ISSN 1691-3078
ISBN 978-9934-8304-0-2

ECONOMIC SCIENCE FOR RURAL DEVELOPMENT

Proceedings of the International Scientific Conference

Integrated and Sustainable Development

№ 27

"ECONOMIC SCIENCE FOR RURAL DEVELOPMENT"

Proceedings of the
International Scientific Conference

INTEGRATED AND SUSTAINABLE DEVELOPMENT

№ 27
Jelgava
2012

TIME SCHEDULE OF THE CONFERENCE

Preparation: October 2011 – April 2012
Process: 26-27 April 2012

Agricultural University in Cracow, 2012
Alberta College, 2012
Aleksandras Stulginskis University, 2012
Corvinus University of Budapest, 2012
Council of Latvian Chamber of Commerce and Industry, 2012
Daugavpils University, 2012
Estonian University of Life Sciences, 2012
Fulda University of Applied Sciences, 2012
Institute of Economics and Social Sciences, Estonian University of Life Sciences, 2012
Institute of Economics by Latvian Academy of Sciences, 2012
Institute of Economics, Hungarian Academy of Sciences, 2012
Kaunas University of Technology, 2012
Latvia University of Agriculture, 2012
Latvian Academy of Agricultural and Forestry Sciences, 2012
Latvian Academy of Sciences, 2012
Latvian State Institute of Agrarian Economics, 2012
Lithuanian Institute of Agrarian Economics, 2012
Mendel University in Brno, 2012
Mykolas Romeris University, 2012
Poznan University of Economics, 2012
Professional Association of Project Managers, 2012
Research Institute of Agriculture Machinery, Latvia University of Agriculture, 2012
Research Institute of Biotechnology and Veterinary Medicine "Sigra", 2012
Research Institute of Economics and Business, 2012
State Revenue Service of Latvia, 2012
Rezekne Higher Education Institution, 2012
Riga International School of Economics and Business Administration, 2012
Riga Technical University, 2012
Rural Support Service, 2012
School of Business Administration Turiba, 2012
School of Business and Finance, 2012
Seinäjoki University of Applied Sciences, 2012
Tallinn University Institute of Political Science and Governance, 2012
Tartu University, 2012
University College of Economics and Culture, 2012
University of Latvia, 2012
University of Szczecin, 2012
Ural State Mining University, 2012
Valga County Government, 2012
Ventspils University College, 2012
Vidzeme University of Applied Sciences, 2012
Wageningen University, 2012
Warsaw University of Life Sciences, 2012
West Pomeranian University of Technology in Szczecin, 2012

ISSN 1691-3078
ISBN 978-9934-8304-0-2

Abstracted / Indexed: ISI Web of Knowledge, AGRIS, EBSCO
http://thomsonreuters.com/products_services/science/science_products/a-z/conf_proceedings_citation_index/
http://www.llu.lv/ef/konferences.htm
www.fao.org/agris/
http://search.ebscohost.com/login.aspx?authtype=ip,uid&profile=ehost&defaultdb=lbh

Programme Committee of International Scientific Conference

Professor **Baiba Rivza**	President of the Academy of Agricultural and Forestry Sciences of Latvia; academician of Latvian Academy of Sciences; foreign member of Academy of Agricultural Sciences of Russia; foreign member of Lithuanian Academy of Sciences; foreign member of the Academy Geargophily (Italy), foreign member of the Royal Swedish Academy of Agriculture and Forestry, **Latvia**
Professor **Bartosz Mickiewicz**	West Pomeranian University of Technology in Szczecin, **Poland**
Professor **Vilija Alekneviciene**	Faculty of Economics and Management, Aleksandras Stulginskis University, **Lithuania**
Professor **Irina Pilvere**	Dean of the Faculty of Economics of Latvia University of Agriculture, **Latvia**
Professor **Ingrida Jakusonoka**	Head of the Department of Accounting and Finance of the Faculty of Economics of Latvia University of Agriculture, **Latvia**
Associate professor **Gunita Mazure**	Department of Accounting and Finance of the Faculty of Economics of Latvia University of Agriculture, **Latvia**
Professor **Barbara Freytag-Leyer**	Department of Home Economics, Fulda University of Applied Sciences, **Germany**
Professor **Jacques Viaene**	Faculty of Bioscience Engineering, Department of Agricultural Economics, University of Ghent, **Belgium**
Professor **Bo Öhlmer**	Department of Economics of the Swedish University of Agricultural Sciences, Uppsala, **Sweden**
Professor **Wim J.M. Heijman**	Wageningen University, **the Netherlands**
Professor **Maria Parlinska**	Warsaw University of Life Sciences, **Poland**
Professor **Csaba Forgacs**	Corvinus University of Budapest, **Hungary**
Professor **Aina Dobele**	Department of Entrepreneurship and Management of the Faculty of Economics of Latvia University of Agriculture**, Latvia**
Professor **Liga Mihejeva**	Department of Entrepreneurship and Management of the Faculty of Economics of Latvia University of Agriculture**, Latvia**
Associate professor **Bruna Maria Zolin**	Department of Economic Sciences, University of Venice, **Italy**
Associate professor **Jonas Jasaitis**	Siauliai University, **Lithuania**
Associate professor **Andra Zvirbule-Berzina**	Head of the Department of Entrepreneurship and Management of the Faculty of Economics of Latvia University of Agriculture, **Latvia**
Associate professor **Inguna Leibus**	Department of Accounting and Finance of the Faculty of Economics of Latvia University of Agriculture, **Latvia**
Associate professor **Modrite Pelse**	Head of Department of Economics of the Faculty of Economics of Latvia University of Agriculture, **Latvia**

The chief facilitator and project leader – associate professor **Andra Zvirbule-Berzina**

Editorial Board

The Editorial Board of the edition of the International Scientific Conference Proceedings:

Editor – in-chief	Associate professor **Andra Zvirbule-Berzina**
Responsible compilers of the proceedings:	Associate professor **Gunita Mazure**
	Lecturer **Zanete Gruzina**
Assistants to the responsible compilers:	**Dzesija Zeiferte**
	Agnese Radzele-Sulce

Language editor: **Gunita Mazure**

Layout designer: **Agnese Radzele-Sulce**

Reviewers

Every article included into the Proceedings was subjected to a scientific, including international review.

All reviewers were anonymous for the authors of the articles.

The following **89** reviewers from scientific and academic institutions of **7** countries (Estonia, Finland, Hungary, Latvia, Lithuania, Poland, and the Czech Republic) have written **206** reviews.

Dzintra Atstaja	Dr.oec., assoc. prof. (School of Business and Finance, Latvia)
Anita Auzina	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Stanislaw Bagienski	Dr.hab., prof. nadz. (Warsaw University of Life Sciences, Poland)
Konstantins Benkovskis	Dr.oec., lecturer (Stockholm School of Economics in Riga, Latvia)
Dainis Berjoza	Dr.ing., assoc. prof. (Latvia University of Agriculture, Latvia)
Veronika Bikse	Dr.oec., prof. (University of Latvia, Latvia)
Ligita Bite	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Vera Boronenko	Dr.oec. (Daugavpils University, Latvia)
Ieva Brence	Dr., assoc. prof. (Latvian Academy of Sciences, Latvia)
Inta Bruna	Dr.oec., prof. (University of Latvia, Latvia)
Veronika Bugina	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Andrzej Czyzewski	Dr.hab., prof. (Poznan University of Economics, Poland)
Alina Danilowska	Dr.hab., prof. (Warsaw University of Agriculture, Poland)
Rimantas Dapkus	Dr., assoc. prof.(Kaunas University of Technology, Lithuania)
Vija Dislere	Dr.paed., assoc. prof., (Latvia University of Agriculture, Latvia)
Aina Dobele	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Aija Eglite	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Justyna Franc-Dabrowska	Dr.hab., adjunct prof. (Warsaw University of Life Sciences, Poland)
Ineta Geipele	Dr.oec., prof. (Riga Technical University, Latvia)
Barbara Golebiewska	PhD hab. (Warsaw University of Life Sciences, Poland)
Jaroslaw Golebiewski	Dr.hab. (Warsaw University of Life Sciences, Poland)
Gunta Grinberga-Zalite	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Inguna Gulbe	Dr.oec.(Latvian State Institute of Agrarian Economics, Latvia)
Māra Gulbe	Dr.math., assoc. prof. (University of Latvia, Latvia)
Uldis Ivans	Mg.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Ingrida Jakusonoka	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Elita Jermolajeva	Dr.oec., assoc. prof. (Daugavpils University, Latvia)
Helma Jirgena	Dr.oec., assoc. prof. (Institute of Economics by Latvian Academy of Sciences, Latvia)
Inara Jurgena	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Janis Kaktins	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Leif Kalev	PhD, assoc. prof. (Tallin University, Estonia)
Laszlo Karpati	Dr., PhD (Budapest Business School, Hungary)
Bogdan Klepacki	Dr.hab., prof. (Warsaw University of Life Sciences, Poland)
Evija Kopeika	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Vulfs Kozlinskis	Dr.habil.oec., prof. (Riga International School of Economics and Business Administration, Latvia)
Zaiga Krisjane	Dr.geogr., prof. (University of Latvia, Latvia)
Gediminas Kuliesis	Dr. (Lithuanian Institute of Agrarian Economics, Lithuania)
Marika Laizane-Jurkane	Dr.sc.pol. (University of Latvia, Latvia)
Olga Lavrinenko	Dr.oec. (Daugavpils University, Latvia)
Inguna Leibus	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Sviesa Leitoniene	Dr., assoc. prof.(Aleksandras Stulginskis University, Lithuania)
Linda Leja	M.Sc. (the Ministry of Environmental Protection and Regional Development, Latvia)

Agita Livina	Dr.oec., assoc. prof.(Vidzeme University of Applied Sciences, Latvia)
Valdemaras Makutenas	Dr., assist. prof.(Aleksandras Stulginskis University, Lithuania)
Gunita Mazure	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Bartosz Mickiewicz	PhD., prof. (West Pomeranian University of Technology in Szczecin, Poland)
Liga Mihejeva	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Tatjana Muravska	Dr.oec., prof. (University of Latvia, Latvia)
Aina Muska	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Grigorijs Olevskis	Dr.hab.oec., prof. (University of Latvia, Latvia)
Liga Paura	Dr.sc.agr., assoc. prof. (Latvia University of Agriculture, Latvia)
Modrite Pelse	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)
Irina Pilvere	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Dina Popluga	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Arturs Praulins	Dr.oec. (Latvian State Institute of Agrarian Economics, Latvia)
Agnese Radzele-Sulce	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Viktorija Rankevica	Dr.oec., assoc. prof. (School of Business and Finance, Latvia)
Priit Sander	PhD (Tartu University)
Linda Silina	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Inga Sina	Dr.oec. (University College of Economics and Culture, Latvia)
Timo Sipiläinen	PhD, assist. prof. (University of Helsinki, Finland)
Tomasz Siudek	Dr., assist. prof. (Warsaw University of Life Sciences, Poland)
Peteris Skinkis	Dr.geogr., assoc. prof. (University of Latvia, Latvia)
Teodor Skotarczak	Dr.hab., prof. (West Pomeranian University of Technology in Szczecin, Poland)
Martin Soucek	Ing. Ph.D. (Mendel University in Brno, Czech Republic)
Evelina Spakovica	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Ilze Sproge	Dr.sc.administr., assist. prof. (ISMA Graduate School, Latvia)
Neringa Stonciuviene	Dr., prof.(Aleksandras Stulginskis University, Lithuania)
Evita Straumite	Dr.sc.ing. (Latvia University of Agriculture, Latvia)
Aivars Strautnieks	Dr.oec., assoc. prof. (emeritus) (Latvia University of Agriculture, Latvia)
Voldemars Strikis	Dr.agr., prof. (Latvia University of Agriculture, Latvia)
Romena Sulca	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Tatjana Tambovceva	Dr.oec., assoc. prof. (Riga Technical University, Latvia)
Elga Tilta	Dr.oec. (Institute of Economics by Latvian Academy of Sciences, Latvia)
Ilze Upite	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Vasilijs Ustinovs	Dr.sc.ing. (Research Institute of Agriculture Machinery, Latvia University of Agriculture, Latvia)
Rando Värnik	PhD., prof. (Estonian University of Life Sciences. Estonia)
Dainis Viesturs	Dr.vc.ing. (Research Institute of Agriculture Machinery, Latvia University of Agriculture, Latvia)
Dace Viksne	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Anastasija Vilcina	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Raina Vira	Dr.paed., assoc. prof.(Riga International School of Economics and Business Administration, Latvia)
Irija Vitola	Dr.oec., prof. (Latvia University of Agriculture, Latvia)
Inesa Voroncuka	Dr.oec., prof. (University of Latvia, Latvia)
Jekaterina Voznuka	Dr.oec., assist. prof. (Baltic International Academy, Latvia)
Bogdan Wawrzyniak	Dr.hab., prof. (University of Technology and Life Sciences in Bydgoszcz, Poland)
Ludwik Wicki	Dr.hab. (Warsaw University of Agriculture, Poland)
Lajos Zoltan Bakucs	Dr. (Hungarian Academy of Sciences, Hungary)
Anda Zvaigzne	Dr.oec., assist. prof. (Latvia University of Agriculture, Latvia)
Andra Zvirbule-Berzina	Dr.oec., assoc. prof. (Latvia University of Agriculture, Latvia)

Foreword

Every year the Faculty of Economics, Latvia University of Agriculture holds the international scientific conference "Economic Science for Rural Development" and publishes internationally reviewed papers of scientific researches, which are presented at the conference. **This year the conference is organised for the 13th year running and all the papers are published in English.** Selected papers from the Proceedings are included into *ISI Web of Knowledge* database and the Faculty of Economics has applied also to Scopus database for including the Proceedings into this database.

Researchers from various European countries representing not only the science of economics in the diversity of its sub-branches have contributed to the conference this year; they have expanded their studies engaging colleagues from social and other sciences, thus confirming inter-disciplinary and multi-dimensional development of the contemporary science. The conference is dedicated to topical themes of rural development; hence, the research results are published in three successive volumes (No. 27, 28, and 29). The first volume of scientific conference proceedings was published in 2000.

Professors, doctors of science, associate professors, assistant professors, PhD students, and other researchers from the following higher education, research institutions, and professional organisations participate at the International Scientific Conference held on April 26-27, 2012 and present their results of scientific research:

Agricultural University in Cracow
Alberta College
Aleksandras Stulginskis University
Corvinus University of Budapest
Council of Latvian Chamber of Commerce and Industry
Daugavpils University
Estonian University of Life Sciences
Fulda University of Applied Sciences
Institute of Economics and Social Sciences, Estonian University of Life Sciences
Institute of Economics by Latvian Academy of Sciences
Institute of Economics, Hungarian Academy of Sciences
Kaunas University of Technology
Latvia University of Agriculture
Latvian Academy of Agricultural and Forestry Sciences
Latvian Academy of Sciences
Latvian State Institute of Agrarian Economics
Lithuanian Institute of Agrarian Economics
Mendel University in Brno
Mykolas Romeris University
Poznan University of Economics
Professional Association of Project Managers
Research Institute of Agriculture Machinery, Latvia University of Agriculture
Research Institute of Biotechnology and Veterinary Medicine "Sigra"
Research Institute of Economics and Business
State Revenue Service of Latvia
Rezekne Higher Education Institution
Riga International School of Economics and Business Administration
Riga Technical University
Rural Support Service
School of Business Administration Turiba
School of Business and Finance
Seinäjoki University of Applied Sciences
Tallinn University Institute of Political Science and Governance
Tartu University
University College of Economics and Culture

University of Latvia
University of Szczecin
Ural State Mining University
Valga County Government
Ventspils University College
Vidzeme University of Applied Sciences
Wageningen University
Warsaw University of Life Sciences
West Pomeranian University of Technology in Szczecin

The following topical themes have been chosen for the conference:
— Production and co-operation in primary and secondary agriculture
— Integrated and sustainable development
— Finance and tax
— Rural business economics and administration
— Resources and sustainable consumption

The comprehensive reviewing of submitted scientific articles has been performed on international and inter-university level to ensure that only high-level scientific and methodological research results, meeting the requirements of international standards, are presented at the conference. Every submitted manuscript has been reviewed by one reviewer from the author's native country or university, while the other reviewer came from another country or university. The third reviewer was chosen in the case of conflicting reviews. All reviewers were anonymous for the authors of the articles. Every author received the reviewers' objections or recommendations. After receiving the improved (final) version of the manuscript and the author's comments, the Editorial Board of the conference evaluated each article.
All the papers of the international scientific conference "Economic Science for Rural Development" are arranged into the three following thematic volumes:

No. 27 Integrated and Sustainable Development

No. 28 Rural Business and Finance
Rural Business Economics and Administration
Finance and Tax

No. 29 Resources and Cooperation
Resources and Sustainable Consumption
Production and Cooperation in Primary and Secondary Agriculture

The publishing of the Proceedings before the conference will promote exchange of opinions, discussions, and collaboration of economic scientists on the international level. The research results included into the Proceedings are available worldwide to any stakeholder.

The abstracts of the conference proceedings provided in English are submitted to the international databases:

Web of Knowledge, which is a unified platform, that integrates all data and search terms. It provides access to the world's leading citation databases, including powerful cited reference searching, the Analyse Tool, over 100 years of comprehensive backfile and citation data. *Web of Knowledge* also delivers access to conference proceedings, patents, websites, and chemical structures, compounds and reactions. While other databases simply aggregate data, *Web of Science* information is carefully evaluated and selected. This time-tested approach helps conserve an institution's resources and researchers' time by delivering access to the most relevant resources. *Web of Science* offers a true cited reference index, which is still the best tool for discovery and the only method of retrieving accurate citation counts.

AGRIS - International Information System for the Agricultural Sciences and Technology set up by the Food and Agriculture Organisation of the United Nations (FAO UN), and especially to the databases containing full research texts set up by the academic higher education institutions.

EBSCO Academic Search Complete is the world's most valuable and comprehensive scholarly, multi-disciplinary full-text database with more than 8,500 full-text periodicals, including more than 7,300 peer-reviewed journals.

CABI PUBLISHING CAB ABSTRACTS database. *CAB Abstracts* gives researchers instant access to over 6.3 million records from 1973 onwards, with over 300,000 abstracts added each year. Its coverage of the applied life sciences includes agriculture, environment, veterinary sciences, applied economics, food science, and nutrition. **CAB Abstracts** is a comprehensive bibliographic database that covers worldwide literature from all areas of agriculture and related applied and life sciences. Published by CAB International, a division of CAB International, CABA is the world's most comprehensive database in its field containing 5 million entries of which 95% are supported by abstracts. Starting from 2009, part of entries is available as full-text periodicals.

The Conference Committee and editorial Board are open to comments and recommendations for the development of future conference proceedings and organisation of international scientific conferences.

We would like to thank all the authors, reviewers, members of the Programme Committee and the Editorial Board as well as supporting staff for their contribution organising the conference.

On behalf of the conference organisers
Andra Zvirbule-Berzina
Associate professor of Faculty of Economics
Latvia University of Agriculture

Content

Integrated and Sustainable Development

"ECONOMIC SCIENCE FOR RURAL DEVELOPMENT"

Proceedings of the
International Scientific Conference

INTEGRATED AND SUSTAINABLE DEVELOPMENT

Creating a Dynamic Model for the Car Aftersales Market

Krisjanis Aboltins[1], MBA
Department of Economics, Faculty of Economics, Latvia University of Agriculture
Baiba Rivza[2], Dr.hab.oec.
Faculty of Economics, Latvia University of Agriculture

Abstract. Today, the majority of profit of car aftersales companies is generated by aftersales services. Therefore, it is of significant importance to research the Latvian aftersales market, to compare it with the markets of the other European countries, and to develop the methods for the future aftermarket analyses as well as to project its future demand.
Comparing the markets of Latvia and the developed Western countries, the authors noticed that there was a remarkably larger share of independent aftermarket companies in Latvia. There is only one mechanical workshop concept chain in Latvia comprised of quite a small number of companies, while in Germany, 62% of all the independent mechanical automotive workshops are a part of workshop concept chains.
As a major instrument for analysis, the authors have used the software Powersim Studio to make a dynamic aftermarket module, which is developed from the aftermarket, car park, economic and society modules. The aftermarket module was divided into the independent aftermarket, which was further separated in 5 levels, and the aftermarket - dependent from car manufacturers, subdivided in 3 levels.
The aftermarket module will provide an instrument to forecast its future volume and structure including its specifics by the regions of Latvia. It will give statistical information and proposals for performance improvement, thus, increasing the competitiveness of industry companies and facilitating regional development.
Key words: regional development, automotive workshops, car aftermarket.
JEL code: R11

Introduction

The car is not only providing comfortable everyday transportation but has also become a part of one's lifestyle and often of the social status. For a successful car industry, the technical maintenance of vehicles is necessary, which requires spare parts and services, which is to say that a car aftermarket is needed.

Car aftermarket includes:

— automotive workshop services (technical maintenance, diagnostics, repairs);
— car spare parts sales.

In Latvia, in the quite recent past, up to 2009, the majority of aftermarket companies' profit came from car and spare parts *sales*. Currently, it is made by the turnover of aftermarket *services*. Therefore, it is important to study the Latvian aftermarket and to develop the methods to project the future aftermarket volume demand. The advancement of the car aftermarket in the regions of Latvia will have a positive effect on the development of regions, reduce the level of unemployment and increase the competitiveness of companies.

The aim of the research is to create an instrument for analyses of demand and supply of the aftermarket in the regions of Latvia within an overall context of its development.

The following tasks were set in order to achieve the aim of the research:

— to describe the passenger car aftermarket in Europe and Latvia, to characterise their main differences, and to outline the aftermarket development opportunities in the regions of Latvia;
— to create and to describe basic modules of the Latvian aftermarket dynamic model.

The research has applied methods of description, analyses, graphic depiction, and mathematical statistics modelling (dynamic model).

The data of the Road Traffic Safety Department (CSDD), the Central Statistical Bureau (CSB), special theoretical and methodical literature, and Wolk & Partner Car Consult GmbH and Wolk After Sales Experts GmbH publications/database are used as a basis for this information.

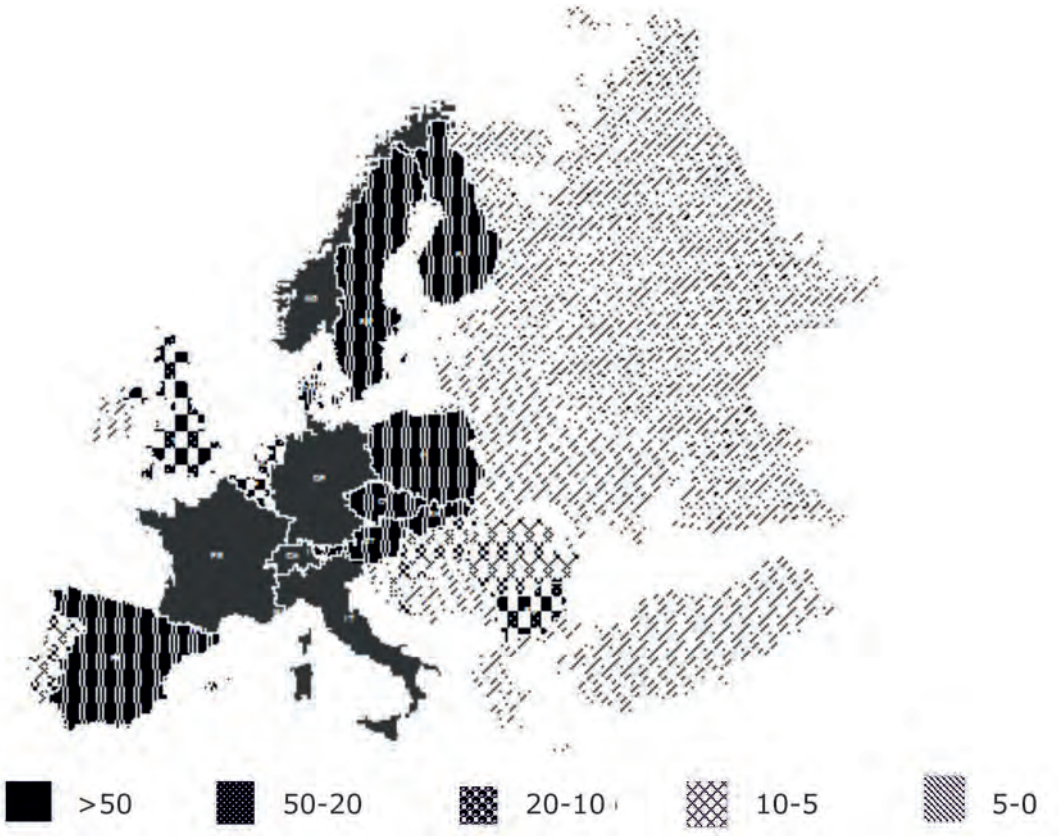
Research results and discussion

Characteristics of the Latvian and European car aftermarket

In the Baltic States, the car industry aftermarket is comprised of 4850 companies. The majority of them are small and medium size, with about 26900 total employees. The aftermarket volume is almost EUR 800 million (Wolk, Nikolic, Aboltins, 2010).

Historically, Latvian car industry companies were focused on car and spare parts sales, and not on servicing. In addition, car industry companies are concentrated in Riga city instead of having authorised workshop chains in the regions of Latvia. For example, some of the most popular car brands (Audi and BMW) have authorised workshops only in Riga. As a result, the Latvian aftermarket is dominated by independent companies. In accordance with "Wolk After Sales Experts" research in Latvia, totally 93% of all passenger car workshops are independent from car manufacturers;

[1] *E-mail address*: krisjanis.aboltins@inbox.lv
[2] *E-mail address*: baiba.rivza@llu.lv



Source: authors' construction based on "Wolk After Sales Experts" database

Fig. 1. **Share of mechanical workshop concepts in % of total independent garages in the country in 2011**

by comparison, in Germany, 44 % of all workshops are part of manufacturers' dealership networks.

The largest problem facing independent repair shops is the lack of the newest technical information, tools, and qualified workforce. As a result, car workshops, particularly in the regions of Latvia, are not able to service qualitatively modern contemporary cars. Car manufacturer representatives creating a dealer network would be one of the solutions. However, in many cases, the car servicing in an authorised (dealer) workshop will be 50% more expensive than the same repair in an independent workshop. As previously noted, in the more affluent Germany, 66% of all the workshops are independent from the manufacturers.

To summarise, currently, a manufacturers' authorised dealers' network has not been established in the regions of Latvia but there is a large number of small repair shops, which, in accordance with the authors' observations, are often not able to provide to a consumer the desirable repair quality.

In the Western Europe, this problem is solved by developing independent garage marketing systems or garage concept chains, which can provide the repair quality and servicing comparable with that of manufacturers' authorised workshops. At the same time, the workshop concept chain garages maintain the service providing a price at the level of a regular independent repair shop, and usually use spare parts supplied by independent spare parts wholesalers. Workshops' concept chain garages are partner systems based on partnership contracts with large distributors or spare parts producers. In literature, workshops concept chain garages are usually divided in three following groups:

— full service workshop systems for mechanical repairs, which offer the complete service for all car brands;
— workshop concept chains specialised in a single product group such as paint and body, tires, auto glass, air conditioning;
— distance retail brands of the parts industry - workshop concept chains, which specialise at retail in a single spare part brand (for example, Bosch Diesel Centre).

Latvia, as opposed to the Western Europe (Figure 1), has a very low (< 5%) share of workshop concept chain garages. Specialised concept chains of body and paint workshops, and concept chains of auto glass garages, do not exist in Latvia. By comparison, in the German car aftermarket, the majority (62%) of mechanical garages independent from manufacturers are a part of some of the workshop concepts. In Europe, as a whole, about 27% of all independent mechanical garages are partners of one of the mechanical workshop concepts (Wolk, Nikolic, Aboltins, Frolich, 2011). For Latvia, only seven mechanical workshops were a part of service concepts in 2011. In Europe, in total, there are 130 concepts of mechanical workshops. In Latvia, there is only one of them - Bosch Car Service.

In Europe, about 60000 mechanical garages are a part of workshop concepts (Wolk, Nikolic, Aboltins,

Table 1

Major mechanical workshop concepts in Europe in 2011, by numbers of outlets

Concept name	Driven by
Bosch Car Service	Bosch
Checkstar	Magneti Marelli
Eurogarage	Groupauto International
Ad Garage	Ad International
Point Service	IDIA / Temot International
Autofit	Trost SE / PV Automotive / Temot International
Eurorepair	Citroen
Meisterhaft	ATR international
1a Autoservice	Centro / Trost SE
A Posto	Rhiag

Source: Wolk After Sales Experts database

Frolich, 2011). Concept chains are usually created by spare parts manufacturers and wholesalers, providing to the garages training, information, and equipment. The garage, being a part of concept, uses spare parts of a specific manufacturer (for example, Bosch) or wholesalers' supplied spare parts.

In the Western Europe, the majority of workshops included in garage concept chains are small companies, which successfully advance by this approach. In the authors' opinion, the creation of exactly this type of garage concept chains in the regions of Latvia is one of the opportunities for small companies to grow. Workshops would attract car drivers who right now are forced to repair cars either in the capital city Riga, or in neighbouring countries. Thus, the creation of garage concept chains would facilitate the regional development and reduce unemployment in the regions of Latvia. A part of some of the manufacturers' authorised workshop network would be another opportunity for advancement. However, creating authorised workshops requires large investment – and, thus, only a small part of the largest car repair workshops would be able to use this opportunity.

Major mechanical workshop concept chains in Europe and leading companies of concept chains are shown in Table 1. There are more than 5000 independent workshops in each of Bosch Car Service and Checkstar workshop concept chains. The 10 concepts shown in Table 1 total to 30000 workshops, which is exactly half of all concept workshops in Europe.

Advantages from the concept chains:

— the workshop obtains trained employees, information, and equipment;
— the spare part manufacturer or wholesaler has clients (workshops being a part of a concept chain);
— the vehicle driver obtains a higher quality of service.

In addition, in accordance with the authors' observations, independent workshops in Latvia are not sufficiently using opportunities set forth by the European Union Regulation No. 461/2010. Among other provisions, the Regulation No. 461/2010 sets forth a new definition for original spare parts, and an opportunity is provided to service and repair cars also during the warranty period in independent workshop without losing the warranty. According to the European Union Regulation No. 461/2010, original spare parts are *not* only spare parts with the trademark of the cars producers. Spare parts produced by independent producers, which are technically identical to car manufacturers' component parts (without car producer's trademark) are also considered as original spare parts.

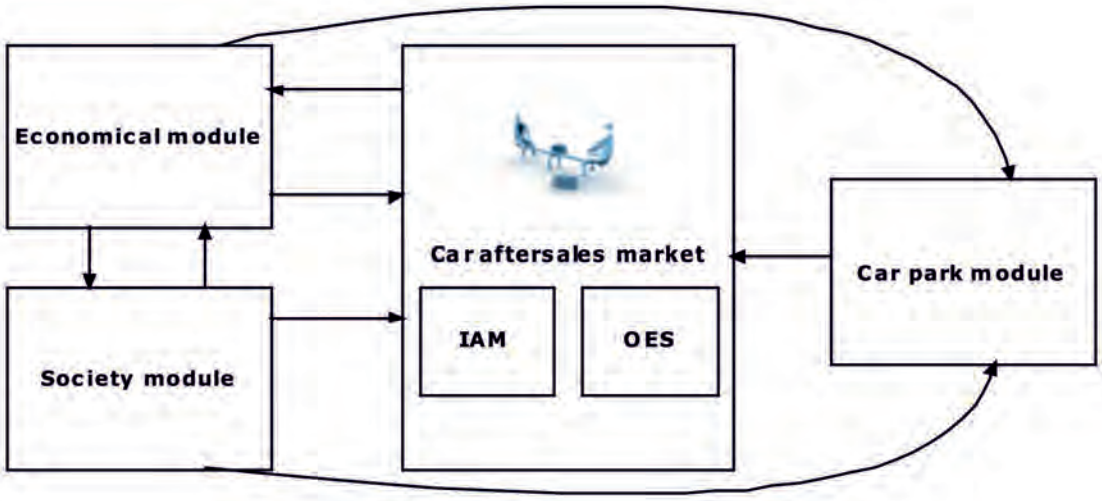
For the successful development of small companies in the regions of Latvia, independent spare parts distributors and workshops should create garage concept chains and use the term "original spare parts" in their marketing activities and explanations to car drivers.

Latvian car aftermarket model

The European car aftermarket has been studied and statistics have been mostly provided to large European industry companies by independent expert companies, such as, for example, Wolk after sales experts, Datamonitor, Polk etc. However, notwithstanding the fact that the Baltic States aftermarket has about 26900 employees, the car aftermarket itself, its development trends, and opportunities in the regions of Latvia are not sufficiently researched.

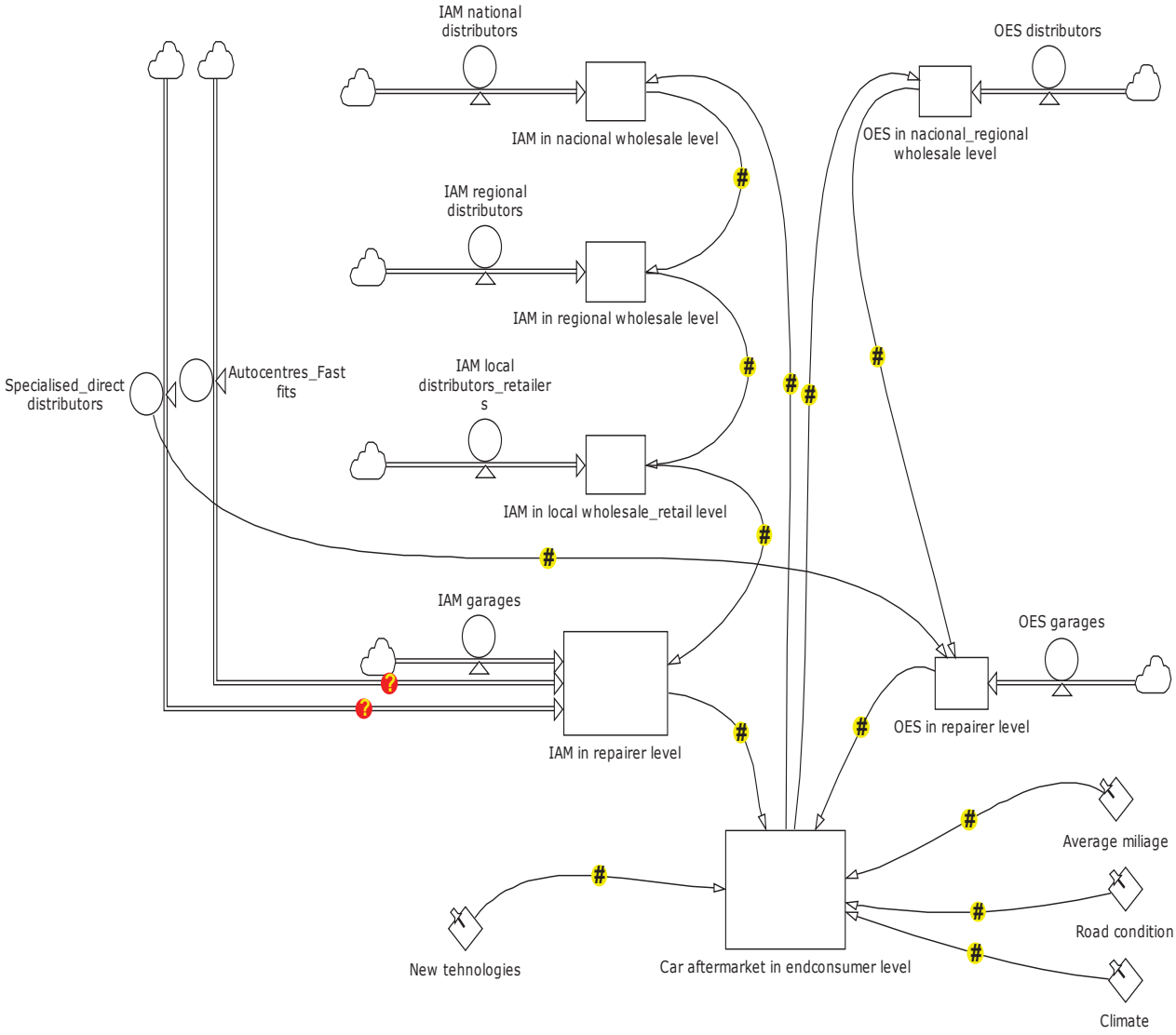
None of the European leading aftermarket expert companies had deeply studied the car aftermarket of the regions of Latvia. Analytical instruments for analyses of aftermarket and statistics are not available. Currently, the aftermarket of the regions of Latvia, which is mostly comprised of small companies, is developing chaotically, not analysing aftermarket tendencies. By developing the aftermarket model, the industry companies would be provided with statistics, information on aftermarket tendencies, and opportunities for its growth in the regions of Latvia, which would subsequently reduce the unemployment and would generate regional growth.

As noted by the authors, for a successful aftermarket in the regions of Latvia, first, it is necessary to create methods for projection of future aftermarket demand volume and tendencies. In designing the Latvia aftermarket model, the corresponding author has applied his experience in one of the leading German aftermarket companies and used software Powersim Studio. In addition, the authors would like to outline that until now, none of the leading



Source: authors' construction

Fig. 2. **Main modules of car after sales market model**



Source: authors' construction

Fig. 3. **Car aftersales model market distribution flow**

European aftermarket expert companies had created a dynamic model of the aftermarket. This model will be also applicable for analyses of the aftermarket of other European countries.

When working on the dynamic model, the following factors affecting it were selected and divided in modules (Figure 2):

1. Economical module:
   - GDP;
   - GDP growth rate;
   - GDP per capita;
   - unemployment;
   - inflation.
2. Car park module:
   - number of cars;
   - car division by age;
   - car engine volume;
   - car division by class;
   - number of cars per 1000 residents;
   - registration of new cars;
   - first registration of used cars;
   - car export, write off.
3. Society module:
   - number of residents;
   - residents by age;
   - residents by gender.

As additional factors affecting car aftermarket, and to compare it to other European countries, the authors selected:

- road condition;
- climate;
- average passenger car mileage;
- new technologies.

The authors divided the car aftermarket into two basic groups:

- OES (original equipment sales);
- IAM (independent aftermarket).

In the module flow portion of the car aftermarket model, the independent car aftermarket was divided in national wholesale, regional wholesale, and local wholesale levels (Figure 3). The number of wholesale companies in each level and division of spare parts flow from higher to lower levels and average profits in each level were considered in model design.

Similarly, as with wholesale companies, also in the repairer level, the number of workshops, profit and spare parts, and material purchase sources division were included in designing the module. In addition, in the independent aftermarket module, specialised distributors, autocentres and fast fitters were addressed, because the division of purchasing sources for spare parts and materials usually differs for the noted companies.

In car aftermarket model flows, the IAM model was separated only in two levels. In designing the model, the spare parts flow to authorised car workshops from independent wholesalers, and also from OES distributors to independent spare parts distributors and independent workshops.

Car park module calculations considered only Latvian car park in technical order and the economic factors affecting it, such as GDP, inflation, unemployment, and car park division by Latvia regions.

By designing the car aftermarket model, the instrument will be created for projection of future aftermarket volume and its structure, including its specifics by the regions of Latvia. It will provide statistical information and proposals for performance advancement and development for car aftermarket companies in the regions of Latvia, thus, increasing the competitiveness for industry companies in the regions of Latvia and facilitating regional development.

Conclusions, proposals, recommendations

1. The aftermarket of Latvia regions is dominated by workshops, which are independent from car manufacturers. The network of car manufacturers' authorised workshops is not sufficiently developed in Latvia.
2. Latvia has a very low share of car workshop concept chain garages, and small independent car workshops are not able to qualitatively service modern contemporary cars. For the successful advancement of small workshops in the regions of Latvia, independent spare parts distributors and associations should create new garage concept chains.
3. The authors, designing a car aftermarket model, will create a practical instrument for projecting future car aftermarket volume and structure including its specifics by regions of Latvia. It will provide industry companies with statistical information and proposals for the performance advancement and development, thus, increasing competitiveness and facilitating regional development.

Bibliography

1. Hecker, F., Hurth, J., Seeba, H.G. (2010). *Aftersales in der Automobilwirtschaft*. Munich: Springer Automotive Media in der Springer Fachmedien München GmbH. p. 328.
2. Central Statistical Bureau. Retrieved: http://www.csb.gov.lv. Access: 12 September 2010.
3. European Economic and Social Affairs Committee. (2009). Markets Subordinated to Car Industry and Manufacturing of Car Parts. Conclusions. Retrieved: http://eurlex.europa.eu/LexUriServ/ LexUriServ.do ?uri=OJ:C:2009:317:0029:0036:LV:PDF. Access: 7 November 2009.
4. Road Traffic Safety Department (CSDD). Retrieved: http://csdd.lv/lat/noderiga_informacija /statistika/. Access: 10 September 2010.
5. Wolk, H., Nikolic, Z., Aboltins, K., Frolich J. (2011). *Garage Service Concepts in the European Car Aftermarket.* Bergisch Gladbach: Wolk after sales experts GmbH. p. 632.
6. Wolk, H., Nikolic, Z., Aboltins, K. (2010). *The Car Aftermarket in Estonia.* Bergisch Gladbach: Wolk after sales experts GmbH. p. 67.
7. Wolk, H., Nikolic, Z., Aboltins, K. (2010). *The Car Aftermarket in Latvia.* Bergisch Gladbach: Wolk after sales experts GmbH. p. 76.
8. Wolk, H., Nikolic, Z., Aboltins, K. (2010). *The Car Aftermarket in Lithuania.* Bergisch Gladbach: Wolk after sales experts GmbH. p 73.

Latvian Emigration Patterns – Regional Perspective

Elina Apsite[1], PhD candidate
University of Latvia

Abstract. At the time of high level of emigration from Latvia, there is an increasing concern about the impact on the country development and regional differences of this process within the country. This paper seeks to give comparison between persons who emigrated from the capital of Latvia – Riga and its suburbs, and other regions of Latvia to the United Kingdom. Based on the web-based survey conducted in 2010, the paper aims to distinguish the main differences between emigrants from Riga and regions of Latvia in terms of the dominant emigration reasons and differences for possible return conditions for either of groups.
Results suggest that the respondents who moved because of the need to have higher income came from Riga or its surroundings and moved more recently (2008-2010). However, respondents from the regions of Latvia have moved just after the accession, because of the wish to improve knowledge of English.
Furthermore, probabilities of return migration suggest that labour migrants coming from Riga are more likely to return than migrants representing family reunification group are. The chance of entrepreneurs to returning to Riga is not high nor for the families created abroad; however, it is more likely for young people to return than for the older ones. Analysis regarding the regions of Latvia shows that the time spent in the UK decreases, while involvement in informal migrant networks increases the probability of return to their former origin.
Key words: emigration, Riga, Latvia, regions, the United Kingdom.
JEL code: J61, R23, F22

Introduction

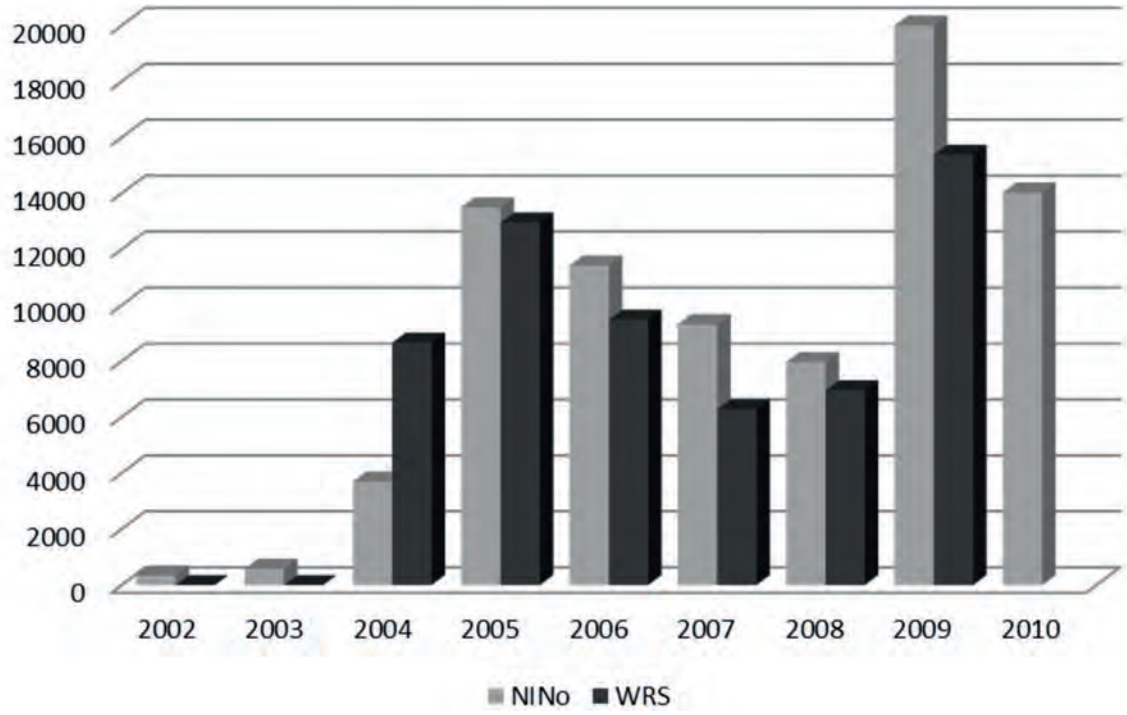
Research on the geographical mobility of the population in Latvia show "that studies related to geographic mobility in Latvia shall be extended so as to analyse links between different types of mobility – internal and international migration" (Berzins, 2011). Therefore, this paper seeks to analyse the following step after internal migrations – international migration and it is looking to find differences between Riga and its suburban area, and other regions of Latvia. "Traditionally persons living in rural areas or regional centres move to the bigger cities or the capital for the employment. Along with the opportunities to work abroad, they directly move abroad. Nowadays, particularly using low –cost airlines" (Krisjane, Bauls, 2011). Previously, there have been several studies on internal mobility and commuting within Latvia. For example, Berzins (2011) stresses that "Latvia nowadays is facing demographic challenges marked by falls in fertility, strong emigration and ageing of the population. Riga is the major urban centre in Latvia. Its size and dominant economic role have influenced the development of the country's urban system, which has a monocentric pattern". The capital Riga and its surroundings concentrates majority of the population of Latvia, i.e. respectively 31% and 28 % of all population (CSP, 2012; Berzins 2011). Therefore, the main emigration source is Riga and the suburbs of Riga. According to the official statistics, in Latvia the suburbs of Riga or Pieriga region are the only ones that have a positive net migration; however, it has decreased since 2009-2010. According to the official statistics of Latvia, other regions of Latvia - Kurzeme, Zemgale, Latgale, and Vidzeme have rather similar out-migration dynamics.

The aim of the paper is to compare characteristics of persons emigrated from the capital of Latvia – Riga and its suburbs, and other regions of Latvia. There are two main research tasks. First, to look at the dominant emigration reasons for persons who are already abroad considering their former place of residence in Latvia. Second, to consider possible return migration conditions for either of the groups. There is only fragmented information on the number of persons currently living abroad. Virtual communication channels instead of face-to-face communication helped achieve higher response rate in order to gather substantial number of responses.

There were 899 persons surveyed in this analysis. They were originally coming from different regions of Latvia covering both rural and urban regions. Most of the respondents (n=332) moved to the UK from Riga or its suburban area. Totally 241 respondents were from the central part of the country called Vidzeme excluding Riga and its suburban area. Just 176 and 104 persons were originally from the Western part Kurzeme and the Southern part Zemgale but 46 respondents were from the Eastern part of Latvia –Latgale. There are both male and female respondents aged 16 – 63. There is no gender-based analysis. At the time of survey, they were all living in the UK and have been staying there for various periods. These data are not representative for each region thereof; all respondents from the regions of Latvia are considered as one group. These data are further analysed using inferential statistics research methods like binary logistic regression. It allows identifying differences between respondents who left the capital of Latvia –Riga and other regions. More precisely, model construction with backward method in the SPSS software allows selecting variables contributing to the model the most.

Latvia is one of the Baltic States that joined the European Union in 2004. This opened free access to the European labour market particularly to the UK, Ireland,

[1] *E-mail address*: elina.apsite@lu.lv



Source: ***author's calculations based on the UK's Home Office***

Fig. 1. **Registered National Insurance numbers (NINo) and registered immigrants from Latvia in the UK with Workers Registration Scheme (WRS) from 2002 to 2010**

and Sweden – were no restriction measures applied to these destinations. Many Latvian residents used this opportunity and went abroad mostly for the employment purposes. "Potential migrants more often chose Ireland and the United Kingdom due to easier access to the labour market in those countries and not least that English was the language of those two countries" (Wadensjö, 2007).

Following the year 2008, situation and conditions in Latvia experienced negative turn "thus, the desire to leave the country strongly accelerated with the economic recession" (Krisjane et al., 2010). Even though, also potential destination countries suffered from the high unemployment and decrease in wages, the situation in Latvia especially after the previous years of rapid economic increase pushed many Latvians to move internationally. "The current global economic crisis is having a profound effect on migrant workers as well as serious implications for the relationship between migration and development. Current experience indicates that the sectors that have been hardest hit by the economic crisis are also those in which migrant workers are over-represented" (Philip, 2009).

As mentioned before, despite worsening economic conditions abroad many Latvians found that employment opportunities and income level abroad was more adequate for their needs and left for work abroad. In total, around 81 thousand immigrants from Latvia entered the UK in the period of 2002 – 2010.

Data in Figure 1 show Latvian nationals registered in the UK at Workers Registration Scheme, which is required for official work documentation, and NINo registration that is compulsory for tax payments and benefit claims. The years 2005 and 2009 with steep increase in registered numbers of Latvian national in the UK represent events occurring in Latvia after the accession to the European Union and access to the free labour market. The second rise in immigration number shows the negative impact after the global economic recession (after the year 2008), which affected the economic wellbeing in Latvia.

"Migration decision is directly and indirectly dependent on many factors" (Lundholm, 2007) and return migration is "long-term and well planned undertaking, however, some emigrants also return spontaneously and without any previous return considerations" (Stamm, 2006). Knowing the diversity of factors creating out-migration flows and conditions encouraging returns, precise national priority could decrease emigration of certain groups and encourage certain groups of people to return. It would be impossible and unnecessary for "emigration to stop. Rather, efforts must be targeted at managing the process through policies that ultimately curb the emigration rate and encourage return-migration" (Gruzevski, 2004). According to the economic theories, "migration flows respond to regional economic disparities. Net migration flows are positive in regions with economic growth and low employment and negative in less prosperous regions" (Lundholm, 2007 see Greenwood, 1985; Todoro, 1969; Westerlund, 2001). International moves might increase income level but it is often misrepresented as an easy way for prosperity especially for "low-skilled and low-paid jobs" (Paruts, 2011). Return migration according to the integrated migration theory and regional development perspective by Klagge and Klein-Hitpaß (2010) researching Poland promotes knowledge-based development in which returnees act as both investors and innovators. They transfer and successfully integrate

Table 1

Emigration reasons of Latvian emigrants from Riga and its suburbs and elsewhere to the UK (n=899): Results from Binary Logistic regression

		B	Sig.	Exp(B)
Migration reasons				
Higher earnings, employment	No	-.336	**	0.714
	Yes (ref)			
Wish to improve the English knowledge	No	0.334	**	1.397
	Yes (ref)			
Year of emigration	2004 -2007	0.403	***	1.495
	2008 – 2010 (ref)			
Constant		0.315	**	1.370
-Log likelihood	1108.911			
Chi-square	16.606			
Cox&Snell R Square	0.019			
Nagelkerke R Square	0.026			
Overall percentage	62.6			

***p<0.01, **p<0.05.

Source: author's calculations based on the empirical evidence (web-based survey with Latvian migrants to the UK)

financial means as well as different types of knowledge into local economies. There are quite large numbers of high-skilled migrants returning to smaller cities and even remote regions in the case of Poland. In the case of Latvia, the analysis did not show any indication of highly skilled returnees who would create substantial economic development in Riga or other regions. Overall, it is clear that knowledge based development needs human capital and it is important both to retain human capital from emigration as well as encourage people to return - especially highly skilled.

Research results and discussion

The research results on Latvian migrants to the UK linking reasons of emigration and possible return migration and their place of origin show different preferences and outcomes. Riga has the highest concentration of population within the country. Stepwise migration from rural to urban and further international moves plays an important role in migration system of Latvia.

Reasons to emigrate: Riga and other regions

"Employment can be a motive for migration, induced by intention to obtain a better position, more income or more interesting job. To avoid unemployment can also be a motive for migration" (Lundholm, 2007). It seems that persons who moved abroad from Riga are more economically concerned than those coming from regions are. However, persons moving from the regional centres or rural areas directly move abroad and according to the results do not have economic reasons determining their choice. Previously, researchers found that "quite a few people are geographically mobile within the territory of Latvia. There are also those respondents who probably will not move within Latvia but would be prepared to find work abroad. This group should be the focus of particular attention, because here we see a certain lack of trust in life and career opportunities in Latvia" (Krisjane et al., 2007).

The results from the binary logistic regression considered two locations: first, the capital Riga and its suburbs or Pieriga and, second, all the other regions of Latvia –Vidzeme (except Riga), Kurzeme, Zemgale, and Latgale. Calculations show that the persons who had financial problems before emigration and a need to earn more are coming from Riga or suburbs comparing with those who did not mention this reason as important. However, this does not indicate unemployment problems as the main reason for emigration but the need for higher income. On the contrary, persons before emigration living in one of the regions of Latvia consider wish to explore and improve knowledge of English as the main reason. There were more emigrants from regions in the period of 2004-2007 and recent migrants from 2008 are coming from Riga region. Overall, the tendency is that more respondents recently emigrate to the UK from Riga region with the particular need for higher income, as found by Lundholm (2007) migration can be positive for an individual's income.

Reasons to return: Riga and other regions

After the analysis of reasons for both emigrants from Riga and regions, further analysis concentrated on the possible conditions on which persons from different places of origin would return to Latvia. Previously, along with the improvement of economic conditions in Latvia and before the economic downturn, the part of emigrants returned. Estimations done by Hazans (2011) show that around 8% of emigrants have returned to Latvia between 2009 and 2010. However, in reality, high unemployment (up to 20% in Latgale region in 2009) and wide consolidation measures performed in Latvia discouraged

Table 2

Probability to return (0=no; 1=yes) of Latvian migrants in the UK who originally come from Riga and its suburbs (n=235): results from Binary Logistic regression

		B	Sig.	Exp(B)
Age group	16 – 23 (ref)		***	
	24 -30	-1.427	***	0.240
	31 - 37	-1.172	***	0.310
	38 - 44	-1.345	**	0.261
	over 45	-1.008		0.365
Motives of emigration	Labour migration	1.266	***	3.545
	Family migration (ref)			
Experience of independent life abroad	No (ref)	-1.473	**	0.229
	Yes			
Family creation	No (ref)	-1.636	***	0.195
	Yes			
Important contacts	No	0.851	***	2.342
	Yes (ref)			
Constant		1.644	***	5.175
-Log likelihood	234.689			
Chi-square	88.426			
Cox&Snell R Square	0.314			
Nagelkerke R Square	0.420			
Overall percentage	77.2			

***p<0.01, **p<0.05.

Source: author's calculations based on the empirical evidence (web-based survey with Latvian migrants to the UK)

many potential returnees to come back and they prolong their stay in the UK.

Therefore, additional regressions regarding return plans for Riga and four regions of Latvia helped identify possible differences. Riga and its suburbs is a densely populated region and results show that respondents from this region who left as labour migrants in comparison with those who left as family migrants are more likely to return. Meaning that those who went abroad to earn have done it and plan to return; however those who moved motived by their families are more prone to stay in the UK. Also in terms of age, all older age groups with the statistically significant results compared with the younger ones (aged 16 – 23) are less likely to return. Returns of young persons are significant for the demographic situation in Latvia and encouragement for those persons to return should be necessary priority.

Furthermore, respondents who value experience of the independent life important are less likely to return. This refers to the individuals' success abroad and if they have become independent economically and socially. If they feel stable, economically safe, can support themselves and families, the probability of return decreases. Sadly, another group of respondents who are more prone to stay in the UK are persons who have created families abroad. It can be with co-ethnics, other nationals or locals, but it decreases the likelihood of return in comparison with those who have not had this experience. On the same line, also persons who have obtained important business contacts abroad are less likely to return to Latvia. According to the data, possible entrepreneurship in Latvia established by returnees particularly in Riga and Pieriga is less likely to happen. Ideally "return-migrants bring back new labour and management culture as well as earned income, thus, increasing household expenditure and savings" (Gruzevskis, 2004) and increase economic growth in their origin or current place of return. If respondents have managed to succeed abroad, it is more likely that they will continue their entrepreneurship in the UK rather than Riga.

According to these data, conditions like length of stay abroad and sources of information on the opportunities to work abroad have important role in the Latvian return plans. The main difference for respondents from Riga is migrant networks, which they use to find information on employment opportunities and possibilities to move to the UK. With the statistical significance, persons who found the opportunities on their own are less likely to return when compared with the persons who moved abroad with support of their friends and families or informal migrant social networks. In addition, those who used formal recruitment networks show opposite tendency of return, however, not to the statistically significant coefficient. It is important to add that the majority of all respondents have noted that support of informal social networks have played a crucial role in their migration experience. Furthermore, migrant networks often are the channels for employers to find employees and vice versa.

Table 3

Probability to return (0=no; 1=yes) of Latvian migrants in the UK who originally come from Vidzeme, Kurzeme, Latgale, and Zemgale (n=440): results from Binary Logistic regression

		B	Sig.	Exp(B)
Employment information obtaining channels	Friends and relatives (ref)		**	
	Recruitment agency	0.033		1.033
	Own efforts	-0.956	***	0.385
Unemployment in Latvia before emigration	No(ref)	0.678	***	1.969
	Yes			
Year of emigration	2004 – 2007 (ref)	0.609	***	1.839
	2008 – 2010			
Experience of independent life abroad	No (ref)	-2.126	***	0.119
	Yes			
Family creation	No (ref)	-0.767	***	0.464
	Yes			
Constant		1.471	***	4.354
-Log likelihood	489.064			
Chi-square	120.169			
Cox&Snell R Square	0.239			
Nagelkerke R Square	0.319			
Overall percentage	70.9			

***p<0.01. **p<0.05.

Source: author's calculations based on the empirical evidence (web-based survey with Latvian migrants to the UK)

For the respondents from regions also time of emigration proves to be an important determinant for their return. According to this analysis, respondents who left Latvia for the UK just after the accession and before the economic downturn are less likely to return than the recent post crisis migrants are. Length of stay in the UK has helped them settle and "the probability of migrants returning dropped over time" (Massey and Espinosa, 1997). Research on the neighbouring country - Lithuania shows the same that "the longer they stay abroad, the more likely Lithuanian emigrants are to establish roots in the host-country" (Thaut, 2009).

Finally, two experiences are important for respondents from regions and those are experience of independent life and family creation. The same as respondents from Riga, also persons from regions are less likely to return to Latvia if they have created family or had the experience of economic and personal independence. Persons are not willing to return if the life conditions for them and their families abroad are satisfactory.

Conclusions, proposals, recommendations

1. Traditionally in Latvia, the capital Riga and other bigger cities were the first destinations for resettlement within Latvia. Currently, Riga and its surroundings have the highest concentration of population. Along with the accession to the European Union and wider opportunities to work abroad, Latvians from both the capital, and also regions and rural parts of the country are choosing international destinations. Since May 2004, top destination for Latvian population has been the UK.
2. Results show that the persons who before emigration have had financial problems and need for additional finance are coming from Riga. On the contrary, persons who lived in one of the regions of Latvia before emigration consider wish to explore and improve the knowledge of English as the main reason.
3. Another task was to calculate the probability of Latvian return migration to Latvia. Riga and its suburbs is densely populated and results show that respondents from this region who left as labour migrants in comparison with those who left as family migrants are more likely to return. Those who went abroad with the need to earn have done it and plan returning home. However, those who moved motived by their families are more prone to stay in the UK.
4. According to the results, possible entrepreneurship in Latvia established by returnees particularly in Riga and Pieriga is less likely to happen. If respondents have managed to succeed abroad, it is more likely that they would continue their entrepreneurship in the UK rather than Riga.
5. On the positive side, identifying possible groups of returnee's regression prove young persons more likely to return, however, it can happened only before they have strongly settled in their new place of residence, created a family, or became entrepreneurs.
6. According to the analysis, conditions like the length of stay and sources of information on the opportunities to work abroad have an important role in the return

plans for persons originally coming from the regions of Latvia. Respondents who left Latvia for the UK just after the accession and before the economic downturn are less likely to return than the recent post crisis migrants are. Length of stay in the UK has helped them settle in and it decreases the probability for them to return.

Bibliography

1. Berzins, M. (2011). Iekszemes migracijas regionalas dimensijas Latvija. (Regional Dimensions of Internal Migration in Latvia). *Latvijas Zinatnu Akademijas Vestis* 65, Issue 3./4., pp. 34 -54.
2. Gruzevskis, B. (2004). Labour Migration in Lithuania. Lithuania Institute of Labour and Social Research.
3. Hazans, M. (2011). Latvijas emigracijas mainiga seja: 2000 – 2010. Latvija (The Changing Face of Emigration from Latvia). *Parskats par tautas attistibu 2010/2011. Nacionala identitate, mobilitete un ricibspeja*. Riga: LU Socialo un politisko petijumu instituts, 70.-91. lpp.
4. Klagge, B., Klein-Hitpaß, K. (2010). High-skilled Return Migration and Knowledge-Based Development in Poland. *European Planning Studies*, Volume 18, Issue 10, pp. 1631-1651.
5. Krisjane, Z., Eglite, P., Bauls, A., Lulle, A., Berzins, M., Brants, M., Cunska, Z., Gnedovska, I., Ivbulis, B., Kruzmetra, Z., Kule, L., Markausa, I. M., Niklass, M., Pavlina, I., Titova, N., Vanaga, S., Vilcins, A., Zarina, I. B. (2007). *Darbaspaka geografiska mobilitate (Geographic Mobility of Labour Force)*. Riga: Latvijas Universitate, LR Labklajibas ministrija, 240 lpp.
6. Krisjane, Z., Bauls, A. (2011). Latvijas iedzivotaju starpvalstu mobilitate pec Eiropas savienibas paplasinasanas (International Migration of Latvian Residents after the EU Enlargement). *Latvijas Zinatnu Akademijas Vestis* 65, Issue 3/4, pp. 71 -85.
7. Krisjane, Z., Berzins, M., Apsite, E. (2011). Post Accession Migration from the Baltic States: the Case of Latvia. In: Glorius, B., Grabowska-Lusinska, I. (eds) *Post Accession Migration: Flows and Patterns.* Amsterdam: Amsterdam University Press (in press).
8. Lundholm, E. (2007). New Motives for Migration? On Interregional Mobility in the Nordic Context*. Doctoral Dissertation.* Umea University, Sweden. GERUM:2.
9. Martin, P. (2009). Recession and Migration: a New Era for Labour Migration? *International Migration Review* 43, Issue 3, pp. 671-691.
10. Massey, D. S., Espinosa, K. (1997). What's Driving Mexico-US Migration? A Theoretical, Empirical, and Policy Analysis. *American Journal of Sociology*, *102* (4), pp. 939–999.
11. Parutis, V. (2011). Economic Migrants' or 'Middling Transnationals'? East European Migrants' Experiences of Work in the UK. *International Migration*, ISSN 0020-7985. Published by Blackwell Publishing Ltd.
12. Stamm, S. (2006). Social Networks among Return Migrants to Post-war Lebanon. *CIS Working Paper No. 9*.
13. Thaut, L. (2009). EU Integration & Emigration Consequences: the Case of Lithuania. *International Migration* Vol. 47 (1).
14. Wadensjö, E. (2007). Migration to Sweden from the New EU Member States, *IZA Discussion Paper* No. 3190, Institute for the Study of Labor, Bonn, Germany.
15. UK Home Office Registered National Insurance numbers. (2010). Retrieved: http://83.244.183.180/mgw/live/mw/ccsex/newnat/a_stock_r_ccsex_c_newnat_jun10.html. Access: 1 December 2011.
16. Latvijas Republikas Centrala Statistikas Parvalde. (2012). Retrieved: http://data.csb.gov.lv/Dialog/SaveShow.asp. Access: 8 December 2011.

Acknowledgment

The research was promoted with the support of the European Union Social Fund project "Support of Doctoral Studies at the University of Latvia".

Econometric Analysis on Public Resources of Latvian Research Institutions

Irina Arhipova[1], Dr.sc.ing., professor
Faculty of Information Technologies, Latvia University of Agriculture

Abstract. The complete integration of Latvia into the Europe Research Area and the involvement in its activities can be ensured through the development and modernisation of the scientific infrastructure objects located in Latvia. For this purpose, it is necessary to assure the higher-level research quality with required critical mass of resources.
Therefore, it is planned to support the nine National Level Research Centres and to advance research programmes in priority research fields. The analysis of the research institution scientific quality is based on the capacity of research institutions within the National Level Research Centres and their status. It is concluded that the scientific quality of research institutions depends on the capacity of research institutions including the number of the researchers, and technical and service staff in full-time equivalent terms. Yet, at the same time, no significant difference is observed among the various National Level Research Centres.
The National Level Research Centres development assures a smooth resource and investment concentration including those necessary for a common consolidation of the National Level Research Centres infrastructure and scientific institutions.
Key words: scientific quality, research institution, research infrastructure.
JEL code: I230

Introduction

The European Union's strategy "Europe 2020" for smart, sustainable, and inclusive growth raised the basic objective of investing 3% of the European Union (EU) Gross Domestic Product (GDP) in research and development (R&D) (Communication from the Commission…, 2010). Latvia has set a quantitative target to increase investment in R&D funding for 1.0% of the Latvian GDP by 2015 and 1.5% by 2020.

In order to increase investment in R&D, the following main tasks have been defined:
— potential development of scientific activity;
— long-term cooperation platform for companies and scientists; and
— support for the development of innovative businesses.

These tasks aim to increase the number of employees in science and research; to establish competitive research institutions with modern material and technical support, thus, ensuring the consolidation of national scientific institutions and strengthening their infrastructure; to promote human resource attraction to science; and to facilitate the competitiveness of scientists (Ministry of Education and Science, 2011).

It is planned to support the nine National Level Research Centres (NLRCs) and to advance research programmes in priority scientific disciplines, covering:
— the use of technology in energy production and sustainable exploitation of natural resources;
— pharmaceutical and bio-medicine;
— information, communication and signal-processing technologies;
— the Latvian language, heritage and creative technologies;
— agricultural resource exploitation and food technologies;
— forest and water resources;
— nanostructured and multipurpose materials, constructions, and technologies;
— public health and clinical medicine;
— socio-economic and social management.

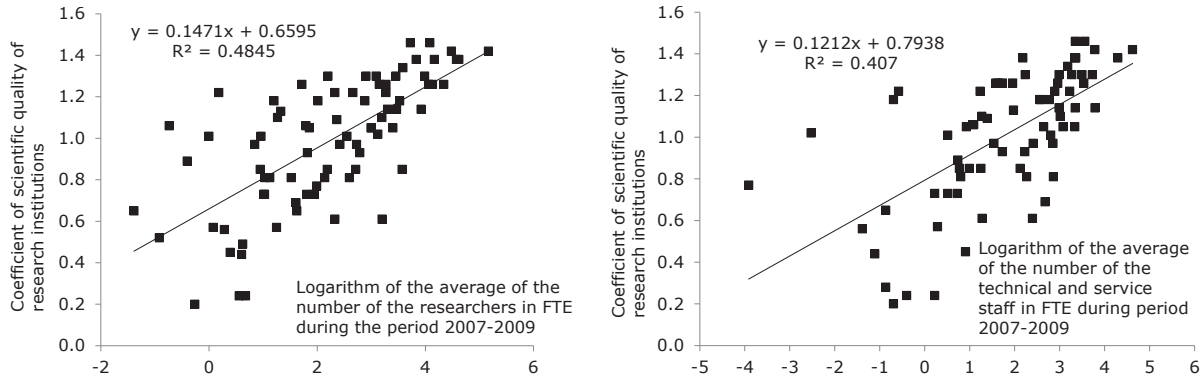
The NLRC is a form of cooperation between research institutions for concentration of science resources for the European level of research in science priority directions, promoting the priority sectors of the Latvian economy and society (Cabinet of Ministers, 2010).

Within the centre, close cooperation between the involved NLRC scientific institutions is ensured for the effective use of available infrastructure in the priority science directions, providing concentration of resources and investment including those necessary for consolidation of a common NLRC infrastructure and scientific institutions. The NLRC objectives are:
— scientific excellency;
— concentration of research infrastructure in order to avoid fragmentation;
— commercialisation of science and industry-science partnership.

The key objective of the scientific and technological policy development is to build science and technology as the basis for the long-term development of a civil society, economics and culture, ensuring the implementation of the knowledge economy and its sustainable growth. A study of internal resource allocation in public research institutions is important as the patterns of expenditures and revenues differ at public institutions after a period of substantial change (Santos J.L., 2007).

One of the priorities of the European Research Area (ERA) is a high-level research infrastructure development in all the EU Member States. The complete integration of Latvia in the ERA and the involvement in its activities can

[1] *E-mail address*: irina.arhipova@llu.lv.



Source: author's construction based on the MoES data

Fig. 1. **Coefficient of scientific quality of research institutions depending on the number of researchers and technical and service staff**

be ensured through the development and modernisation of the scientific infrastructure objects located in Latvia (Balina S., 2011).

Research hypothesis – a critical mass of resources is needed to assure the research quality.

The aim of the paper is to analyse scientific quality of research institutions based on the capacity of research institutions including the number of researchers and technical and service staff in full-time equivalent (FTE) terms within the National Level Research Centres. The following objectives were set in order to achieve the aim:

— to check whether researchers and technical and service staff have significant effect on the scientific quality of research institutions;
— to check whether researchers and technical and service staff have significant effect on the scientific quality of research institution, depending on the status of research institution within the NLRC;
— to check whether researchers and technical and service staff have significant effect on the scientific quality of research institution depending on the type of NLRC.

Research results and discussion

A NLRC can be established by a scientific institution, whose average quality indicators of scientific activity, in NLRC relevant scientific direction, for the past three years are equal to definite quality of their research activities. Quality is determined in accordance with the laws and regulations in force based on funding allocation for state research institutions.

A NLRC consists of at least two scientific institutions – a group, which meets minimum parameters set, and has developed a strategy for the scientific institutions cooperation within the national research centre. The strategy has to be prepared in collaboration with the Ministry of Education and Science (MoES), and coordinated with relevant branch ministry (Ministry of Education and Science, 2011).

The evaluation of research institutions' development strategy is based on the following research quality criteria: participation in international and national level research projects, cooperation with industry, scientific publications included in international databases, patented inventions and protected plant varieties, and the number of young scientists, and PhD students employed in the scientific institution. If a research institution has no NLRC founder member status, it can participate as a user and utilise the NLRC infrastructure for R&D tasks.

1. Research institutions quality depending on the personnel

In Figure 1, the coefficient of scientific quality of research institutions is plotted against the average of the number of researchers in FTE during the period of 2007-2009 in natural logarithm form on the left side and against the average of number of the technical and service staff in FTE during the period of 2007-2009 in natural logarithm form on the right side. A positive linear relationship between the two values is expected since the determination coefficients of their correlation are R^2=0.4845 in the first case and R^2=0.407 in the second case.

The test of regression significance is made, since the p-value is less than 0.05. Hence, it is possible to reject the null hypothesis that the model is insignificant at the five percent level. In the result, generally the coefficient of scientific quality of research institutions depends on the number of researchers in FTE during the period of 2007-2009 in natural logarithm form as well on the number of technical and service staff in FTE during the period of 2007-2009 in natural logarithm form.

At the same time, there is a higher correlation between the variable of the average of the number of researchers in FTE during the period of 2007-2009 in natural logarithm form and the variable of the average of the number of technical and service staff in FTE during the period of 2007-2009 in natural logarithm form (p-value < 0.05). High correlation between the researchers and technical and service staff variables indicate that the variables can be grouped into homogeneous set of variables.

Factor analysis can be used to identify this common personnel factor. Table 1 outlines the factor solution, where the first component explains 82.592% of the total variance.

Table 2 shows the correlation coefficients between researchers and technical and service staff variables and the first component. Thus, it can be seen that the first component is a linear combination of the researchers,

Table 1

Total variance explained

Component	Initial eigenvalues			Extraction sums of squared loading		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.652	82.592	82.592	1.652	82.592	82.592
2	0.348	17.408	100.000			

Extraction method: principal Component Analysis

Source: author's calculations based on the MoES data using SPSS

Table 2

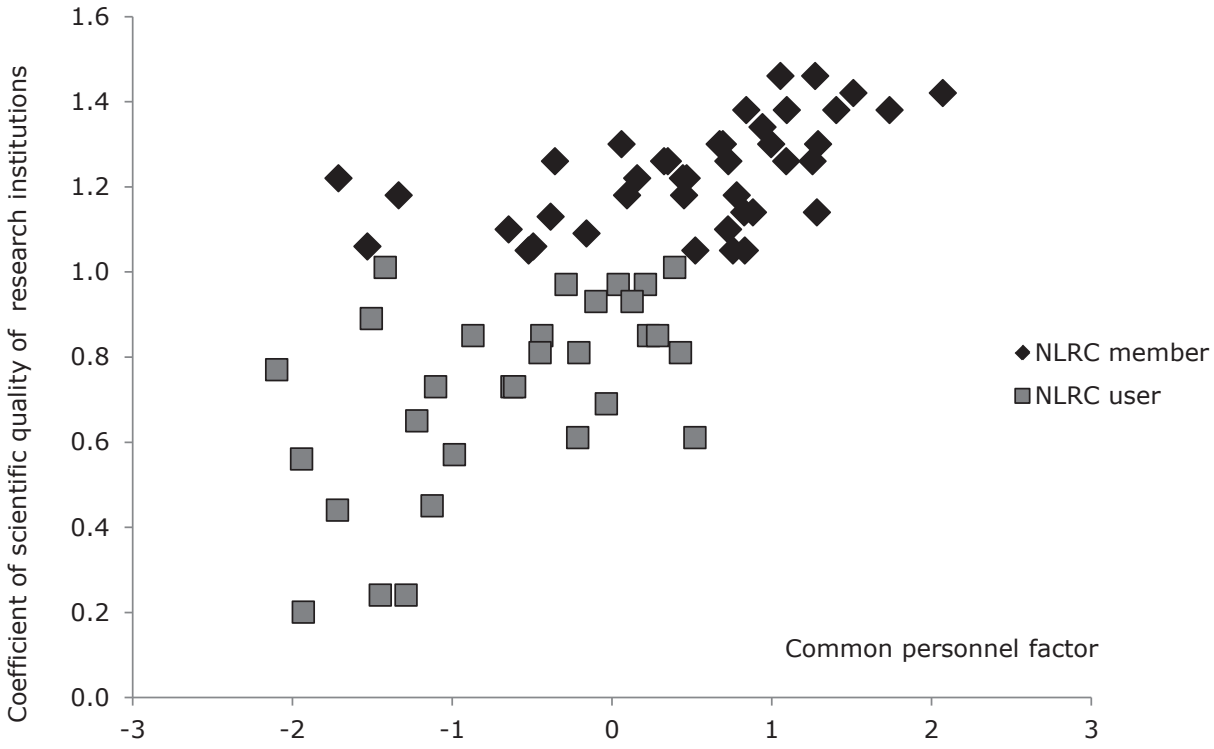
Component matrix

		Logarithm of the average of the number of researchers in FTE during the period of 2007-2009	Logarithm of the average of the number of technical and service staff in FTE during the period of 2007-2009
Component	1	0.909	0.909

Extraction method: principal Component Analysis

1 component extracted

Source: author's calculations based on the MoES data used SPSS



Source: author's construction based on the MoES data

Fig. 2. **Coefficient of scientific quality of research institutions depending on the common personnel and status within NLRC**

and technical and service staff variables, and it can be used as common personnel factor.

2. Research institutions quality depending on the personnel within NLRC

In Figure 2, the coefficient of scientific quality of research institutions is plotted against the common personnel factor depending on the status of research institution within the NLRC.

A positive linear relationship between the two variables is expected and the test of covariance analysis is made, since the dummy variable of the status of research institution within the NLRC was included in the model as well the interaction effect. A dummy variable is equal to

Table 3

Tests of between-subjects effects

Source	Type III of Squares	df	Mean Square	F	Sig.
Corrected Model	4.937	3	1.646	69.096	0.000
Intercept	45.916	1	45.916	1927.694	0.000
Common personnel factor	0.584	1	0.584	24.498	0.000
NLRC status	1.442	1	1.442	60.544	0.000
Common personnel factor * NLRC status	0.053	1	0.053	2.227	0.140
Error	1.620	68	0.024		
Total	80.957	72			
Corrected Total	6.557	71			

Depended variable: Coefficient of scientific quality of research institutions

R Squared = 0.753 (Adjusted R Squared = 0.742)

Source: author's calculations based on the MoES data using SPSS

one if a research institution is a member of NLRC and it is equal to zero if a research institution is a user of NLRC.

The test of individual significance of common personnel factor, the status of research institution within the NLRC, and their interaction effect can be read from Table 3 of covariance analysis results.

An interaction term is a variable, which is created by multiplying two variables together, namely, common personnel factor, and the status of research institution within the NLRC. Interaction term is useful in allowing the marginal effect of a change in an independent variable on the average value of dependent variable to be different for different observations in the sample.

The common personnel factor and the status of research institution within the NLRC are significant at the five percent level, since p-value is less than 0.05 but their interaction effect is insignificant (p-value > 0.05). The determination coefficient of the model is 0.753. The joint test of their significance is performed and the null hypothesis that the model is insignificant at the five percent level is rejected.

It is concluded that the scientific quality of research institutions depends on the capacity of research institutions including the number of researchers, and technical and service staff in full-time equivalent (FTE) terms. At the same time, a critical mass of resources, i.e. human resources, research infrastructure and partners, is needed to assure the research quality.

In Figure 3, the coefficient of scientific quality of research institutions is plotted against the common personnel factor depending on the type of NLRC. A positive linear relationship between the two variables is expected and the test of covariance analysis is made, since the dummy variable of the type of NLRC was included in the model as well the interaction effect.

The test of the individual significance of common personnel factor, the type of NLRC and their interaction effect can be read from Table 4 of covariance analysis results.

The common personnel factor is significant at the five percent level, since p-value is less than 0.05 but the type of NLRC (p-value is 0.742) and their interaction effect (p-value is 0.900) are insignificant at the same significance level. The determination coefficient of the model is 0.609. The joint test of their significance is performed and the null hypothesis that the model is insignificant at the five percent level is rejected.

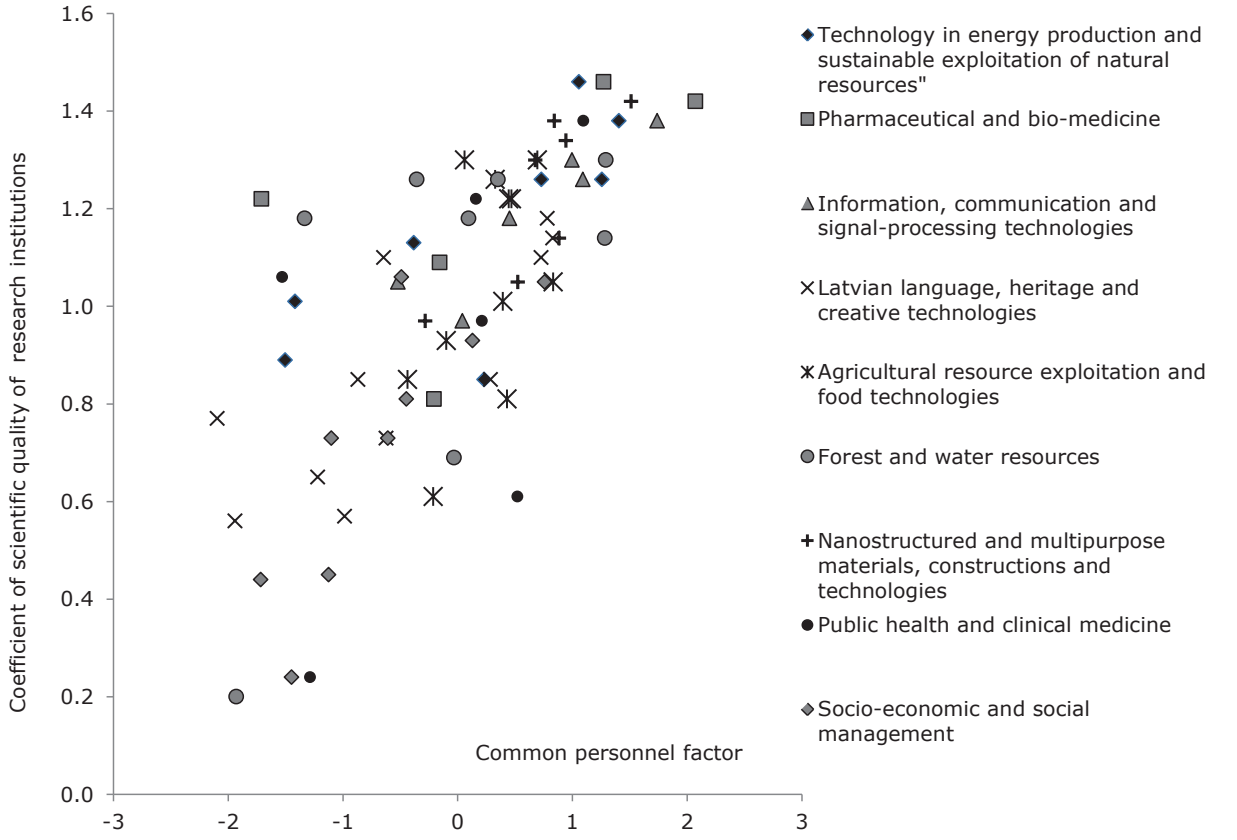
Scientific quality of research institutions did not differ significantly among the various NLRCs. The establishment of NLRC has provided a scientific institutions' cooperation framework for concentration of science resources on the European level of research in science priority directions, thus, ensuring effective use of available infrastructure among scientific institutions involved in the NLRC.

Among the various NLRC there is no disparate impact of the number of research institution personnel on the scientific quality of research institution. The NLRC development assures a smooth resource and investment concentration including those necessary for consolidation of a common NLRC infrastructure and scientific institutions.

The analysis of research institutions resources in nine NLRCs helps define national budgets, facilitates political support, and allows long-term financial commitment. The policy of Latvia's government for higher education and research is developed for the concentration of research infrastructure, prevention of its fragmentation and commercialisation of science and industry-science partnership.

Conclusions, proposals, recommendations

1. The scientific quality of research institutions depends on the capacity of research institutions including the number of researchers, and technical and service staff in full-time equivalent (FTE) terms.
2. At the same time, a critical mass of resources, i.e. human resources, research infrastructure and partners, is needed to assure the research quality.
3. Scientific quality of research institutions did not differ significantly among the various NLRCs.



Source: author's construction based on the MoES data

Fig. 3. **Coefficient of scientific quality of research institutions depending on the common personnel and type of NLRC**

Table 4

Tests of between-subjects effects

Source	Type III of Squares	df	Mean Square	F	Sig.
Corrected Model	3.993	19	0.210	4.263	0.000
Intercept	41.443	1	41.443	840.538	0.000
Common personnel factor	1.440	1	1.440	29.197	0.000
NLRC type	0.292	9	0.032	0.658	0.742
Common personnel factor * NLRC type	0.200	9	0.022	0.452	0.900
Error	2.564	52	0.049		
Total	80.957	72			
Corrected Total	6.557	71			

Depended variable: Coefficient of scientific quality of research institutions

R Squared = 0.609 (Adjusted R Squared = 0.466)

Source: author's calculations based on the MoES data using SPSS

The establishment of NLRC has provided a scientific institutions' cooperation framework for concentration of science resources for the European level of research in science priority directions, thus, ensuring effective use of available infrastructure among scientific institutions involved in the NLRC.

4. Among the various NLRCs, there is no disparate impact of the number of research institution personnel on the scientific quality of research institutions. The NLRC development assures a smooth resource and investment concentration including those necessary for consolidation of a common NLRC infrastructure and scientific institutions.

Bibliography

1. Balina, S. (2011). *Development of Science and Technology in Latvia, 2011*. Riga: Ministry of Education and Science Republic of Latvia. p. 143.
2. Communication from the Commission "Europe 2020 A Strategy for Smart, Sustainable and Inclusive Growth" (2010), *COM(2010) 2020 final*. Retrieved: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF. Access: 3 January 2012.
3. Santos, J.L. (2007). Resource Allocation in Public Research Universities. *The Review of Higher Education*, Volume 30, No. 2, pp. 125-144.
4. Par valsts nozimes petniecības centru noteiksanu, lai nodrosinatu resursu koncentraciju un Eiropas Savienibas strukturfondu efektivu ieguldijumu (On Establishment of National Level Research Centres to Ensure Concentration of Resources and Effective Investment of European Union Structural Funds (2010)). *Cabinet of Ministers Decree No. 243, Riga, 17 August 2010, Riga (prot. Nr. 42 34.§).* Retrieved: http://www.mk.gov.lv/lv/mk/mksedes/saraksts/protokols/?protokols=2010-08-17. Access: 3 January 2012.

Workplaces with Stipend Programme in Latvia: Pros and Cons From the Perspective of Municipalities

Ieva Brence[1+], Dr.sc.administr., senior researcher; **Biruta Sloka**[2], Dr.oec., professor;
Inara Kantane[3], Mg.soc., PhD student
[1,3] Latvian Academy of Sciences
[2] University of Latvia

Abstract. The aim of the paper is to analyse the pros and cons of the Measure "Workplaces with Stipend Programme" (hereinafter - the Measure) from perspective of municipalities. Municipalities are involved in administrating the Measure by concluding contracts with the persons involved in the Measure and by supervising their work. Thus, their opinion concerning the quality of work performed in the Measure and the benefits and challenges arising from the Measure.
The paper concludes that, in general, the municipality representatives evaluate the Measure to be a good tool for promoting the unemployed persons return to the labour market, since approximately 70% of the Measure's participants benefit from participation in the Measure. At the same time, there are several aspects to be improved, e.g. the amount of scholarship for repeated participation should be reduced since there are number of persons who apply for repeated participation in the Measure and reject permanent job offers. At the same time, persons having reported better results in the Measure should be motivated by allowing them undertake tasks with higher level of responsibility, e.g. by becoming an assistant of the Measure's work managers.
Key words: active labour market policy, Workplaces with Stipend Programme Latvia.
JEL code: J08, J24, J28

Introduction

Unemployment rate in Latvia started increasing considerably in the end of 2008 and reached its highest level in 2010 exceeding 22% (State Employment Agency, 2 February 2010). Since that time, unemployment has decreased to a certain extent; however, it still remains high, and in January 2012, it was at the point of 11.6% (State Employment Agency, 16 January 2012).

To ensure the maintenance of labour skills and to provide unemployed with some income during the peak time of unemployment, there were several active labour market policy measures introduced by the State Employment Agency of the Republic of Latvia, inter alia carrier consultations, training courses, and working schemes, among them "Workplaces with Stipend Programme" (further called the Measure). In frames of the Measure, the persons are asked to work for 40 hours per week on jobs set by municipality (mainly these are low qualification jobs), and monthly scholarship that comprises approximately 60% of the minimum wage set in Latvia is provided for the persons for the period of 6 months during one year. Despite the small amount of financing the Measure provided, there were number of people willing to participate in the Measure. From 1 October 2009 to 29 May 2010, totally 39216 (approximately 33% of the unemployed not receiving unemployment benefit) people participated in the Measure and 52917 people (approximately 45% of the unemployed not receiving unemployment benefit) waited in the queue, since there were no free places available (State Employment Agency, 2010). The Measure is managed by the State Employment Agency and the municipalities of Latvia.

The aim of the paper is to analyse the pros and cons of the Measure from the perspective of municipalities.

The Research Methodology involved the following aspects:

1. Analysis of households' survey results – 3064 households were interviewed in the frames of direct interviews in December 2010 – March 2011. The researchers hold in high regard the World Bank experts' support on survey sample preparation and construction of the questionnaire.

For forming the sample, the following quazi-experimental methods were used:

— propensity score matching, difference-in-difference, and instrumental variable design by applying probability of group affiliation, basing on the observed expected values (on similarities in the analysed and control groups) – by comparing persons, having recently finished participation in the WWS with persons waiting for participation in the WWS. The group observed consisted of persons currently participating in the WWS. Kolmogorov – Smirnov test was used for measuring the net income distribution compliance with normal distribution;
— regression discontinuity design – by preparing the sample the criteria were used explaining on whether a person is applicable for participation in the WWS or for receiving unemployment benefit, in their turn persons waiting for participation in the WWS, were used as a control group.

The data were classified in three blocks – households in which any of members currently participates in the Measure, households in which any of the members is waiting in the queue for participating in the Measure, and households in which any of the members has recently participated in the Measure.

During the analyses of the households' questionnaires, mainly the answers of the households having at least

[1] *E-mail address*: Ieva.Brence@lza.lv.

one participant within the Measure were used (excluding from the group the households with at least one person participating in the Measure, at least one person waiting for the participation in the Measure, at least one person recently finished the participation or does not know his / her status). The amount of the households, n = 1006, overall amount of persons, n = 2941. These data are included in the publication. The survey results reflect the following regional participation: Kurzeme – 275 households and 821 persons, Latgale – 110 households and 313 persons, Riga – 187 households and 528 persons, Vidzeme – 251 households and 739 persons, and Zemgale – 183 households and 540 persons.

Before carrying out the questionnaires, twelve pilot interviews were provided and afterwards necessary corrections were made to ensure that the questionnaires are proper and correspond to the objectives of the Study. The questionnaires and the data-entry of the households were carried out by "GfK Custom Research Baltic" Ltd.

2. Interviews with the representatives of the municipalities

Interviews with the representatives of Dobele municipality (the municipality was chosen basing on random choice decision) and interviews with the Head of Employment Policy Unit, Employment Department, Ministry of Welfare and the Head of Women's Organisations' Co-operation Network and Chairwoman of Latvian Children's Foundation, taking into account her knowledge on WWS implementation were carried out to get information that is more detailed. Survey of the representatives of municipalities

There were carried out questionnaires of the representatives of municipalities and the representatives (the Heads of Social Unit or Specialists of the Social Unit) from the municipalities. Totally 116 representatives from the municipalities took part in the questionnaire. The data concerning the municipalities and particular officials were selected according to the information provided from the home-page of the Latvian Association of Local and Regional Governments (www.lps.lv):

— 10 municipalities and appropriate structures – 9 cities as well Riga Eastern Executive Board;
— 106 counties.

The questionnaires of the representatives of municipalities were carried out by the representatives of the Service Provider – researchers and leading researchers who had appropriate previous experience.

The surveys were carried out from December 2010 to March 2011.

Research results and discussion

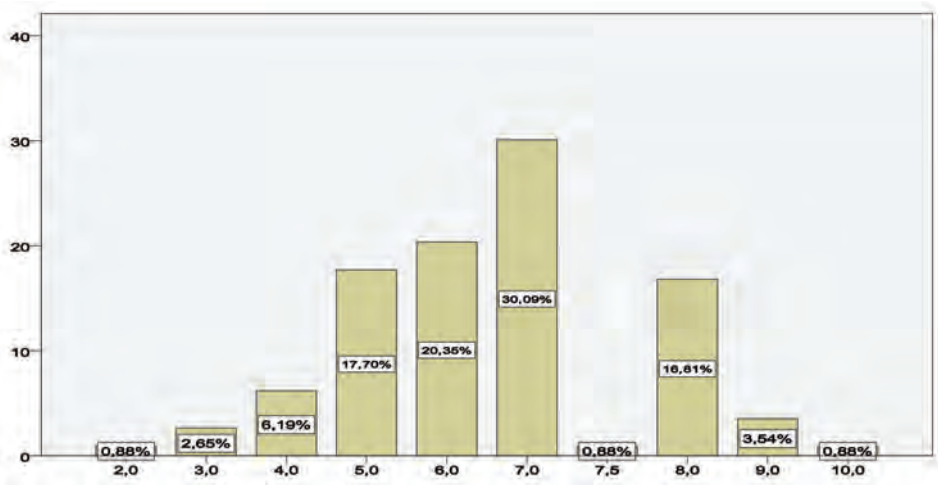
1. Theoretical concepts of active labour market policy

Active Labour Market Policy (ALMP) emerged in the post-war period initially in Scandinavia but were taken up in many advanced economies following the unemployment crises of the 1970s, and this take-up was boosted by the OECD's strong advocacy of ALMPs (Meager, 2010). Since that time, the ALMP is used in almost all the world countries as well as has been widely analysed in scientific literature (Kluve, 2006; Matkovic, 2007; Meager, 2009; van Ours, 2007 etc.). The ALMP is a part of labour market policy and promotes return to the labour market of unemployed persons, provides different kinds of assistance, e.g. consultation, training) to persons who are willing to change work etc. There are different measures of ALMP; however, usually they are associated with consultations provided by state institutions (information of the free working places, consultations on professional adequacy etc.), subsidised employment (paid temporary works, support for starting commercial and self-employment etc.), provision of training (both for employed and unemployed) including training at the employer (Adams, etc, 2007; O'Connell, 2000; Esping-Andersen, 2002; Matkovic, 2007 etc.). An even stronger logic behind the ALMP is to get those people into work that have experienced and continue to suffer from economic and social exclusion, i.e. to focus on those geographical areas where unemployment is significantly and persistently above the national average (Adams et al., 2007). The basic assumption in the theoretical model is that the ALMP have two different types of effects. First, they may have a treatment effect, i.e. they may be beneficial to the unemployed worker in terms of the speed of job finding. Second, they may have a compulsory element, which also speeds up job finding but has negative effects on the quality of post-unemployment jobs (van Ours, 2007). Accordingly, unused human and intellectual capital (in Rotterdam) is a huge potential, the activation of which could have substantial effects for the city's economy. In particular, upgrading the education level of the population proves to be a strategy, which in the long run pays more than stimulation of participation on the labour market (Zandvliet *et al.,* 2009).

Other part of the labour market policy is formed by passive labour market policy that provides allowances and other kind of assistance who need it. In frames of the passive labour market policy, no activities from the persons entitled to receive assistance are required.

The ALMP programmes are regarded as an important tool while solving the problem of unemployment (Lauzadute, 2009). The effectiveness of active labour market policies – including subsidised employment, training and job search assistance – has been a matter of vigorous debate over the past half century (Card, etc., 2010). Overall active labour market policies are cost-effective in reducing unemployment (Nie, Struby, 2011). Some authors, yet, debate the ALMP is in crisis because it is difficult to create a properly functioning labour market and consequently improve the employment prospects using the traditional tools it offers (Sihto, 2001). There are groups that do not benefit fully from participation and that their outcomes are similar to those who do not participate (Briedahl, et. al., 2010). There remains a continuing need to build ladders up out of the marginal jobs most likely to be available to low qualified workless people, not least in the significant public sector where many of the most disadvantaged are most likely to find their first jobs. The attempt to combine an anti-poverty strategy with employment strategy is clear in the European Commission work (Gill, 2006).

The ALMP as a part of the social protection system could support in principle the preservation and development of human capital, i.e. they may increase labour supply by helping individuals keep in contact with the world of



Evaluation scale 1 - 10, where 1 - very low, 10 - very high

Source: authors' calculations based on the municipalities' representatives survey, November 2011 (n=113)

Fig. 1. **The evaluation of municipalities' representatives concerning the quality of work performed in frames of the Measure**

work and thereby maintaining their motivation and skills (Eamets, 2001). The workplace has replaced the family as the main social environment, workplace activity impacts differentially among individuals, and promulgating and maintaining a first-rate corporate image can demand emotional labour (Iancy et al., 2011).

Classroom and on-the-job training programmes appear to be particularly likely to yield more favourable medium-term than short-term impact estimates (Card et al., 2010).

Efficiency of the ALMP differs a lot among states and the schemes they implement. However, one should acknowledge that the ALMP has not only the direct effect (training people and/or providing skills for promoting their return to labour market) but also indirect effects – the work the persons have performed in frames of the ALMP measures. Therefore, the next chapter is devoted to the analysis of the Measure "Workplaces with Stipend Programme" implemented in Latvia from September 2009 to December 2011.

2. Workplaces with stipend programme in Latvia - chances and challenges. Estimates from the point of view of municipalities

For deeper investigation of the Measure, the opinions of municipalities representatives involved in the administration of the Measure and Measure's participants having participated in the Measure are reflected in the chapter. The opinions are gathered concerning such factors as evaluation of work and conditions set for the Measure.

In frames of the municipalities representatives survey, the quality of the work performed in frames of the Measure was analysed. The data prove that the quality of the work is to a large extent related to the demands of the supervisor the Measure's participants had. However, the motivation of persons involved in the Measure was also of importance. Besides, the municipalities' representatives have noted to the number of cases when persons participating in the Measure and having shown good work results have been offered a permanent job. In general the municipalities' representatives evaluate the work done in frames of the Measure with the scores of 7, out of ten. More detailed analysis of the data are reflected in Figure 1.

In frames of the survey, the municipalities representatives acknowledged that 60-70% of the Measure's participants perform their way in a qualitative manner, meanwhile, the others should be controlled.

The household survey results reflect than, in general, the participants evaluate their work performed to be valuable. Analysis that is more detailed is included in Table 1.

Basing on the municipalities' representatives survey results, the benefits of municipalities from the Measure are divided into five blocks:

1. Savings of municipalities' budget and costs, since the Measure allows paying smaller amount of guaranteed minimum income (GMI), apartments' allowances as well as other allowances. Fifty percent of the GMI are ensured by the state and fifty percent are ensured by municipalities. Besides, since the inhabitants' income increase due to the participation in the Measure, the overall consumption increases.
2. Order of the territory of municipality. One of the most important aspects of the Measure the municipalities acknowledge is the contribution to the putting into order the municipality's territory and social assistance of the inhabitants, e.g. the persons involved in the Measure have given large social assistance services for persons of old age and disabled persons.
3. Increase of quality of human resources and decrease of unemployment in the territory of municipality. The municipalities' representatives often noted that even in case the persons are not involved in permanent

Table 1

Evaluation of the households' members opinions concerning the social value of the tasks performed in frames of the Measure in 2010-2011

	Number of Measure's participants	Proportion (%)
Tasks were of a very big value for the society	710	62.6
Tasks were of a value for the society	353	31.1
Tasks were of a small value for the society	40	3.5
Tasks were of no value for the society	16	1.4
Do not know/ no opinion	15	1.3
Total	1134	100.0

Source: authors' calculations based on the household survey performed from November 2010 to March 2011 (n = 1134)

job after they participate in the Measure, their skills and abilities are improved or even gained, since there are a number of long-term unemployed persons involved in the Measure. There are number of cases when permanent job for the person is offered by the municipality. Besides, the factor related to decrease of psychological stress of unemployed and increase of self-consciousness, since due to the participation in the Measure the support of the municipality social psychologist is not necessary anymore.

4. Increase of households budgets. Thanks to the participation in the Measure, the material status of inhabitants improves in most of the cases, thus, guaranteeing greater possibilities for consumption in the territory of municipality and although minimal but increase of taxes.

At the same, there are also several cons to be stated in frames of the Measure that were crystallised from the survey of municipalities' representatives:

1. There is no mechanism for encouraging the best participants of the Measure. People may be rejected to participate in the Measure only in case of serious violations, e.g. unjustified absence of work, usage of alcohol in the workplace etc. People are involved in the Measure basing on queue principles and receive the same amount of scholarship, despite their work performance. Thus, the mechanism for encouraging the Measure's best participants would be welcome.
2. There are number of people who participate in the Measure more than once. According to the survey results, approximately 4% of the Measure's participants have rejected permanent job offers, since they prefer to participate in the Measure. At the same time, persons with a need to participate in the Measure (no financing, no job opportunities) are often not able to perform that due to the limited number of places the Measure has. So, the mechanism for promoting people to involve into permanent work activities would be necessary, e.g. by reducing scholarship of the persons who participate in the Measure for the second or third time.
3. Despite the big responsibility the supervisor has, his salary is extremely low. The supervisor is entitled to receive the minimum wage, in case there are 30 people under his supervision. In case the number of people is smaller, the amount of salary decreases and in the majority of cases it is smaller than the scholarship received by the Measure's participants.
4. The Measure allows work in the territory of municipalities only. Taking into account that most of the territory belongs to enterprises or private persons, it is quite complicated to set tasks for the Measure's participants. The tasks to be done (e.g. parks and gardens that have to be put into order) belong to private sector organisations only.

The improvements in the Measure would allow gaining more benefits both for municipalities and for persons involved in the Measure.

Conclusions, proposals, recommendations

Workplaces with stipend programme is an active labour market policy measure providing benefits both for the persons involved in the Measure, since it allows gaining additional money for them and municipality; since the Measure contributed also to the performance of municipalities - allowing them to save money as well as allowing them to put into order the territory.

In general, the Measure is evaluated to be a good tool both by the municipalities representatives who participated in the administration of Measure and by persons who performed tasks in frame of the Measure. Municipalities' representatives evaluate the tasks performed in frames of the Measure with 6-7 points out of ten on average, besides acknowledging that some of the persons having shown good working results have been offered permanent jobs in municipalities.

More than 93% of the surveyed Measure's participants acknowledge that the tasks performed in frames of the Measure they consider to be valuable or even to a great extent valuable for the society.

At the same time, forty percent of the persons' surveyed note the performance of the task was not pleasant and required physical strength or even a lot of physical strength.

There are several gains from the Measure the municipalities' representatives note, among them the most important being the savings of the municipalities budgets, since the necessity to pay allowances for the persons' involved in the Measure has decreased. Besides, there is a lot of contribution made to putting the

municipalities' territory in order as well as for increasing the socio-economic situation in general.

The proposals for improving the Measure are the following:

For encouraging persons, especially the long-term unemployed ones, to search for permanent jobs, it would be advisable to differentiate the amount of scholarship. Namely, to reduce the scholarship by 20% for the persons who participate in the Measure for more than one time.

In case the contract for participation in the Measure has to be broken for the second time due to the persons' violence of the Measure's rules – to prohibit participation in the Measure.

To consider possibilities for Measure's participants motivation mechanisms, e.g. to deliver certificate after their participation in the Measure. For the persons having reported better results in the Measure, allow undertaking tasks with higher level of responsibility, e.g. by becoming an assistant of the Measure's work managers.

To ensure consultations of psychologist before the person's involvement in the Measure, since losing of job is compared with losing close family member in scientific literature.

Bibliography

1. Adams, J., Ray, T. (2007). Active Labour Market Policy in Scotland: Does It Make a Difference? *International Journal of Manpower,* Volume 28, No. 1, pp. 30-41.
2. Breidahl, K., N., Clement, S., L. (2010). Does Active Labour Market Policy have an Impact on Social Marginalisation? *Social Policy & Administration,* Vol. 44, No. 7, pp. 845-864.
3. Brence, I., Kantane, I., Konstantinova, E., Rivza, B., Saksonova, S., Sloka, B., Korbe, A. (2011). *Workplaces with Stipend Programme in Municipalities for Obtaining and Maintaining Labour Market Skills – Assessment Research Ordered by the State Employment Agency.* Retrieved: http://www.nva.lv/4e1431090ba7a3.03485280.pdf. Access: 5 December 2011.
4. Card, D., Kluve, J., Weber, A. (2010). Active Labour Market Policy Evaluations: A Meta-Analysis. *The Economic Journal,* 120 (November), pp. F452-F477.
5. Eamets, R. (2001). Reallocation of Labour During Transition. Disequilibrium and Policy Issues. The Case of Estonia. *Dissertationes Rerum Oeconomicarum Universitatis Tartuensis No. 5.* Tartu, Tartu University Press.
6. Esping-Andersen, G. (2000). Who is Harmed by Labour Market Regulations? Quantitative Evidence. In Esping-Andersen G. and Regini M. (editors). *Why Deregulate Labour Markets?* Oxford: Oxford University Press, pp. 66- 98.
7. Gill, S. (2006). Active Labour Market Policy and the Reduction of Poverty in the 'New' Scotland. *Critical Social Policy* No. 26: pp. 669-684.
8. Iancu, A., Popescu, L. F., Florentina, L., Popescu, V., D. (2011). The Flexibility Demands of Globalised Labour Markets: Active Labour Market Policies in a Flexicurity System. *Economics, Management, and Financial Markets*. Volume 6(3), pp. 191-196.
9. Kahn, L., M. (2012). Labour Market Policy: A Comparative View on the Costs and Benefits of Labour Market Flexibility. *Journal of Policy Analysis & Management*, Volume 31 Issue 1, pp. 94-110.
10. Kluve, J. (2006). The Effectiveness of European Active Labour Market Policy**.** *IZA Discussion Paper* No. 2018, March 2006 (Bonn: IZA – Institute for the Study of Labour). Access: 21 November 2011.
11. Lauzadute, M. (2010). The Effects of Active Labour Market Programmes on Unemployment Duration. *Ekonomika* 89. Vol. 1, pp. 22-31.
12. Leschke, J. (2011). Transition from Unemployment to Work and the Role of Active Labour Market Policies during the Lisbon Strategy Period and the Economic Crisis. *German Policy Studies/Politikfeldanalyse.* Volume 7, Issue 1, pp. 135-170.
13. Matkovic, T., Sucur, Z., Zrinscak, S. (2007). Inequality, Poverty, and Material Deprivation in New and Old Members of the European Union. *Croatian Medical Journal.* Vol. 48 (5), pp. 636-652.
14. Meager, N. (2010). The Role of Training and Skills Development in Active Labour Market Policies. *International Journal of Training and Development*, Volume 13, No. 1, pp. 1-18.
15. Nie, J., Struby, E. (2011). Would Active Labour Market Policies Help Combat High US Unemployment? *Economic Review*, Vol. 96 Issue 3, pp. 35-69.
16. O'Connell, P.J., McGinnity F. (1997), 'Working Schemes? Active Labour Market Policy in Ireland'**.** Aldershot: Ashgate, 32 p. Access: 21 November 2011.
17. Sihto, M. (2001). The Strategy of an Active Labour Market Policy: An Analysis of its Development in a Changing Labour Market. *International Journal of Manpower*, Volume 22 Issue 8, pp. 683-706.
18. State Employment Agency home page. Retrieved: http://www.nva.lv. Access: 16 January 2012.
19. Van Ours, J.C. (2007). Compulsion in Active Labour Market Policy Programmes. National Institute Economic Review No. 202, p. 67. Access: 4 January 2012.
20. Zandvliet, K., Berretty, T., Collewet, M., Tanis, O. (2009). Activating Potential IC: Effective Addition to Active Labour Market Policy in Rotterdam?' Proceedings of the European Conference on Intellectual Capital, pp. 581-588.

Note: The authors thank Inara Augule for her support in preparing the publication.

Note: The preparation of the paper and its presentation at the conference is supported by the project "Capacity Building of Latvian Academy of Sciences and Latvian Academy of Agricultural and Forestry Sciences and Elaboration of International Project Proposals", Agreement No. 2010/0294/2DP/2.1.1.2.0/10/APIA/VIAA/009, Project No. 009/2112.

Sustainable Development – a New Paradigm of Modern Economics

Wojciech Brocki[1], PhD.
Faculty of Food Sciences and Fisheries, West Pomeranian University of Technology in Szczecin

Abstract. The classical economics is not conducive to solving problems of today's world. Categories of profit earned by individuals do not take into consideration qualitative aspects of mining natural resources and social transformations in the modern world. Such expectations should be met by the economics of sustainable development.
Key words: sustainable development, classical economics, paradigm.
JEL code: A19

Introduction

A human being has become more and more intelligent (has a greater awareness and larger material instrumentation) due to the on-going evolution over millions of years. This is a result of interaction between a human and the environment in which s/he lives and has been developing. The interaction develops and undergoes constant changes. The growing number of population and the technological progress foster the social and economic development. The pressure on natural environment, however, is becoming stronger and stronger. Resources, previously regarded as free goods and abundantly limitless, turned to be exhausted and became rare. This applies predominantly to natural resources. A certain conflict appeared, between the economic effectiveness on micro- and macro scale, mainly due to a need of considering environmental aspects in the social and economic development. At the same time, social problems arise and their background is the uneven development of the modern world and issues of social justice.

Objective and scope of the paper

The aim of the paper is to present considerations on changes in the perception of a paradigm of the modern economics. A paradigm of individual's profit, continual economic growth does not meet today's requirements, as a concept of *homo oeconomicus*. The author attempts to present and prove the sustainable development as a paradigm of the new economics of sustainable development.

Results and discussion

1. Main issues of modern economics

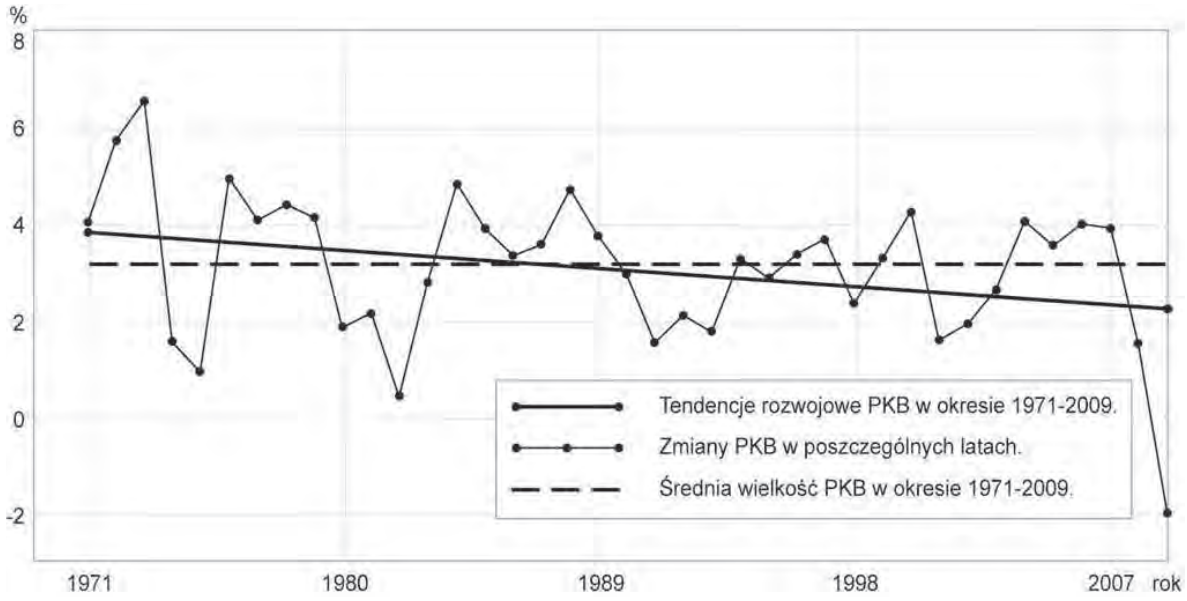
The classical economics creates a balance between production factors based on a production function model. It also examines relationship between outlays and results. It also makes it possible to establish the outlays on a certain level of knowledge. It does not impose any restrictions of environmental or social nature. The production process is supplied with flows of all production factors. The only limit is the final productivity. It builds up the gross product of an enterprise as long as it is positive, which is concurrent with aims of the business activity such as income and profit. A conflict between the interest of enterprise and the interest of society appears. It turns out, however, that the flow of production factors coming from natural resources is not unlimited. The global environment balance is upset, and the society has to bear costs of restoring the balance. According to Wos and Zegar (2002), the problem could be easily solved if environmental and social limitations were introduced to the production function, which is, in fact, quite difficult on the market economy conditions. The production function would lose its classical feature, and consequently be inconsistent with canons of traditional economics (Wos, 2002).

"The one who understands economics mainly as a method of solving optimisation problems and does not think of changeable interaction between real and pecuniary spheres of economy in designing economic models is threatened with a risk of omitting real problems, which might affect the future-oriented development. The most important is not a short-term profit but a long-term optimisation to assure a certain level of satisfying the need of people living today and in the future" (Diffenbacher, 2010, p. 79).

GNP is a common measure of the economic development. Its value and growth rate do not take the specificity of certain countries and qualitative aspects of growth into consideration. GNP accounts both costs of economic activity and benefits of the latter. It includes the so-called 'useful' activity (gaining natural resources, production of goods) that causes the pollution and costs of remedy of the said pollution. It does not seem impossible to face a situation, where social and environmental costs of producing another product unit would be higher than its price. Such situation may occur in case of mining resources that are not easily available. Figure 1 shows changes in the global GNP in 1971-2009. The GNP downward tendency could be seen in the period concerned.

Short-lived fluctuations of the economic development are generally driven by social, economic, or political factors. Long-term tendencies may be connected with the use of production capacity of Earth. The ecological footprint of 1961 was 0.49, whereas in 2010 – 1.5 accordingly, which means today the mankind uses 150% capacity of Earth in terms of mining the resources and absorption of pollution. It is consolatory that the

[1] *E-mail address*: wojciech.brocki@zut.edu.pl.



Source: author's study based on the World Bank data, 1971–2010

Fig. 1. **Changes in the global GNP for the period of 1971–2009**

ecological footprint expressed in global hectare per inhabitant has varied from 2.5 to 2.8 for 40 years, which means taking of remedial measures and/or occurrence of the significant technological progress. The quality of life has improved, which might indicate the welfare of the greater number of the humankind reached the satisfactory level, the measure of which being the 'possess-type' quality of life and paying more attention to increasing the wellbeing ('be-type' quality of life).

The research revealed the correlation between happiness and income. The happiness is achieved at the certain level of income and satisfaction of needs. After reaching the certain level, the more significant role is played by relative income, i.e. a proportion between our income and the income of remaining part of the society. A change in the surroundings (e.g. migration or relocation to a big city) may cause changes in the accepted level of income. There are significant factors indicating the increase in the importance of qualitative issues of the relative nature compared with dynamic aspects of social and economic development. The quality of life in this respect is perceived as a certain level of satisfaction of economic, health-related, and environmental parameters. A number of quality of life factors have been developed, namely, index of sustainable economic welfare, index of happy planet, index of actual progress, or the aforementioned ecological footprint. They are not necessarily correlated with the GNP growth, which may raise doubts regarding the usefulness of the traditional economics for the estimation of changes taking place in the modern world.

However, we do deal with negative phenomena of the global scale, such as overmining of natural resources, undesirable climate changes, lower biodiversity, poverty, malnutrition, or shortage of potable water. They exhibit not only environmental or social dimension but macroeconomic one as well. To maintain the global growth rate of 4% would mean the fivefold growth of GNP over two generations, and tenfold over five generations accordingly (Hauchler, 2010). It is not easy to imagine a similar increase in the rate of natural environment exploitation without radical, unimaginable in today's world qualitative and structural changes. The classical and neoclassical economics seem not to offer effective solutions in the face of the challenges concerned.

2. Factors of changes in paradigm in force

Harmony in the human being-economy-environment system is a *sine qua non* condition of the social and economic development. The state is generally transient – the balance is upset to allow for the new state, of a higher level. The state of a system providing its existence, duration, and development could be referred to an order.

The integrated order could be defined, "… as a positive target of development changes (similar to purpose) connecting component orders in a coherent, consistent manner" (Borys, 2011, p. 77).

The integrated order shall take into consideration the following aspects: balance (sustainability), justice, and durability.

The integrated order includes:

— social order;
— economic order;
— environmental order.

The literature also mentions a term of institutional-political order separate from the social order and the spatial order separate from the environmental one (Borys, 2005, p. 48).The idea of the integrated order is based on the social, economic, and environmental balance.

The social balance may be a factor conducive to the growth or the one that hampers it for a certain time (e.g. developments in Africa, the Middle East, or Greece in 2011). The environmental or economic balance is not sufficient for the sustainable development. The lack of

social balance prevents the foreign capital to inflow or makes it outflow. The political stability on the basis of democratic governance is a guarantee of maintaining the social balance. An individual as a social being may make a choice and join political parties representing different views on the social and economic development.

According to the neoclassical economics, a human being (as labour force) was one of the production factors, along with soil and capital. The progress in the social and economic development triggered subjectivity and sensitivity of the human being as a member of society. The 'posses-type' being changed to a 'be-type' being. The process was associated with the changes in systems of values: from egocentrism through weak anthropocentrism, and even to more and more exhibited pathocentrism and biocentrism. Views that focus on the social equality appeared where still it is assumed that social inequality increases the productivity and stimulates the social and economic development. The equality should of course be relative, not absolute, e.g. equality of opportunities. At the present stage of the social and economic development, the banners appealing to the social justice are reasonable, and the said social justice exhibiting two dimensions:

— intrageneration justice;
— intergeneration justice.

The intergeneration justice is mainly expressed through the protection of the environment, although it should take the intergeneration accumulation of knowledge as a production factor of growing importance into consideration. The intrageneration justice predominantly deals with equal opportunities in the access to primary goods and services. The main problems include fighting the hunger and poverty, health care, education, removal of inequalities (the cast away and outraged in Greece, Italy, USA, etc., in 2011) etc.

The intrageneration justice in the economic context concerns the removal of international trade barriers and creation of material bases for the removal of threats to peace in the world (international aid). The details could be found in Sachs (2006) and Stiglitz (2001, 2006). Both categories of the justice are not contradictory to Rawl's concept of justice. The main feature of the concept is an assumption on the impartiality and rationalism of participants who are not egoists (*homo oeconomicus* cannot thus be a subject of the concept) and on the same opportunities. 'The curtain of ignorance' supports the equalisation of the opportunities.

According to the neoclassical economics, the basis of the economic balance is a harmony of production factors: soil, capital, and labour. The proper share of the factors has to provide the maximum profit, and turning from one state of the balance to another meant the optimisation of the production process and allocation of resources. The limitation in form of the environment made the research apparatus regarding the balance of the production factors stop reflecting the reality. In the 19th and 20th centuries, the main criterion in the process of economic decision making was a private interest, which was in line with egocentric understanding of the world. The one-generation thinking predominated. The evolution of systems of values together with deteriorating environment supported the conclusion saying that the maximisation of individual's benefits does not allow for the social optimisation. The society is not a sum of individuals but is a synergically multisubject subject, often driven by other aims than those of individuals there within.

The aim is a quality and duration of life. If the profit is not an aim set by the society, then the neoclassical economics does not explain problems arising out of it.

The environmental order says that natural capital resources may be the main limitation on the social and economic development.

'Natural capital is all components and elements of the natural environment indispensable to the biological preservation of human race (existence and life of human being) and human civilisation (incl. economy). It consists of primary and auxiliary natural capital. The primary natural capital covers resources required for the conservation of human life, and human race in a biological sense that cannot be replaced by other ones. Elements of anthropogenic capital cannot be used in this case. The elements of primary natural capital include ozone layer, global climate, biological diversity, wildlife, continental glaciers of Antarctica and Arctica, tropical rainforest, or world ocean. The auxiliary natural capital covers the components and elements of the natural environment that are used in economic and management processes. It comprises renewable and non-renewable resources that might be substituted or replenished by anthropogenic capital. The possibility of substitution might be partial or complete depending on the element of the capital (Czaja, 2010, p. 41).

The main criteria to distinguish the primary capital from the auxiliary one are as follows: a role in life conservation processes, possibility of substituting the natural capital with the anthropogenic one and durability of maintaining certain components of the natural capital (Czaja, 2010). A part of the natural capital used for the generation of income makes resources. The primary natural capital features the relative durability (durability in terms of time perspective established by human life span). The auxiliary natural capital is impermanent and depends on the exploitation rate of the resources. There are four rules of durability that reflect a conflict between a conservative approach to the environment and expansive (towards the natural resources) forms of economic activities.

The weak rule of durability (perfect capital substitution) means a conservation of All forms of the capital, irrespective of structures. The perfect substitution occurs between the natural and anthropogenic capitals. It depends on the manufacturing process and economic resources.

The sensitive (moderate) rule of durability (limited capital substitution) requires the conservation of the total value of the capital and its proper structure. It assumes that the natural and anthropogenic capitals might by substitutes to a certain extent. The natural resources should be exploited in a careful, rational manner in order to avoid the degradation.

The strong rule of durability (or capital complementarity) requires the conservation of each capital used. It means the anthropogenic and natural capitals cannot substitute one another, thus, the loss of certain kind of a resource should be replenished by the increase of the same resource rather the investment

in another type of the capital. The strong and sensitive rules occur in association with anthropocentric system of values.

The restrictive (very strong) rule of durability bans the decrease in any of resources. It means no substitution or restricted possibilities of the substitution within a certain capital. The renewable resources might be exploited up to its annual growth with regard to the renewal in subsequent periods. Non-renewable resources should not be exploited. The rule concerned is based on biocentric system of values (Borys, 2005).

The restrictive rule of durability should apply to the primary natural capital. In the present situation, the logic demands the application of the sensitive and strong rules in case of the auxiliary natural capital. Each case of irrational use of exhaustible resources may affect the quality of life of future generations and break the principle of intergroup justice. The technological progress that cannot be predicted today might cause the increased substitution in the use of natural and anthropogenic capitals and changes in the quality and structure of needs satisfied by a human being.

Today's world cannot be said to develop harmoniously and adopt for the integrated order. The social order is upset by the unequal development of the world: poverty, malnutrition, and other aspects of intrageneration injustice. The economic order is also upset by the lower rate of the GNP growth and its environmental limitations and international trade barriers. The environmental order that covers the primary and auxiliary natural capitals features unfavourable climate changes, biodiversity, natural environment pollution, overexploitation of natural resources etc. The foundations of the intergeneration justice are thus undermined. The need for the evolution of existing system of values appears. Radical macro changes in economics and politics are necessary.

3. Economics of the future – economics of sustainable development

Economics, in the classical approach, is a science dealing with the optimum use of resources that occur in limited amount and can be used alternatively. The neoclassical economics explains all economic processes on the market (of goods, labour, capital). The markets reach balance (supply and demand) in a longer perspective. Then, the optimum distribution of production factors and goods appears to provide the permanent economic growth.

The following assumptions were given for a neoclassical model:

— *homo oeconomicus* is a model of human behaviour. The human being acts for his own benefits, maximises the benefits and behaves in a rational way with regard to economics;
— needs are of unlimited nature at the shortage of production factors (economic resources). This would bring about the need of permanent growth and more efficient use of production factors;
— exchange transactions are equivalent for all. All are equal to law and take rational decisions;
— social welfare develops according to individual preferences. This assumption brings about a neoclassical dogma of consumer sovereignty (Rogall, 2010).

The above assumptions are the factors of a dogma of the classical economics of economic growth in a longer perspective. It allows for the short-living fluctuations of the economic growth rate. They are corrected by a market mechanism of allocating production factors, and interest and discount rates. The uniform and stable economic growth does not meet environmental barriers due to the efficiency of a market mechanism of technological substitution. The exhaust of natural resources becomes a stimulus for more economical use thereof and looking for alternative solution and technologies (Fiedor, 2007). The model of Solow from 1956 assumed that the economic growth was determined by egzogenic technological progress and that labour and physical capital were basic production factors. In the theory of the egzogenic growth, the long term growth is a result of investing in the human capital, innovations, inventions, and international external effects (transfer of knowledge, technology and capital). In the new theory of growth based on knowledge, innovations and inventions, the limitations on the economic growth of environmental nature are found and the reductions thereof are assumed:

The reasons of the said limitations are as follows:

— dematerialisation if economic growth, gradual decrease in its energy and Raw material based intensity;
— decrease in GNP polutogenity due to friendly environment and technological progress;
— increase in effective labour (Fiedor, 2007).
— The classical economics, although undergoing the advantageous evolution, still does not solve two principal problems:
— society is not perceived as community;
— it adopts a weak rule of capital durability (perfect substitution), pertaining to the natural capital in particular

The neoclassical economist of the environment, Endres (2007), summed up the above problems: "there is no space for the interest of the society beyond interests of its members" (p. 29).

The global interest of the society in a wider context is peace, security, democracy, social peace, the world without hunger and poverty as well as the natural environment available to today's and future generations etc.

The neoclassical economics ignores the future while dealing with short-term issues of profit and economic growth. It does not notice economic conditions undergoing changes over the past 200 years and related pressure of human beings on the environment, the capacity and regeneration ability of which is not unlimited. This may affect the life on Earth. According to the neoclassical economics, the production and technology determined the rate of exploitation of natural resources. Taking the condition of the natural environment into consideration, the environment, and technology should determine the scope, development, and scale of the production.

It is reflected by two approaches of the paradigm nature:

— ecological paradigm of economics (demand for ecologisation of economy and economic activity);
— paradigm of economisation of natural environment with regard to its protection and use (Czaja, 2010).

The ecological paradigm of economics means the dominance of ecological aspects of economic development with regard to goals established by the neoclassical economics. The superior goal is the maintenance of the development at the non-affected environment quality. The paradigm of economisation of natural environment, in turn, means the use of economic methods to minimise costs of achieving ecological goals and costs of economic growth. It is concurrent with the neoclassical economics of environment upon the assumption of the co-operation between representatives of different sciences who apply different research methods without a new science to be established. The economics of environment developed based on the achievements of neoclassical economics in the 1970s.

The economics of environment (…) is a body of the theory of economics that examines static and dynamic conditions of optimum use of resources and values of the natural environment (Fundamentals…, 2002, p. 39).

According to Poskrobko (2010), the theory of modern economics of environment following the attempts were made:

— ecological arrangement of flows of matter and energy in processes of economic activities;
— maximum extension (durability) of use of resources – from mining to return (in any form);
— maximisation of effective use of energy;
— estimation and internalisation of external effects;
— rational use of public goods (from water of lakes and rivers to space objects);
— ecological risk assessment, which is meant to be uncertainty due to random impact of anthropogenic burden (environment pollution).

The economics of environment is a step forward toward the economisation of the natural environment, although it is still criticised for:

— application of *homo oeconomicus* model – selfish human being not adapted to today's reality;
— model of perfect competition;
— guidance by 'weak' rule of durability;
— lack of methods to estimate environmental costs in the future and lack of possible consideration of the said costs in today's decision making processes.

The ecological economics developed based on the criticism of the neoclassical economics of environment. It refers to the ecological paradigm of economics and derives from the achievements of ecological philosophy. The subject of the ecological economics is the research and description of relations between the economy and environment in the economic development process. According to Jezowski (2003) "… a complete assessment of the ecological economics is not easy since there is no definite set of basic concepts, close range of subject and established methodological approach" (p. 8).

The ecological economics introduced concepts of natural capital, durability, and justice (intrageneration, intergeneration, and interspecies). It widely uses a concept of external effects introduced by Pigou in 1920. The ecological economics, while criticising the environmental economics, accuses it of ahistorical depiction, ignorance of growth limits and omission of cause-and-effect relations between the economic activity of human beings and pollution of the natural environment, which is not reflected in external costs either.

According to Czaja and Fiedor (2010), the following scenarios are possible for the further development of the ecological and environmental economics:

— independent, separate, and partially self-sufficient development of both sciences;
— path toward synthesis depending in 'merger' with a dominance of one of them;
— demise of both sciences and taking over their research issues by theoretical schools of main streams of economics;
— development of a new science based on the achievements of both to form a theory or the basis of the sustainable development strategy, i.e. sustainable economics.

Each of the scenarios may occur if the growth rate of the modern economy and science, and transformations of the society and natural environment are taken into consideration. The German literature, and recent Polish publications, treats the ecological economics as the basis of the new sustainable economics also referred to as the economics of sustainable development.

According to Rogall (2010), the economics of sustainable development should base on 10 key theses, namely:

— strong sustainability – economy as a sub-system of nature and most natural resources do not subject to substitution;
— pluralistic approach – recognition of certain achievements of traditional economics and environmental economics;
— further development of traditional and ecological economics toward the sustainable development;
— change in paradigm, growth rate versus exploitation rate of resources, intra- and intergeneration justice etc;
— ethical principles based on individual responsibility;
— transdisciplinary approach;
— necessary changes in framework conditions with the use of political and legal instruments, sustainable production and consumption, price standards and specific approach to substantive goods;
— sustainable (social and ecological) market economy;
— global responsibility.

The economics of sustainable development exhibits real foundations, since it emphasises the environmental aspects of development, whereas, the growing social problems of the world of global and local nature are becoming less important. The similar way of solving environmental and social problems depends in the slower rate of economic growth caused by them. The internalisation of external costs occur in micro (companies) and macro (states) scale, there is also a need of bearing mega scale costs that cover the whole world in order to solve the crucial problems of the development. The existence of one economics would make it stronger than in case of a number of sciences of a specific subject easier to be criticised. The foundation of the economics of sustainable development should be a sustainable market economy, which would allow for the state intervention. The economics of sustainable development through the term 'sustainable development' in its name is a new depiction of the economics of 200 years based on a paradigm of *strict* economic development with due consideration to its achievements due to current conditions. Economics as a social science should undergo

transformations, just like economy and science, and consider changes in interactions within a society and between the economy, society, and natural environment. Stiglitz (2006) stated: "Economics was my starting point but I was forced to go beyond the economics" (p. 273). The economics of sustainable development may later come back to the name of 'economics' since the term 'sustainable development' might be found useless due to its obviousness; economics may as well adopt a name of economics of integrated development. The concept of integrated development as a new development paradigm was introduced by Borys (2011a). In this case, it means a wide, multiadjective sustainable development, which is explicit from a semantic point of view.

Conclusions

The sustainable development is the only possibility of solving problems of today's world. It has been treated as a concept so far but nowadays it is a new paradigm of economics that considers the integrated order with regard to the social, economic, and environmental aspects. The development approached in this way exhibits the following properties: self-maintenance, durability and sustainability, and contains qualitative elements of transformation from welfare to wellbeing. Modern economics has to deal with the escalation of the wider social and environmental problems.

Bibliography

1. Borys, T. (2005). *Sustainable Development as a Matter of Measuring the Indicator.* In: Indicators of Sustainable Development. Ed. T. Borys. Bialystok: Economics and Environment.
2. Borys, T. (2011). Sustainable Development – how to Recognise Integrated Order. Problems of Sustainable Development 6 (2), pp. 75–81.
3. Borys, T. (2011a). *The Boundary Conditions for Sustainable Economic Development.* In: Economics of Sustainable Development in Light of the Canons of Science. Ed. B. Poskrobko. Bialystok: WSE.
4. Brocki, W. (2011). *Responsible Fisheries in the Light of Economics of Sustainable Development.* In: Economics of Sustainable Development in Light of the Canons of Science. Ed. B. Poskrobko. Bialystok: WSE.
5. Brocki, W. (2012). *Responsible Fisheries as Element of Sustainable Development*. West Pomeranian University of Technology, Szczecin, ISBN 978-83-7663-023-6.
6. Czaja, S., Fiedor, B. (2010). *Environmental Economics and Ecological Economics as the Pillars.* In: Economics of Sustainable Development. Materials for Study. Ed. B. Poskrobko. Bialystok: WSE.
7. Diffenbacher, H. (2010). *Economics of Sustainable Development for Economic Studies – Carefully Conditions and Experience of the German.* In: Economics of Sustainable Development. Outline of Research and Teaching Issues. Ed. B. Poskrobko. Bialystok: WSE.
8. Endres, A. (2007). *Umweltokonomie*. Stuttgart: W. Kohlhammer Gmbh.
9. Fiedor, B. 2007. *Renewable and Nonrenewable Resources in the Theory of Sustainable Development.* Retrieved: http://old.1p.sachiel.stxnext.pl/Members/Artur/aktualnosci/ konferencja_uj. Access 28 November 2011.
10. *Fundamentals of Environmental Economics and Natural Resources*. 2002. Ed. B. Fiedor. Warszawa: C.H. Beck.
11. Hauchler, I. (2010). *Social and Institutional Barriers to Sustainable Economy.* In: Economics of Sustainable Development. Materials for Study. Ed. B. Poskrobko. Bialystok: WSE.
12. Jezowski, P. (2003). Ecological Economics – New Scientific Discipline. Economics and Environment Volume 2, Issue 24, p. 8.
13. Kosmicki, E. (2006). *Homo Sustinens the Main Problems of Education for Sustainable Development.* In: Education for Sustainable Development. Ed. T. Borys. Bialystok: Economics and Environment.
14. Kosmicki, E., Pienkowski, D. (2010). *The Basic Problem of Education for Sustainable Development Modernisation Technocratic and Reflexive Modernisation.* In: Education for Sustainable Development. Vol. I. Education for Integrated Governance. Ed. T. Borys. Bialystok: Economics and Environment.
15. Rawls, J. (2010). *Theory of Justice*. Warszawa: PWN.
16. Rogall, H. (2010). *Economics of Sustainable Development*. Theory and Practice. Poznan: Zysk i S-ka.
17. Sachs, J. 2006. *The end of Poverty. The Task for our Generation*. Warszawa: PWN.
18. Smith, A. (2007). *The Wealth of Nations. Inquiry into the Nature and Causes of the Wealth of Nations.* Warszawa: PWN.
19. Stiglitz, J.E. (2004). *Globalisation.* Warszawa: PWN.
20. Stiglitz, J.E. (2006). *The Roaring Nineties. A New history of the Most Exquisite of the Decade in World History.* Warszawa: PWN.
21. Wos, A., Zegar, J.S. (2002). *Socially Sustainable Agriculture*. Warszawa, Institute of Economics of Agriculture and Food Economy.

Travel Patterns of Children Living in Rural Areas of Riga Agglomeration: an Exploration of School Trips to Riga

Girts Burgmanis[1] Mg.sc.geog.
Faculty of Geography and Earth Sciences, University of Latvia

Abstract. In the past two decades, rapid economic, social, and spatial changes have affected the hinterland of Riga, thus, changing mobility and commuting patterns. Although, there are wide evidences from the Western countries showing growing children's dependence on a car provoking various negative consequences as well as extensive studies on mobility in Riga agglomeration in the context of commuting, there is still little known about children's everyday travel behaviour in Latvia. The aim of this paper is to explore children's travel patterns and transportation mode choice for school trips to Riga from living in rural areas of Riga agglomeration and considering contemporary changes in public transport services and settlement system transformations. Drawing on results from children's survey carried out in eight Riga secondary schools and analysed by binary logistic regression, the study identifies that suburbanisation and insufficient public transport services in municipalities situated in Riga agglomeration have affected children's choice of transportation mode. These changes determined that the distance to school and family driving habits were the most influential variables. The increase of distance from home to school and frequency of car usage by parents encourage children to choose car for school trips.
Key words: children, school trips, travel behaviour, Riga agglomeration.
JEL code: R40

Introduction

Over the past twenty years in post-socialist countries due to the economic and social changes, travel behaviour has sharply changed shifting away from walking and public transport to using an automobile. Although, the most impressive changes have occurred within cities (Dogson J., et al., 1998; Grava Z., 2007), similar trends are observable also in rural and peri-urban areas in Latvia. Private car ownership besides socio-economic restructuring of society as well as collapse of public transport system was mainly favoured by the increase of distance through process of suburbanisation, which socio-spatially restructured the hinterland of Riga at the end of the 20th century and beginning of the 21st century (Krisjane Z., Berzins M., 2011). The previous academic studies in Latvia (Naudzuns J., 2002; Krisjane Z., et al., 2007) researching transformations of transportation and mobility patterns focused primarily on adults and common trends of travel behaviour. Travel behaviour despite clear evidences from the Western Europe and the North America (Mackett R., 2002) shows that the general changes of travel behaviour more intensely affect the children.

The aim of this paper is to analyse travel mode choice and effects of contemporary settlement system transformation processes as well as changes in and effects of the public transport system on children aged 12-17 living in rural areas of Riga agglomeration. Hence, the lack of such studies also raises several essential issues and proposes objectives for this study. First, to represent interaction of urban and rural area through experiences of children. Second, to reveal the effects of recent transportation transformations and post-socialist transformations of urban and peri-urban areas on young people's travel behaviour and mode choice residing in Riga agglomeration. Third, to provide evidences from children's everyday mobility experiences for transport system planners, out-of-school activity organisers, and health authorities to exercise appropriate functions on a local scale.

This study using a binary logistic regression model examines a range of background variables (such as gender, distance, ethnicity, age, place of residence etc.) previously elicited from the survey carried out in eight urban secondary schools in Riga. The results show that the length of distance to school has mainly influenced using a car for commuting to school and has decreased young people's independent mobility. The model also shows that family habits of using a car affect the young people's choice of particular transportation modes for a trip to school.

Children's travel behaviour and mode choice for school trips

The car-oriented mode of mobility of families directly affects children and young people's travel patterns through immaturity and dependency on adults. The growing interest on travel behaviour of children is generally associated with dramatic increase of car use for daily trips to school over the past two decades (McDonald N., 2007; Mackett R., 2002; Pooley C., et al., 2005) and the negative effects on young people's health and development determined by these travel behaviour changes.

The growing children's dependency on car has two negative consequences, which very often are considered as pushing factors for travel behaviour and mode research. First, the problem of reduction in physical activity and increase in obesity are most

[1] *E-mail address*: gjirts_rhv@inbox.lv

frequently studied and declared negative consequences in progressive increase of a car use among children (Cooper A., et al., 2003; Timperio A., et al., 2004). Second, it has also been claimed that regular usage of car decreases independent mobility and autonomy (O'Brien M., et al., 2000) and constrains development of social and spatial skills (Rissotto A., Tonucci F., 2002).

Studies from various disciplines emphasise importance of two factor groups affecting and constraining travel mode choice. Some researchers all over the world (McDonald N., 2008; Nelson N., et al., 2009) have argued that the distance between dwelling and school is a critical factor, which promotes children to walk or choose other transportation modes. For example, McDonald (2008) shows that travel time and distance along with population density have the strongest effect on mode choice and suggests that children would walk to school more regularly if they lived closer than 1.6 kilometres. As population density decreases, travel distance to school increases, resulting in fewer children actively commuting. The elements and quality of pedestrian environment, hilly or plain routes and features of the physical environment related to safety also strongly influence the trip to school (McMillan T., 2007; Schlossberg M., et al., 2006) as well as parent's or children's perception of local physical environment (Timperio A., et al., 2004).

The second brunch of studies examines importance of socio-demographic factors on commuting patterns. Significant differences of travel behaviour and mode choice are observed among children of various age and gender. However, these differences are mostly based on stereotypical parents' views on the safety of girls gradually disappearing at the age of 14 (O'Brien M., et al., 2000). Family habits and particularly parental restrictions are considered as a factor, which very strongly influences the mode choice. Concerns about traffic safety and abduction are primary reasons to restrict temporally and spatially independent mobility of a child and increase chauffeuring to daily activity sites (Mattson K., 2002; McDonald N., 2010). Several studies show that the mobility rate of children and passive or active travel depend on household income, the number of cars owned by family, and family driving habits associated with convenience of parents (McDonald, 2008b).

Changes of transportation patterns in Riga agglomeration in post-soviet era

The economic and social changes, experienced in Latvia during the early 1990s after the fall of the Soviet Union and replacement of state planned economy with a market system, directly changed the conditions, which previously guided the development in rural areas. Spreading of the market principles stimulated enormous socio-economic changes in rural areas through decay of collective farm system, shift from production to service industry favouring increase of unemployment and forfeit of functional diversity, privatisation, socio-economic differentiation, and socio-spatial restructuring of particularly peri-urban areas. The most rapid transformations took place in the transport system significantly changing inhabitants' travel behaviour and turned to excessive private car use. Such changes had several significant causes.

First, the transport system of socialism, which was primarily based on subsidised public transportation and was very inexpensive, collapsed in a very short period in the early 1990s. Sharp reduction of subsidies and growth of technical maintenance expenses determined dramatic increase in public transport prices in the early 1990s in Latvia. The high public transport ticket price along with a relatively low petrol price stimulated an explosive car ownership and use similarly as in other post-socialist countries (Pucher J., 1999).

Second, cutting off public transport trips and reconsideration of timetables, particularly in rural areas, was the other consequence initiated by decrease of subsidies for public transport, devolvement of public transport services in management of private enterprises, which was guided by interests of profit, and decline of population. Decline in public transport services made the existing public transport system in rural areas deficient, and encouraged acquiring and using a car for commuting. The high use of private cars for commuting mainly characterises Riga agglomeration (Krisjane Z., et al., 2007).

Third, automobilisation of post-socialist countries occurred also due to resolved shortage of cars characterising the Soviet Union (Grava Z., 2007) where production was restricted keeping supply of vehicles, limited spare parts and prices in relation with wages were very high.

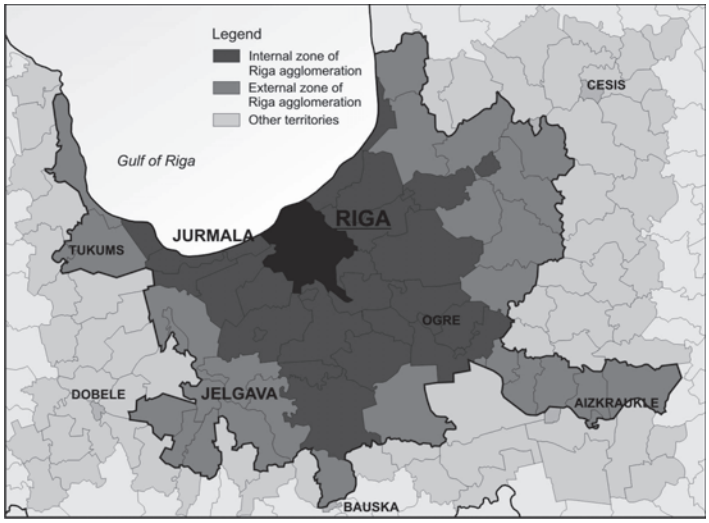
Fourth, the economic structural changes, which reflect in employment structure, development of private business, and foreign investment inflows contributed to the household's financial resources, which together with the car availability on the market and the growing supply have made vehicle purchase and use more affordable than before (Grava Z., 2007). The second-hand cars imported from the Western countries fulfil market demand offering various opportunities for people and families with diverse financial resources and desires.

Fifth, although throughout the world, there is a strong correlation between income and auto ownership (Pucher J., 1999), financial incentives, and generous supply obviously do not provide the only explanation for the immense growth of car owners. In Latvia, as well as in other Central and Eastern European countries, the automobile has become an extremely important symbol of freedom and social status (Pucher J., 1995).

Finally, after the 1990s Riga hinterland was exposed to suburbanisation. These changes of the settlement system within Riga agglomeration and displacement of residences outside the city stimulated a rapid increase of distance between home and workplaces or schools and commuting towards Riga from urban fringe (Krisjane Z., Berzins M., 2009). Most of the former inhabitants of Riga frequently use private cars from their residences in the outskirts for daily commuting to work (Berzins M., Krisjane Z., Kruzmetra Z., 2010) without which it would be difficult to cover huge distances varying between few kilometres to more than 70.

Riga agglomeration as a case study area

Riga agglomeration has a monocentric urban structure where Riga dominates as a residential, employment, transport, and service centre (Berzins M., Krisjane Z., 2008; Berzins M., Krisjane Z., Kruzmetra Z., 2010). Although, agglomeration of Riga emerged in the 1970s and has continuously changed,



Source: Department of Human Geography, University of Latvia, 2004

Fig. 1. **Spatial structure of Riga agglomeration**

it never existed as an administrative and statistical unit imposing to explore social, economic, and spatial processes within the agglomeration area. Contemporary borders of Riga agglomeration are fixed using a methodology based on an indicator reflecting the size and intensity of commuting flows between Riga and its adjacent territories (Department of Human Geography, 2004). Krisjane and Berzins (2009) pointed that using intensity of labour migration as the main indicator; the borders of agglomeration were located at radius from 50 to 60 km, with travel times up to 1.5 hours.

Following these findings, Riga agglomeration, after the administrative territorial reform in 2009, consists of 22 municipalities and 16 towns. The territorial structure of this area includes the capital city Riga as the central city, and the internal and external zone of the agglomeration (Berzins M., Krisjane Z., 2008). The two zones differ from one another by the nature of interaction between the zones and the capital city through intensity of daily commuting and density of population. At the beginning of 2007, the total population of Riga agglomeration except the capital city was 428,627 people who lived in the area covering only 15% of Latvia's territory (Krisjane Z., Berzins M., 2009).

Changes in housing market after the 1990s, increase of economic resources and easy accessible loans in the 2000s, provided inhabitants with possibility to seek for dwelling consistently with their financial resources favouring intensification of suburbanisation, which reflected in shift from multi-storey apartments in the core city to single detached houses in Riga agglomeration. Increasing demand for detached houses enhanced construction boom in Riga outskirts allowing inhabitants fulfil their desire for better quality of life also involving aspects of environment quality and attractiveness (Berzins M., Krisjane Z., 2008).

These trends progressively evoked increase in the number of inhabitants within Riga agglomeration exposing mainly adjacent municipalities of Riga where the increase of population reached nearly 40% in the past ten years (Krisjane Z., Berzins M., 2011). Former inhabitants of the capital city mostly with higher education and superior income level changed places of residence to suburbs keeping their workplaces in Riga (Berzins M., Krisjane Z., Kruzmetra Z., 2010). These transformations stimulated a rapid increase in commuting towards Riga from urban fringe (Krisjane Z., Berzins M., 2009).

Materials and methods

The data for this study were obtained from a survey called "The Study of Children's Activities and Perception of Urban Environment" conducted in February 2010. The selection of schools for surveying was made considering their location and language of tuition. Hence, eight both Latvian and non-Latvian speaking schools were chosen from four residential neighbourhoods (Teika, Zolitude, Purvciems, Kengarags, Centrs).

Questionnaires were distributed to students from basic school grades 6-9 and secondary school grades 10-11 in eight Riga schools. Totally, 2296 students were surveyed, of which 2040 were out of the defined study sample age group 12-17 years and lived in cities (such as Riga, Jelgava, and Jurmala). The 30 questionnaires inaccurately filled in by respondents and not corresponding to conditions of the sample were eliminated from a further analysis. Further, just 226 (10% of the total survey sample) correctly filled questionnaires were used for the statistical data analysis.

The survey consisted of several parts. The first part elicited general socio-demographic information on the respondent and his/her household characteristics. The second part of the questionnaire examined young people's travel behaviour to school. The last set of questions dealt with family driving habits.

In this study, the respondent's self-reported most frequently chosen travel mode to school as a dependent variable was used to explain the travel behaviour of children and the mode choice for school trips. The last transformations of dataset for increasing their reliability and preventing a highly unstable regression model were managed due to insignificant number of respondents who regularly use bicycle for school trips or walk (nearly only 3%). Eight respondents

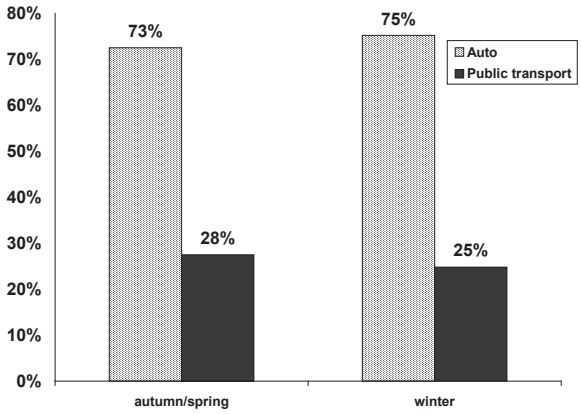


Fig. 2. **Travel mode for school trips in spring/autumn and winter, percent (N = 218)**

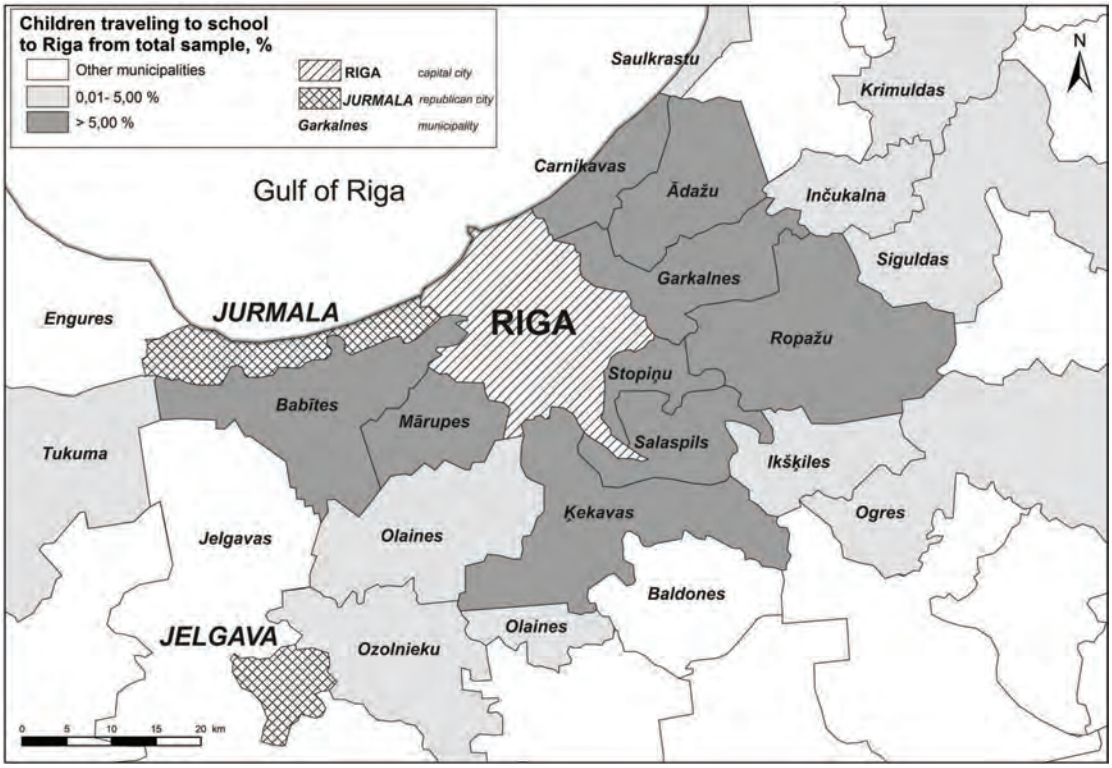


Fig. 3. **School trips from Riga agglomeration to Riga**

who answered that the most frequently used travel mode to school was cycling or walking were removed from further analysis. Consequently, answers of 218 respondents were included in a binary logistic regression model.

Travel mode to school in spring and autumn was used as a dependent variable and consisted of two categories: car and public transport where car was the reference mode for the regression model. The analysis focuses on nine independent variables in total. Two of them such as travel distance and driving habits of family were widely discussed in previous research from the Western countries as very significant and most affective in travel mode choice. The Google maps were used for estimating the travel distance from home to school. A variable representing the type of dwelling and duration of living in the place of residence was used assessing the effect of residence place and effect of suburbanisation on children's travel behaviour. Three in previous research frequently used socio-demographic variables (age, gender, and ethnicity) were included in the regression model. Two more descriptive categorical variables were used for explaining commuting patterns such as actual level of education reflecting additional socio-demographic characteristics of respondent and location of school, which were used as an indicator considering the importance of spatial distribution of schools. The binary logistic regression model using statistical data processing software SataMP 10 was created and was used for explaining travel patterns and mode choice.

Results and discussion

The seasonal changes in travel mode choice were not significant for residents of Riga agglomeration. Young people going to Riga from outskirts to school without reference on season mostly travel by car with their parents. The private car for school trips is used three times more frequently than public transport. Distinct differences of travel behaviour between warm and cold seasons of the school year are also not observable among respondents commuting from Riga agglomeration. Only 2.5% of young people using public transport in autumn and spring join their parents for commuting to Riga in winter by car (Figure 2).

Absence of active transportation modes in travel patterns for school trips can be explained by a large average distance (17.9 km) from home to school, which makes it almost impossible to walk or cycle to school and leads to the necessity to use more passive modes of transportation. There are also other reasons distinguishable for such travel patterns; a very high private car ownership rate (98%) among respondents' families living within Riga agglomeration as well as lack of appropriate and safe infrastructure for active transportation to school mainly outside of the city.

The patterns of school trips from rural areas to Riga represented in Figure 3 partially match with the zoning model of Riga agglomeration developed by the Department of Human Geography in 2004. Major flows of children can be observed from municipalities, which are located alongside the city of Riga and match with the internal zone of Riga agglomeration. There is a number of potential reasons for this finding. Primarily, the adjacent municipalities have direct public transport links with Riga making it easier to reach school for children. For example, there are direct bus routes from five municipalities (Babite, Garkalne, Marupe, Kekava, and Stopini) and four municipalities (Babite, Salaspils, Carnikava, and Garkalne) include train services.

The adjacent municipalities of Riga are also directly exposed to the process of suburbanisation and changes of settlement patterns. Migration of former Riga inhabitants to surrounding areas as well as keeping their workplaces in the city increased commuting flows towards Riga and opportunities for children to travel to school by their parents using a private car. This explanation is consistent with the findings from a previous study by Krisjane and Berzins (2009).

The mode choice model further provides a more detailed understanding of this descriptive statistics and importance of distance and other factors on travel mode choice. Although, the current discussion mostly in the Western studies on children's travel has turned to walking to school, this study considering restrictions of active mobility determined by distance for children residing in Riga agglomeration focuses only on the car and public transport modes.

The regression model shows that the family driving habits or frequency of car usage and travel distance have the strongest effect on car usage for daily commuting (Tables 1 and 2). For example, 57% of children whose parents use a car more than 3 days in a week more likely will use a car for commuting to school. Considering previous studies on the suburbanisation processes and commuting patterns from suburbs to Riga, such results are not surprising (Berzins M., Krisjane Z., Kruzmetra Z., 2010). Parents who work in Riga combine their trip to work with a child's chauffeuring to school. Moreover, such commuting patterns for families are also advantageous because the children do not have to spend additional funds for the bus tickets (at least in one direction). The model also shows that the increase of distance by 1 km between home and school leads to a 1.7% increase in a respondent's probability to a private car use. These findings are also consistent with previous researches from the Western countries (McDonald, 2008; Schlossberg et al., 2006).

Although the previous researches focusing on independent mobility (O'Brien M., et al., 2000) showed that spatial autonomy increased when children grew older and parents considered them competent enough for negotiating with danger in public space and public transport, the findings of this study are different. Sociodemographic characteristics have no direct effect on decline in car use for older children who travel to school from Riga outskirts.

This research also rejected observations from other studies that girls less likely use public transport for school trips. There are several explanations for this deficiency of correlation between socio-demographic factors and mode choice. Despite the existence of direct public transport routes from surrounding areas to Riga, the number of public transport trips is still insufficient in municipalities. These are the consequences of adaptation to principles of market economy and public transport transformations in the 1990s restricting opportunities for school trips determining that children without reference on gender and age have to adhere their daily schedules to schedule of public transport. Lower accessibility to public transport encourages children to use a car for school trips. This explanation is supported by findings from previous studies (Krisjane et al., 2007) suggesting that further the child's place of residence from Riga is located, the less covered is the adjacent area with public transport trips linking particular area with Riga. A wide range of distance between home and the bus stop or train station is also a characteristic for rural areas. The distance may vary from hundreds of metres to few kilometres presenting difficulties for children to easily access public transport. The author supposes that both boys and girls without reference on age residing in Riga agglomeration are equally exposed to previously described problems establishing uncomfortable conditions for children and encouraging sharing the car with parents for school trips.

Conclusions

The analysis and interpretation of mode choice model identifies several key findings and conclusions, which may be useful for explaining travel behaviour and choice of transportation mode of children residing in Riga agglomeration.

1. The distance to school and family driving habits are the most influential variables. The increase of distance from home to school and car usage by parents leads to more passive transportation of children. Car usage for parents and their children also allows to minimise travel time from home to work or school. A significant role is also played by

Table 1

Binary logistic regression model. Comparison of car and public transport usage among young people residing in Riga agglomeration

	Model (car ref. group)
	Coeff.
Travel distance	0.102**
Age	-0.238
Male	-0.379
Non-Latvians	0.070
Secondary school students	-0.502
Detached house	0.601
Duration of living in a place of residence > 5 years	-0.624
Care usage more than 3 days in a week	2.611**
School located in the city centre	-0.542
Summary of model	
N	218
Log Likelihood	-102.685
Model X^2	51.17
Probability	0.000
Pseudo R^2	0.20

Notes: Significance ** P<0.01

Table 2

Marginal effects of the binary regression model

	Model (car ref. group)
	Marginal effects (dy/dx)
Travel distance	0.017**
Age	-0.039
Male	-0.064
Non-Latvians	0.012
Secondary school students	-0.091
Detached house	0.100
Duration of living in the place of residence more than 5 years	-0.106
Car usage more than 3 days in a week	0.572**
School located in the city centre	-0.098

Notes: Significance ** P<0.01; * P <0.05

parents' rationality when their trip to a working place is combined with chauffeuring a child to school.

2. The post-socialist urban transformation, which occurred in the past two decades has an effect on children's travel behaviour and mode choice. The change of residence places from the city to its frontier area increased the distance and decreased easy access to schools in Riga as well as other institutions with social significance for children.
3. The crucial results show that if a further increase in the distance and private car usage is still seen due to further suburbanisation or residential deconcentration and automobilisation, more likely children will use passive transportation modes and particularly the car for their trips to school. This also raises a question what the consequences of such trend would be.
4. Future studies of children's daily mobility and travel patterns should include more detailed and more objective variables of the household and municipality of respondent (for example, bus stop density or public transport trips daily) characteristics. A more detailed research is necessary to examine how contemporary urban transformations and decisions made by parents to move to suburbs affect not only children's travel patterns but also changes in daily

routine. For example, what time does a child have to wake up in the morning, how does he or she get back to home, do these changes decrease the level of independent mobility? It is also necessary to discuss the effect of modern changes such as optimisation of school network in municipalities within Riga agglomeration.

Bibliography

1. Berzins, M., Krisjane, Z. (2008). Amenity Migration in Postsocialist Metropolis: the Case of Riga Agglomeration. *Proceedings of the Latvian Academy of Sciences. Section B,* Volume 62, Issue 1/2, pp. 71-77.
2. Berzins, M., Krisjane, Z., Kruzmetra, Z. (2010). An Emerging Pattern of Peri-Urban Growth in the PieRiga. *Scientific Papers University of Latvia: Earth and Environmental Sciences*, Volume 752, pp. 253-267.
3. Cooper, A.R., Page, A.S., Foster, L.J., Qahwaji, D. (2003). Commuting to School - are Children who Walk More Physically Active? *American Journal of Preventive Medicine*, Volume 25, Issue 4, pp. 273–276.
4. Department of Human Geography, University of Latvia (2004). A Study of Population Mobility in the Riga Agglomeration. Unpublished survey.
5. Dodgson, J., de Rus, G., Lopez, F., Palsaitis, R., Villemi, E.M., Waldren, R. (1998). Urban Public Transport in the Baltic States. *Transport Reviews*, Volume 18, Issue 2, pp. 153-163.
6. Grava, S. (2007). Urban Transport in the Baltic Republics. In K. Stanilov (eds.), *The Post-Socialist City: Urban Form and Space Transformations in Central and Eastern Europe after Socialism*. Dordrecht: Springer. pp. 313-343.
7. Krisjane, Z., Berzins, M. (2009). Commuting and the Deconcentration of the Post-Socialist Urban Population: the Case of the Riga Agglomeration. *Folia Geographica*, Volume 14, pp. 56-74.
8. Krisjane, Z., Berzins, M. (2011). Post-socialist Urban Trends: New Patterns and Motivations for Migration in the Suburban Areas of Riga, Latvia. *Urban Studies*, Volume 48, pp. 1-18.
9. Krisjane, Z., Eglite, P., Bauls, A., et al. (2007). The Geographical Mobility of the Labour Force. Unpublished survey.
10. Mattson, K.T. (2002). Children's (In)dependent Mobility and Parents' Chauffeuring in the Town and the Countryside. *Tijdschrift voor Economische en Sociale Geografie*, Volume 93, Issue 4, pp. 443–453.
11. McDonald, N.C. (2007). Active Transportation to School Trends among US Schoolchildren, 1969–2001. *American Journal of Preventive Medicine,* Volume 32, Issue 6, pp. 509-516.
12. McDonald, N.C. (2008). Children's Mode Choice for the School Trip: the Role of Distance and School Location in Walking to School. *Transportation*, Volume 35, Issue 1, pp. 23–35.
13. McDonald, N.C. (2008b). Household Interactions and Children's School Travel: the Effect Parental Work Patterns on Walking and Biking to School. *Journal of Transport Geography*, 16, Issue 5, pp. 324–331.
14. McDonald, N.C., Deakin, E., Aalborg, A.E. (2010). Influence of the Social Environment on Children's School Travel. *Preventive Medicine*, Volume 50, pp. S65–S68.
15. Mackett, R. (2002). Increasing Car Dependency of Children: Should we be Worried. *Proceedings of the Institution of Civil Engineers–Municipal Engineer*, Volume 15, pp. 29–38.
16. McMillan, T. (2007). The Relative Influence of Urban Form on a Child's Travel Mode to School. *Transport Research Part A*, Volume 41, Issue 1, pp. 69–79.
17. Naudzuns, J.R. (2002). Transports Latvija. In V. Raudseps (eds.), *Socialekonomiska procesa trajektorija Latvija laika no 1985.gada lidz 2002. gadam*. Ventspils: Ventspils augstskola. p. 243.
18. Nelson N.M., Foley, E., O'Gorman, D.J., Moyna, N.M.,Woods, C.B. (2008). Active Commuting to School: How Far Is Too Far? *International Journal of Behavioural Nutrition and Physical Activity*, Volume 5, Volume 1, pp. 1-9.
19. O'Brien, M., Jones, D., Sloan D., Rustin, M. (2000). Children's Independent Spatial Mobility in the Urban Public Realm. *Childhood*, Volume 7, Issue 3, pp. 257–277.
20. Pooley, C.G., Turnbull, J., Adams, M. (2005). The Journey to School in Britain since the 1940s: Continuity and Change. *Area*, Volume 37, Issue 1, pp. 43-53.
21. Pucher, J. (1995). Road to Ruin? Impacts of Economic Shock Therapy on Urban Transport in Poland. *Transport Policy,* Volume 2, Issue 1, pp. 5-13.
22. Pucher, J. (1999). The Transformation of Urban Transport in the Czech Republic, 1988-1998. *Transport Policy,* Volume 6, Issue 4, pp. 225-236.
23. Rissotto, A., Tonucci, F. (2002). Freedom of Movement and Environmental Knowledge in Elementary School Children. *Journal of Environmental Psychology,* Volume 22, Issue 1/2*,* pp. 65.-77.
24. Schlossberg, M., Greene, J., Paulsen, P., Johnson, B., Parker, B. (2006). School Trips: Effects of Urban Form and Distance on Travel Mode. *Journal of American Planning Association*, Volume 72, Issue 3, pp. 337–346.
25. Timperio, A., Crawford D., Telford, A., Salmon, J. (2004). Perceptions about the Local Neighbourhood and Walking and Cycling among Children. *Preventive Medicine*, Volume 38, Issue 1, pp. 39–47.

Acknowledgment

This work has been supported by the European Social Fund within the project "Support for Doctoral Studies at the University of Latvia".

Emigration and its Impact on The State Economics

Vida Ciuleviciene[1], Dr., assoc. professor
Aleksandras Stulginskis University

Abstract. The article analyses the emigration of Lithuanian citizens in the period of 2001-2010 and its impact on the state economics. Lithuania has the highest scope of emigration in the EU and there is an increasing tendency. More than 330 thousand citizens have emigrated during the period analysed. Therefore, the aim of the article is to analyse the scope of emigration and to evaluate its impact on the state economics. The results of the research show that mostly young and qualified people of the age 20-34 have emigrated during the period analysed. Both positive and negative aspects of emigration shall be mentioned. Remittances to people in Lithuania are increasing as well as their share of GDP, the number of the unemployed and the level of unemployment have decreased thereto. However, the total number of citizens and labour force has also decreased significantly. One can also indicate a significant tendency of ageing, an increasing load of the dependent, decreasing contributions to the social security fund, and a growing deficit of this fund. Share of the personal income tax and profit tax in the national budget has decreased thereof.
Key words: emigration, impact, state economics.
JEL code: J110; O150; C100

Introduction

The European Union's statistical office Euro stat announces that Lithuania is the state where the scope of emigration is the highest in the EU. According to the number of emigrants per 1000 people, Lithuania has higher numbers than its neighbouring countries: Latvia, Poland, and Estonia. The process of emigration is important as it influences not only the life of individuals but also the state's demographic, social, and economic development. The emigration process in Lithuania has especially intensified after 2004, when Lithuania entered the EU and the policy of free movement of people in the EU zone came into effect. Apparently there cannot be only a positive or negative evaluation of emigration. This process has both positive and negative consequences. Most often people emigrate in search for better living conditions: the aim to find an appropriate job, receive a decent salary, and establish a safe environment. However, such an intensive emigration influences not only the changes of the total number of citizens but also a demographic structure - a decreasing number of young people, ageing, gender disproportion as well as the lack of labour force, decreasing contributions to social funds, an increasing average number of the dependent for one employed citizen, the lack of the qualified labour force etc. Other important consequences of emigration are the departure of intelligent and educated people, the tension in the social security system, and consequences for the families and children. For a country with such a small population like Lithuania, there is a problem of losing ethnicity. However, emigration has also some positive aspects. First, the level of unemployment in Lithuania decreases and the wages in some economic activities and investment in staff increase due to emigration. Moreover, the emigrated people get work experience; cultural changes take place and emigrants' cash flow return to Lithuania. Since the influence of emigration is essential, it is necessary to analyse the impact of migration on the state economics, mainly the tendencies of the unemployment and occupation, the level of income etc. Nevertheless, the impact of each factor can only be identified partially, as all the factors are related and influence one another, whereas the sources of information are limited. The aim of this article is to identify the emigration scope and evaluate its influence on the state economics. The research object is population emigration. Performance tasks: to evaluate the scope of emigration from Lithuania; to identify demographic social and economic characteristics of the emigrants; and to identify the impact of emigration on the state economics. The following research methods were used to analyse data and information: a monographic method was applied to evaluate the sources of migration data and scope; a comparative analysis was used to compare migrants' characteristics; a monographic method and time-series comparison (when two sequences of numbers are compared) were used to assess the impact of migration on the state economics; and a correlation-regression analysis was used for determining the impact of migration on the state economics.

Research results and discussion

Life experience and research papers (Adomenas, 2006; Acosta et al, 2007; Barham et al, 1998; Ciarniene et al, 2009; Stulgiene, et al 2009; Berzinskiene et al, 2010; Martinaitis, Zvalionyte, 2007; International … , 2008; Butkus et al, 2010; Stankuniene, 2010: Taylor, 1999; Taylor et al, 2005 etc.) show that when a person moves to another country not only his/her life changes but there are also changes in the state, especially if the number of emigrants is considerable.

In order to identify the scope of emigration, one faces the problem of limited information. The evaluation of emigration flow is very complicated when migration takes place in the space of free movement of persons. In this case, one may speak about declared and undeclared

[1] *E-mail address*: ciulvida@gmail.com

Table 1

Emigration rates and dynamics

Year	Number of emigrants per 1000 citizens			Number of emigrants per 1000 citizens	Dynamics of the number of emigrants % (base - 2001)			
	declared	undeclared	total		declared	undeclared	total	number of emigrants per 1000 citizens
2001	7.3	15.8	23.1	2.1	100.0	100.0	100.0	100.0
2002	7.1	7.4	14.5	2.0	97.3	46.8	62.8	95.2
2003	11.0	11.7	22.7	3.2	150.7	74.0	98.3	152.4
2004	15.2	17.3	32.5	4.4	208.2	109.5	140.7	209.5
2005	15.6	32.5	48.1	4.6	213.7	205.7	208.2	219.0
2006	12.6	15.2	27.8	3.7	172.6	96.2	120.3	176.2
2007	13.8	12.7	26.5	4.1	189.0	80.4	114.7	195.2
2008	17.0	6.7	23.7	5.1	232.9	42.4	102.6	242.9
2009	22.0	12.7	34.7	6.6	301.4	80.4	150.2	314.2
2010	83.2	-	83.2	25.3	1139.7	-	360.2	1204.8

Source: author's calculations based on the data of the Department of Statistics

emigration. In Lithuania, the declared emigration is based on the data of population register on the declaration of place of residence. Lithuanian Department of Statistics declares that statistic information about emigrants' occupation before emigration is provided by Social Security personal database (beginning and end of the employment) and also information on the company code. Statistical Business Register provides information on the company code, which allows preparing statistics about emigrants' occupation before leaving according to the economic activity of the previous work place. However, not all the people who leave the country take care to sign out. Therefore, the data by the Department of Statistics on the declared emigration is only partially true. Based on demographic statistics, emigrants are people who leave for a period of at least 12 months. In the first quarter of each year, the research of citizens' occupation shows data on people who have left the country, and this is the source of information to evaluate the number of emigrants who have not declared their departure from Lithuania. Official statistics does not provide detailed information about the scope of undeclared emigration. This is most often identified based on the population census and the information of additional statistic research. The population census, however, takes place every ten years, whereas in the meantime undeclared emigration may only be evaluated by using a selective survey, which only gives a vague picture of the situation.

Provided by the official statistics, 204.8 thousand people have declared their departure in the period of 2001-2010, which accounts for 6.3 % of population since the beginning of 2011. During the period analysed, the number of emigrants has increased 3.6 times, especially significantly - the number of declared emigration has increased 11 times (Table 1). It should be mentioned that the flow of emigration in the period of 2001-2010 was increasing constantly; however, the most significant scope of emigration per 1000 citizens was in 2010. This is related to the obligation to pay compulsory health insurance contributions of LTL 72 (EUR 21) set in Compulsory Health Insurance Law of 2009.

Changes in declared and undeclared emigration have their own reasons. In some researchers' point of view (Berzinskiene, Reizgeviciene, Reizgevicius, 2010), the increasing number of the declared emigration was influenced by two main factors: the departing people were more confident on the employment possibilities abroad and, thus, willing to declare their departure; a possibility of legal departure and employment in the target country, after Lithuania became an EU Member State; and consequent legal agreements on the exemption from double taxation of labour income. Total number of emigrants (both having declared and undeclared their departure) accounted for 336.8 thousand citizens in the period of 2001-2010, which is almost 132 thousand more than the data shown in the declaration of place of residence.

In the period of 2001-2010, Lithuanian emigrants account for 104.6 thousand women (51.1%) and 100.1 thousand men (48.9%). Among the emigrants who have declared their departure, the majority is formed by women. However, at the beginning of this period, in 2001-2001 more men tended to emigrate, while the part of emigrating women has increased since 2003. For women, higher mobility is promoted not only by their search for better material conditions but also by their aim for career and growth in their professional life. In contrast, career opportunities for men and women are not equal in Lithuania, the priority most often is given to men. Emigrating women form a relatively bigger part than men. One may assume that emigration has changed form a short-term exploratory at the beginning of the period to a long-term one. The majority of emigrants, i.e. 43.7% - have never been married, 40.7% are married, 12.8% - divorced, and 1.9% are widowers. A more detailed analysis of gender and marital status shows

that married men and divorced women (45.6 %) tend to emigrate with the aim to take their families to the country of emigration. During the past decade, the most mobile people were 25-29 and 20-24 years old. They accounted for 20.3% and 15.6% of the emigrated, accordingly. A relatively big part was formed by people of 30-34 years old, 13.6% of the emigrated. This group is of the highest labour potential, mostly in search for education and career. Approximately one fifth of the emigrated (18.4%) was formed by children and young people under 19. This kind of emigration actually poses a threat to Lithuania , because when young people leave, one may notice ageing of the population, the country loses potential labour force and taxpayers. Senior emigrants account for about 2.4%. It is important to notice that when a senior emigrates, the payment of pension is suspended. Therefore, one may assume that senior people leave permanently to live with their children's families without declaring their departure.

The majority of emigrants are job seekers. In 2001-2009, totally 74.4% of Lithuanian citizens emigrated due to economic reasons, i.e. wanted to live and work in another country with better work and living conditions and social security. In 2010, generally 85% of 15 year-old and elder emigrants were unemployed for one year or longer before leaving the country (in 2009, this number accounted for 81%). Evaluating the previous occupation, the following economic activities have lost most employees: wholesale and retail trade, motor vehicles and motor cycles repair - 3.7%, manufacturing 2.3%, transport and storage 1.6%, construction 1.5%, and accommodation and food service activities 1.1%. If comparing the data of 2009 and 2010, one may notice that an increasing number of emigrants were involved in professional, scientific and technical activities, and administrative and support service activities (each account for 0.03 percentage points; and human health and social work activities - 0.2%. This may have negative results in the future when Lithuania needs specialists in these spheres.

Most emigrated people – 58% had secondary special education, including secondary education with professional qualification; 18.9% had high and university education, which means that Lithuania as a state had already invested in these people. This shows that educated employees have more opportunities to search information about jobs in foreign markets. These people have a good command of foreign languages, thus, they can easier adapt in new jobs. Therefore, labour resources in Lithuania decrease constituting a growing load for the state economics. According to the labour exchange, labour force demand remained high in 2010; employers registered 148 thousand vacancies (61.4% more than in 2009).

Concerning the decrease of population due to emigration, one may state that Lithuania loses young people. This may leave irreversible consequences not only on demographic processes but also on labour force, which might be imported from other countries. Most emigrants - 83.9% are Lithuanian citizens. Thus, there is another problem - losing ethnicity.

Lithuania, a relatively small country, in 2001-2011, has lost its population from 3487.0 to 3244.6 thousand, i.e. 242.4 thousand, which is 7%. Only in 2010, just 83.2 thousand people emigrated, which is by 61.2 thousand more than in 2009. This increase in number was influenced by economic and social factors as well as by the obligation to pay compulsory health insurance contributions set by the Compulsory Health Insurance Law. It is possible that in 2010 many people declared their departure, although they might have departed much earlier. Emigration influences a general demographic situation in the state: the structure of population changes with the increase of the number of senior people and those over 60 years. In 2000, senior people accounted for 19%, in 2005 - 20.2%, and in 2011 - even 21.6% of the population. Due to this reason, expenditure on social security benefits increased significantly - 2.7 times; expenditure for old-age increased from LTL 3065.1 thousand to LTL 7695.8 thousand, which is a 2.5 times increase. Thus, old-age pensions and pre-retirement pensions are increasing in spite of gradual extension of retirement age. The number of pension beneficiaries compared with the total population has increased in the period analysed. In 2000, this ratio was 27%, and in 2010- 28.9%; i.e. it has increased by two percentage points. When a country's demographic situation changes, gender proportions are violated, index of ageing and age dependency ratios increase, which best illustrate an economic burden for citizens. At the beginning of 2001, there were 1138 women per 1000 men; at the beginning of 2011, this ratio reached 1153, i.e. 15 more women per 1000 men. The growth of gender disproportion influences other demographic rates. At the beginning of 2011, there were 1.4 times less children of 0-14 years old than senior people: 100 children per 144 senior people; whereas in 2001, this ratio was 97 (Table 2).

One may notice a gradual decrease in the share of children and an increase in the share of senior people. This shows that the burden for working-age people is increasing in Lithuania. Moreover, the consequences of the decreased number of children will be important in the future when they become employed.

Emigration influences the situation in the labour market. In 2010, there was a considerable demand for labour force, especially in the service sector - 51% of all vacancies supply, in the construction sector - 6.7%, and industry- 2.6%. The biggest supply was offered for salespeople, truck and cargo vehicle drivers, painters, tailors, cooks and sales managers. There is also a growing demand for such specialists as insurance agents, garment technologists, and doctors.

Researchers across the world study migration and analyse in detail the influence of money remittances on the state economics (Taylor, 1999; Taylor et al., 2005; Aggarwal et al., 2005; Lopez-Cordova, 2005; Yang and Martinez, 2006 and others). However, this issue has been little analysed in Lithuania. Emigrants' money remittances are evaluated on the basis of Lithuanian balance of payments and data base of the Department of Statistics. However, in order to evaluate objectively, one must admit that neither source provides exact information. The article on balance of payments "Labour Income" includes not only migrants' but also other people's wages, such as employees of embassies, consulates, and international institutions. Due to this, the rate of migrants' remittances from foreign countries is a little too high. Moreover, a substantial part of emigrants'

Table 2

Age dependency ratios (as of 1 January)

Year	Per 100 population aged 15-59					
	children (aged 0-14)	relatives %		elderly people (aged 60 and older)	relatives %	
		fixed base (2005=100)	link (previous year=100)		fixed base (2005=100)	link (previous year=100)
2005	27	100.0	96.4	32	100.0	100.0
2006	26	96.3	96.3	32	100.0	100.0
2007	25	92.6	96.2	32	100.0	100.0
2008	24	88.9	96.0	32	100.0	100.0
2009	23	85.2	95.8	32	100.0	100.0
2010	23	85.2	100.0	33	103.1	103.1
2011	24	88.9	104.3	34	106.3	103.0

Source: author's calculations based on the data of the Department of Statistics

Table 3

Workers' remittances and compensation of employees from abroad and its dynamics

Indicators		2005	2006	2007	2008	2009	2010
Workers remittances and compensation of employees from abroad, LTL million		2079.1	2719.6	3591.2	3698.4	3041.2	4371.8
Relatives %	fixed base (2005=100)	100.0	130.8	172.7	177.9	146.3	210.3
	link (previous year=100)	-	130.8	132.0	103.0	82.2	143.8

Source: author's calculations based on the data of the Bank of Lithuania

remittances is sent informally, through their friends and acquaintances, brought by the emigrants themselves or in the form of clothes or other commodities. Some researchers assume that real sums of remittances are considerably higher (from 10 to 50%) (Kasinskis, 2009). According to the Bank of Lithuania, remittances of private individuals who have worked abroad for more than a year and received income accounted for LTL 984.9 million in 2010, whereas in 2001, only LTL 12.1 million. This means that remittances have increased more than 80 times. Labour income and remittances by individuals from foreign countries accounted for LTL 4371.8 million, which is LTL 1330.6 million (43.8%) more than in 2009 and LTL 2292.7 million (2.1 times) more than in 2005 (Table 3).

However, Lithuania does not have enough data to evaluate objectively the economic consequences of migrants' money remittances. The above analysis shows that sums of remittances increase. It is especially difficult to identify what influence the remittances have on separate areas of the country or on the mitigation of income inequality. A comparison of the amount of emigrants' remittances with the GDP shows the importance on the state economics. Before the EU membership, the share of these remittances was lower than 1%; while in 2004, with the increase of GDP, labour income and remittances by individuals, this ratio exceeded 1%. In 2005-2010, the part of labour income and individuals' remittances in the GDP increased by 1.7 percentage points from 2.9% in 2005 to 3.3% in 2009, thus, in 2010 reaching 4.6%. Therefore, one may state that migrants' remittances from abroad may be treated as a significant opportunity to accelerate the growth of GDP. The same thing may be confirmed by a correlation analysis, the results of which show that connections between money remittances and GDP are statistically significant (Significance F; p=2.01827 E-05), and the regression equation shows that when migrants' income increases by LTL 1 million, the country's GDP increases by LTL 0.065 million if other factors absent from the equation are mid-level. The amount of remittances is determined by many factors, such as a possibility for emigrants to earn money and help their families in Lithuania, access of international money transfer and their rates. Remittances by the people employed in foreign countries have increased significantly after Lithuania became an EU Member State and the scope of emigration increased. The total amount of remittances during the period analysed exceeded LTL 20 billion. Migrants' remittances have a positive impact on the state's balance of payment, since it provides foreign exchange reserves and additional savings for the development of state economics (Kasinskis, 2009).

Emigration influences not only the changes of population but also labour force. Among other EU Member States, Lithuania has lost the biggest part of labour force during the past decades. In 2001, labour force accounted for 1635.8 thousand but in 2006 – only 1588.2 thousand. During this short period, labour force in Lithuania decreased by 3%. Some emigrants from Lithuania are replaced by immigrants from other countries; however, this number is not increasing: in 2010, there were 5.2 thousand immigrants, i.e. 1.3 thousand less than in 2009. On average, there was 1.6 immigrant per one thousand citizens (in 2009 – 1.9, in 2008 – 2.8). The number of the unemployed and the level of unemployment and labour force have decreased due to emigration. Because of the economic growth and emigration, the number of the unemployed in Lithuania has decreased from 284 thousand to 69 thousand, i.e. four times. A correlation analysis was carried out to identify the influence of emigration scope on the change of the unemployed. The results show that there is a reverse connection between these two variables, the average intensity – $(r = -0.42)$. Thus, a conclusion may be drawn that not only unemployed people emigrate. In 2001, the level of unemployment was 17.4%, later with the increase of emigration, the unemployment constantly decreased. In 2007, when the economic growth was considerable, the unemployment rate was only 4.3%. Later, this rate started increasing again; this is related not only to the scope of migration but also to the deterioration of economic situation, lower export possibilities etc.

Due to emigration and a decreased number of working age people, there are less revenues to the budget. In 2005, the number of people who were insured by the state social security and paid taxes to the budget equalled to 1369.7 thousand, while in 2010, this number decreased by 117 thousand (8.5%). According to the social security fund data, in 2006, the share of insured population of employed population was 95%, and in 2010 – 93%, i.e. decreased by 2 percentage points. The share of taxes in the national budget also decreases. According to the Ministry of Finance, the amount of taxes on income and profits, paid to the state and municipal budgets decreased by 45.9%, and their proportion in the taxable income decreased from 29.8% in 2008 to 19% in 2010, even by 10.8 percentage point only during the period of 2008-2010 (of which tax on individual income - 18.6% and 14.9% respectively or 3.7 percentage points). Such changes may be explained by the fact that in 2010 most companies paid profit tax for the low profitable period in 2009. According to the data of the State Tax Inspectorate under the Ministry of Finance, in 2009, the number of profitable companies decreased by one-fifth due to the beginning of economic crisis. Revenues from personal income tax were low due to emigration, lower salaries, and number of the employed. The average monthly gross salary in the private and state sectors accounted for LTL 982 in 2001 and LTL 2152 in 2008, i.e. increased more than twice. This shows that salaries were increased and more money was invested in employees when the economic situation was improving and labour supply was low.

Only in the period of 2000-2009 old-age benefits increased from LTL 3.1 billion to LTL 7.7 billion, i.e. more than 2.5 times. Expenditure on pensions of GDP accounted for 6.5% in 2005, 8.6% in 2010, i.e. it increased by 2.1 percentage points. In 2001-2010, revenues to the State Social Security fund increased 2.4 times in absolute terms thanks to the economic growth; however, expenditure has grown more than three times. Thus, the growth of expenditure at the State Social Security fund is significantly faster than the growth of income. The calculation of the rates of income and expenditure per person show that income increased 2.5 times but expenditure increased 3.2 times. Once again, this only confirms the fact that under the changes of demographic situation, social security expenditure increases despite the extension of a retirement age. Whereas, employers' social contributions to the State Social Security fund have decreased from 53.7% in 2000 to 48.8% in 2009 (Indicators calculated according to ESSPROS). The share of costs by the State Social Security fund has increased from 8.5% of GDP in 2005 to 14% in 2010. Due to the reasons mentioned above, tension in the social security grows; Social Security has an increasing deficit: only during the period of 2008-2010, it has increased from LTL 1.4 billion in 2008 to LTL 2.8 billion in 2010, i.e. twice as much.

Despite the growth of emigrants' remittances, the number of the unemployed, and a lower level of unemployment etc. has other positive effects on emigration. These effects are difficult, if not impossible, to identify by such quantitative indicators as knowledge from abroad, qualifications, work experience, foreign languages, cultural exchange, an opportunity to improve the state economics, and living conditions. However, Lithuania is a small country, and in case emigration continues at this rate, Lithuania will lose intellectual potential and investment to staff. Besides, there will be a continuous shortage of labour force, demographic situation will get worse and this will cause various problems and increase a polarisation of population.

Conclusions

1. During the period analysed, emigration is increasing from Lithuania. For one thousand citizens, the number of emigrants has increased from 2.1 in 2001 to 25.3 in 2010. Lithuania has lost more than 330 thousand people in absolute terms during the period of 2001-2010.
2. Mostly young people of age 20-34 emigrate. More than half of them have special secondary education including secondary education with professional qualification, 18.9% of the emigrated have higher or university degree. This shows that Lithuania is losing well-qualified employees and investment in them. The number of population has decreased by 7% due to emigration. Old-age demographic factors and the number of the dependent are increasing. Age structure of population is changing, as there are more senior people, thus, increasing expenditure on social protection benefits.
3. Emigration influences the situation in the labour market. The number of the unemployed has decreased, whereas the demand for labour force and salaries has risen.

4. Emigrants' remittances influence the state economics significantly, retaining their share in GDP. The amount of taxes on income and profits to the state and municipal budgets as well as their share in income tax is decreasing due to the decrease in the number of citizens paying taxes to the budget.

Bibliography

1. Acosta, P., Calderon, S., Fajnzylber, P., Lopez H. (2007). What is the Impact of International Remittances on Poverty and Inequality in Latin America? The World Bank, Washington, DC, USA. Retrieved: http://www.sciencedirect.com/science/article/pii/S0305750X07001945. Access: 16 December 2011.
2. Adomenas, M. (2006). Emigracija is Lietuvos: padetis, problemos, galimi sprendimo budai. Pranesimas konferencijoje „Emigracija is Lietuvos: padetis, problemos, galimi sprendimo budai" (Emigration from Lithuania: Situation, Problems, Possible Solutions. Conference Proceedings from "Emigration from Lithuania: Situation Problems, Possible Solutions"). Retrieved: http://www3.lrs.lt/docs2/WXBUZDAW.DOC>. Access: 11 December 2011.
3. Aggarwal, R., Demirguc-Kunt A., Martinez-Peria, M. (2005). *Do workers' Remittances Promote Financial Development?* The World Bank, Mimeo.
4. Barham, B., Boucher, S. (1998). Migration, Remittances, and Inequality: Estimating the Net Effects of Migration on Income Distribution. *Journal of Development Economics*, Volume 55, Issue 2, pp. 307-331.
5. Berzinskiene, D., Reizgeviciene, R., Reizgevicius, M. (2010). Migracijos itaka darbo rinkai. *Ekonomika ir vadyba: aktualijos ir perspektyvos* (Impact of Migration on Labour Market. *Economics and Management: Current Issues and Perspectives),* 2 (18), pp. 5-17.
6. Butkus, M., Matuzeviciute, K. (2010). Migracijos tendenciju Europos Sajungoje vertinimas. *Ekonomika ir vadyba: aktualijos ir perspektyvos,* (Evaluation of Migration Tendencies in the European Union. *Economics and Management: Current Issues and Perspectives*), 2 (18), pp. 28-38.
7. Ciarniene, R., Kumpikaite, V., Taraskevicius, A. (2009). Makroekonominiu veiksniu poveikis zmoniu migracijos procesams: teoriniai ir praktiniai aspektai. *Ekonomika ir vadyba: aktualijos ir perspektyvos,* 2 (14), pp. 553-559.
8. *International Migration in Europe. Data Models and Estimates* (2008). Edited by James Raymer and Frans Willekens, John Wiley and Sons, Ltd.
9. Yang, D., Martinez, C. (2006). Remittances and Poverty in Migrants' Home Areas: Evidence from the Philippines. The World Bank, Washington, DC), pp. 81–121.
10. Kasinskis, K. (2009). Emigrantu piniginiu pervedimu indelis i Lietuvos ekonomika. (Impact of Emigrants' Remittances to Lithuanian Economics). Retrieved: http://www.iseivijosinstitutas.lt/get.php?f.525. Access: 13 October 2011.
11. Lopez-Cordova, E.(2005). Globalisation, Migration and Development: The Role of Mexican Migrant Remittances. *Economics. Journal of the Latin American and Caribbean Economic Association*, 1, pp. 217–256.
12. Martinaitis, Z., Zvalionyte, D. (2007). Emigracija is Lietuvos: ka zinome, ko nezinome ir ka turetume zinoti? (Emigration from Lithuania: Facts we Know and Don't Know; What Should We Know?), *Politologija*, 3(47), pp. 112-134.
13. Stankuniene, V. (2010). *Lietuvos gyventoju politikos metmenys: kartu ir lyciu tyrimo pamokos.* (Lithuania's Population Policy Framework: Research of Gender and Generation). Vilnius: socialiniu tyrimu centras.
14. Stulgiene, A., Daunoriene, A. (2009). Migracijos poveikis darbo jegos rinkos pusiausvyrai. Ekonomika ir vadyba (Impact of Migration on the Balance of Labour Force Market). *Economics and Management* 14, pp. 984-992.
15. Taylor, J.E. (1999). The New Economics of Labour Migration and the Role of Remittances in the Migration Process. *International Migration*, Volume 37, Issue 1, pp. 63–88.
16. Taylor, J., Mora, J., Adams R., Lopez-Feldman, A. (2005). *Remittances, Inequality, and Poverty: Evidence from Rural Mexico*, University of California, Mimeo, Davis.

Social Entrepreneurship Paradigm and its Assessment in Latvia

Lasma Dobele[1], PhD student, lecturer
Faculty of Economics, Latvia University of Agriculture

Abstract. The research aim is to investigate the paradigm of social entrepreneurship in tackling socio-economic problems in Latvia, thus, four paradigms (government, free market, tertiary sector, and social entrepreneurship) and their advantages and disadvantages in tackling socio-economic problems were characterised. The nature and topicality of this term in tackling socio-economic problems was improved after analysing the scientific literature on social entrepreneurship. Defining a social enterprise is based on social and economic criteria. It was found in the present research that the government, the market, and nongovernmental organisations were not able to solve the increasing socio-economic problems (poverty and unemployment), and one of the most efficient and sustainable solutions was the development of social entrepreneurship.
Key words: social entrepreneurship, social business, unemployment.
JEL code: E24, H55, I33, J60

Introduction

According to the Millennium Development Goals of the United Nations, it is necessary to decrease poverty (by reducing the proportion of individuals with income less than 1 dollar a day) and increase employment of higher productivity, especially among women and youth, until 2015. In Latvia, the problem of poverty is urgent as well. According to data of the Central Statistical Bureau (CSB), totally 38.1% of the population lives at the poverty line. In Latvia, the long-term unemployed account for 38.3% of their total number, and the highest proportion of job seekers is observed among young individuals, i.e. aged 15-19 (61.5%). Since 1995, the government expenditures on benefits and pensions have risen by 76.5% on average. It proves that the government cannot cope with the increasing socio-economic problems; and new, efficient, and sustainable solutions have to be searched for. Social entrepreneurs argue that social enterprises have emerged as a response to the problems, caused by the market, which the government is not able to solve (Mulgan G., Landry L., 1995). Therefore, it is important to promote the development of social entrepreneurship.

The term social entrepreneurship becomes more and more topical in the world, thus, various authors have tried to develop the most optimal definition of this term. Yet, there is no unanimity among them – often a definition is justified with a phrase "a social enterprise is recognised when it is seen". In the result, it is hard to collect statistical data on social enterprises and conduct further comparative research on social entrepreneurship (Lyon F., Sepulveda L., 2009).

There is a lack of studies on social entrepreneurship in Latvia, and economic theoreticians have mostly researched corporative social responsibility (A.Petersons, L.Pavare, and A.Viksne). Social enterprises were studied for the first time in the survey Global Entrepreneurship Monitor 2009. According to the survey, the indicator of social entrepreneurship in Latvia, compared with other countries, is not very high, i.e. 1.9%. E.Zagare (2010) in her research paper found that the majority of social entrepreneurs were not even aware of the fact that they were engaged in social entrepreneurship. Therefore, it is important to start the present research with definition criteria for social entrepreneurship as well as to emphasise the role of social entrepreneurship in tackling socio-economic problems.

The research aim is to investigate the paradigm of social entrepreneurship in tackling socio-economic problems in Latvia. The following research tasks were defined to achieve the aim:

1) to investigate the nature of social entrepreneurship and to set criteria for its identification;
2) to assess the paradigm of social entrepreneurship in tackling socio-economic problems;
3) to analyse the necessity for developing social entrepreneurship in Latvia.

Research **hypothesis:** social entrepreneurship can be a significant instrument for tackling employment problems in Latvia. The following research **methods** were employed in the present research: the monographic and descriptive methods, analysis and synthesis, induction and deduction, the graphical method, and correlation analysis. Data of the Latvian Central Statistical Bureau, the survey Global Entrepreneurship Monitor 2009, the Lursoft company, and scientific literature were used in the present research. Given the fact that there is a lack of scientific studies on social entrepreneurship in Latvia, findings of foreign scientists and social entrepreneurs were also used in the research.

1. Nature of social entrepreneurship and its definition criteria

Presently, various definitions and interpretations of the term social entrepreneurship exist. J.Mair and I.Marti (2006) distinguish three groups of terms based on the leading-motive chosen for a definition: individual (social entrepreneur), process (social entrepreneurship), or economic entity (social enterprise).

Orientation towards an individual - social entrepreneur. When defining the term social

[1] *E-mail address*: Lasma.Dobele@llu.lv

Table 1

Characteristics of social entrepreneurs

Economic theoreticians	Definition of social entrepreneur	Characteristics of social entrepreneurs
J.B.Say (19th century)	An individual who makes the factors of production more productive and provides higher income.	*Creation of values*
J.Schumpeter (20th century)	A businessman introduces an innovation in business to cause changes in production.	*Innovation, promotion of changes*
P.F.Drucker (1985)	A businessman always searches for changes, challenges them and uses them as opportunities. Business does not always include a leading-motive for profit.	*Identification and use of opportunities*
H.Stevenson	Businessmen mobilise resources to achieve their business goals.	*Mobilisation of resources*
B.Drayton (1998)	A social entrepreneur integrates an unusual and creative approach for tackling problems with high ethics.	*Ethical views*
G.S. Mort, J.Weerawardena, K.Carnegie (2003)	Social entrepreneurs feature novelty, proactivity, and disposition to take risk in their decision-making.	*Ability to take risk*
D.Bornstein (2004), B.Dreyton (2004)	Individuals who are motivated by a wish to bring changes to the society.	*Promotion of changes*
G.Vega and R.E. Kidwell (2007)	Innovators in tackling special social problems. They use the opportunities that were not successfully exploited by individuals in the private, public, and nongovernmental sector.	*Tackling of social problems*
Alvord S.H., Brown L.D., Letts C.W (2004)	Individuals who have an ability to cause sustainable changes in the social sector – to change local social norms, roles, and expectations in order to bring changes in the life of marginal groups.	*Ability to cause sustainable changes*
R.L.Martin and S.Osberg (2007)	Traditional entrepreneurs are motivated by money, while social entrepreneurs – by altruism. There are significant differences in the understandings of these values	*Motivations*
G.J.Dees (1998)	Social entrepreneurs are stakeholders bringing changes to the social sector who act according to their mission of creating and maintaining social values.	*Creation of social values (social mission)*

Source: author's construction based on literature analysis

entrepreneur, the main emphasis is put on an individual or a group of individuals who establish a social enterprise and the skills and abilities inherent to them (Bornstein D., 2004). In identifying a social entrepreneur, the most important issue is to stress the factors that motivate an entrepreneur to start entrepreneurship (Kuratko D., Hornsby J., Naffziger D., 1997).

Early French, English, and Austrian economists characterised entrepreneurs as "stakeholders of change" in a fast growing economy. A French economist of the 19th century J.B.Say stressed creation of values (Dees J.G., 1998), an Austrian economist J.Schumpeter emphasised that entrepreneurs had an influence on promoting economic progress, while P.Drucker characterised entrepreneurs as users of changes and opportunities. He also was the first one who stated in his work "Innovation and Entrepreneurship" that entrepreneurship did not necessarily have to include the leading-motive for profit. It means that an entrepreneur might be led by other interests, not only by the creation of material values.

One can conclude that the entrepreneurial abilities identified by the early economic theoreticians are also significant to social entrepreneurs, thus, modern economic theoreticians stress the previously mentioned qualities. For instance, an ability to use an unusual and innovative approach is important (Thompson J.L., 2008). Researchers of social entrepreneurship also stress a special ability of social entrepreneur (Catford J., 1998) to identify opportunities and efficiently exploit available resources (Sharir M., Lerner M., 2006). Ethical views of social entrepreneur are important (Catford J., 1998) as well. Characteristics of social entrepreneurs are summarised in Table 1.

The author points that these characteristics of social entrepreneurs are very important, however, it has to be admitted that traditional entrepreneurs, at the same time, might have the mentioned abilities. One of the most essential characteristics of social entrepreneurs is **motivation** (Martin R.L., Osberg S., 2007). Mostly, financial gains motivate traditional entrepreneurs, whereas altruism motivates social entrepreneurs. A motivation of social entrepreneurs closely relates with their main ability – to **create social values** (Mort G.S., Weerawardena J., Carnegie K., 2002).

One can conclude that *a social entrepreneur is an individual who pursues a goal of creating social values in a society, employing the approach of entrepreneurship. The social entrepreneur features high principles of ethics, an ability to identify and implement opportunities, produce innovations, and mobilise resources for achieving the goal in order to solve socio-economic problems and bring positive changes to the society*.

Orientation towards an economic entity - social enterprise. Economists and social entrepreneurs have tried to develop an optimum definition of the term social enterprise (Wallace S.L., 1999), yet, there is a lack of single and precise criteria for its definition.

Various criteria characterising a social enterprise may be found in the scientific literature. For instance, the Social Enterprise Coalition sets three main criteria: approach of entrepreneurship, social goals, and social ownership. A similar approach for identifying social enterprises was also specific to F.Lyon and L.Sepulveda (2009).

J.Pearce (2003) stresses six unifying elements for a social enterprise, while the founder of social entrepreneurship M.Yunus (2010) sets seven ones: a goal of business is to solve the problem of poverty or other problems of society instead of raising profits; an enterprise has to be financially sustainable; investors get back only their original investments without any interest; profit is used for enterprise development; an enterprise is friendly to the environment; labour is paid wages corresponding to a market situation, working under better conditions; and work is done with pleasure.

One can conclude that there are no single criteria to be used for precisely defining social enterprises. K.Peattie and A.Moorley (2008) believe that there are only two explicitly defined criteria identifying a social enterprise: priority of social goals and engagement in commercial activities. The author also agrees with this outlook on condition that these two criteria have to be defined in more detail, as there are narrow bounds among social enterprises, socially responsible corporations, and charity organisations.

Social criteria. The priority of any social enterprise is a social goal or the creation of social values, and gaining profit is a subordinate priority (Mair, Marti, 2006). To achieve the social goal, it is important to engage **socially little-protected groups of society** in social enterprises (Boschee, 2006). These might be poor or low-income individuals (families) and socially little-protected groups, as they face social rejection on the labour market most often. The Cabinet Regulations No. 32 "Regulations Regarding Socially Little-protected Groups of Persons" (11 January 2005) sets 16 groups fitting the status of socially little-protected group of individuals (the disabled, individuals freed from imprisonment, the long-term unemployed etc.). However, these are not the only socially little-protected groups; young individuals with poor skills, individuals of pre-retirement age, and parents after a childcare leave might belong to such groups. Yet, the status **of poor family (person)** is granted in accordance with the Cabinet Regulations No. 299 "Regulations Regarding the Recognition of a Family or Person Living Separately as Needy".

To obtain the status of social enterprise, two development scenarios are possible:

1) to employ the mentioned socially little-protected groups of society (65%) or other categories of individuals at a social enterprise (including their engagement in the management of enterprise) if an entrepreneur can prove their belonging to a socially little-protected group;
2) to provide the most necessary services/goods to socially little-protected and/or poor groups of society at a lower cost that corresponds to their income level.

A significant criterion for identifying social enterprises is also **sustainability of social values** (Thompson J.L., 2008).

Economic criteria. First, social enterprises are engaged in **commercial activities generating revenues**; it means that they operate based on the principles of business, as it is important to provide the **self-sustaining** of enterprises. According to the ideas of M.Yunus (2007), a social enterprise has to operate with profit or at least without loss. Otherwise, it is a charity organisation, which exists owing to donations etc.

As regards **profit distribution**, it is important to emphasise that owners of a social enterprise are not allowed to share the enterprise's profit; it has to be **reinvested** in the enterprise or invested in further promotion of public goods by providing the society with goods/services of lower price and better quality, which are also available (Wallace S.L., 1999). M.Yunus (2007) assumes that only original investments, without any interest, are given back to social investors. In case such an enterprise is liquidated, its accrued profit and assets are transferred to another social enterprise, thus, ensuring that the goals are achieved (Galera G., Borzaga C., 2009).

Social (democratic) ownership is also specific to social enterprises; it is closely associated with making decisions, which do not relate to the shares of equity owned.

To precisely distinguish social enterprises from traditional ones, there is a significant criterion of social enterprises – they supply certain **goods or services to the market (poor or low-income intervals)**, the production of which is not desired by or financially unprofitable to the private sector. Considering the fact that social entrepreneurs who supply necessities (food, housing, education), used to face a problem – the poor are not able to pay even a low price for goods and services supplied (Seelos C., Mair J., 2005), support of the central or local government is required.

One can conclude that a social enterprise has to conform to several social and economic criteria. Based on these criteria, an ideal type of social enterprise may be determined, yet, in practice, social enterprises conform to a part of the mentioned criteria.

Based on the previous studies, a *social enterprise is defined as an organisational economic entity founded with the purposes of creating social values in the society, employing socially little-protected groups of society at the enterprise, or providing such groups with services and/or goods*.

Orientation towards a process - social entrepreneurship. Social entrepreneurship includes the above-mentioned criteria for a social enterprise and characteristic elements of social entrepreneur, thus, the

Table 2

Basic guidelines for tackling socio-economic problems

Basic guidelines	Economic theoreticians	Main conclusions	Problems / criticism
Market	**A.Smith** ("invisible hand") **Neoclassical economists** (Cowen, 1988)	Failures caused by the market might be solved with innovative market mechanisms.	— Social innovations are not introduced. — The market is oriented towards individual gains. — The poorest stratum of society is not provided with goods.
Government	**Welfare economists** (Gray, Healy and Crofts, 2003) **Supporters of Keynesian theory**	The government has to tackle social problems through social benefits, income redistribution, and subsidies.	— Lack of financial resources. — Lack of efficiency in performing commercial activities. — Threats of corruption.
Tertiary sector	**Institutional economists** (Valentinov and Baum, 2008)	The best solution to tackle failures caused by the market, especially in developing countries, is the development of the tertiary sector.	— "Benefit culture" is created. — Local public needs are not well known. — In case of shortage of funding, the tackling of problems is stopped.
Social entrepreneurs	**Social entrepreneurs** (Drayton, 2002; Nicholls and Cho, 2006; Yunus, 2010)	Social entrepreneurship is the best solution to offset problems caused by the market and to fill "governmental gaps".	— Dominant capitalism culture – "profit dominance". — Merging social and economic values causes threats for existence of enterprises.

Source: author's construction based on literature analysis

term social entrepreneurship will not be analysed in a wider scope. One can say that *social entrepreneurship is a type of entrepreneurship, the priority of which is to create social values while ensuring its financial self-sustaining and sustainability*.

1.2. Paradigms in tackling socio-economic problems

Over various periods, both representatives of the tertiary sector and the government as well as entrepreneurs, by means of market mechanisms, have tackled socio-economic problems. According to experiences in the world, the functions, which the government or the private sector is not able to execute, are transferred to social entrepreneurs. After analysing the opinions of various authors on tackling socio-economic problems, four paradigms are possible.

Free market. In the period of industrial economies, A.Smith's idea of the market's "invisible hand", which solves various problems, caused by the market, without any interference of the government dominated. Nowadays, too, such a neoclassical economist as T.Cowen (1988) believes that failures caused by the market may be solved by means of innovative market mechanisms. An advocate of social entrepreneurship, G.J.Dees (2001) who believes that the market does not make social improvements and does not provide either the poorest stratum of society with goods and services does not agree with it. I.Maitland (1997) stresses that the market does not take into consideration ethical norms but it promotes greed and individual prosperity instead of an increase in the welfare of society (Table 2).

Tertiary sector. S.Baines et al. (2010) define a tertiary sector as a formal or institutionalised, separate from the public sector, non-profit, and self-regulating sector. Volunteers are often engaged in this sector, but, at the same time, professional organisations employing paid labour operate in it (Billis D., Gelennerster H., 1998). The tertiary sector also includes charity organisations and groups of society (Shaw E., Carter S., 2007), and nongovernmental organisations belong to this sector as well.

Such institutional economists as V.Valentinov and S.Baum (2008) emphasise that entrepreneurship can develop only in an environment that is able to support the market. In developing countries, especially in their rural areas, the institutional environment is weak, thus, failures caused by the market cannot be solved only by means of market instruments. They believe that the best solution, especially in developing countries, is the development of their tertiary sector. It casts doubt on the need for social enterprises, as, according to this view, social enterprises perform the functions of organisations of tertiary sector. Yet, supporters of the organisation "Ashoka" argue that social entrepreneurs better know a local society and its needs than nongovernmental organisations and are able to find the cause of a problem and solve it.

J.L.Thompson (2008) believes that the tertiary sector relies on work of volunteers. M.Yunus (2007) supports this idea by arguing that solely nongovernmental

Table 3

Expenditures on government benefits and pensions, thou. LVL

Indicators	1995	2000	2005	2010	Average increase rate, %
Expenditures on benefits:	62 883	93 899	169 024	359 181	***80.6***
Increase rate, % - $t_{m(k)}$	-	*49.3*	*80.0*	*112.5*	
Sickness benefits	15 040	8 686	27 254	66 802	***105.6***
Increase rate, % - $t_{m(k)}$	-	*-42.2*	*213.8*	*145.1*	
Unemployment benefits	7295	21 546	28 967	88 820	***145.5***
Increase rate , % - $t_{m(k)}$	-	*195.4*	*34.4*	*206.6*	
Expenditures on pensions:	243 809	444 962	558 709	1 233 381	***76.3***
Increase rate, % - $t_{m(k)}$	-	*82.5*	*25.6*	*120.8*	
Old-age pensions	181 845	361 430	465 947	1 091 980	***87.4***
Increase rate, % - $t_{m(k)}$	-	*98.9*	*28.9*	*134.4*	
Expenditures on government benefits and pensions – in total	306 692	538 831	727 733	1 592 562	***76.5***
Increase rate, % - $t_{m(k)}$	-	*75.7*	*35.1*	*118.8*	

Source: author's construction based on the CSB data

organisations are not able to cope with social problems, as they often depend on donations. Upon running out of funds, social problems are not tackled as well. Besides, funds available for charity in developing countries are small, whereas needs are huge there. Dependence of individuals on social benefits and donations, which does not reduce but promote poverty, is not a less significant problem caused by the government support and donations of public organisations. A new system of welfare has to be created, which motivates individuals to control their lives themselves and take the initiative over the situation instead of waiting only for assistance from others (Leadbeater C., 1997).

Government. According to public–finance theory, socio-economic problems have to be tackled by the government, as its main tasks are to provide residents with public goods (libraries, education, national defence, and security) and reduce the inequality, created by the market, by means of an income redistribution mechanism. Such welfare economists as M.Gray et al. (2003) and supporters of Keynesian theory are convinced that the government has to tackle social problems through a system of social benefits, income redistribution, and subsidies. Yet, it has to be noted that governments of many countries (especially developing countries) do not have sufficient funding to regulate their market by means of benefits and subsidies. Social insurance schemes and services financed from tax revenues are not able to tackle effectively the increasing social problems – long-term unemployment, poverty etc. (Leadbeater C., 1997). Nowadays, an issue of efficient use of funds becomes more and more topical.

Due to the high unemployment and the aging of society, expenditures on both social benefits and pensions have substantially increased in the government budget (Table 3). The expenditure on the unemployed (unemployment benefits) significantly increased, i.e. by 206.6% in 2010 compared with 2005 and by 145.5% on average during the period of 1995-2010. It may be explained by the economic recession, which caused employee optimisation processes.

Considering the aging of society, the expenditure on pensions have significantly risen, i.e. an average increase rate was 76.3% from 1995 to 2010; in the result, a government budget deficit reached LVL 1050 mln in 2010, which proved that the government could not effectively tackle all socio-economic problems and it should search for new efficient and sustainable solutions.

B.Shore has emphasised in an interview with A.M.Wolk in 2007 that social entrepreneurs were able to execute tasks the government could not cope with, as they were ready to take a greater risk, besides, in terms of cost, they performed more efficiently than the government, as they were less bureaucratic, more flexible, and more capable of increasing returns from their employees (Leadbeater C., 1997). Social enterprises are more innovative in providing public services, which determine their efficiency (Shah D., 2009).

Social entrepreneurship. Social business is the best solution to offset failures caused by the market due to high transaction costs, effects of exogenous factors on fair price policy, and asymmetric information flows between consumers and sellers (Drayton W., 2002; Nicholls A., Cho A.H., 2006). Social entrepreneurs use J.Schumpeter's argument that the business approach has to be changed to solve deeply-rooted problems created by the traditional market system, which used to lead to a lack of goods and services, unemployment, and income loss for certain groups of society.

Regardless of such critics as M.Gray et al. (2003) who assert that social entrepreneurs and their proposals are very deeply rooted in the dominant paradigm of neoliberal economics to be able to imagine another type of capitalism, M.Yunus is convinced that almost all social and economic problems in the world may be solved by means of assistance of social enterprises, thus, changing

Table 4

Strength of correlation for effects of the factors causing unemployment in Latvia

Indicator	Correlation coefficient (r)	Strength of correlation
Number of established enterprises	-0.66	Correlation is strong
GDP	-0.20	Correlation is weak
Number of emigrants	0.76	Correlation is strong
Income of individuals (net average monthly wage of employees)	-0.24	Correlation is weak

Source: author's construction

lives of 60% individuals of the lowest stratum by assisting them to get out of poverty.

The efficiency of social enterprises is doubted by followers of A.Smith's ideas who emphasise in the magazine *the Economist* that the private and public sector have to perform their own functions by strictly separating the creation of social values from that of economic values, as the merger of both types of values may threaten the existence of a successful enterprise by negatively affecting its economic performance. Whereas, J.Emerson stresses that the merger of social and economic values is not only desired but also needed, as it can promote the establishment of a system of socially responsible capitalism (Emerson J., Bonini S., 2003). I.Maitland (1997) also stresses that those entrepreneurs who will support social values get greater economic gains.

One can conclude that socio-economic problems may be tackled both by means of a market mechanism and with assistance of the tertiary sector as well as by using the government budget funding. Yet, it is important to be aware of the role of social entrepreneurship in tackling problems, which is especially essential during the economic recession when funds available in the tertiary sector and government support significantly decrease, and new, innovative, and sustainable ways of tackling socio-economic problems have to be searched for.

1.3. Necessity to analyse the development of social entrepreneurship in Latvia

The most significant problems that exist in Latvia and that might be tackled by means of social entrepreneurship are, first, the high unemployment rate (18.7% in 2010) and, second, social entrepreneurship is an important instrument to reduce poverty. Due to these problems, the problem of emigration has become urgent as well. In 2010, totally 10702 residents have emigrated from Latvia, which is 1.5 times more than in 2000, thus, making a negative migration balance of 7912 individuals.

After analysing the rates of employment and unemployment, one can conclude that in the period of 2000-2008, a trend was observed that the rate of employment rose and, in its turn, the rate of unemployment declined (in this period, the rate of unemployment decreased by 43.1%, while the rate of unemployment rose by 13.4%). In the second half of 2008, an opposite trend began - the rate of unemployment declined and the rate of unemployment started sharply increasing due to the economic downturn, which caused significant problems in the national economy – poverty, emigration etc. In accordance with the European Parliament resolution of 19 February 2009 on Social Economy, one can conclude that 10% of the total number of European enterprises represents social economy, i.e. 2 million enterprises or 6% of total employment, and it has a high potential to establish and retain a stable level of employment. The resolution states that social entrepreneurship assists to correct the three main disadvantages of labour market: unemployment, employment instability, and rejection of the unemployed on the labour market. It means that it is possible to reduce the unemployment rate by promoting the development of social entrepreneurship.

To identify the factors affecting unemployment, a correlation analysis was performed to ascertain the strength of correlation between a variable and a factor. By hypothetically assuming that certain factors and their interaction affect unemployment, a rate of unemployment was determined as a variable the numerical value fluctuations of which were studied in relation with value changes in other factors (GDP, number of founded enterprises, income of residents, and number of emigrants).

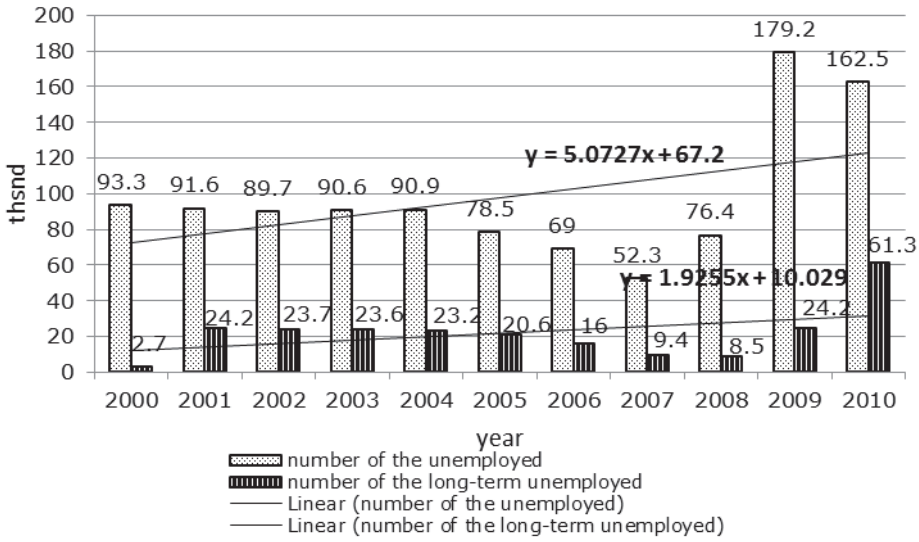
Data from databases of the CSB and Lursoft were used for the calculation of correlations, and the correlation diagram included 15 points (factors were studied in the period of 1996-2010). The result is presented in Table 4.

One can conclude that unemployment features:

1) **a strong correlation** with the number of established enterprises and the number of emigrants. Namely, with an increase in the number of established enterprises, the unemployment rate tends to decline, since new jobs requiring human resources are created. Yet, with an increase in the unemployment rate, the number of emigrants increases, which means that the working population moves abroad in search for jobs.

2) **a weak correlation** with the GDP and the income of individuals, which allows concluding that other factors also affect and determine changes in unemployment as a variable but the effects of these particular factors are insignificant.

The above-mentioned problems may be tackled by means of social entrepreneurship. Besides, it is important to stress that **socially little-protected groups of society are employed** at social enterprises, for instance, individuals with special needs, the long-term unemployed or other groups of society with a comparatively low level of employment. A.Amin (2009) believes that social enterprises often employ individuals coming from a socially unfavourable environment and having limited skills, experience, and social capital, thus, they face social rejection in the labour market.



Source: author's construction based on the CSB data

Fig. 1. **Number of the unemployed and the long-term unemployed in Latvia in 2000-2010**

Therefore, social enterprises perform as a mechanism for reintegrating rejected individuals into the labour market (Chan, 2008). It relates to the **long-term unemployed** as well. According to Figure 1, one can conclude that the linear trend characterising the number of unemployed tends to increase. The number of unemployed individuals has annually risen by 5.1 units on average. The fastest increase in the number of registered unemployed individuals was observed in 2009. The number of the long-term unemployed tends to increase as well. According to the trend's equation, one can conclude that the number of the long-term unemployed has annually grown by 1.9 units on average.

One can conclude that by means of social entrepreneurship, it is possible to find a solution for various socio-economic problems, which the government is not able to solve and the private sector is not interested in.

Conclusions

1. Social entrepreneurship is a type of entrepreneurship, the priority of which is to create social values while ensuring its financial self-sustaining and sustainability.
2. The identification of a social enterprise is based on social criteria (priority of social goals, employment of socially little-protected groups of society, creation of social values) and economic criteria (generation of income from commercial activities, financial self-sustaining, social ownership, and profit distribution).
3. Social entrepreneurship plays a significant role in tackling socio-economic problems, as funds available in the tertiary sector declined, while the government expenditures on pensions and social benefits from 1995 to 2010 have grown by 76.5% on average. It means that social entrepreneurship can provide significant support to the government in tackling socio-economic problems.
4. One of the main socio-economic problems in Latvia is the high rate of unemployment (18.7% in 2010), which strongly correlates with the number of established enterprises. It is possible to create new jobs by developing social entrepreneurship.
5. A social enterprise plays a significant role in employing socially little-protected groups of society, including reintegration of the long-term unemployed into the labour market. The number of the long-term unemployed has annually increased by 1.9 units on average in Latvia in the period of 2000-2010. It was mainly determined by the economic situation in the country, in the result of which the number of employees was optimised at enterprises.

Bibliography

1. Alvord, S.H., Brown, L.D., Letts, C.W. (2004). Social Entrepreneurship and Societal Transformation. *Journal of Applied Behavioural Science*, 40, Issue 3, pp. 260 – 282.
2. Amin, A. (2009). Extraordinarily Ordinary: Working in the Social Economy. *Social Enterprise Journal*, Volume 5, Issue 1, pp. 30–49.
3. Baines, S., Bull, M., Woolrych, R. (2010). A More Entrepreneurial Mindset? Engaging Third Sector Suppliers to the NHS. *Social Enterprise Journal*, Volume 6, Issue 1, pp. 49-58.
4. Billis, D., Gelennerster, H. (1998). Human Services and the Voluntary Sector: Towards a Theory of Comparative Advantage. *Journal of Social Policy*, Volume 27, Issue 1, pp. 79-98.
5. Boschee, J. (2006). Social Entrepreneurship: the Promise and the Perils in Nicholls A. (ed.*) Social Entrepreneurship: New Models of Sustainable Social Change*. Oxford University Press, New York, NY, pp. 356-390.
6. Bornstein, D. (2004). *How to Change the World: Social Entrepreneurs and the Power of New Ideas*. USA: Oxford University Press, p. 341.

7. Catford, J. (1998). Social Entrepreneurs are Vital for Health Promotion – but They Need Supportive Environments too. *Health Promotion International,* Volume 13, Issue 2, pp. 95-97.
8. Central Statistical Bureau. Retrieved: http://www.csb.gov.lv/. Access: 4 January 2011.
9. Chan, K. (2008). Creative Philanthropy: Development of Social Enterprise in Hong Kong. In: the *8th ISTR International Conference, 2nd EMES-ISTR European Conference "The Third Sector and Sustainable Social Change: New Frontiers for Research":* selected papers, 9-12 July, 2008 Barcelona, Spain.
10. Cowen, T. (1988). *The Theory of Market Failure*. Washington: George Mason University Press. p. 384.
11. Dees, J.G. (1998). Enterprising Non-profits: What do You do when Traditional Sources of Funding Fall Short? *Harvard Business Review*. January/February, pp. 55-67.
12. Dees, G.J. (2001). *The Meaning of "Social Entrepreneurship".* Retrieved:
13. http://www.caseatduke.org/documents/dees_sedef.pdf. Access: 8 November 2011.
14. Drayton, W. (2002). The Citizen Sector: Becoming as Entrepreneurial and Competitive as Business. *California Management Review*, Volume 44, Issue 3, pp. 120 – 32.
15. Emerson, J., Bonini, S. (2003). Blended Value Executive Summary. Blended Value Organisation Retrieved: www.blendedvalue.org/publications/index.html. Access: 12 January 2012.
16. European Parliament Resolution of 19 February 2009 on Social Economy (2009).Retrieved:http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0062+0+DOC+XML+V0//EN. Access: 2 March 2011.
17. Galera, G., Borzaga, C. (2009). Social Enterprise: An International Overview of Its Conceptual Evolution and legal Implementation. *Social Enterprise Journal*, Volume 5, Issue 3, pp. 210–228.
18. Gray, M., Healy, K., Crofts, P. (2003). Social Enterprise: is it the Business of Social Work*? Australian Social Work*, Volume 56, Issue 2, pp. 141-54.
19. Kuratko, D., Hornsby, J., Naffziger, D. (1997). An Examination of Owner's Goals in Sustaining Entrepreneurship. *Journal of Small Business Management*, January, pp. 24-33.
20. Leadbeater, C. (1997). *The Rise of Social Entrepreneurs*. Demos: London. p. 85.
21. Lursoft database. Retrieved: http://lursoft.lv/. Access: 7 November 2011.
22. Lyon, F., Sepulveda, L. (2009). Mapping Social Enterprises: Past Approaches, Challanges and Future Directions. *Social Enterprise Journal*, Volume 5, Issue 1, pp. 83–94.
23. Mair, J., Marti, I. (2006). Social Entrepreneurship Research: A Source of Explanation, Prediction, and Delight. *Journal of World Business,* Volume 41, pp. 36–44.
24. Maitland, I. (1997). Virtuous Markets: the Market as School of the Virtues. *Business Ethics Quarterly*, Volume 7, Issue 1, pp. 17-31.
25. Martin, R.L., Osberg, S. (2007). Social Entrepreneurship: the Case for Definition. *Stanford Social Innovation Review*, spring 2007, pp. 28–39.
26. MK noteikumi Nr.32 (11.01.2005.) "Noteikumi par sociali mazaizsargato personu grupam" (Cabinet Regulations No. 32 of 11 January 2005 Regulations Regarding Socially Little-protected Groups of Persons). Retrieved: http://www.likumi.lv/doc.php?id=99488. Access: 7 November 2011.
27. MK noteikumi Nr.299 "Noteikumi par gimenes vai atseviski dzivojosas personas atzisanu par trucigu (Cabinet Regulations No. 299 Regulations Regarding the Recognition of a Family or Person Living Separately as Needy). Retrieved: http://www.likumi.lv/doc.php?id=207462. Access: 7 November 2011.
28. Mort, G.S., Weerawardena, J., Carnegie, K. (2003). Social Entrepreneurship: Towards Conceptualisation. *International Journal of Non-profit and Voluntary Sector Marketing*, Volume 8, Issue 1, pp. 76-88.
29. Mulgan, G., Landry, L. (1995). *The Other Invisible Hand: Remaking Charity for the 21st Century*. London: Demos/Comedia. p. 106.
30. Nicholls, A., Cho, A.H. (2006). Social Entrepreneurship: the Structurisation of a Field in Nicholls A. (ed.*) Social Entrepreneurship: New Models of Sustainable Social Change*. Oxford University Press, New York, NY, pp. 99-118.
31. Pearce, J. (2003). *Social Enterprise in Anytown*, London: Calouste Gulbenkian Foundation. p. 144.
32. Peattie, K., Moorley, A. (2008). Eight Paradoxes of the Social Enterprise Research Agenda. *Social Enterprise Journal*, Volume 4, Issue 2. pp. 91–107.
33. Rastrigina, O. (2009). *Global Entrepreneurship Monitor*. Riga: TeliaSonera Institute at SSE. p. 40.
34. Seelos, C., Mair, J. (2005). Entrepreneurs in Service of the Poor – Models for Business Contributions to Sustainable Development. *Business Horizons*, Volume 48, Issue 3, pp. 241-246.
35. Shah, D. (2009). A UK Policy Perspective: Thought Piece From the UK Social Enterprise Coalition. *Social Enterprise Journal*, Volume 5, Issue 2, pp. 104–113.
36. Sharir, M., Lerner, M. (2006). Gauging the Success of Social Ventures Initiated by Individual Social Entrepreneurs. *Journal of World Business,* Volume 41, Issue 1, pp. 6 – 20.
37. Shaw, E., Carter, S. (2007). Social Entrepreneurship: Theoretical Antecedents and Empirical Analysis of Entrepreneurial Processes and Outcomes. *Journal of Small Business and Enterprise Development*, Volume 14, Issue 3, pp. 418-34.
38. Social Enterprise Coalition: What is Social Enterprise? Retrieved: http://www.socialenterprise.org.uk/pages/frequently-asked-questions.html. Access: 14 January 2011.
39. Thompson, J.L. (2008). Social Enterprise and Social Entrepreneurship: Where have We Reached? A Summary of Issues and Discussion Points. *Social Enterprise Journal*, Volume 4, Issue 2, pp. 149–161.
40. United Nations. Retrieved: http://www.un.org/millenniumgoals/poverty.shtml. Access: 7 November 2011.
41. Valentinov, V., Baum, S. (2008). The Institutional Economics of Rural Development: Beyond Market Failure. *Journal of Central European Agriculture*, Volume 9, Issue 3, pp. 457-462.

42. Vega, G., Kidwell, R.E. (2007). Toward a Typology of New Venture Creators: Similarities and Contrasts between Business and Social Entrepreneurs. *New England Journal of Entrepreneurship*, Volume 10, Issue 2, pp. 15-28.
43. Wallace, S.L. (1999). Social Entrepreneurship: the Role of Social Purpose Enterprises in Facilitating Community Economic Development. *Journal of Developmental Entrepreneurship,* Volume 4, Issue 2, pp. 153 – 174.
44. Wolk, A. (2007). *Social Entrepreneurship and Government. A New Breed of Entrepreneurs Developing Solutions to Social Problems*. Washington: Small Business Administration, p. 61.
45. Yunus, M. (2010*). Building Social Business: the New Kind of Capitalism that Serves Humanity's Most Pressing Needs*. USA: Public Affairs, p. 207.
46. Yunus, M. (2007). *We Can Put Poverty into Museums*, Grameen Communications, Dhaka. p. 282.
47. Zagare, E. (2010). *Labdarbibas veikala 'Otra elpa' ka socialas uznemejdarbibas formas attistiba Latvija* (The Development of Charity Shop 'Otra elpa' as Social Entrepreneurship Form in Latvia). Riga, p. 75.

Attraction of Funding From The European Union Structural Funds for Technology Transfer

Aija Dukule[1], Mg.oec.
Latvia University of Agriculture
Inara Jurgena[2], Dr.oec., associate professor
Faculty of Economics, Latvia University of Agriculture

Abstract. Funding of the EU Structural Funds is justifiably regarded as an instrument for stimulating an economy during the overall economic downturn. The research aim is to investigate the possibilities for using the EU Funds and various sources of financing for developing the process of technology transfer.
The availability of the EU Structural Funds to promote and implement innovations in the programming period of 2007-2013 was analysed, and the attraction of the EU Structural Funds to develop technology transfer projects was assessed in the present research.
Key words: innovation, Structural Funds.
JEL code: O3

Introduction

With the accession to the EU, funding of the EU policy instruments or various EU financial resources – Structural Funds – is available to Latvia. The EU Structural Funds are financial support granted by the European Commission to the EU Member States including Latvia for the purpose of promoting overall development. Funding of the EU Structural Funds is justifiably regarded as an instrument for stimulating an economy during the overall economic downturn, which is, to a great extent, promoted by the development of science and business.

The research **aim** is to investigate the possibilities for using the EU Funds and various sources of financing for developing the process of technology transfer.

The following tasks were **set** to achieve the research aim:

— to characterise the development of innovations in Latvia;
— to assess the use of and the possibilities for attracting the EU Funds for promoting innovative processes and to analyse their problems.

To execute the tasks set, the following research **methods** were employed: the monographic method, analysis and synthesis, statistical analysis methods, and SWOT analysis.

Research results and discussion

Innovation means the creation of a new product and its sale on a market, often by means of non-traditional methods. Innovation management is an independent field of economic science and professional activity.

Innovation management may be viewed in three aspects:

— science and the art of innovation management;
— a type of activity and decision-making in innovation management;
— innovation management institutions (Fjodorova S. et al., 1998).

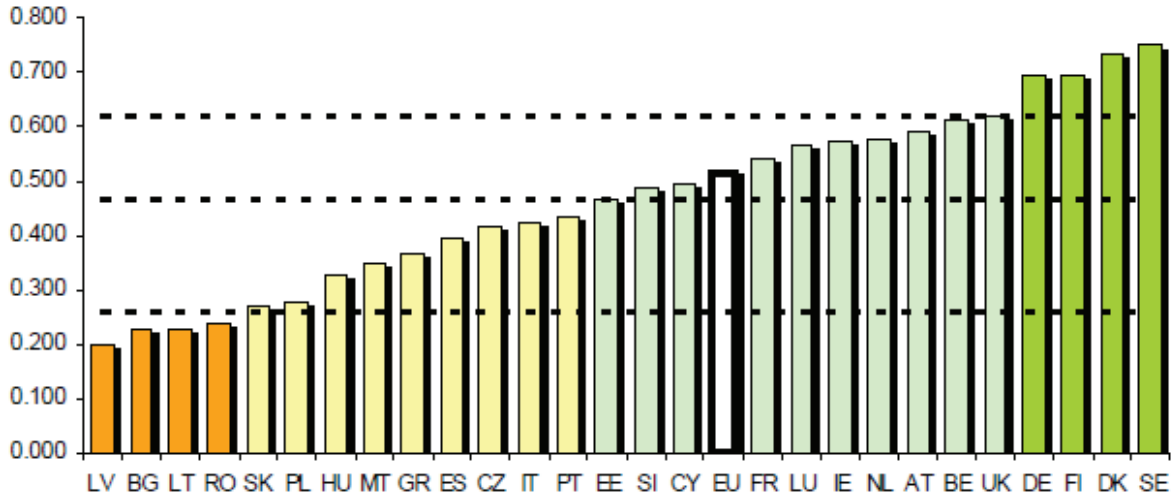
Innovative activity is a complex process, which depends on various factors. Very good coordination has to exist between innovation and scientific development policy. Innovation policy is a policy that promotes integration processes between the EU Member States and candidate countries by fully observing the principles set in the Maastricht Agreement. Besides, considering the decisions made by the EU leaders in Lisbon (2000) and Barcelona (2002), the European integration process envisages establishing a single European research and knowledge dissemination area with coordinated and effective knowledge exchange among all the sectors engaged in economic activity.

The National Development Plan of Latvia 2007-2013, which is the key medium-term planning document of the country, sets the strategic goal and defines priorities to establish a knowledge-based economy. These priorities are based on educated and creative individuals, technological excellence, and flexibility of entrepreneurs as well as scientific and research development (Komercdarbibas konkuretspejas...). It is not possible to implement transition to an innovative (knowledge) model of the Latvian economy by performing limited measures in a certain policy field. This transition has to become apparent as synergy of goals and activities between the public and private sector.

The Competitiveness and Innovation Framework Programme 2007-2013 has to be taken into account for the purpose of association with the European Commission policy documents. The Competitiveness and Innovation Framework Programme (2007-2013) integrates 9 specific Community support programmes into a single framework, which is important for increasing European productivity and innovative capacity and providing sustainable development, while at the same time taking into consideration corresponding environmental aspects.

According to the European Commission's report on quantitative indicators of innovations, Latvia was ranked in the 27th position, in terms of innovations, in 2010

[1] *E-mail address*: aija.dukule@llu.lv
[2] *E-mail address*: inara.jurgena@llu.lv



Source: Innovation Union Scoreboard, 2010

Fig. 1. Summary Innovation Index for the EU Member States in 2010

(Figure 1). According to this index, Latvia took this position for several years. The World Economic Forum views Latvia in a similar uncomplimentary way, ranking Latvia in the 88th position regarding its innovation capacity for the period of 2009-2010, while according to the latest data (*Global Competitiveness Index 2010-1011*), Latvia was ranked the 57th in 2011 (Latvietis inovativais, 2011).

Although, the Summary Innovation Index for Latvia was the lowest among the Member States of the EU-27, it has to be emphasised that the average increase of indicators included in this index for Latvia has risen by 2.71% over the recent five years, and it was greater than the average increase or 0.85% for the EU-27 Member States.

Latvia is one of the most modest introducers of innovations having the achievement indicators below the average EU level. Relative successes are observed regarding its human resources, finances, and government support. Relative drawbacks are observed regarding open, excellent, and attractive research systems, cooperation and entrepreneurship, and innovators. Strong growth is observed regarding patent submissions in accordance with the Patent Cooperation Agreement in the field of social problems and trademarks of the European Community. A significant worsening is observed regarding publications, which are referred to the most in the world, innovative small and medium enterprises cooperating with other ones, and revenues gained from licences and patents abroad. Growth indicators regarding finances, government support, and intellectual resources are higher than on average. The indicators in other fields are below the average level (Inovacijas Savienibas ...).

1. Availability of the EU Structural Funds for promoting innovations in the programming period of 2007-2013

One of the smallest amounts of investments in research and development in the European Union is made in Latvia. It is one of the main factors hindering the development of applied research, commercialisation of research findings, and innovative business. In Latvia, only 18% of all businessmen, on average, are innovative; whereas, this indicator in the European Union countries is 45% on average. Innovations are specific to large businessmen in Latvia, i.e. 54% of their total number. Among small businessmen, innovative are only 14%, and 27% are innovative in the group of medium businessmen. According to the Business Competitiveness and Innovation Promotion Programme for 2007-2013, the goal of innovation is to increase the capacity and efficiency of the National Innovation System by providing a 3% increase in the number of innovative businessmen in the manufacturing sector (Informativais zinojums par...).

In accordance with a decision of the EU Council of Ministers on the long-term financial framework for 2007-2013, Latvia has received a funding of EUR 4.53 billion to implement the goals of cohesion policy by means of the EU Funds (the ERDF, the ESF, and the CF).

Table 1 presents the co-funding of the European Community and Latvia during the period of 2007-2013 broken down by the funds. The total funding of the European Community amounts to EUR 4.53 billion for all the funds, while the co-funding of Latvia totals EUR 1.22 billion, thus, the total sum reaches EUR 5.75 billion. One can see that the largest total funding or 53.86% is received from the ERDF (European Regional Development Fund), the CF (Cohesion Fund) accounts for 33.99%, while the ESF (European Social Fund) accounts for 12.15% of the total funding of all these funds.

According to the analysis of the status of Structural Funds in the programming period of 2007-2013 as of 30 September 2011, more than 37.1% of funding has been paid to beneficiaries, and contracts have been made at an extent of 80.5% of available funding (Table 2).

Contracts were concluded at the highest extent or 87.9% of the available EU funding for Operational Programme 1 "Human Resources and Employment", and 50.7% of the ESF funding had been paid out to beneficiaries. As regards Operational Programme 2

Table 1

Distribution of funding broken down by the fund in Latvia in the programming period of 2007–2013, EUR

Fund	Funding of the European Community	Co-funding of Latvia	Total funding	% of the ESF and the CF
ERDF	2 440 017 364	662 793 319	3 102 810 683	53.86
ESF	550 653 717	97 174 186	647 827 903	12.15
CF	1 539 776 553	381 540 358	1 921 316 911	33.99
Total:	**4 530 447 634**	**1 141 507 863**	**5 671 955 497**	**100.00**

Source: authors' construction based on the EU Funds, 2007-2013

Table 2

Status of Structural Funds broken down by the fund in Latvia in the programming period of 2007–2013 until 30 September 2011

Fund	Funding of EU Funds	Contracts concluded		Funding paid to beneficiaries	
	LVL	LVL	%	LVL	%
ESF	409 807 619	360 089 231	87.9	207 701 632	50.7
ERDF	1 692 047 974	1 266 825 981	74.9	608 314 990	36.0
CF	1 082 161 121	935 529 948	86.4	364 511 907	33.7
Total:	**3 184 016 714**	**2 562 245 160**	**80.5**	**1 180 528 529**	**37.1**

Source: authors' construction based on the EU Funds, 2007-2013

Table 3

Status of the Structural Funds by activity programme in Latvia until 30 September 2011

Activity programme	Funding of the EU Funds	Contracts concluded		Funding paid to beneficiaries	
	LVL	LVL	%	LVL	%
1. OP*	409 807 619	360 089 231	87.9	207 701 632	50.7
2. OP**	517 777 459	378 717 908	73.1	225 414 518	43.5
3. OP***	2 256 431 636	1 823 438 021	80.8	747 412 379	33.1
Total:	**3 184 016 714**	**2 562 245 160**	**80.5**	**1 180 528 529**	**37.1**

* Operational Programme 1 "Human Resources and Employment"

** Operational Programme 2 "Entrepreneurship and Innovations"

*** Operational Programme 3 "Infrastructure and Services"

Source: authors' construction based on the EU Funds, 2007-2013

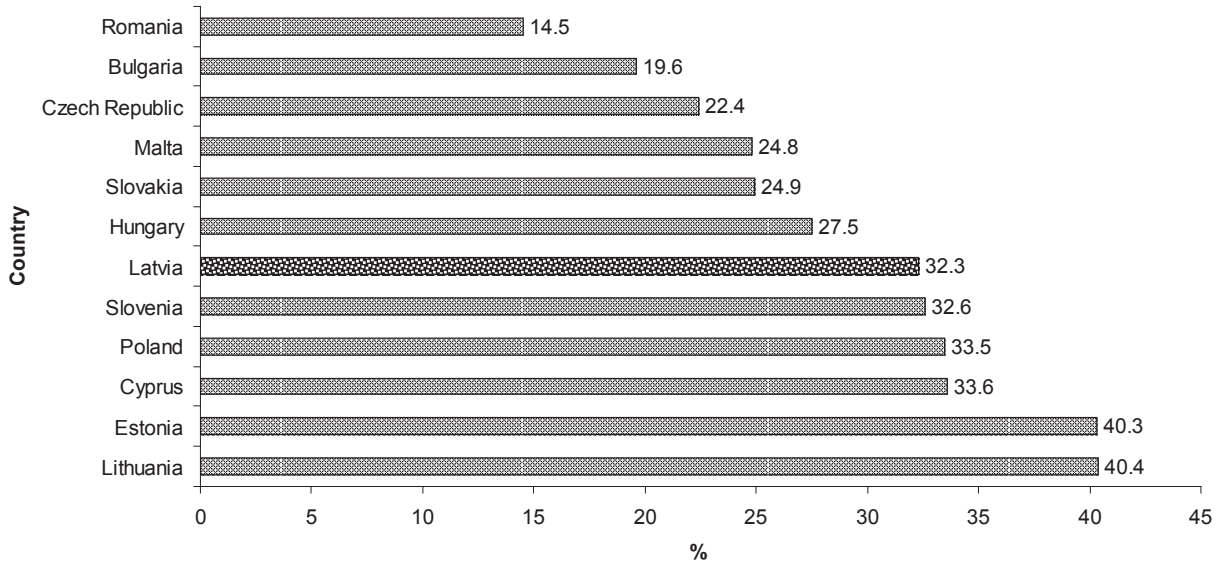
"Entrepreneurship and Innovations", contracts were concluded at an extent of 73.1% of the available EU funding, and 43.5% of the EU funding had been paid out. Operational Programme 3 "Infrastructure and Services" featured a high respective extent – 80.8%, however, only 33.1% of the EU funding had been paid out (Table 3).

In general, one can conclude that the amount of funding available to Latvia in the programming period of 2007-2013 rose 4.4 times on average compared with the programming period 2004-2006. In the programming period of 2007-2013, too, the largest funding is available from the ERDF and the Cohesion Fund. However, the ESF funding is used most efficiently, which may be positively viewed in the present economic situation when a high rate of unemployment is observed. It is important to improve the future economic situation by implementing those activities of the EU Funds that promote economic activity, increase government budget revenues, reduce social tension, and enhance the infrastructure of priority industries, while at the same time observing the conditions of international creditors in relation to the use of EU funding and providing sufficient national government funding.

There is a reason to believe that Latvia has made positive results in using the EU funding if compared with the other new Member States, as Latvia is ranked at a relatively high position for absorbing the funding granted in the programming period of 2007-2013 (Figure 2).

To promote innovations in the programming period of 2007-2013, financial support is provided for:

— establishing competence centres;
— establishing a coordinated system of technology transfer;
— financing new enterprises of the industry of high and medium technologies at technology incubators;
— attracting employees of high qualification;
— purchasing equipment and instruments to introduce innovative products in production;



Source: Finansu ministrijas informativais...

Fig. 2. **Transfer of funds to the Member States from the EU funds and the CF until 5 September 2011, %**

Table 4

Progress of implementing measures and activities in Latvia in the programming period of 2007-2013, LVL

Activity	Co-funding of the EU funds	Selections of project proposals announced	Contracts concluded (as of 30 June 2011)
Competence centres	37 373 845.34	36 320 910.72	37 373 552.46
Technology transfer contact points	1 906 322.81	2 122 468.08	1 906 281.84
Development of new products and technologies	7 295 504	11 255 313.29	7 107 853.83
Development of new products and technologies – support for introducing new products and technologies in production	44 687 749.46	77 425 417	7 732 233.83
Development of new products and technologies – support for registering ownership of industrial property	174 764.16	849 999.97	95 805.75

Source: authors' construction based on Ekonomikas ministrijas zinojums..., 2011

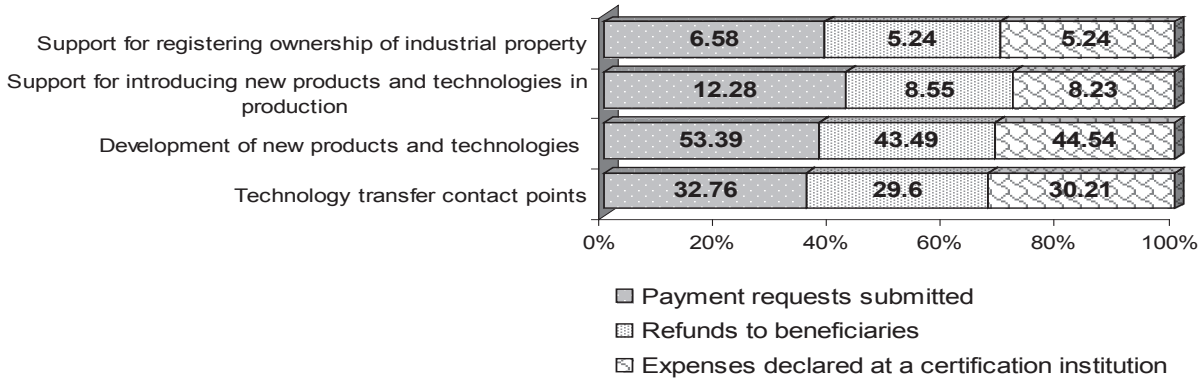
— investments in enterprises that create high value added in their production process (Basic elements of innovative activity).

The implementation of measures and activities was successful until 30 June 2011 –competence centres and technology transfer contact points concluded contracts at an extent of 100% of the available EU co-funding, and contracts for development of new products and technologies were made at an extent of 97.43%. A low progress or 17.30% was made for support of introducing new products and technologies in production, and a medium indicator of 54.82% was reached for registering ownership of industrial property.

After analysing the financial progress until 30 June 2011 regarding innovation measures and activities affecting technology transfer (Figure 3), one can conclude that, in general, the available EU funding was absorbed successfully.

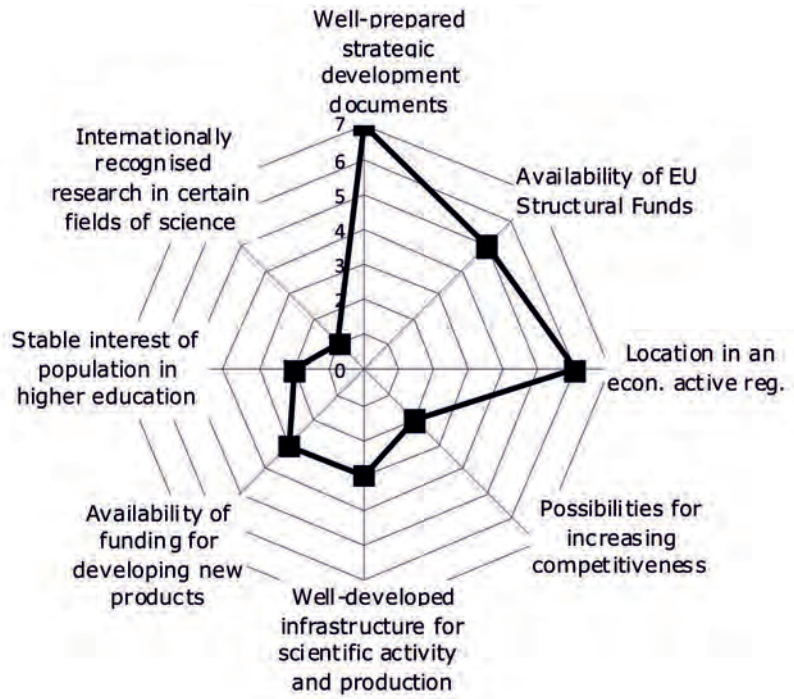
After analysing the attraction and uptaking of the EU Structural Funding, one can conclude that Latvia makes good progress in uptaking various EU funds; however, mostly nothing changes in reality. Often there is a surplus of funds in various programmes that could be used for increasing the competitiveness of enterprises and the country, and establishing an efficient innovation system and entrepreneurship environment, which is one of the basic tasks of the government in this field.

The present economic situation is certainly one of the reasons why funds are not fully spent, yet, it may not be regarded as the main factor affecting the uptaking



Source: authors' construction based on Ekonomikas ministrijas zinojums..., 2011

Fig. 3. **Progress regarding measures and activities in Latvia in the programming period of 2007-2013, %**



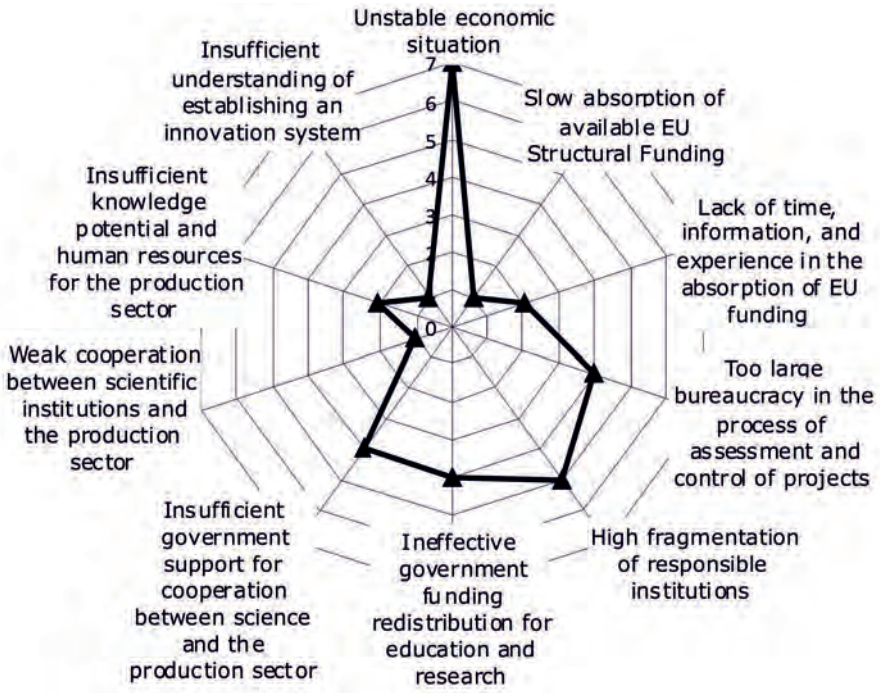
Source: authors' construction

Fig. 4. **Radar chart for the strengths of using the EU Structural Funds identified in the SWOT analysis**

of the EU funding. The lack of time, information, and experience may be regarded as one of the problems. Since there are many various programmes and their administrative institutions, quite a lot of time has to be spent on getting familiarised with a set of available opportunities and understanding the mechanism for attracting funding.

Complicated planning, which project submitters deal with, has to be certainly mentioned. Since programs are opened irrespective of processes occurring at an institution and enterprise, a situation emerges quite often that the period of a programme exists before or after a real need arises. In such a situation, co-funding is used by those who wait for a certain programme or if the period of a need coincides with the time of opening the programme. Therefore, one of the solutions is prolongation of the period of a certain programme.

Co-funding is a significant aspect in the present economic situation. Since the attraction of EU funding, in the majority of cases, is done according to a principle – first, make an investment, after get a refund, project submitters are often short of funds to be invested in their project, and such project submitters who lack funds drop out. It has to be also mentioned that there is a problem related with the usefulness of programmes to satisfy certain needs; quite often, there are limitations on various support conditions, which are not beneficial to project submitters. One can say that



Source: author's construction

Fig. 5. **Radar chart for the weaknesses of using the EU Structural Funds identified in the SWOT analysis**

the mentioned and other aspects, which hinder the uptaking of the EU funding reduce the number of project submitters.

2. Positive and negative factors affecting the uptaking of the EU Structural Funds

After performing a pair-wise analysis of the strengths of using the EU Structural Funds identified in a SWOT analysis (Figure 4), one can conclude that the determinant factors are well-prepared strategic development documents and location in an economically active region as well as availability of the EU Structural Funding, while other factors are less significant.

According to the pair-wise analysis of the weaknesses identified in the SWOT analysis (Figure 5), the main determinant factor is an unstable economic situation. An influential factor is also the high fragmentation of responsible institutions.

Besides, a significant factor in using the EU Structural Funds is also too large bureaucracy in the process of assessment and control of projects.

To develop successfully innovative activities, an innovation development strategy with certain priorities and available funding has to be defined on the national level. Based on the priorities, a legal framework shall be developed, which has to include issues of education, science, and entrepreneurship associated with innovations, design a support programme, and justify necessary funding for training, research, and entrepreneurship.

Of course, problems may be still tackled inside every institution by assuming that the opportunities for attracting the EU funding are not fully exploited in Latvia. Yet, a solution might be the establishment of a single resource, uniting many presently responsible institutions. Its task is to administer the limitations that emerge while implementing various programmes and to submit proposals for changes instead of administering the programmes. Presently, there is no institution, which controls and supervises all the institutions that design programmes and control their implementation; in the result, both entrepreneurs and the competitiveness and overall development of the country suffer from it.

Conclusions, proposals, recommendations

1. An innovation policy for the national economy, which would promote the development of new knowledge-based industries and increase the proportion of high value added goods produced in traditional industries has to be purposefully implemented since the resources available to Latvia are limited. The uptaking of the EU Structural Funding provides opportunities for the successful implementation of the innovation policy.
2. Relatively better innovation indicators are observed for Latvia in the fields that specify the possible potential of innovations, for instance, the number of graduates in natural sciences, the number of individuals engaged in further education, expenses on information technologies, and the availability of risk capital. The exports of products of high technology industries, the number of employees in industries of medium and high technology, and the number of European and international patents are ones of the lowest Latvian indicators among the EU Member States.

3. The efficiency of the administrative system for the EU Structural Funds has a direct effect on the efficiency of using structural funding and refunds. Delays in starting the implementation of projects and processing documents for refunds together with exogenous factors have affected the total cost of projects, thus reducing their efficiency.
4. The intensity of using and uptaking the EU funding in Latvia is significant, and almost the entire available funding is uptaken – the efficiency of quantitative uptaking is high.
5. The determinant factors for the strengths of using EU Structural Funds identified in the SWOT analysis are: well-prepared strategic development documents and location in an economically active region as well as the availability of EU Structural Funding. The determinant factor for the weaknesses identified in the SWOT analysis is the unstable economic situation and too large bureaucracy in the process of assessment and control of projects.

Bibliography

1. Atmaksato Eiropas Savienibas strukturfondu lidzeklu izlietosanas efektivitate *(Efficiency of Use of Refunded European Union Structural Funding)*. Riga: LR Finansu ministrija. Retrieved: http://www.esfondi.lv/upload/01strukturfondi/petijumi/035zinojums_precizets_270808_final.pdf. Access: 23 October 2011.
2. *Ekonomikas ministrijas zinojums* par Eiropas Savienibas fondu lidzfinanseto pasakumu un aktivitasu ieviesanu par parskata periodu no 01.01.2011. lidz 30.06.2011. Informativais zinojums *(Report of the Ministry of Economics on the Introduction of Measures and Activities Co-financed by the European Union Funds for the Period 1 January – 30 June 2011).* Retrieved: http://www.em.gov.lv/imags/modules/.../EMzino_2011g_1_pusg_prec.doc. Access: 20 November 2011.
3. *European Innovation Scoreboard 2010*. INNO-Metrics Publications. Retrieved: http://ec.europa.au/research/era/docs/en/innovation-union-scoreboard-2010.pdf. Access: 15 November 2011.
4. *Finansu ministrijas informativais zinojums* par Eiropas Savienibas finansu resursu apguvi lidz 2009.gada 30. septembrim (*Informative Report of the Ministry of Finance on the Uptaking of European Union Funding until 30 September 2011).* Informativais zinojums, Finansu ministrija, 2009. Retrieved: http://www.esfondi.lv/upload/01-strukturfondi/FMzino_2009-30-06.pdf. Access: 30 September 2011.
5. Fjodorova S., Jevinga I. Inovaciju vadisana (*Innovation Management)*. Riga: Rigas Tehniska universitate. 1998, 25 lpp.
6. *Inovacijas Savienibas petniecibas un inovacijas rezultatu parskats 2010*. *(Innovation Union Competitiveness Report 2011*). Kopsavilkums (Summary). Retrieved: http://ec.europa.eu/enterprise/policies/innovation/files/ius/ius2010-cp_lv.pdf. Access: 25 October 2011.
7. Komercdarbibas konkuretspejas un inovacijas veicinasanas programma 2007. – 2013. gadam *(Business Competitiveness and Innovation Promotion Programme 2007-2013)*. Riga: LR Ekonomikas ministrija. Retrieved: http://www.em.gov.lv/em/images/modules/items/item-_file_17546_emprog.doc. Access: 12 September 2011.
8. *Latvietis inovativais* (*Innovative Latvian*). Retrieved: http://scenariji.lv/2011/05/inovativais-latvietis/. Access: 1 November 2011.

Student at Regional Higher Education Institution – Customer or Provider?

Janis Eglitis[1], Dr.oec., assoc.prof., Ventspils University College

Abstract. The period of transition from centrally planned to market economy in Latvia has brought various new trends in the system of higher education. The transition itself has had ups and downs, and on the background of the world economic crises and its consequences, the topic of the efficiency and effectiveness of the system of higher education is very important. Twenty years after regaining of independence and experience of free market economy still there is no clear understanding of how economy and particularly labour market interferes with higher education market among neither politicians nor administrators. Misunderstanding of basics undermines the success of planned reforms and expected improvements. So, the aim of the descriptive analytical research of literature with some case studies is the clarification of the notion of customer in higher education as well as the clarification of a wider understanding of the role of a student and a graduate in the economic development of a region and the state.
The key figure of the system of higher education is a student, often viewed as a customer or client. However, the relations between a student and a higher education institution have complex and long term impact that shall be analysed from comprehensive economic point of view. Student is a customer of higher education and simultaneously an investor that directly and indirectly brings resources to a region. But student should become also a developer of a region and a state as the economic impact of higher education goes far beyond training and research.
Keywords: student, customer, higher education institution, effectiveness, regional development.
JEL code: R11.

Introduction

The Baltic States regained independence twenty years ago. The transition from centrally planned to market economy was rather devastating due to the lack of human capital with market experience and lack of social capital. Higher education system (HES) of Latvia was a sector, where elements of market economy were rapidly implemented and demand-supply relations perfectly worked for some time, since the profit of higher education institutions (HEIs) was the main driving force. However, that was not a sustainable development. Trying to cope with consequences of the economic crisis of 2008, politicians are inventing new models of financing of HEIs and new models of HEIs. Meanwhile in the society, the perception of a student as a customer is still strange, factors of efficiency strongly prevail over factors of effectiveness. Efforts to increase efficiency without considering the rise of effectiveness will not bring expected results, neglecting the impact of regional HEIs on the regional development might increase centralisation of the HES and simultaneously deepen regional disparities. Planning of reforms based on wrong assumptions will not bring the expected improvements. So, the aim of the descriptive analytical research of literature with some case studies is the clarification of the notion of customer in higher education as well as the clarification of a wider understanding of the role of a student and a graduate in the economic development of a region and the state. Planned reforms in the system of higher education should be comprehensively matched with long-term economic development of the state and a region.

Research results and discussion

Higher education is generally understood to cover teaching, research, and extension (Mishra, 2006) and the quality of higher education most often is referred to these notions. However, it is a narrow understanding as the quality of higher education has an ultimate - economic dimension – i.e.influence on regional and state development that can bemeasured by the indicators of effectiveness and impact.

1. Customer in the HES

According to Britannica, a customer is one that purchases a commodity or service and client is a person who engages the professional advice or services of another. The key difference is that customers rely on their own judgment to evaluate a purchase, whereas clients must rely on the professionals to tell them what they need (Armstrong, 2003). However, both words are used interchangeably though there are some nuances in colloquial speech. In economy, the term customer is more applicable.

Several social groups might be supposed as customers in the HES – students, parents, employers and state, however, real customers in higher education are taxpayers – they pay for the HES and expect rise of the quality of life. Certainly, there might be exceptions, i.e. countries where the HES is only (or partly) privately financed.

The topic of student as customer is not quite new, for a long time this approach was not applicable to education as academia was not ready to accept this idea for

[1] *E-mail address:* janis.eglitis@venta.lv

different reasons. There are some factors that changed the attitude:

— Total Quality Management ideology that brought the idea of a wider involvement of a customer – all parties involved in the production process are accountable for the overall quality of the final product or service;
— internationalisation and globalisation (global customers);
— increased customer expectations;
— increased affluence and leisure time;
— competition.

In the market of education, no doubts students are customers – receivers or often buyers of the HES services. Students want to obtain competencies, knowledge, and skills during the study process and get formal recognition by receiving a diploma. HEIs offer or sell their know-how providing corresponding learning, assessment and, finally, formal recognition by issuing diplomas, certificates, and qualifications according to the existing standards. However, there are some essential differences between student and customer:

— in business, there are very limited (specific) sales restrictions due to personal qualities or background;
— in education the obtaining of the product (diploma) is not guaranteed, even if the payment (tuition fee) has been done;
— students participate in the education process and they must also take some responsibility for quality (Hall, 1996);
— students are actively involved in the processes of HEI - cooperation and interaction is unavoidable;
— "students are like customers because they choose institutions and pay for tuition, select programmes, but they are also like employees because they must be actively engaged in their jobs, be motivated to perform and performance expectations are placed on them" (Kamvounias, 1993);
— assessment quality and norms are issued by provider (HEI) and may not be negotiated (so "client is always right" must not work here, however it is not quite right at the moment when student chooses HEI);
— student achieves new knowledge, skills and abilities (value added to student) that is a real product of the HES (diploma is just a formal confirmation).

This would not be quite applicable if 100% state financed HES would exist and external mobility of people would be restricted (typically in centrally planned closed economies). In the EU, both state and privately financed HEIs coexist; students can rather freely choose HEIs all over the EU as well as HEIs can recruit students from the third countries.

From education quality viewpoint, the obtaining of diploma cannot be compared with purchasing of goods as students have to prove their competence acquired during the studies (some exceptions may happen – see negative feedback case below). It means that direct (tuition fees) or indirect (state financed education) financing is not a sufficient factor for obtaining of formal document of education. Students directly or indirectly buy all services offered by higher education institutions, including reliable and objective assessment of their competence. So, a student can be looked upon as a limited customer.

The notion of HES service for students traditionally had core compounds - teaching, research, and academic assessment. However, many other groups might be also viewed as customers of the HES (alumni, parents, and staff), thus the customer service (facilities, leisure, libraries) provided in support of a HEI's core products (typically free of charge) becomes a very essential topic.

Notion of service quality was developed in GAPS model by A.Parasuraman, V.Zeuthaml and L.Berry (Zeuthaml et al., 1993) and in Service Quality model by C.Grönroos (Kang and James, 2006). Customer service quality can be expressed by five determinants of functional quality:

— reliability - the service firm provides the customers with accurate service without making any mistakes and delivers what it has promised to do by the time that has been agreed upon;
— responsiveness - the employees of a service firm are willing to help customers and respond to their requests as well as to inform customers when service will be provided, and then give the prompt service;
— assurance - employees' behaviour will give customers confidence in the firm and that the firm makes customers feel safe;
— empathy - the firm understands customers' problems and performs in their best interests as well as giving customers individual personal attention and having convenient operating hours;
— tangibles - is related to the appeal of facilities, equipment and material used by a service firm as well as to the appearance of service employees (Faganel, 2010).

Functional quality, technical quality, and image make customer satisfaction (Kang and James, 2006). These determinants may refer to any firm or service provider, and are applicable to all customers of HEI and might bring a competitive advantage that can be commercialised (Efficiency…, 2009).

So, for HEI, the quality of teaching, research and assessment, and the quality of customer services are important for successful operating in the global world. Certainly, the best solution is to attract, first, better educated students and, second, to attract more students that is not always possible due to different restrictions. That gives several options for operating in education market.

— Positive feedback

Attraction of better students gives a positive feedback - better selection rates give an opportunity to raise the output, outcome and impact quality as well as prestige of the HEI – that means sustainable development. The HEI can be characterised as development driven.

— Neutral feedback

Retaining the selection standard high and accommodating more students give the opportunity to invest profit for performance improvement that offers good opportunities for development. The HEI can be characterised as growth driven.

— Negative feedback

The more students, the more money they bring, thus, inconsiderable admission restrictions, small dropout rates, no further interest about the outcome

Table 1

The impact of HEI on the regional development and competitiveness

No.	Notion	Indicator
1.	Prestigious university	University rankings
2.	Efficiency – outputs	Number of graduates per financial input Number of publications/patents per financial input/academic staff Dropout rate
3.	Effectiveness – outcomes	Employability Earnings of graduates/taxes paid by graduates Productivity Innovation Regional development Share of high value added in export Regional spillovers New enterprises Created workplaces Investment brought by graduates

Source: Eglitis and Panina, 2010

quality. This is an unsustainable way of development and works under specific circumstances that can be internal or external and can be characterised as profit or customer driven HEI. The approach has some distorting consequences - grade inflation, shortened contact hours, and the redefinition of study time (George, 2007). The wisely invested profit, however, offers good opportunitiesfordevelopment.

So, in comparison with ordinary business customer, student most often has non monetary standard to achieve and no business obligations to comply with. The real customer in any situation has authority to dictate to the producer (or take their business elsewhere). Student chooses HEI, however, without rights of influencing assessment.

2. Expected results

Taxpayers and students that pay tuition fee no doubts are interested in result of the process. HEI graduates enter labour market and their role immediately changes as the customer now is the labour market, but graduates are to offer their competencies, knowledge, and skills having been formalised as diploma. So, HEIs act as providers and are evaluated twice – first by students when they choose the HEI and second - by employers when students enter labour market. HEI can be described by three indicators: prestige, efficiency, and effectiveness. For the secondary school graduates, very often prestige is a decisive factor. Is it the right choice? It depends on how the prestige is being measured or formed. There are numerous university and programme rankings (Rauhvargers, 2011), however, such rankings are not always relevant and available on the regional level.

Employers, regional authorities, and state need more profound indicators, for example, the indicators of impact (Table 1) of HEI on the regional development and competitiveness.

There are many different direct and indirect interactions between higher education market and labour market that can be described by the indicators of effectiveness. Being a prestigious and/or efficient does not mean being effective (see case study), thus, for region, state and taxpayers, the effectiveness is the most important factor.

Case study - the supply – demand in the HES of Latvia

Since regaining the independence in 1991, there is a real market of higher education in Latvia. In 2009, the share of private sector made 35% of the total number of students, 73% of students paid tuition fees, and there were 916 (635 different) higher education study programmes. In 1990, there were 10 HEIs, while in 2008 – already 60. The period from 1990 to 2009 can be described as coping with high demand from both the secondary education sector and the labour market. Was it successful?

The HES of Latvia in 1990-2009 can be considered as very successful because the number of HEIs and study programmes increased dramatically to cope with demand. Regardless of the growing tuition fees (however, with the state guaranteed credits available for studies), the number of students changed from 138 per ten thousands of inhabitants in 1993 to 566 in 2006 (it should be admitted that in developed countries, the number of students has also increased).

Returns from persons with higher education attainment are higher and unemployment – lower, there is a bigger potential for knowledge-based economy – all these classical advantages of higher education attainment have worked in Latvia. Indeed, the GDP growth rate of Latvia during that period was one of the highest in the EU. Transition from secondary to higher education was customer or demand driven, albeit it would not work without appropriate demand for graduates of HEIs. During the economic boom, the HES functioned as profit driven. However, for Latvia, indicators of knowledge economy (The World Bank Index of Knowledge Economy), competitiveness (The Global Competitiveness Report by World Economic forum), and innovations (the EU Innovation Scoreboard) are among the lowest in the EU. A hypothetical question appears – what would

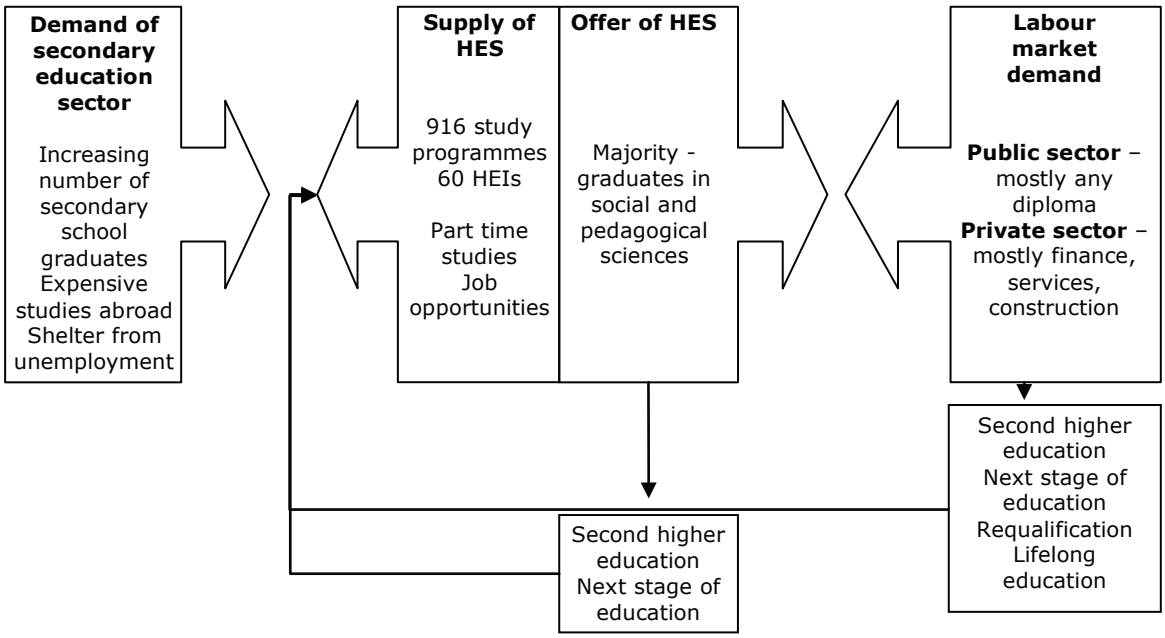


Fig. 1. **Demand – supply in the HES of Latvia in 1990-2009**

Table 2

Evaluation of the HES

Probable approaches of the reforming of HES	Interests of students	Interests of HEI	Interests of entrepreneurs	Interests of State and Region
Science University	0.14	0.11	0.16	0.21
Network of Regional HEIs	0.33	0.32	0.30	0.42
Status quo	0.12	0.18	0.09	0.11
Free market	0.22	0.16	0.26	0.11

Source: Panina, 2011

have changed if the number of students were even bigger? Would the wellbeing of the country increase? It turned out that customer and profit driven approaches must be linked with long term objectives of the state development and the HES should be evaluated according to the efficiency indicators.

Case study - the efficiency of the HES of Latvia

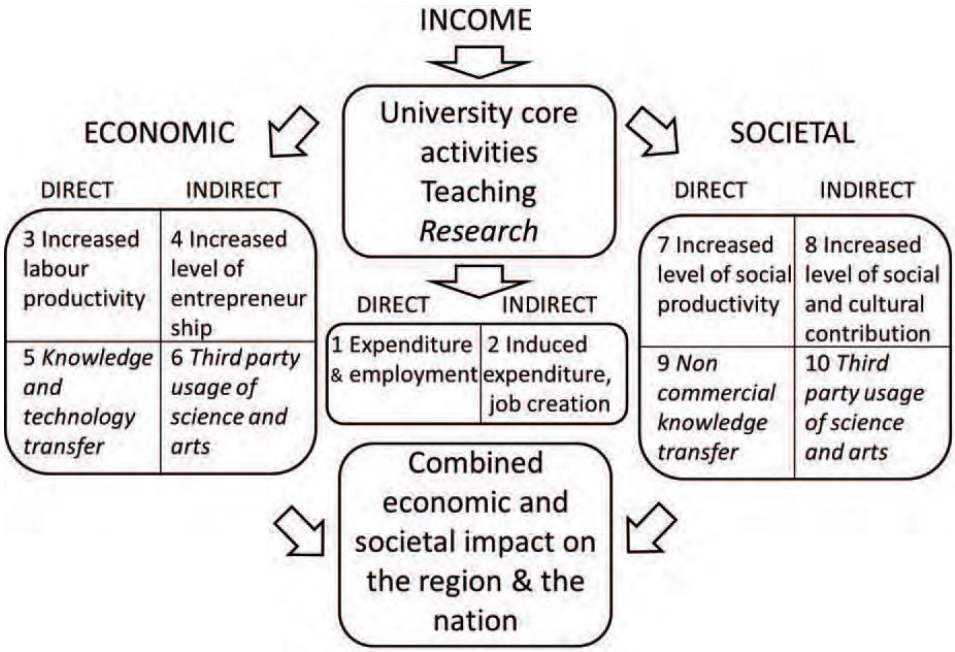
Regional disparities measured by the share of the first (usually capital) region of GDP in Latvia are one of the biggest in the EU (close to 2/3), so the state policy should be oriented on the improvement of the economic performance of regions. The author assumes that regional HEIs are to become the main driving force of the regional development.

After the Parliament elections of 2010, there had been several proposals to reform the HES as 60 HEIs (including colleges) and more than 900 study programmes calculated per capita or per student significantly exceed, for instance, the indicators of the Scandinavian countries (Hedin, 2009). It is clear – status quo is not sustainable. Unfortunately, promoters of reforms usually concentrate only on a narrow group of selected factors they want to improve (efficiency, labour market needs, or social justice) neglecting the multiple chains that connects the HES and economy. The centralisation of HES might increase financial efficiency of the system itself, but that would mean reallocation of resources towards capital region and increasing of regional disparities. That would also mean reducing of effectiveness.

In 2010, the idea of establishing the "Science University" was proposed. The main aim of this reform is reaching higher position in international university rankings, providing better quality of education and research by centralising of resources. In comparison with the existing system, it might seem reasonably, however, regional and sustainable development becomes problematic. Another idea (free market) proposed the principle "money (credit given by the state) follows student" (every student is credited by the state). Similar system was recently implemented in Lithuania. However, this approach also causes more questions and problems than probable benefits. Described (though not proved) as socially fair proposal, it might be very expensive and destructive for the HES. The logical alternative to the three abovementioned approaches is development of the network of regional HEIs (six HEIs in five regions of

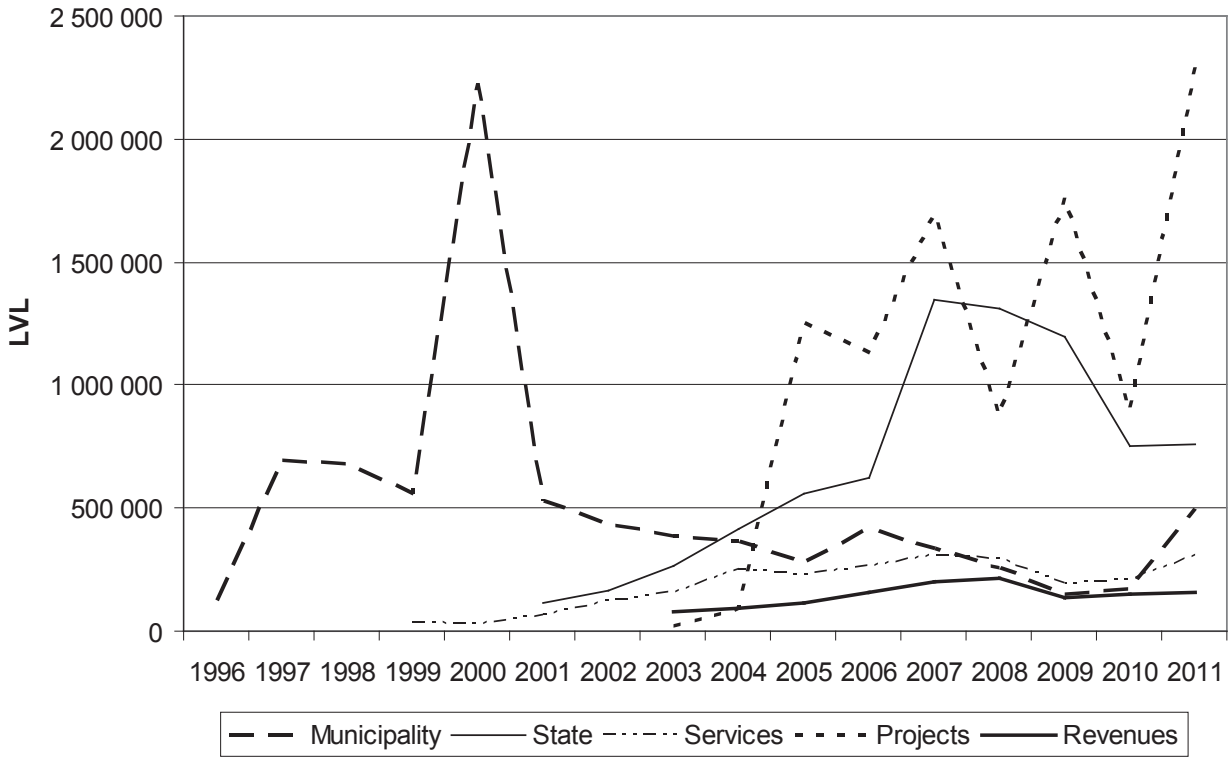
Latvia) that unavoidably means centralisation of HEIs in the capital Riga.

Analytic Hierarchy Process was used to evaluate these four approaches (Science University, status quo, free market and development of the network of regional HEIs) according to four scopes of interest (students, HEIs, entrepreneurs, region and state) by 8 experts (Panina, 2011). The research indicates (Table 2) that from the point of view of all stakeholders, the development of the network of regional HEIs is the most preferable solution.



Source: The Impact of the University of Cambridge on the UK Economy and Society. Library House, 2006

Fig. 2. **Education Impact Model**



Source: author's construction based on the statistical data

Fig. 3. **Dynamics of resource allocation**

3. The impact of HEI

Perhaps the best way to prove the importance of HEIs for regional and state development is calculating in monetary terms all possible kinds of educational impact. Certainly, the most difficult task is the identification of scopes of impact or methodology of evaluation that would be comprehensive and applicable in different countries. Several researches from the UK (The Impact of Universities on the UK Economy, Degrees of Value (concerns societal impact)), and one from Ireland (O'Caroll et al., 2006) can be mentioned, however, for the future implementations for HEIs of Latvia the adopted approach of Cambridge University (The Impact of the University of Cambridge…) seems to be most significant (Figure 2).

The impact of HEI on the regional and state economy is formed in three ways: through direct and indirect HEI core, economic, and societal activities. Certainly, legislation and taxation system is different in every country as well as regional background; however, the main scopes of impact are determined. Thus, new roles of a student appear. Without student, there is no business for higher education institutions - no teaching (no workplaces) and no research (no investments), no foreign students (export of services), no innovations and technologies (no business development) - this is a short list of probable economic and social losses. Even more - analysing the impact of HEI or benefits primarily brought by students, they can be looked upon as investors and providers of development. Thus, student has several simultaneous roles – investor, customer, and provider.

Case study – Ventspils University College (VUC)

Ventspils is a seaport city located about 200 kilometres from the capital Riga in the Western part of Latvia with about 40 thousand inhabitants. Ventspils University College started to operate in 1997 with a hundred students in two bachelor study programmes. In 2011, there are 890 students in 5 bachelor, 3 master and 2 doctoral study programmes, the total number of academic staff in three faculties and two scientific institutes is about 70. The dynamics of allocation of financial resources (Figure 3) describes the direct economic impact of VUC on the regional development.

Initially, VUC was municipality financed (financial resources were mostly allocated for salaries and construction works). By 2011, the municipality co finances some projects and pays some bonuses to the academic staff. Meanwhile, there are several flows of resources that increase aggregate demand in the city (state finance since 2001, income from VUC services, finances generated by VUC project activities). The municipality gets also tax revenues (data available from 2003). By 2011, the aggregate financial resources brought by VUC more than two times exceed financial resources allocated by the municipality.

Conclusions

1. Student has several simultaneous roles depending on the reference and time - being an investor as one of the core components of HEI, being a customer with limited opportunities inside HEI (not being able to buy diploma), and being a provider of the regional development.
2. Customer service becomes very important factor for the HEI to gain competitive advantage by improving relations not only with students but with other customers (alumni, parents, staff, and donors) as well.
3. Customer and profit driven approaches in the HES should be in accordance with the aims of sustainable development of the region and the state.

Bibliography

1. Armstrong, M. (2003). Students as Clients: A Professional Services Model for Business Education. *Academy of Management Learning and Education*, Vol. 2, No. 4, pp. 371–374.
2. O'Carroll, C. et al (2006). The Economic and Social Impact of Higher Education. Irish Universities Association. Retrieved: http://hdl.handle.net/10197/672. Access: 3 September 2011.
3. Degrees of Value. How Universities Benefit Society. Universities UK (2009). Retrieved: www.universitiesuk.ac.uk/Publications/Documents/DegreesOfValue.pdf. Access: 3 September 2011.
4. Efficiency and Effectiveness in Higher Education. Universities UK (2009). Retrieved: http://www.universitiesuk.ac.uk/Publications/Pages/EfficiencyinHigherEducation.aspx. Access: 3 September 2011.
5. Eglitis, J., Panina, L. (2010). Education Market Failure or Victory – the Context of the Economic Crisis in Latvia. *In: Economics and Management: Current Issues and Perspectives*. No. 4 (20). Sauliai: Siauliu universiteto leidykla, 2010, pp. 30-39.
6. Faganel, A. (2010). Quality Perception Gap Inside the Higher Education Institution. *International Journal of Academic Research*. Vol. 2. No. 1. January 2010.
7. George, D. (2007). Market Overreach: The Student as Customer. *Journal of Socio-Economics*. Volume 36, Issue 6, December 2007, pp. 965-977.
8. Hall, D. (1996). How Useful is the Concept of Total Quality Management to the University of the 1990s? *Journal of Further and Higher Education*, 20(2), pp. 20-32.
9. Hedin, S. (editor) (2009). Higher Education Institutions as Drivers of Regional Development in the Nordic Countries. *Nordregio Working Paper 2009*:3.
10. Kamvounias, P. (1999). *Academy of Educational Leadership Journal*, Jan, 1999, Volume 3, Issue 1.
11. Kang, G. and James, J. (2006). Service Quality Dimensions: an Examination of Gronroos's Service Quality Model. *Managing Service Quality*. Volume 14, Number 4, 2004, pp. 266–277.
12. Mishra, S. (2006). Quality Assurance in Higher Education: An Introduction, National Assessment and

Accreditation Council: Bangalore. Commonwealth of Learning: Vancouver. NAAC.
13. Panina, L. (2011). Latvijas augstakas izglitibas sistemas efektivitates izpete un videja termiņa attistibas modeli. (Thesis to be printed).
14. Rauhvargers, A. (2011). *Global University Rankings and Their Impact.* European University Association, p. 85.
15. The Impact of Universities on the UK Economy. Fourth Report. Universities UK, 2009. Retrieved: http://www.universitiesuk.ac.uk/Publications/Pages/ImpactOfUniversities4.aspx. Access: 3 September 2011.
16. The Impact of the University of Cambridge on the UK Economy and Society. Library House. Retrieved: http://insighteast.org.uk/viewResource.aspx?id=14290. Access: 3 September 2011.
17. Zeithaml, V. et al. (1993). The Nature and Determinants of Customer Expectations of Service. Retrieved: http://www.scribd.com/doc/54384673/1024-Zeithaml-Berry-and-Parasuraman-1993. Access: 3 September 2011.

Employment Growth in Hungarian Food Chains

Imre Ferto, DSc and
Corvinus University of Budapest and Institute of Economics and Hungarian Academy of Sciences, Hungary
Csaba Forgacs[1], CSc
Corvinus University of Budapest

Abstract. The paper analyses the employment growth after 2004 in small and medium firms of food chain in the Central region of Hungary using survey data. The authors focus on five factors explaining employment growth including managerial skills, firm characteristics, external company linkages, legal environment, and industry specificity. Contrary to the previous studies concentrating only on producers' behaviour, this paper investigates three stages of food chain: producers, processors, and retailers. Results confirm that managerial attributes, external linkages, and legal environment play an important role in the employment decisions. Moreover, firm characteristics also influence the employment growth in some specifications. Interestingly, the effect of branch specific characteristics has no impact on the employment decisions.
Key words: employment growth, agri-food chain, SMEs.
JEL code: Q12, Q18

Introduction

The economic development results in a declining number of job opportunities in agriculture and shows unforeseen situation in the EU new Member States. Striking observation is the significant divergence in agricultural labour productivity and agricultural labour use after political reforms. Employment level in agriculture has been declining in all EU 10 CEECs; however, it has been going on at very different level. Swinnen et al. (2005) identify two different patterns of agricultural labour adjustment in the new Member States.

A fast decline of agriculture's share in total employment together with a moderate increase in the share of individual farms in total agricultural land applies to the development in Estonia, Hungary, and the Czech Republic.

Agricultural employment decreases slowly or even increases together with a high prevalence of individual farms and this applies to Poland, Romania, Lithuania, Latvia, and Slovenia.

Agricultural labour adjustment usually can be explained by external (outside of agriculture) or internal (inside of agriculture) factors.

Bojnec and Dries (2005) analyse labour adjustment in and out of agriculture during the transition period to the market economy. Their results show that elderly, less educated and full-time employees on a farm are more likely to continue with farming. Inflow of labour into agriculture is largely associated with the unemployment and retirement of farm household members. Age, education and investment in human capital are the key factors that improve the quality, mobility and flexibility of labour, which is crucial for efficient labour adjustment on the micro-level and sector level. Better-educated individuals are more likely to enter the employment in non-agricultural, particularly service, activities.

Ciaian et al. (2010) focus on job creation and destruction in the EU agriculture disaggregating employment patterns and job flows into detailed intra-sectoral labour adjustment dynamics based on farm level panel observations from 1989 to 2006. They find that a) job creation and destruction rates in the EU agriculture are high compared with other sectors; b) there are important differences in job creation and destruction rates between different Member States; c) Member States with small average farm sizes display higher job creation and destruction rates than those with larger average farm sizes.

Focusing on factors inside the agricultural sector, (Swinnen et al., 2005) shows that decreasing agricultural prices and any development, which would increase the reservation wage of agricultural workers are important drivers of labour outflow from agriculture.

Herzfeld et al. (2011) point out that the majority of studies assumed a homogenous influence of the various determinants mentioned above across the different countries. They analyse the heterogeneity in determinants of the use of agricultural labour over the transition period for a panel of 29 European and Asian transition countries. Their results reveal quite heterogeneous impacts of the inter-sectoral income ratio, the relative size of agricultural employment, the unemployment rate, and the general level of economic development on a measure of sectoral labour adjustment across transition countries. In addition, the estimated coefficients show opposing signs for selected determinants.

Fieldsend (2010) shows the link between 'driving forces' of employment and economic prosperity, and policy responses. A set of 40 indicators was compiled from strategies and programmes relevant to employment in the EU rural areas. Driving forces could be 'endogenous' or (neo-) 'exogenous' to the territory where the employment rate (jobs per person) influences the 'impact' (sustainable economic prosperity) where 'responses' can be policy responses or socio-economic responses.

[1] *E-mail address*: csaba.forgacs@uni-corvinus.hu

Table 1

Descriptive statistics of variables

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Employment number dependent variable	207	8.60	18.16	1	180
Employment growth independent variables	207	0.21	0.41	0	1
MC: age	231	44.39	11.09	26	72
MC: experience	230	14.83	10.86	1	50
MC: high_education	231	0.35	0.48	0	1
FC: firmsize	212	5.18	1.82	1	9
FC: firmage	228	11.33	9.09	0	62
FC: ownfin	231	0.18	0.39	0	1
EL: intl_links	231	0.25	0.43	0	1
EL: info_chain	231	0.38	0.49	0	1
EL: support	231	0.27	0.44	0	1
LS: court_trust	231	0.41	0.49	0	1
LS: court_cost	231	0.57	0.50	0	1

Source: authors' estimations based on the survey data

Rural development programmes (RDP) of the EU are partly targeting to offer more jobs for rural population, among them for those losing their job in agriculture. Several studies analyse the possible impact of RDP on rural employment. Elek et al. (2010) analyse the possible impacts of the CAP reform on farm employment in an economically disadvantaged rural region in Hungary. Results suggest that the farm size is positively related to the expected number of male employment on the farms, whilst the less favoured land has negative effects on the male employment except seasonal workers. Farms employing more labour expect that the number of full time female workers slightly increases, whilst the number of part-time and seasonal employees is expected to decrease. Less favoured areas have negative impact on the job expectancy for seasonal workers. In general, farmers' expectations contradict to the intention of the CAP reform.

Ghib and Berriet-Solliec (2010) analyse the impact of three CAP measures on rural non-agricultural employment. The Rural development programme is not very efficient due to the under estimation of the potential beneficiaries, the other schemes attempt to offer non-agricultural employment; thereby, providing little real support to the agricultural sector. Choosing activities (tourism and enterprise), which are open to all rural society lead to enhanced competition between beneficiaries. However, it is also emphasised that co-financing can be met only by owners of strong capital helping create jobs in rural areas.

Patrick and Zier (2011) have investigated the impact of direct payments and rural development measures on protecting jobs in the Eastern Germany. They find only few desirable effects on job maintenance or job creation in agriculture and they underline that investment subsidies had a zero marginal employment effect, while introduction of the fully decoupled Single Farm Payment has likely contributed to significant job losses.

The aim of this paper is to analyse the employment growth after 2004 in small and medium enterprises (SME) of food chain in the Central region of Hungary using survey data. The authors focus on SMEs because policy makers usually advocate their role to create new jobs. Applying semi parametric and semi-nonparametric models, the authors present an empirical analysis of the key determinants of employment choice. Contrary to the previous studies concentrating only on producers' behaviour, three stages of food chain as producers, processors, and retailers were investigated this time. This approach allows getting more insights to better understanding of labour adjustments in food chain.

The sample and key variables

A questionnaire was designed and data were collected from the Central region of Hungary in 2011 to investigate the SMEs' determinants of employment growth. Firms with less than 250 employees were defined as SMEs. The sample covers three stages of food chain producers, processors, and retailers. Face-to-face interviews with each respondent were conducted. The surveyed 231 firms include 64 producers, 59 processors, and 108 retailers.

The first dependent variable, the employment is a binary variable, which takes the value of 1 if the employment has increased after 2004 and zero otherwise. Table 1 shows that the mean of employment number is around nine and 21 per cent of the firms having increased the number of employees. Firms with the employment growth have more employees (16) than in the control group (7).

Independent variables can be classified into four groups. First group describes the managerial

Table 2

Mean of variables by stages of food chain

	Processor	Retailer	Farmer	F test	Bartlett test
Employment number	14.48	6.20	7.89	0.059	0.000
Employment growth	0.26	0.16	0.22	0.284	0.257
MC: age	44.77	40.64	51.12	0.000	0.025
MC: experience	15.91	11.44	20.07	0.000	0.108
MC: high_education	0.23	0.27	0.52	0.002	0.591
FC: firmsize	5.40	5.27	5.02	0.582	0.486
FC: firmage	12.09	8.30	17.16	0.000	0.000
FC: ownfin	0.19	0.12	0.22	0.077	0.037
EL: intl_links	0.30	0.21	0.24	0.697	0.803
EL: info_chain	0.32	0.30	0.41	0.785	0.970
EL: support	0.34	0.24	0.31	0.792	0.863
LS: court_trust	0.38	0.56	0.28	0.093	0.819
LS: court_cost	0.68	0.56	0.52	0.295	0.918

Source: authors' estimations based on the survey data

characteristics of firms (MC), including the age of manager and managerial experience in years, and a dummy, which is one if a manager's education level is above the secondary education (high_education) and zero otherwise. The average age of manager is 44 years with 15 years managerial experience. On average, 35 per cent of respondents have higher education.

The second group identifies the firms' characteristics (FC); firm age in years, the firm size in terms of gross revenue with 9 ordinal categories. The authors employ a dummy for own financial resources (ownfin), which is one if a manager has answered affirmatively to the statement: 'I have satisfactory reserves' (4 or 5 in 5 items Likert scale). The average firm size is in the middle of nine categories. The mean age of firms is 11 years ranging from a newborn firm to the old one (62 years), and 18 per cent of respondents think that they have satisfactory reserves.

The authors measure external company linkages (EL) using the following variables. Intl_links variable is a dummy variable, which takes one if a firm exports or imports or there is a foreign ownership in the firm; otherwise, it is a zero. Info_chain is a dummy equalling to one if a manager has answered affirmatively to the statement: 'there is reciprocity in knowledge transfer in the supplier-buyer chain' (4 or 5 in 5 items Likert scale), otherwise - zero. Support is a dummy, which takes one if a manager has answered affirmatively to the statement: 'do you have any chance to get more than the price' (4 or 5 in 5 items Likert scale), otherwise - zero. Twenty-five per cent of respondents have international links, 38 per cent think that 'there is reciprocity in knowledge transfer in the supplier-buyer chain, and 27 per cent point out that they have any chance to get more than the price'.

The fourth set of variables displays attitude to the legal system. Court_trust is a dummy equalling to 1 if a manager has answered affirmatively to the statement: 'reinforcement of contracts by the court can be possible' (4 or 5 in 5 items Likert scale). Court_cost is a dummy equalling to 1 if a manager has answered affirmatively to the statement: 'reinforcement of contracts by the court is very costly' (4 or 5 in 5 items Likert scale). Forty-one per cent of firms trust in legal system in general, but 57 per cent of them think that the contract enforcement is very costly. Finally, the authors add two industry specific variables including producer and processor.

The authors are interested in the difference of variables' mean across various stages of food chain. Table 2 shows processors as the largest group in terms of employees number (14) followed by farmers (8) and retailers (6). Estimations reveal that there is no significant difference in the employment growth, firm size, international links, info chain, support and court costs by branches at 10 per cent level of significance. Calculations confirm significant difference in managerial experience, higher education and trust in legal system. Estimations also reveal difference in managerial and firm age and own financing, however, Bartlett test rejects the null hypotheses of equal variance. Interestingly, it was found that producers are more experienced and with higher education. The retailers trust more in legal system than processors and producers.

Results

Various binary models were estimated in order to examine the relationships between the employment growth and various explanatory factors. The binary models are typically estimated by maximum likelihood after imposing distributional assumptions of error term. However, semi-parametric literature emphasise that parametric estimators of discrete choice models are known to be sensitive to departure from distributional assumptions. Various estimators have been developed for correcting this restrictive nature of parametric models. In this paper, the authors apply the semi-nonparametric approach of Gallant and Nychka (1987) and the semi-

Table 3

Semi nonparametric maximum likelihood estimations for the employment growth

	Model 1	Model 2	Model 3	Model 4	Model 5
MC: age	0.030**	-0.002	-0.007	-0.012	-0.033***
MC: experience	-0.033	-0.026**	-0.020**	-0.057***	-0.029
MC: high_education	2.100***	1.020***	1.088***	1.877***	1.937***
FC: firmsize		0.151***	0.127***	0.184**	0.091
FC: firmage		0.040***	0.034***	-0.003	-0.017
FC: ownfin		0.723	0.847***	0.238	0.237
EL: intl_links			0.230	0.710*	0.891*
EL: info_chain			0.309	-0.182	-0.075
EL: support			0.332*	0.694**	0.573**
LS: court_trust				-2.238***	-1.833***
LS: court_cost				0.884**	0.747**
IS: processor					0.573
IS: producer					0.298
N	207	191	191	191	191
Wald (p value)	0.000	0.000	0.000	0.000	0.000
Likelihood ratio test of Probit model against SNP model					
	0.356	0.039	0.033	0.004	0.004

Note: * p<0.1; ** p<0.05; *** p<0.01

Source: authors' estimations based on the survey data

parametric maximum likelihood approach of Klein and Spady (1993). The authors report only those models, which perform better.

The authors focus on the determinants of contract using five different specifications by adding different groups of variables step by step (Table 3). Model 1 shows the coefficients of MC variables. The managerial age negatively, whilst higher education positively influences the employment growth. In other words, older managers reduce the number of employment and educated managers are more likely use more employees.

As the next step, firm specific variables were added to the managerial characteristics (Model 2). The coefficient of age became insignificant. Estimations show that more experienced managers reduced, whilst managers that are more educated increased the number of employment. The positive coefficient of firm age and firm size implies that older and larger firms prefer employing more people. The own financing has no significant impact on the employment growth.

Interestingly, external company linkages do not influence significantly the number of employment (Model 3). Other variables confirm the results of Model 2, except own financing influencing positively the employment growth.

Then, the model was extended with legal system variables (Model 4). Managerial and firm specific variables produce similar results in terms of direction of coefficients as in Model 2, except firm age. Estimations show that firms with international links and non price support are more likely to increase the employment. Similarly, thinking that contract enforcement is very costly has positive impact on the employment growth.

Finally, two dummy variables (Producers and Processors) were added to check the possibly influence of branches (Model 5). Interestingly, industry specificity has no significant effect on the employment growth. The majority of results are similar to Model 4 with some exceptions. Managerial experience and firm size lost their significance, whilst managerial age negatively influences the employment growth.

Conclusions

The aim of the paper is to identify factors that influence SMEs' decision on the employment growth along food chain in the Central region of Hungary. The authors focus on five factors explaining the employment growth including managerial skills, firm characteristics, external company linkages, legal environment, and industry specificity. Results confirm that managerial attributes, external linkages, and legal environment have important role in the employment decisions. Moreover, firm characteristics also influence the employment growth in some specifications. Interestingly, the impact of branch specific characteristics has no role explaining the employment decisions. Results highlight that the government should improve the legal environment and access to international markets beyond the traditional measures of SMEs policies.

Bibliography

1. Bojnec, S., Dries, L. (2005). Causes of Changes in Agricultural Employment in Slovenia: Evidence

from Micro-data. *Journal of Agricultural Economics,* 56 (3), pp. 399-416.
2. Ciaian, P., Dries, L., Kancs, d'Artis (2010). Job Creation and Job Destruction in the EU Agriculture. *EAAE 114th Seminar,* April 15-16, 2010, Berlin, Germany.
3. Elek, S., Ferto, I., Forgacs, C. (2010). The Possible Effects of the CAP Reform on Farm Employment in Hungary. *Agricultural Economics Review,* 11 (2), pp. 29-34.
4. Fieldsend, A. F. (2010). Indicators for the Assessment of the Potential for Employment Creation in Rural Areas. *Studies in Agricultural Economics*. Issue 111, March 2010.
5. Gallant, A. R., Nychka, D. W (1987). Semi-nonparametric Maximum Likelihood Estimation. *Econometrica* 55, pp. 363-390.
6. Ghib, M-L., Berriet-Solliec, M. (2010). From Small Farming to Rural, Non-agricultural Work in Romania: an Evaluation on 3 Measures of the Rural Development Programme. *Proceedings. EAAE 118th Seminar.* August 25-27, 2010, Ljubljana, Slovenia.
7. Herzfeld, T., Dries, L., Glauben, T. (2011). Labour Adjustment in Agriculture: Assessing the Heterogeneity across Transition Countries. *EAAE 2011 Congress.* August 30 to September 2, 2011 ETH Zurich, Zurich, Switzerland.
8. Klein, R., Spady. R. (1993). An Efficient Semi-parametric Estimator of the Binary Response Models. *Econometrica* 61, pp. 387-421.
9. Petrick, M., Zier, P. (2011). Regional Employment Impacts of Common Agricultural Policy Measures in Eastern Germany: a Difference-in-differences Approach. *Agricultural Economics*, 42 (2), pp. 139-149.
10. Swinnen, J.F.M., Dries, L., Macours, K. (2005). Transition and Agricultural Labour. *Agricultural Economics,* 32, pp. 15-34.

Acknowledgements

The paper is based on two research projects as "TAMOP-4.2.1.B-09/1/KMR-2010-0005", in the framework of the subproject "Knowledge Based Economy in Hungary" and OTKA K 84327 "Integration of Small Farms into Modern Food Chain".

Theoretical Aspects of Migration

Inese Freidenfelde[1], *Mg.oec.*

Abstract. The research provides an overview and analysis of processes, which influence migration. The author has analysed migration theories explaining causes and tendencies of migration. The intensity and volume of migration flows change over time. These changes can affect the development of national economies. Thus, countries have to explore the diversity, causes and motives of migration flows, its historical formation, and influencing factors. It allows reacting to changes in migration and managing the migration processes in due course.
The migration processes are so complicated that the existing theories are not able to explain fully them, concentrating more on selected narrow aspects. These theories do not pay enough attention to such vital aspects of migration problems as political instability, ethnic composition, historical influence, working environment, and life quality.
Key words: migration, migrants, migration theory, motivation for migration.
JEL code: F22

Introduction

People migrate to different territories due to various reasons. These differences influence the whole migration process. Demographic, economic, and political effects in a country change along with migration, which is influenced, in turn, by a number of varying conditions.

The mobility of citizens increases rapidly influencing migration. Migration is driven by both economic and non-economic reasons. As a result of migration, various economic, social and political effects arise in emigration or migration countries.

The research subject is the analysis of theoretical aspects of migration. The research object is the theoretical aspects of migration. The research aim is to examine the theoretical aspects of migration. The research task is to study and analyse the theoretical aspects of migration. The research applies general scientific research methods, including monographic, graphic, and logical construction methodology.

Results and discussion

The essence of migration and its features

Migration is the movement of citizens from one administrative territory to another. Human Migration classifies migration into intercontinental migration, migration between/among countries, intra-district, and inter-district migration (Human Migration Guide, 2005).

There is no unified theoretical definition of migration, since its process depends on numerous conditions. A migrant can be a person migrating to another town or country; a refugee crossing the state boundary to avoid religious or political prosecution; a job seeker who is motivated by economic reasons; a slave, whose migration is compulsory; a person who migrates due to war or natural calamities (Figure 1).

Migration is a demographic phenomenon, which changes demographic indicators of a region. Movement of citizens is a complex process that embraces several types and forms of mobility. Migration can be classified by purpose, time, distance, ethnical composition etc. (Thieme, 2006).

The migration process can significantly impact on the development of certain territory by changing its population structure including sex, age, marital status, education, nationality, and other indicators, thus influencing the natural movement.

Since migration is led by different factors, demographic effects in a country change along with migration. For instance, when many people migrate from rural areas to a city, it causes problems to the city's infrastructure.

Types and definitions of migrants are summarised in Table 1 (Patterns of Human Migration…., 2006).

Nowadays, migration or movement of citizens is a global phenomenon, which can be evaluated from different angles considering individual and global migration tendencies. Migration is a movement of citizens or other breathers, as a result of which their distribution on a territory as well as quantity and composition in every involved region alters.

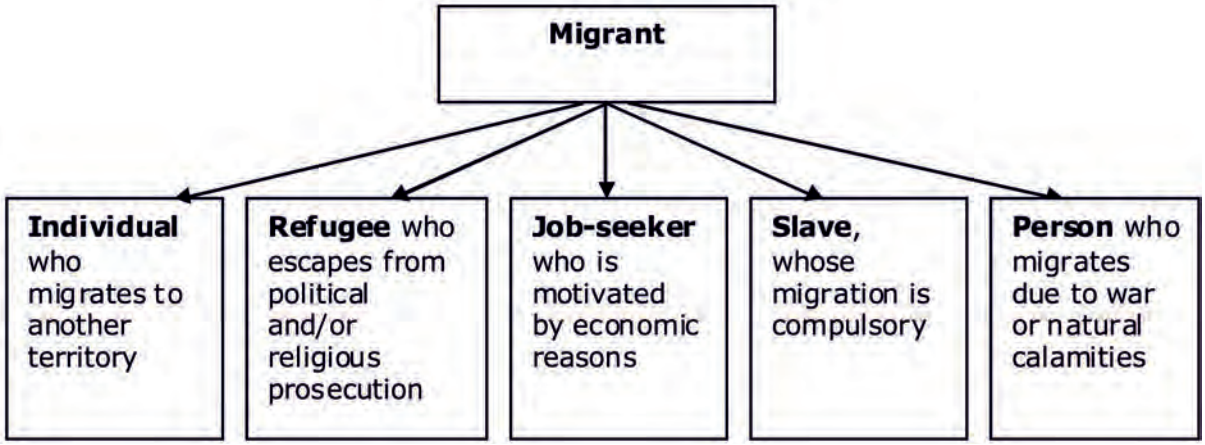
The intensity and volume of migration flows can change (increase or decrease) over time affecting a national economy. Therefore, it is necessary to explore the diversity of migration flows, its historical formation, and influencing factors.

Appraisal of the migration effect is summarised in Table 2 (Karnite, Karnitis, 2009: Krisjane, Bauls, 2005; Indans, 2008).

The intensity and volume of some flows can dwindle, while others – swell, respectively influencing the labour market, revenues from tourism, house prices etc. It also stipulates the necessity to analyse the diversity of migration flows, factors, consequences and opportunities to regulate the volume of flows (Krisjane, Bauls, 2005).

Migration is often regarded as the main cause of rapid population growth, implying degradation of resources and diminution of biodiversity. However, once migrants settle, natural increase of population becomes more significant. Population of migrants that exceeds the birth rate has greater influence over the country's territory. Hence, it is important to consider impact of the second and the first generations on the initial migration (Patterns of Human Migration…, 2006).

[1] *E-mail address*: inese.freidenfelde@gmail.com



Source: author's construction based on Human Migration Guide

Fig. 1. **The notion of a migrant**

Table 1

Definitions of migrant

Notion	Definition
Basic types of migrants	
Long-term migrants	Change domicile for a period of 12 or more months
Temporary migrants	Move for a short time period and do not change their principal domicile
Other types of migrants	
Economic migrants	• Temporary work migrants known as temporary workers. Individuals who migrate for a short time period to work and send wages to their home country; • Highly-qualified and business migrants. Educated and skilled individuals who migrate within internal labour markets, where large international companies and organisations are located; or job seekers who offer their skills and qualification in other markets; • Illegal migrants who look for a job in another country, where they have no work permits and/or required legal documentation.
Family reunion migrants	Individuals who join their family members, and were already working in one of immigration countries as part of any migration category.
Internally displaced individuals	Individuals who have to leave their homes or places of residence compulsorily in order to escape from consequences of armed conflicts, violence, breach of human rights, or natural calamities. People who have not crossed a state boundary.
Refugees and asylum seekers	People who avoid armed conflicts, violence and calamities, leave their domiciles and cross a state boundary.
Return migrants	Individuals who return to their country of origin, after being employed in other country.
Seasonal migrants	Migrate regularly looking for a job, manufacturing capacities or due to educational aims during particular seasons.
Transient migrants	Individuals with no permanent domicile. Travellers who migrate from one place to another using popular geographical models. Tramps migrating chaotically.

Source: author's construction based on Patterns of Human Migration Affecting Biodiversity

Theories of migration

Several scientists, starting from the first researchers of migration Ernest George Ravenstein (1885) and Everett Lee (1966), tried to find out reasons and tendencies of migration, using a range of theoretical models. Many theories have become dominating, explaining why and how the migration process starts; others explain long-term migration processes. Neoclassical Economic Theory, New Economics of Migration Theory, Segmented Labour Market Theory, and World Systems Theory are the leading theories, which explain the migration processes.

Most of theories are based on economic factors, such as search for a better job and higher income, living

Table 2

Appraisal of the migration effect

Positive effect from migration	Negative effect from migration
In emigration countries	
• wire transfers; • human capital benefits; • decrease in unemployment; • human factor.	• outflow of highly skilled workforce; • decrease in state funds; • decrease of productivity and quality of work; • decrease of a country's population; • human factor.
In immigration countries	
• provision of specialists for opened vacancies; • addressing the need for skilled employees; • fostering the state economy – through tax payments, advanced competition, increase of domestic demand; • immigrants undertake jobs the locals are unwilling to do; • immigration can improve the demographic situation; • immigration can assist the EU to integrate into the global competition more effectively; • immigration of highly qualified and educated employees can improve the economic situation of a country significantly.	• immigration of low-skilled employees prolong ineffective bankruptcy of companies; • immigration of low-skilled employees decrease remuneration level of local low-skilled labour; • descendants of immigrants tend to take advantage of a country's social allowances; • new competition on the labour market; • integration of foreign cultures; • risk of thievery and fraud increases; • immigration cause ethnic and social pressure.

Source: author's construction based on Devoretz, 2004; Karnite, Karnitis, 2009; Roel, 2004; Rowthorn, 2004; Taylor, 2006

standards etc. One of the theories – Network Theory – is based on sociological factors. The migration theories are shown in Table 3.

The analysis of migration theories result in the following conclusions. Ernest George Ravenstein (1885), the founder of Push-Pull Theory, admits that "push-pull" factors influence migration, and the underlying motives for migration are economic ones. Neoclassical Economic Theory suggests that migration is linked to the global demand and supply of labour force. Countries with limited supply and demand for labour offer higher remuneration, which is the most crucial factor in attracting immigrants. New Economics of Migration Theory concludes that poverty factors influence migration, as a result of which living conditions improve and earnings rise. Segmented Labour Market Theory acknowledges that immigrants are employed in vacancies that are important for the overall economic development. Network Theory adds that networks are a vital element in the migration process since they determine which target country migrants will choose. World Systems Theory proves that international migration is a sub-product for the global capitalism (Tobler, 1995).

In economic theories of migration, people are regarded as potential workforce. International migration shows the flow of manufacturing inputs. This statement is the basis for all international migration theories. According to Classical Macroeconomic Theory of Migration (Lewis 1954) that is derived from Adam Smith's concept, migrants move from regions with excess labour force towards regions, which lack this labour force. Therefore, migration is a mechanism that balances the labour market.

Therefore, economic theories highlight such factors as uneven remuneration, employment, working conditions, social guarantees, education, living standards, political stability, and environment, which form motivation for migration.

All migration theories are elaborated both on macro- and micro-levels, being referred to in economics and sociology (Roel, 2004). However, these theories have a number of inconsistencies:

— none of the migration theories gives full, integrated explanations of migration processes;
— international migration is not divided from internal migration theory;
— the theories omit compulsory migration, which is an important part of the process;
— impact of government policies on international migration is not taken into account.

The migration processes are so complicated that the existing theories are not able to fully explain them, concentrating more on selected narrow aspects. These theories do not give enough attention to such vital aspects of migration problems as political instability, ethnic composition, historical influence, working environment, and life quality.

Consequently, international migration theories are not consistent enough to forecast the migration dynamics. Kupiszewki (1996) came to the same conclusion, while analysing the possible course of migration based on changes in the EU population. De Jong and Visser (1997) also agreed to this opinion when forecasting population for 1995.

The migration forecasts were based on different migration theories and made using simple econometric

Table 3

Theories of migration

Theory	Basics	Motives
Push-Pull Theory	The "push-pull" factor process influences migration.	Economic, political or environmental motivation.
Neoclassical Economic Theory	International migration is linked to the global demand and supply of labour force.	Net gain between migration costs and revenues fosters migration in a target country.
New Economics of Migration Theory	Poverty factors influence migration, as a result, living conditions improve, and earnings rise.	A group of people decide to migrate; principal motives: to increase earnings, eliminate risks, and to overcome constraints of local labour market.
Segmented Labour Market Theory	Migration is demand- but not supply-driven.	Migrating labour force is motivated by a concrete goal they want to achieve.
World Systems Theory	Globalisation processes are in charge of the mobile labour force creation.	A migration model implies migration from poor countries to rich countries.
Double Labour Market Theory	Demand for labour force as well as employment experience in a country (as opposed to uneven remuneration) determines migration.	Remuneration also depends on employee's status, in addition to demand and supply of labour in a country.
Human Resource Theory	Migration flows originate from districts with comparatively limited earning opportunities towards regions, where these opportunities are better.	Age is the most crucial factor determining where people migrate.
Network Theory	The theory overviews connections among people that unite migrants, former migrants and non-migrants in a country of origin and target regions.	Networks of people foster migration due to lower migration costs, higher security level, more stable revenues, and lower risks.

Source: author's construction based on Bijak, Kupiszewski, Kicinger, 2004; Jones, 2009; Roel, 2004; Tobler, 1995; Thieme, 2006

models, primarily relating to the net migration balance or the number of immigrants by level of income. Such a narrow approach leads to biased results. Unreliable forecasts are often identified within Neoclassical Economic Migration Theory.

The author concludes that migration flows and factors change over time. Classical migration theories are more spread in the countries with weakly developed economies; however, emigration concerns also economically developed countries.

The mobility of population increases rapidly and influences migration. It is hard to determine the level of economic development, which conditions a decision to migrate, and immigration policy is the vital constituent of migration processes.

Conclusions

1. People migrate to different territories due to various reasons. These differences influence the whole migration process. Demographic, economic, and political effects in a country change along with migration, which is influenced, in turn, by a number of varying conditions.
2. The migration process can significantly affect the development of a certain territory by changing its population structure including sex, age, marital status, education, nationality, and other indicators.
3. Classical migration theories are more spread in the countries with weakly developed economies; however, emigration concerns also economically developed countries.
4. Economic theories highlight such factors as uneven remuneration, employment, working conditions, social guarantees, education, living standards, political stability, and environment, which form motivation for migration.
5. Migration theories feature a number of inconsistencies: they do not provide full, integrated explanations of migration processes; international migration is not separated from internal migration theory; the theories omit compulsory migration, which is an important part of the process; finally, the impact of government policies on international migration is not taken into account.
6. The migration theories do not pay enough attention to such vital aspects of migration problems as political instability, ethnic composition, historical influence, working environment, and living standards. The theories are not consistent enough to forecast the long-term migration dynamics.

Bibliography

1. Bijak, J., Kupiszewski, M., Kicinger, A. (2004). International Migration Scenarios for 27 European Countries: 2002-2052. Central European Forum for Migration Research. Retrieved: http://www.cefmr.pan.pl/docs/cefmr_wp_2004-04.pdf. Access: 10 May 2011.

2. Devoretz, D. J. (2004). Immigration Policy: Methods of Economic Assessment. Global Migration Perspectives. Retrieved: http://www.gcim.org/gmp/Global%20Migration%20Perspectives%20No%204.pdf. Access: 17 June 2011.
3. Human Migration Guide (6-8), National Geographic. (2005). Retrieved: http://www.nationalgeographic.com/xpeditions/lessons/09/g68/migrationguidestudent.pdf. Access: 6 June 2011.
4. Indans, I. (2010). Migracijas procesi un politika Baltijas jUras regiona 2008-2009.(Migration Processes un Policies in the Baltic Sea Region 2008-2009) Retrieved: http://www.fes-baltic.lv/uploads/files/fes_bjvp.pdf Access: 21 May 2011.
5. Indans, I., Kruma, K. (2006). Latvijas imigracijas politika: problemas un perspektIvas (Latvian Immigration Policy: Problems and Perspectives). The Latvian Institute of External Politics, the Konrad Adenauer Foundation. Retrieved: http://www.politika.lv/temas/fwd_eiropa/10022/. Access: 15 May 2011.
6. Indans, I., Roze, M. (2005). Iedzivotaju migracija un darbaspeka kustiba. (Population Migration and Labour Mobility). Retrieved: http://www.president.lv/images/modules/items/PDF/item_601_Demografija.pdf. pp. 117-129. Access: 13 April 2011.
7. Jones, T. A. (2009). Migration Theory in the Domestic Context. Human Architecture: Journal of the Sociology of Self-Knowlwdge, VII. Retrieved: http://www.okcir.com/Articles%20VII%204/Jones-FM.pdf. Access: 25 May 2011.
8. Karnite, R., Karnitis, K. (2009). Iedzivotāju starpvalstu ilgtermina migracijas ietekme uz Latvijas tautsaimniecibu (Impact of Population Long-term Migration on the National Economy of Latvia). Retrieved: http://www.politika.lv/temas/fwd_eiropa/18267/. Access: 12 April 2011.
9. Krisjane, Z., Bauls, A. (2005). Migracijas regionalas iezimes Latvija (Regional Features of Migration in Latvia). Retrieved: http://www.president.lv/images/modules/items/PDF/item_601_Demografija.pdf, pp. 130-148. Access: 17 March 2011.
10. Migration Push and Pull Factors / Global Migration Patterns Version 2. (2010). Baig and Jouglaf on: Sat 01. Retrieved: http://www.lewishistoricalsociety.com/wiki/tiki-read_article.php?articleId=37. Access: 7 March 2011.
11. Patterns of Human Migration Affecting Biodiversity (2006). World Eild Life. Retrieved: http://www.worldwildlife.org/what/communityaction/people/phe/Migration/WWFBinaryitem6127.pdf. Access: 27 March 2011.
12. Roel, J. (2004). Economic Theories of International Migration and the Role of Immigration Policy. Retrieved: http://epc2006.princeton.edu/download.aspx?submissionId=60112. Access: 3 March 2011.
13. Rowthorn, R. (2004). The Economic Impact of Immigration. Retrieved: http://www.civitas.org.uk/pdf/Rowthorn_Immigration.pdf. Access: 28 March 2011.
14. Taylor, J.E. (2006). International Migration and Economic Development. International Symposium on International Migration and Development. Retrieved: http://www.un.org/esa/population/migration/turin/Symposium_Turin_files/P09_SYMP_Taylor.pdf. Access: 17 May 2011.
15. Thieme, S. (2006). A Brief Overview of Theories of International Migration. Retrieved: http://www.glopp.ch/C1/en/multimedia/C1_pdf1.pdf. Access: 29 May 2011.
16. Tobler, W. (1995). Migration: Ravenstein, Thorntwaite, and Beyond. Geography Department, University of California. Retrieved: http://blog.lib.umn.edu/globerem/main/Tobler.pdf. Access: 7 June 2011.
17. The Economics of Migration. (2007). Trades Union Congress. Retrieved: http://www.tuc.org.uk/extras/migration.pdf. Access: 27 June 2011.
18. Trends in International Migration. (2001). Organisation for Economic Co-Operation and Development. Retrieved: http://www.oecd.org/dataoecd/23/41/2508596.pdf. Access: 6 June 2011.
19. Zvidrins, P. (2004). Depopulacija (Depopulation). Research of the Strategic Analysis Committee. p. 105.

Sustainability of LAT: The NATREX Approach

Rita Freimane[1], Mg.math., lecturer
Faculty of Economics and Management, University of Latvia

Abstract. Discussions regarding the appropriate exchange rate regime in Latvia have been arisen several times. There was an opinion that the depth of the recent recession and the difficulty of recovery were attributable in large part to the decision of the authorities to maintain the country's overvalued fixed exchange rate. How one can find whether the lat is overvalued or not? To what extent was the real exchange rate misaligned?
The aim of the paper is to estimate the equilibrium real exchange rate of the Latvian lat using the Natural Real Exchange Rate (NATREX) approach.
The author has adapted a small structural theoretical NATREX model of a small open economy and estimated econometrical model, which allows analysing the medium- term and long-term dynamics of the real exchange rate of the Latvian lat. It was shown that among other factors the Latvian lat real exchange rate was especially determined by such real fundamental factors as productivity, terms of trade, and foreign interest rates.
Medium-term NATREX series are estimated and, comparing with actual real exchange rate values, medium-term misalignments are obtained and analysed in the research.
Key words: equilibrium real effective exchange rate, misalignments, NATREX model, time series analysis.
JEL code: F31, F41, C51, C22

Introduction

To answer the question about sustainability of Latvian national currency, the author analyses the real effective exchange rate of the lat. The real exchange, rather than the nominal, determines basic economic decisions about consumption, growth, and resource allocation. Importance of the real exchange rate is emphasised by the fact that this is a key indicator of external competitiveness. If the real exchange rate becomes overvalued in relation to the equilibrium real exchange rate for significant time period, such sustainable real appreciation can be interpreted as a decrease in external competitiveness of the economy. Appreciation of the real (effective) exchange rate in response to large, potentially temporary inflows of capital may adversely affect competitiveness of the external sector, posing a dilemma for policymakers. On the contrary, real appreciation can reflect increasing competitiveness if it is related to an increase in productivity (typically for a transition period). Summarising, the real exchange rate misalignments shall be studied in the context of fundamental determinants. This is the only way to determine whether real appreciation is caused by a decrease or increase in competitiveness. Understanding the sources of the real appreciation is important for policy purposes.

There are various concepts of equilibrium exchange rates that can be used to assess the appropriate level at which a currency should be fixed against euro. In transition countries, two most popular are fundamental and behavioural approaches. First was introduced by Williamson (1994). The so-called macroeconomic balance approach compares current real exchange rates with a fundamental equilibrium exchange rate (FEER) that would exist when the economy is at full employment (internal balance) and in current account equilibrium (external balance) (Williamson J., 1994). The problem in practice has been to calculate the real equilibrium, because the approach assumes that no other factors affect the exchange rate than the determinants of internal and external balance. The second approach (BEER) analyses the actual behaviour of real exchange rates with econometric analysis (Clark and MacDonald, 1998). The behavioural models usually identify group of exogenous variables, which determine the internal and external balance. The reduced form connects the real exchange rate with these determinants. Thus, there is no need to search for the sustainable levels of the current account and the external position, as they are endogenous to the system.

The term of NATural Real EXchange rate (NATREX) was brought up by J.L. Stein in 1994. The NATREX stands for a medium-run, equilibrium exchange rate, which combines a general equilibrium concept to a dynamic economy. According to Stein's definition, "The NATREX is the equilibrium real exchange rate that clears the balance of payment in the absence of cyclical factors, speculative capital flows, and movements in international reserves" (Stein J.L., 2006).

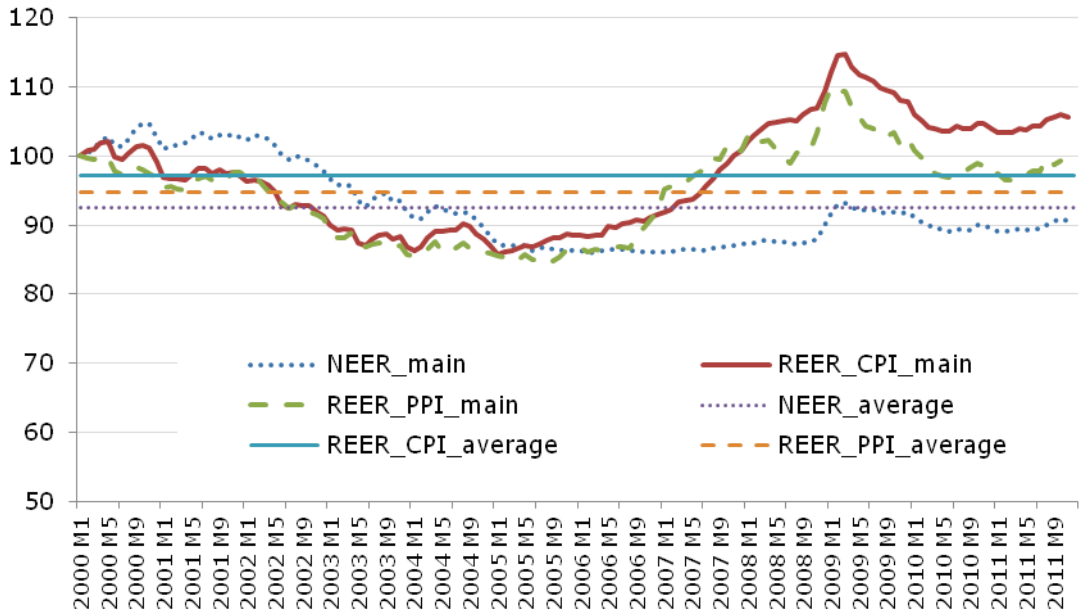
The aim of the paper is to estimate the equilibrium real exchange rate of the Latvian lat using the NATREX model.

To that end, the following **tasks of the research** have been carried out:

1) description of the NATREX approach;
2) formulation of an econometrical model, description of time series needed for modelling, and estimation of the model;
3) the NATREX series are obtained and real exchange rate misalignments are estimated and analysed applying model's results.

The period of analysis goes from Q1 of 2000 to Q3 of 2011 using quarterly observations of the REER and

[1] *E-mail address*: Rita.Freimane@lu.lv



Source: author's calculations and construction based on data from the Bank of Latvia

Fig. 1. Nominal and CPI and PPI based real effective exchange rates (against main trading partners, 2000=100) and their 11 years average values

its fundamentals. According to the NATREX idea, one should use annual or semi-annual data and cover longer period, but problem is in availability of all necessary time series.

The paper is organised as follows. First, description of the method will be introduced. Then the NATREX model is applied to CPI based real effective exchange rate (REER) of the lat, calculated according to the main trading partners of Latvia. Second, an empirical estimation of NATREX of the lat in medium run is performed. Misalignments are calculated as percentage deviations from estimated and actual REER values. Finally, the results are discussed and conclusions summarised.

1. REER and competitiveness

As mentioned before, the real exchange rate can be used as a key indicator of external competitiveness. Series of real effective exchange rates are calculated and offered to public by the Bank of Latvia. An increase in the index is real appreciation of the lat. The dynamics of real effective exchange rate (Figure 1) shows that at the end of 2011, the price competitiveness has improved as compared with the pre-crisis levels but for forecasting the future dynamics, there is a need to find driving factors.

The main variable, which is analysed in this article is CPI based real effective exchange rate of the lat (REER), which is calculated by the Bank of Latvia as weighted average against main trading partners. Figure 1 presents REER dynamics in comparison with PPI based REER and NEER. It shows observable fluctuations in trends of all variables. The interest is related to determination of the factors that influence these movements around 11 years' means, and finding out if they are around their equilibrium value.

The author does not present a literature survey about the fundamentals driving equilibrium exchange rates and channels through which they influence REER values, it can be found in Hinkle and Montiel (1999), Egert (2004), Egert, Halpern and MacDonald (2005), Kazaks et al (2006) etc.

The next section shows a short description of the theoretical model (based on Stein J.L., 2005, 2006) and clarifies variables, which are used in econometrical modelling thereafter.

2. The NATREX approach: theoretical background

The NATREX can be described like "a moving inter-cyclical equilibrium, neutral with respect to money, can be expressed wholly in real terms, making the equilibrium real exchange rate independent of the nominal exchange-rate regime"(Stein J.L., 1995). So, this approach can be applied in case of different exchange rate regimes including fixed exchange rate, like in Latvia.

Before estimation, it should be clarified that the NATREX is not the optimal real exchange rate, i.e. it is only the equilibrium rate implied by the prevailing fundamentals and existing macroeconomic policies. The fundamentals change over time and determine moving steady state NATREX. So, the NATREX modelling is a formal attempt to explain the existing relationship between the real exchange rate and the set of fundamental variables explaining savings, investment, and current account (CA) levels.

The NATREX has already been used in some studies on small open economies. It has a positive approach in the sense that it does not try to give a priori values of CA or output that is optimal or desirable to reach (Koske I., 2008).

In general, the NATREX approach is open to a wide variety of different model specifications, where savings, investment, and current account are endogenously

determined. The most important factors are thrift parameters measuring preference for consumption and productivity, imposing two stability conditions: a negative relationship between the marginal productivity of capital and the capital stock, and positive relationship between savings and the net foreign debt level (Detken et al, 2002). A small scale structural model with four behavioural equations and one identity, when desired social savings minus social investment equal the current account, is used in the article. Term "social" is used according to Steins (1995) proposal – it denotes private plus public variables.

The medium-term equilibrium can be described by the following equation:

$$I - S + CA = 0 \quad (1)$$

where I is intended investment, S is intended savings, and CA is the intended current account.

A small- scale model is adapted for empirical estimation. It was introduced by Gandolfo G., Felettigh A., 1998 and consists of four dynamic equations according to investments, consumption, trade balance and real interest rate, and the identity (1) constraining these four equations. In distinction to the author's previous article (Freimane R., 2011), here the whole model is estimated in structural form simultaneously.

— The Investment equation:

$$I_t = b_1 I_{t-1} + f_1(Y_{t-1}, (MPK_{t-1} - R_{t-1})), \quad 0 < b_1 < 1 \quad (2)$$

where I - investment (fixed net private + public investment in real terms), Y - real GDP, MPK - the marginal product of capital, R- real interest rate. ((MPK-R) coefficient should be positive) (Gandolfo, G., Felettigh, A., 1998)

— The Consumption equation:

$$C_t = b_2 C_{t-1} + f_2(Y_t, F_{t-1}, P_t, Z_t), \quad 0 < b_2 < 1 \quad (3)$$

where C - consumption (internal public+ private consumption in real terms), Y - real GDP, P - Consumer price index (Gandolfo, G., Felettigh, A., 1998), Z - vector of exogenous variables, the most important of which is the social thrift parameter that stands for the social propensity to save (Variable p_t_s in the model) (Egert E. et al, 2005).

— The Trade Balance equation:

$$B_t = b_3 B_{t-1} + f_3(Y_t, REER_t, Y_t^F, TOT), \quad 0 < b_3 < 1 \quad (4)$$

where trade balance B=Export-Import, Y - real GDP, REER - CPI based real effective exchange rate against main trading partners, Y^F - foreign GDP (like in (Gandolfo, G., Felettigh, A., 1998)), and TOT - terms of trade.

— The Real Interest Rate equation:

$$\left(R - R^F\right)_t = b_4 \left(R - R^F\right)_{t-1}, \quad 0 < b_4 < 1 \quad (5)$$

where R - real interest rate, R^F – foreign real interest rate (Gandolfo, G., Felettigh, A., 1998).

Equations from (1) to (5) form the NATREX model, which will be estimated in its structural form. Solving the system, to REER yields the medium- term equilibrium real exchange rate, or NATREX.

Generally, the NATREX approach allows finding long-term NATREX, too. The long-run equilibrium is derived when the stock of capital and foreign debt are stabilised at their steady-state levels, and replaced in the system. That asks additional calculations and the author sees it like proceeding of the current analysis in next publications.

3. Empirical results

The model is a system of simultaneous equations, so appropriate method of model's estimation shall be chosen. Eviews 7.0 was exploited for that purpose. Estimation method is the Fully Modified Least Squares (FM-OLS) regression that was originally designed in work by Phillips and Hansen (1990) to provide optimal estimates of cointegrating regressions. The method modifies least squares to account for serial correlation effects and for the endogeneity in the regressors that result from the existence of a cointegrating relationship.

3.1. Data

Quarterly data from Q1 of 2000 to Q3 of 2011 were used.

Time series for Latvia were taken from the Bank of Latvia, the CSB of Latvia, while the rest of the world data – from Eurostat and International Monetary Fund IFS Statistics. Series were tested according to method – stationarity tests (Augmented Dickey Fuller tests) and cointegration tests. Results may be available on request.

3.2. Estimation results

The model has four behavioural equations and one identity. Estimations of the behavioural equations are summarised in Table 1, which is given below. All equations have information about estimated coefficients and their p-values. If a particular p-value exceeds 0.05, one can say that the corresponding coefficient is not statistically significant with 95% probability.

Table 1

Coefficients and descriptive statistics of the dynamic equations of the model

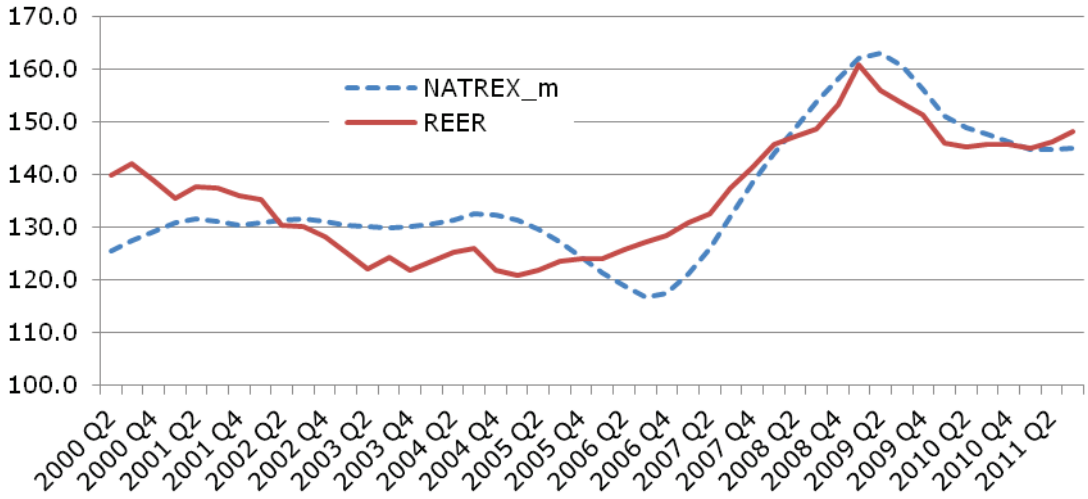
Trade Balance Equation (3)	B = 0.847 B(-1) - 0.0004 Y(-1) - 5.697 REER + 0.066 Y_F -9.51 TOT (p-val.) (0.000) (0.000) (0.000) (0.002) (0.0005) Mean of dependent variable=-424.36 SD of dependent variable=345.4 SE of regression = 86.233 R squared=0.94
Consumption Equation (2)	C = 0.625 C(-1) + 0.294 Y(-1) - 0.678 F(-1) + 0.570 P -2.96 p_t_s (p-val.) (0.000) (0.000) (0.226) (0.034) (0.038) Mean of dependent variable=3004.214 SD of dependent variable=956.67 SE of regression = 120.204 R squared=0.95
Investment equation (1)	I = 0.714 I(-1) +0.074 Y(-1) + 11.744 (MPK-R) (p-val.) (0.000) (0.025) (0.000) Mean of dependent variable=983.73 SD of dependent variable=435.41 SE of regression = 124.24 R squared=0.92
Interest rate equation (4)	R –R_F = 0.953 (R-R_F) (p-val.) (0.000) Mean of dependent variable=2.36 SD of dependent variable=8.007 SE of regression = 3.89 R squared=0.76

Source: author's calculations using Fully Modified Least Squares (FMOLS) in Eviews 7.0

Short analysis for each equation separately is given below:

The Trade Balance Equation: all partial regression coefficients are statistically significant and have expected signs. Export depends positively on the foreign real GDP (Y_F) and negatively on REER. Imports are a positive function of real GDP (Y) and of REER. Therefore, the trade balance (B=Exports-Imports) is positively related to Y_F and negatively to REER and Y.

The Consumption Equation: the NATREX theory postulates that consumption (C) is a positive function of real GDP and negative function of F_{t-1}. Coefficient of the



Source: author's calculations based on the model (1)-(5)

Fig. 2. Actual real exchange rate of the lat (REER) and medium-term equilibrium real exchange rate NATREX (NATREX_m).

P depends on propensities to consume with respect to Y and to F (Gandolfo G., Felettigh A., 1998). Coefficient next to the current stock of net foreign debt (F_{t-1}) has correct sign but appears insignificant. The social thrift parameter – social propensity to save has negative coefficient, as expected (a decrease in savings implies an increase in consumption).

The Investment Equation: all coefficients were expected to be positive. Estimated results are according to that, and all of them are statistically significant.

Theoretical background of previous statements is related to theoretical NATREX derivations and is available in list of research papers mentioned before (Gandolfo G., Felettigh A., 1998), (Detken et al., 2002) etc.

3.3. The NATREX series estimation and real misalignments

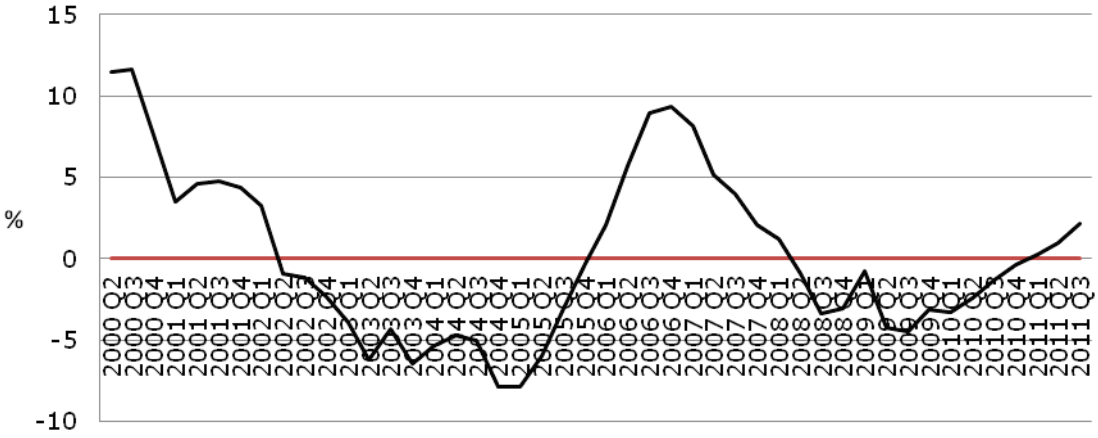
The aim of the analysis has been to determine, based on the model, the medium-run NATREX. The NATREX has been calculated in the following way: the Trade Balance equation estimated in the model is used for derivation of REER series (renamed NATREX). Figure 2 shows the results of numerical simulations by comparing the actual real exchange rate with the equilibrium rate (NATREX).

As it can be seen in Figure 2 and Figure 3, NATREX estimations show significant appreciation of lat during the period of 2005-2008. After the recent recession period, REER moved from situation of overvaluation to an undervaluation till Q1 of 2011.

Misalignments were calculated like percentage deviation from "equilibrium" series. Results are presented in Figure 3.

The dynamics of the real misalignment in medium term suggest significant overvaluation during 2005-2008. To analyse how this has influenced external competitiveness, it should be compared with the dynamics or exports (Figure 4).

Figure 4 shows that decline in exports dynamics during 2005-2009 is approximately the same period of real medium-term overvaluation of the Latvian lat. The decline in 2008-2009 is a result of the world recession



Source: author's calculations

Fig. 3. The Medium-run misalignment of the Latvian lat (%)

Source: author's construction based on the data from www.csb.gov.lv

Fig. 4. Latvian exports of goods on services (% of GDP)

with lower demand from all countries and anyway came when REER started falling again.

Deeper analysis of the Latvian lat's overvaluation or undervaluation will be done after obtaining long-term NATREX in future publications.

There are several studies analysing the equilibrium exchange rate of the Latvian lat. Yet, they are mostly not appropriate for comparisons and testing robustness of the results – they cover different time horizons.

The most recent paper is Freimane R. (2011), where the NATREX approach was used too, but using a different approach: behavioural equations were estimated using Vector Error Correction (VEC) model and equilibrium values were obtained by calibration. Comparing results from these two studies, in general, they are quite similar, thus, allows believing in robustness of them.

Conclusions, proposals, recommendations

1. Real effective exchange rate is particularly useful in considering comparative changes under a country's real economic circumstances. For policy purposes, it is important to understand the sources of the real misalignments between equilibrium or sustainable exchange rate and actual exchange rate.
2. NATREX estimations show that the Latvian lat real exchange rate was especially determined by real fundamental factors: productivity, terms of trade, and the world's interest rates. It is important to improve labour productivity in Latvia to boost competitiveness.
3. NATREX estimations show significant appreciation of lat during the period of 2005-2008. This period in Latvia can be characterised by the rapid growth in GDP, which was not supported by similarly strong growth in productivity. It can be associated with large capital inflows the potential of which has not been used efficiently.
4. Estimation of the long-term NATREX asks imposition of the conditions of internal and external equilibrium. Such conditions appear too stringent when expressed in quarterly data. The author's future investigations will be related to a widened period of analysis using annual or semi-annual data.

Bibliography

1. Babecky, J., Bulir, A., Smidkova, K. (2010). Sustainable Real Exchange Rates in the New EU Member States: What did the Great Recession Change, *IMF Working Paper*, WP/10/198, p. 24.
2. Clark, P.B., MacDonald, R. (1999). Exchange Rates and Economic Fundamentals: A Methodological Comparison of BEERs and FEERs*,* in R. MacDonald and J.L. Stein (eds), *Equilibrium Exchange Rates*, Ch. 1, Dordrech: Kluwer Academic Publishers, pp. 1-38.
3. Detken, C., Dieppe, A., Henry, J., Marin, C., Smets, F. (2002). Model Uncertainty and Equilibrium Value of Real Effective Euro Exchange Rate, *ECB Working Paper* No. 160, p. 51.
4. Egert, B., Halpern, L., MacDonald, R. (2005). Equilibrium Exchange Rates in Transition Economies: Taking Stock of the Issues, *CEPR Discussion Paper* No 4809, p. 57.
5. Freimane, R. (2011). Sustainable Real Effective Exchange Rate in Latvia, Current Issues in Economic and Management Sciences, *Conference Proceedings*, Riga: LU, pp. 206 -215.
6. Gandolfo, G., Felettigh, A. (1998). The NATREX: An Alternative Approach. Theory and Empirical Verification, *CIDEI Working Paper* 52, (Rome: University La Sapienza), p. 22.
7. Hinkle, L., Montiel, P.J. (1999). *Exchange Rate Misalignment: Concepts and Measurement for Developing Countries*, Oxford University Press, p. 614.
8. Kazaks, M., Kule, L., Strasuna, L. (2006). Euro Introduction in Latvia: Risks and Opportunities (available in Latvian only), *Hansabanka Analytical Discussions*, p. 17.
9. Koske, I., (2008). A Semi-Structural Method to Estimate the NATREX for a Small Open Economy. The Case of Finland, *Applied Economics Quarterly* 54/2, pp. 73-93.
10. Marin-Martine, C. (2001). A Structural Approach to the NATREX Model, *Mimeo*, University of Mauricia, p. 40.
11. Stein, J.L. (2006). *Stochastic Optimal Control, International Finance, and Debt Crises*, Oxford University Press, p. 286.
12. Stein, J.L. (2005). The Transition Economies: a NATREX Evaluation of Research, *CESifo Working Paper* No. 1448, p. 45.
13. Stein, J.L. (1998). *The Natural Real Exchange Rate of the US Dollar and Determinants of Capital Flows, in Estimating Equilibrium Exchange Rates*, ed. by J. Williamson, Institute for International Economics, Washington, D.C., pp. 133 – 176.
14. Weisbrot, M., Ray, R. (2010). Latvia's Recession: The Cost of Adjustment with "An Internal Devaluation", *CEPR*, p. 19.
15. Williamson, J. (1994). Estimating Equilibrium Exchange Rates. *Institute for International Economics*, Washington DC., pp. 177-244.

Failure of Institutional Instruments for Strategic Development of Latvian Regions

Sergejs Ignatjevs[1], Dr.oec.; **Boriss Heimanis**[2], Dr.oec.
Baltic International Academy

Abstract. The research problem is failure of institutional instruments for strategic development of Latvian regions which, being well-organised into the system both on the EU and national level, cannot help Latvian regions sustain balanced strategic development. The aim of this article is to provide overview of the existing pan-European and intranational institutional instruments, which may be used for strategic development of Latvian regions and to find out why the use of these instruments hinders achieving their main goal – balanced strategic development of Latvian regions. The research is based on the method of analysis of legislation enactments, documents and official information of the EU and Latvian institutions, dynamic analysis of statistical data describing strategic development of Latvian regions, and logical analysis. The authors use the methodology of institutional economics and the resource approach to strategic regional development to prove the hypothesis that Latvian regions do not transfer the resources that are provided by the EU and intra-Latvian institutional instruments into their own assets and capital, which can be used for strategic development. As a result of their research, the authors have come to the conclusion that Latvia, which has both its own institutional instruments and the EU institutional instruments for the purpose of strategic regional development, currently has unbalanced long-term development of its regions, and it may be explained by domination of separate political interests instead of professionalism in the Latvian policy of regional development, weakness of Latvian civil society, and passivity of Latvian regions in the use of institutional instruments of strategic development.
Key words: strategic development of region, Latvian regions, resources of strategic development, institutional instruments of strategic development.
JEL classification code: B41, P11, P25

Introduction

Within this research, the authors define the strategic development of Latvian regions as their capacity to attract different types of strategic resources: people, investment, and business. This concept applies to the resource approach (Skaratan, 2003; Tihonova, 2006), which is based on the following theoretical and methodological pre-condition: the resources, which the region attracts, may become its capital (which is a vital pre-condition for the region's strategic development), if these resources are transferred to the assets, they can provide the region with social and economic benefits.

Strategic development of regional socio-economic systems is an important precondition for stable functioning of regions under the circumstances of market economy and interterritorial competition for resources. Some scientific publications in Latvia focus on particular aspects of region's strategic development. The specifics of strategic development of Latvian regions was studied by E. Vanags, O. Krastins, I. Vilka, V. Locane (Krastins, 2000; Krastins, Locane, 2002; Vanags, Krastins, 2004; Vanags, Vilka, 2005), B. Rivza, P. Rivza, V. Bikse, M. Kruzmetra, I. Baraskina (Rivza, Bikse, 2003; Rivza, Kruzmetra, Baraskina, Rivza, 2005), V. Mensikov (Mensikov, 2002), I. Vaidere (Vaidere, 1995), E. Jermolajeva (Jermolajeva, 2008), S. Keiss (Keiss, 2005), V. Boronenko (Boronenko, 2009), and S. Ignatjevs (Ignatjevs, 2010). E. Vanags together with his research group made great contribution to the development and practical implementation of the method for quantitative and qualitative assessment of strategic development of Latvian regions in the publication "Different Latvia" (Vanags, Krastins, 2004). The factors of region's strategic development have been studied by researchers from the Faculty of Economics and Management of the University of Latvia (Skapars, Sumilo, 2006) and researchers from the Institute of Social Investigations of the Faculty of Social Sciences of Daugavpils University (Voronovs, Petrova, Racko, 2006). The resources of strategic development of Latvian regions are monitored in such regular Latvian reports as "Development of Regions in Latvia" (State Regional Development Agency) and "Human Development Report" (Social and Political Research Institute of the University of Latvia). All these studies show that strategic development of Latvian regions is unbalanced and such disbalance has increased in the recent time. The situation with strategic development of Latvian regions requires finding possible reasons and applicable solutions.

To study the role of institutional instruments for strategic development of Latvian regions, the authors have used the methodology of institutional economics (Hamilton, 1962; Williamson, 2000; Petrovic, Stefanovic, 2009) which is almost not used by economic science in Latvia. In their research, the authors study four groups of the EU and Latvian institutional instruments: management instruments (committees, agencies, managing institutions), legal instruments (development strategies, legislative enactments), organisational instruments (Euroregions, specially supported territories), and financial instruments (Structural Funds, municipal financial equalisation system).

[1] *E-mail address*: stranik7@inbox.lv
[2] *E-mail address*: boriss.heimanis@gmail.com

The aim of this article is to provide overview of the existing pan-European and intranational institutional instruments, which may be used for strategic development of Latvian regions and to find out why the use of these instruments hinders achieving their main goal – balanced strategic development of Latvian regions.

To achieve this aim, the authors have performed the following tasks:

— analysed the system of existing institutional instruments for strategic development of Latvian regions;
— found out the reasons why these instruments do not achieve their main goal – balanced strategic development of Latvian regions.

The authors use the method of the analysis of legal enactments, documents and official information of the EU and Latvian institutions, dynamic analysis of statistical data describing strategic development of Latvian regions to show that searched institutional instruments are not achieving their aim of the balanced strategic development of Latvian regions, and the logical analysis to find out possible reasons of failure of institutional instruments.

With these methods, the authors have proven the hypothesis of the research: Latvian regions do not transfer the resources that are provided by the EU and intra-Latvian institutional instruments into their own assets and capital, which may be used for strategic development.

Results and discussion

The results of the authors' research show that the main management institutions, which are responsible for strategic development of the EU regions are the Committee on Regional Development of the European Parliament, REGI; the EU Committee of the Regions, CoR; the Assembly of European Regions, AER; and the Congress of Local and Regional Authorities of the Council of Europe (European Commission, 2012). Yet, only two abovementioned institutions, i.e. the Committee on Regional Development of the European Parliament and the Committee of the Regions, are part of the official structure of the EU institutions. Moreover, the first of them is the substructure of the EU legislation authority, i.e. the European Parliament, while the other is the EU consultative authority. These two institutions will be described in detail with the purpose of further analysis of legal products of their activity, which are closely connected with strategic development of the European regions.

The Committee on Regional Development of the European Parliament *(REGI)* is responsible for regional policy and the policy of cohesion, especially for the European Regional Development Fund, the Cohesion Fund, and other financial instruments of the EU regional policy; evaluation of the influence of other instruments of the EU policy on economic and social cohesion; and coordination of the Structural Funds of the European Union, remote regions and islands as well as cross-border and interregional cooperation, relations with the Committee of the Regions, organisations of interregional cooperation, local and regional authorities. The Committee on Regional Development makes draft legislation in relation to different financial and organisational instruments, which is afterwards discussed in the European Parliament.

One of the most important "semi-legislative products" of the Committee on Regional Development is "The EU Strategy for the Baltic Sea Region", which was published on 10 June 2009 and is the first EU internal regional strategy on macro-regional level. The strategy provides new instruments for cooperation in the Baltic Sea region and improves the division of objectives between the Member States and regions, paying greater attention to the region's peculiarities in the EU policy in general. The EU strategy for the Baltic Sea region describes and implements the idea of functional regions with common views and objectives.

The other basic idea, which is implemented by the Committee on Regional Development of the European Parliament, is the idea of greater responsibility of regional and local authorities. In practice, the EU principle "more power, more responsibility" for the Baltic States means that cooperation of all local interested participants of territorial strategic development including the institutes of civil society, is extremely important. Therefore, the EU strategy for the Baltic Sea region is the EU internal political document, which directs region's strategic development and determines the factors of such development.

The other important EU institution, which is responsible for the policy of strategic development of the European regions, is the Committee of the Regions established by the Maastricht Treaty in 1994. It is the EU consultative authority representing the opinion of regional and local legislative authorities of the EU Member States and the opinion of the executive authorities. The EU management authorities, i.e. the Commission, the Council, and the Parliament, shall consult the Committee of the Regions on 10 basic directions of activity that are of common interest. The Committee of the Regions provides and protects regions' opinion in adoption of the laws of the European Community. The main problem in the work of the Committee is assessment of proposals of the European Commission from the point of view of regional interests.

The Committee of the Regions consists of 344 members, which represent all EU countries and are appointed for a 4-year term (that can be prolonged) by the governments of the EU Member States, which take their decisions under the circumstances of complete political independence. As a result of its activity, the Committee of the Regions produces such documents as resolutions, strategies, statements, researches, and publications.

The European cross-border organisation - the Assembly of European Regions, AER - was formed in 1985. As for the end of 2008, it united more than 270 regions from 33 countries (including non-EU ones) and 16 interregional organisations. In the authors' opinion, the most important thing in the structure of this organisation is the fact that any territorial unit, which subjectively considers it a region and wants to work in the Assembly, can become its member. For example, Lithuania in the Assembly is represented by such regions as Alytus, Kaunas, Panevezys, Siauliai, Taurage, and Utena, at the same time Poland is represented by Woj. Dolnoslaskie, Woj. Malopolskie, Woj. Slaskie, Woj. Wielkopolskie (Assembly of European Regions, 2012). In its turn, none of Latvian regions and territories is the member of the Assembly of European Regions.

Table 1

Latvia's participation in the European institutions responsible for strategic regional development

Institution	Total number of the members and their status		Among them Latvia	
	Status	Number	Status	Number
Committee of Regional Development of Europarliament, REGI	Full members	49	Full members	0
	Substitutes	49	Substitutes	2
Committee of Regions of European Union, CoR	Full members	344	Full members	7
	Substitutes	344	Substitutes	7
Assembly of European Regions, AER	Member regions	270	Member regions	0
Congress of Local and Regional Authorities of the Council of Europe	Full members	318	Full members	3
	Substitutes	318	Substitutes	3

Source: authors' summary based on the data of official websites of the European institutions

Information about participation of Latvia and its regions in official and political EU institutions is summarised in Table 1.

The EU institutional system, which represents and protects regional interests and draws them up in the form of political and legal products is, primarily, the institutional resource of strategic development of the European regions. In the authors' opinion, it is insufficiently used by Latvian regions, which do not take active part in the work of the EU institutions responsible for strategic regional development (Table 1).

In its turn, Latvia's internal institutional system, which is responsible for strategic development of its regions is formed by the Cabinet of Ministers, National Regional Development Council, the *Ministry of Regional Development and* Local Government*,* the *State Regional Development Agency, and Regional development agencies and planning regions with their Development councils.* The competence of these institutions is prescribed in the LR Regional Development Law of 2002 and the Cabinet Regulations No. 288 of 31 March 2009 "The Statute of the *State Regional Development Agency"*.

To coordinate regional development, spatial planning, and territorial policy in the country, the Cabinet of Ministers has formed National Regional Development Council, which in equal amount consists of the representatives of management bodies and the representatives of planning regions and local governments. The Cabinet of Ministers establishes the number of representatives in the National Regional Development Council and the procedure for their nomination as well as organisation of work of the Council.

The *Ministry of Regional Development and* Local Government is the leading institution, which develops and implements regional policy of the state and coordinates implementation of state support measures for regional development.

The *State Regional Development Agency* is the state management body, which is controlled by the *Minister for Regional Development and* Local Governments. The agency implements support measures for well-balanced regional development of the country through introduction of financial instruments of the state, the EU funds, and other financial instruments, which are delegated in the regulatory enactments, development of electronic management of the state and local governments, research work and administrative support for the secretariats of international programmes.

The *Ministry of Regional Development and* Local Governments supervises the activity of planning regions. Within the framework of its competence, a planning region ensures planning and coordination of region's development as well as cooperation of local governments and other state management bodies. Legal and political basis for strategic development of Latvian regions is formed by the following documents: Regional Development Law, Spatial Planning Law, National Development Plan, National Planning, Guidelines of Regional Policy, Programmes of Sector Development, Development Programmes of Planning Regions and their spatial planning as well as the Development programmes for local governments.

As the authors' analysis of institutional, legal and political instruments of strategic development of Latvian regions has shown, Latvia has rather well-developed complex institutional and legal system, which ensures long-term balanced development of Latvian regions.

The financial instruments of strategic regional development are different funds, which finance the measures of balanced strategic regional development. First, it is the European Regional Development Fund, which is regulated by the Regulations No. 1080/2006 and 1083/2006. Latvia has such financial instruments of strategic regional development as the Regional fund, which is regulated by the Cabinet Regulations No. 288 of 13 April 2004 and the *Municipal Finance Equalisation Fund*, which is regulated by the law of the Republic of Latvia "On Equalisation of Municipal Finances".

The European Regional Development Fund, ERDF is one of the EU Structural Funds. It was founded in 1975 to ensure long-term financial support for the programmes on regional development and is specially oriented at less developed regions. It assists in equalisation of the main socio-economic disbalance of the regions.

Table 2

The performance of Latvian regions in accordance with some indicators of strategic development, 2010

Latvian regions	Non-financial investment in constant prices of 2010, mln LVL	Economically active statistical units of the market sector, absolute values	Net migration, %
Riga	1005.3	51 869	-0.54
Pieriga	246.9	20 621	+0.25
Kurzeme	338.3	17 074	-0.64
Latgale	180.2	17 031	-0.43
Vidzeme	200.3	14 533	-0.38
Zemgale	198.3	14 011	-0.34

Source: authors' calculations based on LR CSB, 2011a, 2011b

The Regional Fund of Latvia was formed to provide support in promotion of regional development and ensure balanced sustainable development of the state. The Regional Fund provides support for merchants who are registered and work in specially supported territories and municipal council or commercial company where more than 50% of capital shares (stocks) belong to the local government.

The activity of such financial instrument for strategic development of Latvian territories as the *Municipal Finance Equalisation Fund is based on significant economic differences of Latvian local governments.* Currently, the system is mostly based on inter-municipal financing (horizontal equalisation) but it also provides general state subsidies (vertical equalisation).

Since the strategic development of regions needs not only financial resources but also interterritorial cooperation, the European institutional space has also organisational instruments, which are aimed at their common strategic development and acquisition of financial resources. On the EU level, it is the European Territorial Cooperation Group, which is regulated by the Regulation No. 1082/2006 as well as such instrument as Euroregions. Latvia has such organisational instruments for strategic regional development as planning regions and specially supported territories, which are regulated by the Regional Development Law of the Republic of Latvia.

The European Territorial Cooperation Group (ETCG) was formed to overcome hindrances, which prevented territorial cooperation on the EU level, it is the cooperation instrument that allows forming cooperation groups with certain rights in the EU territory. In accordance with the Regulation No. 1082/2006, the European Territorial Cooperation Group can be formed in the EU territory in accordance with conditions and the procedure established by this Regulation. The aim of ETCG is promotion of cross-border, international and/or interregional cooperation of its participants, which leads to consolidation of economic and social cohesion. In all its member states, the ETCG has the rights and the broadest legal capacity and capability granted by the legal acts of these states to legal persons; it can purchase or alienate movable and immovable property, employ personnel and be the party of court proceedings.

Another organisational instrument of strategic development of the European regions is Euroregion, which is the European form of international integration based on close collaboration of two or several territorial formations situated in the borderland of the European neighbouring states. Formation of such Euroregion allows its members to form joint economic structures, develop frontier trade, and implement different projects in the sphere of tourism, ecology, sport, and culture. Customs barriers and hindrances for labour migration almost disappear within the borders of such Euroregion. Euroregion concept was formed as a result of the EU policy, which was directed at decentralisation of political and economic power and creation of specific exterritorial formations.

Latvia has such organisational instruments of strategic regional development as planning regions and specially supported territories. The Development programme of the planning region is developed in every planning region, it is a medium term (seven-year) planning document of regional policy, which establishes the priorities of development of respective planning region and contains particular measures. In its turn, the specially supported territory is the territory that for quite a long time had negative tendencies of economic and social development or one of these tendencies and that has received the status of specially supported territory by the law. The development of specially supported territories is encouraged by special credit policy, tax reliefs, and the resources of the Regional Fund, which ensure additional possibilities to finance projects encouraging economic activity in the respective territory, creation of new places of work and keeping the existing ones as well as helping improve living standards for the population of this territory.

In previous methodological research implemented by one of the authors, he offers to use five indicators to assess the strategic development of Latvian regions (Ignatjevs, 2010) and to evaluate the ability of above-described EU and Latvian institutional instruments to achieve their goal for Latvian regions:

— migration surplus which is the indicator of human resource flows;
— non-financial investment, which is the indicator of the flows of physical manufacturing resources;

— economically active statistical units of the market sector, which are the indicator of the flows of entrepreneurial activity resources;
— direct foreign investment, which is the indicator of the flows of foreign financial resources;
— domestic investment, which is the indicator of the flows of domestic financial resources.

All the five mentioned flows of strategic resources of regional development can form the capital, which will transform the potential level of a region's long-term development into a real one. The performance of Latvian regions in accordance with some indicators of strategic development is shown in Table 2.

Thus, the EU and Latvian legal and institutional instruments form the system of financial and organisational mechanisms, which promote strategic development of European and Latvian regions, sometimes also in the case of their complete passiveness (Latvian Municipal Finance Equalisation Fund). However, almost all these instruments require active participation and personal interest of the regions. As a result of their research, the authors suppose that passivity of Latvian regions in transference of resources provided by these institutional instruments (Table 1) to the region's assets and capital is the main reason why this well-created system of institutional instruments does not achieve its main goal – balanced strategic development of Latvian regions (Table 2).

Conclusions

1. The EU has formed quite complicated hierarchical system of institutional instruments for the regions' strategic development, which is an important resource of civil democratic society being a pre-condition for long-term balanced development of all EU regions.
2. Institutional instruments of strategic development of Latvian regions can be divided into four groups: management instruments (committees, agencies, managing institutions), legal instruments (development strategies, legislative acts), organisational instruments (Euroregions, specially supported territories), and financial instruments (Structural Funds, municipal financial equalisation system). All these instruments are sufficiently efficient on condition that the territories take active part in solution of problems of their strategic development.
3. In addition, Latvia has its own system of institutional instruments for even strategic development of Latvian regions. However, currently it has not achieved its aim of balanced strategic development of Latvian regions and it may be explained by domination of separate political interests instead of professionalism in the Latvian policy of regional development, weakness of Latvian civil society, and passivity of Latvian regions in the use of institutional instruments of strategic development.

Bibliography

1. Assembly of European Regions. (2012). *Vocation.* Retrieved: http://www.aer.eu/about-aer/vocation.html. Access: 5 January 2012.
2. Boronenko, V. (2009). *The Role of Clusters in the Development of Regional Competitiveness.* Summary of Doctoral Thesis. Jelgava: LLU.
3. European Commission. (2012). *Institutions and Bodies of the European Union.* Retrieved: http://europa.eu/about-eu/institutions-bodies/index_en.htm. Access: 5 January 2012.
4. Hamilton, D. (1962). Why is Institutional Economics not Institutional? In: The American *Journal of Economics and Sociology,* Nr. 3(21), pp. 309-317.
5. Ignatjevs, S. (2010). *Teritorijas marketings ka regiona strategiskas attistibas faktors (Territory Marketing as the Factor of Region's Strategic Development).* (In Latvian), Rezekne: RA.
6. Jermolajeva, E. (2008). Regionalas politikas realizesana Latvija, izmantojot Eiropas Savienibas lidzfinansejumu (Implementation of Regional Policy in Latvia with the Use of the EU Co-financing). (In Latvian), In: *Proceedings of 50th International scientific conference of Daugavpils University.* Daugavpils: Saule, pp. 182-191.
7. Keiss, S. (2005). Regionalas attistibas virzieni un pasakumu sistema regionu izveidei Latvija ES konteksta (Directions of Regional Development and the System of Measures for Formation of Regions in Latvia in the EU Context). *LZP Ekonomikas un juridiskas zinatnes galvenie petijumu virzieni 2004. gada.* (In Latvian), No. 10, pp. 73-79.
8. LR CSB. (2011a). Table IVG04: Non-financial Investment by Statistical Region (at constant prices of 2010, mln lats). Retrieved: http://data.csb.gov.lv/DATABASEEN/ekfin/Annual%20statistical%20data/05.%20Investment/05.%20Investment.asp. Access: 5 January 2012.
9. LR CSB. (2011b). Table SRG021: Economically Active Market Sector Statistical Units by Statistical Regions and Main Kind of Activity (NACE Rev. 2). Retrieved: http://data.csb.gov.lv/DATABASEEN/uzreg/Annual%20statistical%20data/01_skaits/01_skaits.asp. Access: 5 January 2012.
10. LR CSB. (2011c). Table IBG05: Long-term Migration by Statistical Region, City under State Jurisdiction and County. Retrieved: http://data.csb.gov.lv/DATABASEEN/Iedzsoc/Annual%20statistical%20data/04.%20Population%20E%20Migration/04.%20Population%20E%20Migration.asp. Access: 5 January 2012.
11. LR CSB. (2011d). Table ISG12: Resident Population by Statistical Region, City under State Jurisdiction and County at the Beginning of the Year. Retrieved: http://data.csb.gov.lv/DATABASEEN/Iedzsoc/Annual%20statistical%20data/04.%20Population/04.%20Population.asp. Access: 5 January 2012.
12. Mensikov, V. (2002). Regionaljnoje razvitie v uslovijah globalizacii (Regional development in the circumstances of globalization). (In Russian), In: *Regional Competitiveness,* Part 1. Daugavpils: Saule.
13. Petrovic, D., Stefanovic, Z. (2009). Methodological Position(s) of Institutional Economics. In: *Facta Universitatis,* Nr. 2(6), p. 105-114.
14. Rivza, B., Bikse, V. (2003). Globalization and Entrepreneurial Attitudes in Latvia. In: *Internationalising Entrepreneurship, Education*

and Training, Grenoble, France, September 8–10. CD IntEnt2003.
15. Rivza, B., Kruzmetra, M., Baraskina, I., Rivza, P. (2005). Lauku attistiba paplasinataja Eiropa XXI gs. sakuma (Rural Development in the Extended Europe in the Beginning of XXI Century). (In Latvian), In: *Proceedings of the International Scientific Conference "Economic Science for Rural Development",* Jelgava, 27-28 April 2005. Ministry of Agriculture of the Republic of Latvia, Lithuania, Warsaw etc. Jelgava, 2005. No. 9: Agriculture. Regional development, pp. 164-178.
16. Skaratan, O. (2003*).* Russkaja kuljtura truda i upravlenija (Russian Culture of Labour and Management). (In Russian), In: *ONS,* No. 1, pp. 30-54.
17. Vaidere, I. (1995). Ekonomikas regionalas disproporcijas kave tautsaimniecibas attistibu (Regional Disproportions of Economics Hinder the Development of National Economy). (In Latvian), In: *Labrit*, No. 84.
18. Vanags, E., Krastins, O. (red.) (2004). *Dazada Latvija: pagasti, novadi, pilsetas, rajoni, reģioni. Vertejumi, perspektivas, vizijas (Different Latvia: Civil Parishes, Areas, Cities, Districts, Regions. Assessments, Perspectives, Visions).* (In Latvian), Riga: Latvian Statistical Institute, State Regional Development Agency.
19. Vanags, E., Vilka, I. (2005). *Pasvaldibu darbiba un attistiba (Activity and development of municipalities)*. (In Latvian), Riga: LU, Association of Latvian Municipalities.
20. Voronovs, V., Petrova, I., Racko, E. (2006). *Regionalas ekonomikas konkuretspejas paaugstinasana un aktiva adaptacija globalizacijas apstaklos (Improvement of Competitiveness of Regional Economy and its Active Adaptation under the Circumstances of Globalisation).* (In Latvian), Daugavpils: Saule.
21. Williamson, O.E. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. In: *Journal of Economic Literature,* Nr. 3(38), pp. 595-613.

Potential of Latgale Region and Directions of the Development

Elita Jermolajeva[1], Dr.oec., associate professor
Department of Economics, Faculty of Social Sciences, Daugavpils University
Sanda Cingule-Vinogradova[2], Dr.oec.

Abstract. Regional development issues appear to become more topical from year to year. In the middle of the 1990s, in Latvia, special attention was paid to regional development. Unfortunately, economic and social disparities between Latvia's regions have not only disappeared but they continue to increase in all the regions, still lagging behind the average EU indicators (except Riga and Pieriga). This means the objectives and tasks set in the regional policy are not always successfully implemented in practice. Disproportion can be observed in socio-economic development of the regions, resulting in dissimilar conditions for community potentialities and actions. In-depth research was carried out in the Southern Latgale (territories of former Daugavpils, Kraslava, and Preili districts), which in many aspects is a specific sub-region. The authors conclude that Latgale's strategic advantages are geographical location in the Eastern part of Latvia and existing but insufficiently used development potential. They propose several development directions for Latgale: knowledge and innovation, creation of networking or clusters between enterprises, education and science institutions' work, optimisation of state institutions, business favourable fiscal policy, export promotion, corporate social responsibility, infrastructure quality, "good news" factor, employment and labour quality, community motivation etc. The authors also propose to use financial, infrastructure, and information support instruments to foster innovation.
Key words: regional development, regional socio-economic differentiation, Latgale region, Southern Latgale sub-region.
JEL code: R11

Introduction

Economic development along with positive impact induces also negative tendencies, for instance, unbalanced differentiation of various territories/ regions, and thus, the issues of regional development become more topical from year to year. In the middle of the 1990s, in Latvia, special attention was paid to regional development, and it was based on European long-term experience. Unfortunately, economic and social disparities between Latvia's regions have not only disappeared but they continue to increase in all the regions, still lagging behind the average EU indicators (except Riga and Pieriga). This means the objectives and tasks set in the regional policy are not always successfully implemented in practice. Disproportion can be observed in socio-economic development of the regions, resulting in dissimilar conditions for community potentialities and actions.

In Latvia, some territories have extremely slow development, for instance, a number of socio-economic indicators in Latgale are the lowest in comparison with other Latvia's regions. In order to determine potential development directions of Latgale, the current situation on regular basis in six Latgale districts has been analysed since 1999 up to the ATR (administrative territorial reform) in 2009 and also after the ATR in the newly established entities – counties. In-depth research was carried out in the Southern Latgale[3] (territories of former Daugavpils, Kraslava, and Preili districts), which in many aspects is a specific sub-region, and furthermore – its location is quite remote from Latvia's most developed statistical regions.

The choice of the main topic for the study was justified by Latgale's strategically advantageous geographical location in the Eastern part of Latvia and existing but insufficiently used development potential. The authors of the article have previously cooperated in the framework of the following studies: "Economics' Development Perspectives and Directions of Latvia's Regions" and "Evaluation of Potential and Development Directions of Southern Latgale", though, the publication reflects only some part of the study results.

The object of the study is Latgale Planning Region (further in the text – Latgale region). **The subject of the study** – potential and development directions of Latgale region with in-depth analysis of the Southern Latgale. **The aim of the study** is to conduct the analysis of the development potential of Latgale region including the Southern Latgale as a sub-region, and to define economic development directions.

The main tasks of the study:

1) to evaluate and analyse historical, social and economic development of Latgale region before and after the ATR;
2) to analyse the situation and branch structure of economics in Latgale region;
3) to size up the development potential of the Southern Latgale sub-region and to analyse the opinion of the population on the socio-economic, political activity,

[1] *E-mail address*: elita.jermolajeva@gmail.com

[2] *E-mail address*: sanda.cingule@gmail.com

[3] In the framework of the study, Latgale region is divided into two sub-regions – Southern Latgale and Eastern Latgale (territories of former Balvi, Rezekne, and Ludza districts), according to NUTS (level 3) and most commonly used (in the state institutions, for instance, Ministry of Agriculture, Rural Support Service, Ministry of Agriculture, Rural Support Service, Environmental Investment Department; National Development Plan, acquisition of the EU funds etc) division. The author – S.Cingule-Vinogradova

and future perspectives of the sub-region and local governments;

4) to define potential development directions and most perspective economy sectors of Latgale region.

Methodology

In the joint study, a number of common scientific research methods in economics were used as monographic method; analysis and synthesis, logical constructive, grouping and comparison methods; induction and deduction methods; territorial development potential method elaborated by S.Cingule-Vinogradova; dynamic temporal ranking analysis method; quantitative research method for sociological studies - questionnaire, its results processed with SPSS data analysis tools (Descriptive Statistics Analysis Methods – Frequencies, Descriptives, Crosstabs); non-parametric (inferential) statistics method χ^2 – Hi (Chi-Square) tests to estimate mutual connections of the indications; qualitative research method for sociological studies; logic constructive method etc.

In defining the strategic development directions and perspectives of Latgale economics, the authors of the study apply the following most important socio-economic development strategic planning methods and principles: A.Marshal's method of industrial districts (clusters); comparative advantage theory by A.Smith and D.Ricardo, and industrial location theory by A.Weber; active usability of scientific innovations for area development promotion by E.Heckscher, B.Ohlin (supplemented by V.Boronenko); central place theory by A. Lösch and W.Christaller; conclusions of A.Pred's method analysis; area location structural model for spatial differentiation of land usage intensity, and ways by J.Heinrich von Thünen.

Results and discussion

1. Short description of Latgale region and the Southern Latgale sub-region

Latgale region is located in the Eastern part of Latvia, and borders on two Latvia'a regions – Vidzeme and Zemgale and three countries - Russia, Belarus, and Lithuania. Latgale Planning Region differs from historically-ethnographic Latgale region. Planning region is a derived public entity, established according to the Regional Development Law. Latgale Planning Region was founded in 2006 with the aim to ensure regional development planning, coordination, and cooperation of local governments and other state administration institutions.

The area of Latgale region is 14 549 km^2 or 22.5% of Latvia's total area. When comparing several socio-economic development indicators, Latgale region is ranked as the most underdeveloped region, for instance, the average Gross Domestic Product (GDP) in Latvia's regions per capita was LVL 7144 in 2008, while for Latgale it was almost two times lower – LVL 3926. Latgale region has other lowest indicators – non-financial investments per capita, number of economically active individual entrepreneurs per 1000 inhabitants etc. (Development of Regions ..., 2010).

There are 21 local governments in Latgale region, including two republican significance cities and 19 counties, and 145 local administrations. Rezekne county with the area of 2.5 thousand km² or 17.5% of the regional area is the largest local government in Latgale region, while Baltinava county with the area of 0.2 thousand km² - the smallest. To ensure intensification of Latgale region development, the major attention is paid to the development centres on four levels: 2 national importance development centres – Daugavpils and Rezekne; 5 regional importance development centres – Balvi, Kraslava, Livani, Ludza, and Preili; county importance development centres - 7 small towns and 10 large villages; local importance development centres – rural settlements – villages, defined in territorial planning documents by local governments.

The second largest state significance city Daugavpils is located in Latgale region, and Daugavpils has major potential for industrial production development and also intellectual potential. Daugavpils is a multi-cultural, multi-ethnical, and multi-functional city developing into a cross-border importance economic development and service centre. The aim of Rezekne city is to become a centre of culture, education, and creative industries in the Eastern Latvia. Business development infrastructure, knowledge transfer centres for promotion of innovative activity and production development, academic activity, and applied studies as well as major part of most qualitative labour force are concentrated in the development centres of the region. Latgale Development Strategy with its main task to retain minimum 300 thousand inhabitants in the region has been elaborated to promote territorial development of the region. The objective is to increase a share of private sector in local economy and to increase labour wage up to 60% of the EU average level by 2030 (Latgale Strategy, 2010).

Latgale region has a wide road network connecting it with the largest cities in Vidzeme and Zemgale, and the capital city Riga. International transport corridors provide direct communication between Latgale and major centres of the neighbouring countries – Moscow, Vitebsk, Smolensk, Kaunas, Vilnius, Warsaw, Pskov, and St. Petersburg. By Latvia joining the EU, the strategic importance of Latgale increased in handling, processing, and delivering transit cargos to customers in the EU Member States, thus, Daugavpils and Rezekne are developing as regional logistic centres, Daugavpils international airport project is also being developed. Another development potential of Latgale is its landscape values, and cultural and historic heritage – Latgale is known as the Country of Lakes.

The Southern Latgale sub-region is the most remote area from the Baltic Sea and reaches most into the continent. The history of Latgale region significantly differs from the rest of Latvia, and these historical differences create explicit multi-cultural, multi-ethnical, multi-national, and multi-functional environment and economically different environment. In addition, the environment in the Southern Latgale differs from the Eastern Latgale. The differences can be observed in unbalanced economic development and economic activity, employment and unemployment level, population income level, and social and cultural life conditions of the territories. The unbalanced socio-economic development of the regions and territories has been historically influenced by objective and subjective factors.

The overall economic situation in Latgale has the same tendency as throughout Latvia concerning economic

growth and crisis. The structure of gross product, produced by enterprises in Latgale, overall, is like the national economy structure, where services create the major share of it. The specific feature, in comparison with the neighbouring regions, is relatively high rate of services and relatively low rate of industry. The highest GDP index was in 2007 – 8.3% of Latvia's total GDP. The most rapid growth was also observed in 2007 – by 46%, which mainly related to the opportunities provided by the European Union – investments in Latgale and markets outside Latvia. According to the forecasts of experts, the value added produced in Latgale in 2011 will exceed 1.6 times the amount produced in 2004 (Latgales regions..., 2011).

In Latgale, the major part of the value added of all Latgale economy sectors is produced by industry – almost LVL 120 million in 2010. Transport and communication sector is nearly of the same importance – in 2010, the value added was LVL 114 million, which exceeded the production volume gained in 2004 almost 2.5 times. The entrepreneurs involved in agriculture and forestry are of great importance for the development of rural areas and promotion of employment. In 2010, the value added produced in the sectorexceeded LVL 53 million, which is the fifth largest amount in the region. Processing industry plays an important role in Latgale development – each fifth active enterprise, registered in the region, employs almost 1/6 of economically active population in the region. The main share (more than 90% of the total processing industry newly created value added) in Latgale industry is produced by such sectors as metal processing and machinery building, food production and woodworks, and production of vehicles and non-metallic products. Export capacity development of Latgale enterprises is positively influenced by successfully implemented investment projects, mainly focused on increasing global competitiveness and increasing volume of innovative products. Production of export goods is mainly concentrated in the largest enterprises of the region, recently joined by innovative SMEs (Latgales regions..., 2011).

Nevertheless, business support structure in Latgale is weakly developed – only 5 business incubators and 5 technological centres are operated in the region. Rezekne Special Economic Zone (RSEZ) aims to develop industry and communication, to promote trade, export and import of goods via Latvia by attracting investments for production and infrastructure development and for creation of new jobs – 13 enterprises were operational in it in 2011.

Latgale region planning documents and the study "Economics' Development Perspectives and Directions of Latvia's Regions" emphasise the main values of Latgale region:

— educated, culturally, socially, economically, and politically active community;
— ecologically clean nature and heritage values;
— geographic location of Latgale at the Eastern border of Latvia, transit transport corridors.

2. Complex analysis of the Southern Latgale development potential assessment

When assessing the development potential of the Southern Latgale territories (S.Cingule-Vinogradova, 2011), the analysis of territorial development indexes was based on the available official statistical data and its division by former districts before the ATR and by cities and counties after the ATR. SWOT analysis comprises information on evaluation of the current situation in the respective territories carried out by the Southern Latgale local governments as well as the experience of the authors, based on working experience in the Southern Latgale local governments.

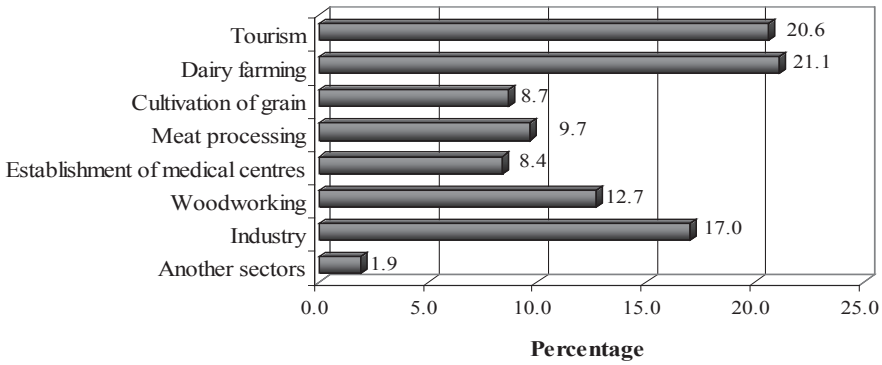
Summarising the acquired information, the authors come to the conclusion that, unfortunately, weaknesses still prevail over the Southern Latgale economic development opportunities. However, the existing advantages and opportunities are sufficient for fostering business development. The most essential advantages of the Southern Latgale are human resource potential (intellectual, cultural, social etc.), ecological environment and biological diversity, developed transport network, geographical location, and natural resources.

Relating to the data, acquired from the Southern Latgale sub-region SWOT analysis, to the whole Latgale region, the conclusion is that Latgale region has a weak position among its direct competitors – other regions of Latvia (according to the socio-economic indicators, the region holds the last position in the country). Statistical data is objective information, though, the target markets may have an interest in the features of some specific area, which is not reflected in statistical data. The territory has a significant development potential due to its resources favourable for business (place, natural resources, and market "niches"), which are not fully used yet.

The inhabitant is the real evaluator of the economy and life quality of the area. If the community does not see the development opportunities, unleashed potential and possibilities to balance the regional development, it is practically impossible to implement positive changes. The opinion of the inhabitants on the current situation in the Southern Latgale in relation to other regions of Latvia, on the activity of local governments and their opinion on the socio-economic development perspectives of the territory was studied by the means of questionnaire forms within the quantitative study. Questioning was carried out from November 2009 to March 2010. Totally 612 respondents were selected and divided into 4 age groups: under 25 years; from 26 to 35 years; from 36 to 45 years; and above 46 years. SPSS data analysis tools were used to process the filled in questionnaire forms, all the statistical indicators were calculated by Statistical Package for Social Sciences program (SPSS 11.01).

The age group from 26 to 35 years was the largest - 33.2%, from 36 to 45 years - 29.7%, and below 25 years - 22.5%. The smallest age group was above 46 years (14.5%). The respondents above 55 years mainly refused to fill in the questionnaire forms as they did not want to share their opinion but the most active age group was from 26 to 45 years. The gender division of the respondents was 69.4% - females and 30.6% - males.

The questionnaire contained 15 questions grouped into 3 blocks: 1) opinion of the respondents on socio-economic situation in the Southern Latgale; 2) evaluation of the local government activity regarding the existing situation and development opportunities; and 3) facts about the respondent – age, gender and place of living according to the former district division. Within the



Source: S.Cingule –Vinogradova's construction based on the population survey data

Fig. 1. **More capable industries and areas in the Southern Latgale (% distribution of the total number of answers)**

query block "The attitude and opinion of the respondent on socio-economic situation in the Southern Latgale", it was studied how inhabitants evaluate the development position of Latgale among other regions of the country – Kurzeme, Vidzeme, and Zemgale (valuation scale from 1 to 4, where "1" is the lowest value and "4" – the highest value):

— Vidzeme region had the highest evaluation in terms of development – average score - 3.09 points;
— Zemgale region was ranked the second most developed region – 2.82 points;
— Kurzeme region was marked as the third most developed region - 2.55 points;
— Latgale region was rated as the most underdeveloped region – only 1.61 points.

The evaluation shows that the respondents critically and realistically assess the development of the region in comparison with other regions of Latvia. The inhabitants above 46 years have positive opinion on Latgale development but the youth under 25 years have the most critical opinion on the development level of the region. The tendency – the younger is the regional inhabitant, the lower is the regional development score, and – the older is the respondent, the higher is the score.

According to the respondents' opinion, the main reason for weak development of the Southern Latgale is a lack of state support for the region – it was mentioned by 27.1% of respondents, the second reason - lack of support for business start-ups (15.4%), and the third reason – remote location from the capital city. The other reasons were mentioned as historically developed situation, passivity of community to protect their rights, corruption problems in state institutions and judiciary system, lack of state regional policy etc.

Majority of the respondents in the Southern Latgale thinks that entrepreneurship is not sufficiently developed in the territory (82%). The respondents mention the need to elaborate favourable tax policy for promotion of business development as one of the priorities and vital pre-conditions for the Southern Latgale development – it was the most frequently chosen option in two age groups – under 25 and above 46 years. The other condition – proper management and development of infrastructure (most frequently chosen option in the age group from 36 to 45 years). Attraction of young people to the region, according to respondents' opinion (10.3%), would help develop the Southern Latgale (most frequently chosen option for the age group from 26 to 35 years), attraction of foreign investments (9.1%), need for favourable tax policy for the whole Latgale region (7.9%). The total division of the answers once again confirm the tendency obtained from the questionnaire data – community is not comfortable with the economic and social situation in the region and wants it to be improved.

Answering the question about the most perspective economic sectors of the Southern Latgale, the respondents indicated dairy farming (21.1%), tourism (20.6%), and industry (17%) (Figure 1). Among the other sectors they mentioned – sheep-farming (meat, wool), horse-breeding (riding, sports), crafts, soap production, apiculture, fish farming, breeding of exotic animals, trade, fruit growing, and hunting as a kind of sports.

In addition, it was explored if and to what extent there are interconnections between population age, gender and living place when evaluating situation of business development in the Southern Latgale. Two hypotheses were brought forward and verified, using non-parametric method χ^2 – Hi square (Chi-Square) test to estimate interconnections of two features corresponding to the nominal value scale. The conclusion: there is an interconnection between the features, indicating that evaluation of the current business situation is dependent on a living place - near the cities or in rural places ($p=0.021 > \alpha$) and age ($p=0.006 > \alpha$), but is not dependent on gender ($p=0.144 > \alpha$). This means that the age and the place and not the gender of the potential entrepreneur is determinant to start a business, in order to activate business development in the Southern Latgale.

The qualitative research method – in-depth expert interviews was also used with the aim to define the Southern Latgale potential, to define possible direction of economic development and the role of Daugavpils University in promoting development of the sub-region. Nine experts were selected and interviewed in the period from September to October, 2010. The experts mentioned several important conditions for the Southern Latgale sustainable development: innovations, effective use of human resource potential, improvement of infrastructure and information quality, increase of product value added, use of natural recourses and cross-border opportunities,

Table 1

Main development directions and support instrument for Latgale region

Development directions	Description of development directions and support instruments
Knowledge	Knowledge level and quality determine the development level of people –more informed, knowing, professional, active, self-starting people have more opportunities on the labour market as employee or employer. Development of cooperation between universities, vocational schools, state and municipal institutions, enterprises. Role of life-long learning.
Innovation	Grants for scientific research, cooperation between scientists and producers, improvement of existing products and services, creation of new products and sectors with increased value added etc. Even a small initiative being implemented in practice has a more substantial contribution, meaning and economic value than a large amount of knowledge, which is not used. Implementation of social innovation.
Creation of networks or clusters	Perspective directions: logistics clusters (people, cargos, road, rail and air transport), production clusters (metal working, construction materials, textile etc.), bio-production clusters (fish, meat, plants, herbage, fruit, vegetables), clusters of engineering technologies, forest, tourism. Inter-sectoral and/or adjoining science clusters based on cooperation with other Latvian regions, Russia, Belarus and Lithuania.
Biological Science Valley	Southern Latgale has the largest proportion of specially protected nature territories, thus, protection and maintenance of ecological and diverse environment is a logical development direction to create "Biological science valley". It is an area for theoretical and practical studies of natural sciences with its centre at Systematic Biology Institute, Daugavpils University. Promote production with high value added in sectors of agriculture, fish farming, industry, and tourism.
Support instruments in the fields of: — finance — infrastructure — information	— Elaboration and implementation of state support programmes for Latgale; elaboration of allowances for business crediting in Latgale; offer "seed fund" for regional businesses to implement new ideas. — Creation of Science/technological park in Daugavpils (the second largest city in the country, concentration place of higher education institutions in the region); proper management of general infrastructure (roads, communication), quality development. — Creation of information/consultation centres in Latgale as training institutions (including distance learning) for students, teachers, adults to achieve long-term objectives – to create knowledge-based regional economy and re-structured industry.

Source: authors' construction

business – supportive environment, activation of Daugavpils University work etc.

3. Development directions of Latgale region

The existing potential of Latgale region specifies several development opportunities. Geographic location, traditions of industrial production, agriculture and crafts, knowledge and professionalism of human resources, education institutions, ecologically clean environment, biological diversity, and attractive landscapes are significant resources. One of the most important tasks is to increase quality and effectiveness of use of the existing resources, to create new products and services with high added value. The authors propose several Latgale development directions, which function simultaneously and supplement each other (Table 1).

The most significant driving engine of Latgale development is **knowledge and innovation** that would ensure implementation of sustainability principle. Education is one of the means to maximise human capital and regional development opportunities – this was also emphasised by the experts of the qualitative study and the respondents of the quantitative study. The application of innovations would promote the development of Latgale in the long-term perspective, fostering efficiency of the existing sectors, and creating new activity fields. It is important to develop social innovations that would make it possible for the area development subjects to think, speak, and act differently and to achieve the results of sustainable development in the environment they live. Social innovations do not require major financial investments but they definitely require that the subjects of the area development have real and true interest and responsibility.

Creation of networking or clusters between enterprises, education and science institutions is one of the ways to achieve qualitative socio-economic improvements in the region. Cluster approach provides that the production structure in specific economic areas (city, county, region) should develop in a way that the production of one particular sector could be used in other sectors. In the EU Member States, clusters are an important element for developing innovation and business competitiveness (*Boronenko..., 2007*).

Use of biological diversity is one of the priority development directions. In Latgale, there are 53 national importance specially protected nature areas and 159 natural sites, local importance protected nature areas, and a great number of protected plants and

species. There is sufficient potential for studies of plants and live organisms in order to create **biological science valley** in Latgale with Daugavpils University as a leading institution.

The authors mention a number of other conditions for successful development of Latgale region, for instance, **work optimisation of state institutions; business favourable fiscal policy; export promotion; corporate social responsibility, infrastructure quality, "good news" factor, employment and labour quality, community motivation** etc. The authors propose to use **financial, infrastructure, and information** support instruments (Table 1) to foster innovation.

The development of Latgale region would avert and diminish disparities between the regions of Latvia – a small country in the sense of territory. Since the EU and other countries in the world perceive Latvia as a single territory, balancing of socio-economic development of the regions in Latvia would provide investors with more positive, stable, and trustful vision of Latvia as a potential area for investing.

Conclusions and recommendations

1. Available human, natural, and geographic location resources provide manifold preconditions for the development of Latgale region.
2. The existing area potential is not fully used. Entrepreneurship level is comparatively low, sectors with small value added predominate in the economic structure, business support infrastructure is underdeveloped.
3. The respondents of the quantitative study and the experts of the qualitative study mentioned several problems and also development opportunities of the Southern Latgale:
   1) main reason of underdevelopment is a lack of state support for the sub-region, and remote distance from the capital city;
   2) existing potential involves knowledge and professionalism of human resources, qualified specialists, good production traditions, infrastructure planning, agricultural areas, and free market niches;
   3) local governments should be more active in providing the basic needs of the inhabitants and in stimulating entrepreneurship in a specific territory;
   4) to ensure the Southern Latgale development, it is required to significantly increase resources and to coordinate investments on the regional level;
   5) businesses need varied support: predictable tax system, diminished bureaucracy in state institutions, improved all kinds of infrastructure, developed business incubators, support to small and medium enterprises etc.
4. Daugavpils University should become the education centre of Latgale and by means of Technology Transfer Office it should cooperate with businesses, create new innovative products and act as a mediator between science, business, and society.
5. Development and potential growth of Latgale region economic sectors is foreseen in the following:
   1) traditionally leading sectors – food production; wood processing; metal working and machinery building; transport, communication and logistics;
   2) new sectors as growing fast – tourism; health and healing services; creative industries; renewable energy and energy efficiency to some extent based on agriculture and forestry.

Bibliography

1. Agarwal, P. (2009). *Walter Christaller. Hierarchical Patterns of Urbanization.* Centre of Spatially Integrated Social Sciences. Retrieved: http://www.csiss.org/classics/content/67. Access: 16 November 2010.
2. Barnes, T.J. (1996). *Logics of Dislocation: Models, Metaphors and Meanings of Economic Space*. New York, p. 293.
3. Boronenko, V. (2007). *Klasteru pieeja regionu attistibai zinasanu ekonomikas apstaklos. (Cluster Approach for Region Development in Knowledge-based Economy).* Daugavpils Universitates Socialo petijumu instituts. Daugavpils: DU Akademiskais apgads "Saule", 370 lpp.
4. Cooke, P. (2006). *Problems and Prospects for Clusters in Theory and Practice.* Centre for Advanced Studies of Cardiff University. Retrieved: www.dime-eu.org/.../Cooke%2006% 20Clusters%20Critique%5B1%5D.doc. Access: 21 November 2010.
5. Cingule-Vinogradova, S. (2011). *Evaluation of the Potential of Southern Latgale and the Directions of its Development.* Doctoral Thesis for the Scientific Degree (Dr.oec.) 17 June 2011, p. 182.
6. Jauhiainen, J.S. (2000). *Regional Development and Regional Policy*: European Union and the Baltic Sea Region. Turku, p. 132.
7. Latvijas regionu ekonomikas attistibas perspektivas un virzieni: Latgales regions (Development Perspectives and Economic Directions of Region of Latvia: Latgale Region). Jermolajevas E. nepubliceti materiali (Jermolajevas E. Unpublished Materials), 2011, 49 lpp.
8. Krastins, O., Vanags, E., Vanags, I., Valodins, E., Zake, A., Locane, V. (2009). *Latvijas dazadiba skaitlos un vizijas 2009 (Latvia's Diversity in Figures and Vision 2009)*. Latvijas Republikas Centrala Statistikas parvalde. Riga. 108 lpp.
9. *Latgales strategija 2030 (Latgale Strategy 2030)* (2010). Latgales planosanas regions. Retrieved: http://www.latgalestrategija.lv. Access: 10 January 2011.
10. Petrova, I., Jermolajeva E. (2007). *Eiropas valstu pieredze teritorialaja marketinga un tas izmantosanas iespejas Latvija (Experience of European Countries by the Territorial Marketing and its Possibilities in Latvia)*. Daugavpils: Saule. 159 lpp.
11. Porter, M. (1998). *Clusters and the New Economics of Competition*. p. 14. Retrieved: http://hbr.org/product/clusters-and-the-new-economics-of-

competition/an/98609-PDF-ENG. Access: 8 August 2010.
12. Pumain, D. (2004). *Central Places Theory.* Retrieved: http://www.hypergeo.eu/ article.php3?id_ article=188. Access: 25 November 2010.
13. *Regionu attistiba Latvija 2010 (Regional Development in Latvia 2010)* (2011). VRAA. Riga. 171 lpp.
14. Titze, M., Brachert, M., Kubis, A. (2011). The Identification of Regional Industrial Clusters Using Qualitative Input-Output Analysis (QIOA). *Regional Studies*, Volume 45, Number 1, pp. 89-102.
15. Vaidere, I., Vanags, E., Vanags, I., Vilka, I. (2008). *Regional Policy and Development of Local Government in Latvia and the European Union*. Riga, p. 326.

Risk Management Plan as an Integral Part of The Mid-Term Strategy in Providing Loan Guarantees to Agribusinesses

Helma Jirgena, Dr.oec., assoc. prof.
Institute of Economics, Latvian Academy of Sciences
Juris Hazners[1], MBA
Latvian State Institute of Agrarian Economics

Abstract. The negative impact of the global crisis on the Latvian agriculture and food processing has led to a necessity of revision of the mid - term strategy of the Rural Development Fund as a sole provider of loan guarantees to Latvian agribusinesses. The aim of the research is to select an appropriate strategy for the Fund and elaborate an action plan for the three years period from 2012 to 2014. The selection of the strategy is based upon the available results of the SWOT analysis. The selected defensive strategy requires an elaboration of a risk management plan. While the internal factors of the operation of the Rural Development Fund have remained much the same, the external environs have changed rapidly. Several factors have a major share in the changes of external risks. Therefore, it is necessary to elaborate the risk management strategy by identifying the most important threats factors and providing risk analysis with risk prioritising. Out of the four main risk management strategies, the avoidance and imitation are not applicable to the Fund, as the organisation cannot leave the market and the Fund operates in the sector where no competitors or leaders do exist. After the threats analysis and evaluation, risk management plan is worked out to avoid risks or to mitigate risk impact. The identified threats are evaluated and mapped on a semi-quantitative risk matrix. The study results into a detailed risk management plan including risk prioritisation, responsible persons, and actions to be taken.
Key words: loan guarantees, mid-term strategy, risk management plan.
JEL code: G32

Introduction

The impact of the global crisis in 2008-2009 on the Latvian agriculture and food processing was negative. After high returns in 2008 when producer prices soared, many agribusinesses had expansion plans and purchased expensive inputs. In the aftermath, higher production costs were not met by similarly high producer prices. The slowdown in the global export markets weakened the demand of the processors for the raw material and returns declined drastically. Since the establishment in 1994, the state joint stock company "Rural Development Fund" (further in the text - Fund) has provided loan guarantees to agribusinesses. Many companies whose loans were guaranteed by the Fund came under financial pressure and some faced insolvency. To avoid bankruptcies of their clients banks provided loan restructuring by postponing payments and extending repayment periods. As the market value of the collaterals became lower, banks demanded extra guarantees from the Fund. Thus, the demand for loan guarantees grew. At the same time, guarantee risks became higher. The Ministry of Agriculture commissioned Fund to provide increased risk support measures to agribusinesses. The list of the applicants liable for the guarantees was extended and the upper limit of a single guarantee was raised thereof. After the slight decline over a few years, the total amount of loan guarantees since 2009 has increased markedly. However, the structure of the loans has changed at the same time. About one half of the loans are in the restructuring of the pending loans and current assets, while the share of investment loans has declined.

The hypothesis of the paper: risk management plan is an important constituent of the mid- term strategy in providing loan guarantees to agribusinesses. The aim of the study is the elaboration of the risk management plan for the Fund. Research tasks include selection of the strategy; assessment of the risk, which deals with the probability and consequences of failure of a strategy (financial and non-financial), as one of the factors associated with the acceptability of strategic options, and elaboration of the risk management plan. Identified risks are evaluated by semi-quantitative risk matrix method. Semi-quantitative methods are the most widely used; even they usually do not carry an accurate mathematical model. These methods provide simple and rapid assessment. The information can be gathered by a single person or team. This assessment is used often when numerical data are inadequate or unavailable, or resources are limited (time, budget or expertise).

Research results and discussion

1. Business strategy of the Fund for the mid-term period after the crisis

Rapidly changing external environment has led to a necessity for the development of the mid-term business strategy of the Fund after the crisis in economics. Lamb (1984) provides the following definition of strategic management: "Strategic management is an ongoing process that evaluates and controls the business and the industries in which the company is involved; assesses its competitors and sets goals and strategies to meet all existing and potential competitors; and then

[1] *E-mail address*: juris@lvaei.lv.

reassesses each strategy regularly to determine how it has been implemented and whether it has succeeded or needs replacement by a new strategy to meet changed circumstances, new technology, new competitors, a new economic environment, or a new social, financial, or political environment.". In corporate strategy, Johnson, Scholes and Whittington (2008) stress that in measuring the effectiveness of the organisational strategy, it is extremely important to conduct a SWOT analysis to figure out the internal strengths and weaknesses, and external opportunities and threats of the entity in business. SWOT or TOWS analysis helps identify strategic options by matching external opportunities and threats with internal strengths and weaknesses. According to Weihrich (1982), four strategic alternatives that address the following additional questions do exist:

— Strengths and Opportunities (SO) - How can the organisation use its strengths to take advantage of the opportunities?
— Strengths and Threats (ST) - How can the organisation use its strengths to avoid real and potential threats?
— Weaknesses and Opportunities (WO) - How can the organisation use its opportunities to overcome the weaknesses?
— Weaknesses and Threats (WT) - How can the organisation minimise its weaknesses and avoid threats?

There are many definitions of risk depending upon the financial, economic, natural, environmental, and social factors involved. The ISO 31000 standards define risk as "the effect of uncertainty on objectives, whether positive or negative". The USA National Aeronautics and Space Agency (NASA, 2005) defines risk as a "combination of the likelihood of an undesirable event occurring and the severity of the consequences of the occurrence, expressed as their product". Risk management is the identification, assessment, and prioritisation of risks followed by coordinated and economical application of resources to minimise, monitor, and control the probability and/or impact of unfortunate events or to maximise the realisation of opportunities. According to Nocco and Stulz (2006), a corporation can manage risks in one of two fundamentally different ways: one risk at a time, on a largely compartmentalised and decentralised basis; or all risks viewed together within a coordinated and strategic framework. The latter approach is often called "enterprise risk management" or "ERM for short. As Hoyt and Liebenberg (2011) point out, interest in enterprise risk management (ERM) has continued to grow in recent years. Unlike traditional risk management where individual risk categories are separately managed in risk "silos", the ERM enables firms to manage a wide array of risks in an integrated, enterprise-wide fashion. Meulbroek (2002) emphasises that a company can implement its risk management objectives in three fundamental ways: modifying its operations, using targeted financial instruments, or adjusting its capital structure.

Several risk management standards have been developed including ISO standards. The strategies to manage risk include transferring the risk to another party, avoiding the risk, reducing the negative effect or probability of the risk, or even accepting some or all of the consequences of a particular risk. Once risks have been identified, they must then be assessed as to their potential severity of impact (generally a negative impact, such as damage or loss) and to the probability of occurrence. In the assessment process, it is critical to make the best educated decisions in order to properly prioritise the implementation of the risk management plan. All methods to manage the risk fall into one or more of these four major categories:

— avoidance (eliminate, withdraw from or not become involved);
— reduction (optimise - mitigate);
— sharing (transfer - outsource or insure);
— retention (accept and budget).

According to ISO 31000 standards, the stage immediately after completion of the risk assessment phase consists of preparing a Risk Management Plan, which should document the decisions about how each of the identified risks should be handled. Implementation follows all of the planned methods for mitigating the effect of the risks. Risk analysis results and management plans should be updated periodically. Previously selected measures may become ineffective, and risk levels may change in the business environment. Risk evaluation is a complex process irrespective of the economic entity involved as it implies an attempt to predict the future of the organisation above the possible statistical and mathematical calculations. As stated by Radu (2009), risk assessment is a systematic process to identify and compare that to consider the organisation's key assets, threats and vulnerabilities that can occur, the likelihood and consequences, and protective measures that can be counteracted. To estimate risk, there are three broad categories of methods: quantitative, qualitative, and semi-quantitative. Quantitative assessments usually are based upon the calculation of the annualised loss expectancy. The annualised loss expectancy is a calculation of the single loss expectancy multiplied by the annual rate of occurrence. Quantitative methods are mostly applied in financial markets. Semi-quantitative methods are used to

Severity of impact	Score	Probability of occurence				
		Frequent	Probable	Occasional	Remote	Improbable
Score		5	4	3	2	1
Extreme	5	25	20	15		5
High	4	20	16	12		4
Medium	3	15	12	9	6	3
Low	2	10	8	6	4	2
Very low	1	5	4	3	2	1

Source: NASA, 2005

Fig. 1. **The USA NASA risk matrix model with mapped Composite Risk Index values**

describe the relative risk scale, while qualitative methods usually classify risks in four categories like "low", "medium", "high" and "very high" with five probabilities of occurrence. In a semi-quantitative approach, different scales are used to characterise the likelihood of adverse events and their consequences. Analysed probabilities and their consequences do not require accurate mathematical data. The objective is to develop a hierarchy of risks against a quantification, which reflects the order that should be reviewed and no real relationship between them. Various numbers of risks and probabilities of their occurrence are used. The impact of the risk event is commonly assessed on a scale from 1 to 5, where 1 and 5 represent the minimum and maximum possible impact of an occurrence of a risk. The probability of occurrence is likewise commonly assessed on a scale from 1 to 5, where 1 represents a very low probability of the risk event actually occurring, while 5 represents a very high probability of occurrence. This axis may be expressed in either numbers (once a year, once in ten years) or may be put descriptive. The USA NASA (2005) applies its definition of risk with the NASA 5*5 Risk Matrix, which uses numerical (1 through 5) likelihood and consequence levels. The results are mapped on a 5*5, shade-coded, risk matrix with deep grey, medium grey and light grey matrix elements. Primary risks are represented by the deep grey zone of the matrix. Modified matrix uses four sub-ranges of risk with shades of grey colour. Numerous different risk formulae exist, but perhaps the most widely accepted formula for risk quantification is the Composite

Table 1

Risk probabilities and severity of losses in points

Points	Risk probabilities		Severity of losses	
	Description	Occurrence	Description	Losses (LVL)
1	Very seldom	Once in 5 years	Minimal	<10,000
2	Seldom	Once in 2 years	Small	10,000-20,000
3	Periodically	Every year	Medium	20,000-100,000
4	Rather frequently	Every quarter	Large	100,000-500,000
5	Frequently	Once in a month	Very large	>500,000

Source: authors' construction

Table 2

Composite Risk Indexes for risks in specified areas

No.	Risk area	Risks	I	P	CRI
1	Personnel	Leave of important employee	2	1	2
2		Insufficient level of personnel competence	3	2	6
3		Enrolment of new employee	2	1	2
4		Lack of experience	3	3	9
5		Deficient personnel motivation system	3	1	3
6	Reputation	Insufficient and ineffective publicity	3	1	3
7		Delayed fulfilment of obligations	3	2	6
8		Late decision making	2	1	2
9		Insufficient argumentation of decisions	3	1	3
10	Information systems	Electronic data copying, storing and safety	4	2	8
11		Accessibility and safety of database	4	2	8
12		Conformity and development opportunities of database	3	1	3
13		Emergency alternative hardware	3	1	3
14	Law and politics	Legal changes	3	3	9
15		Incomplete agreements	4	2	8
16		Authority to conclude transactions	3	1	3
17	Asset management	Insufficient diversification of the disposal of the assets	3	5	15
18		Deficient balance of the efficiency of disposal of the assets with safety	4	3	12
19		Insufficient cash reserves to meet the liabilities	3	3	9
20	Guarantees	Guarantee portfolio risk	4	5	20
21		Single guarantee risks	5	4	20

Source: authors' construction

Risk Index (CRI). The CRI is calculated by multiplying the score for impact of risk event (I) to the score of probability of occurrence (P). The Composite Risk Index, thus, can take values ranging from 1 through 25, and this range is usually arbitrarily divided into three or four sub-ranges. The overall risk assessment in case of three sub-ranges is then "low", "medium" or "high". For instance, the three sub-ranges could be defined as 1 to 8, 9 to 16, and 17 to 25. When four sub-ranges are defined (by adding "very low" to risks), four sub-ranges are defined as 1 to 6, 7 to 11, 12 to 19, and 20 to 25. Values of the CRI according to division in five sub-ranges are provided in Figure 1.

2. Results of the SWOT analysis

Internal strengths

The options of mutual replacement by staff members can be viewed as a strength, considering the scarcity of personnel resources. The personnel is experienced and possesses the necessary expertise. Moreover, professional skills are improved continuously. The company itself has a good reputation.

Internal weaknesses

The necessity of mutual personnel replacement is a weakness. Staffing is insufficient. Motivation is inefficient. Accountancy operations are incomplete. Database support is not adequate. Data processing, storage, distribution, and safety are inefficient. Website is incomplete and needs more frequent upgrading. Supply of current assets is insufficient. Asset investments are not diversified efficiently.

External opportunities

Asset investments can be diversified more efficiently. Outsourced expertise should be hired, if necessary. Publicity can be improved and public awareness should be increased.

External threats

Changes in legal environment can complicate the management of existing guarantees. Highly volatile global markets have impact on anticipated operational outcomes. The number of undertakings with high risk levels is growing along with the necessity of additional guarantees. Single guarantee risks and guarantee portfolio risks are permanent.

3. Risk management plan

After the SWOT analysis, the main internal strengths and weaknesses, and the main external threats and opportunities of the Fund were identified in six main areas: personnel, reputation, information systems, legal and political environment, asset management, and guarantees. The number and importance of the Fund's internal strengths at the meantime are insufficient to select the strategy with the exploration of external opportunities or minimisation of external threats. Thus, the SO and ST strategies would not be selected for the future development. The external opportunities are few and they would not necessarily bring benefits. Therefore, the WO strategy is not appropriate. The defensive WT strategy should be selected by minimisation of internal weaknesses to mitigate the possible impact of external threats. The internal factors of the Fund have not much changed lately. At the same time, the impact of external threats has increased. Several risk factors have a major share in the changes of external threats. Therefore, it is necessary to elaborate the risk management strategy by identifying the most important risk factors and providing risk analysis with risk prioritising. Priorities of risks are evaluated according to the point scale. After the risk analysis, risk management plan is worked out to avoid risks or to mitigate risk impact. Out of the four main risk management strategies, the avoidance and imitation are not applicable to the Fund, as the organisation cannot leave the market and the Fund operates in the sector where no competitors or leaders do exist. The other three strategies can be applied to the extent. The Fund has the opportunity to control important environmental factors. Multilateral cooperation with the banks and clients would be improved. Leaving out the forecast changes in the external factors of the consideration, the Fund would enhance the internal response. After the identification of the main risks, risk analysis was provided to assign the priority evaluation to every risk taking into account the existing actions, processes, or plans used to mitigate the Fund's operational risks. Risk probability is evaluated according to a five-point scale upon the expected frequency of occurrence from "very seldom" to "very often" with respective periods from 5 years to less than one month. Probability enclosesalso a risk anticipation and time period necessary to mitigate the risk impact. Severity of losses is evaluated according to a five-point scale with respective losses from LVL 10,000 to more than LVL 500,000. Risk probabilities and severity of losses in points with their respective descriptions, periods of occurrence, and extent of losses are provided in Table 1.

Composite Risk Index is calculated for every risk within the specified area. Every risk has a unique number assigned. The calculated risk priorities are provided in Table 2.

The numbers of the risk priorities are mapped in their respective cells of the 5*5 risk matrix (Figure 2).

Losses	Score	Probability				
		Very frequent	Frequent	Periodical	Seldom	Very seldom
Score		5	4	3	2	1
Very large	5		20	17		
Large	4	21				
Medium	3		18	4,14,19		
Small	2		10,11,15	2,7		
Minimal	1			5,6,9,12,13,16	1,3,2	

Source: NASA, 2005, authors' calculations

Fig. 2. Risks by numbers and their priorities

Table 3

Assigned risk numbers for high priority risks, responsible persons and action plan

No.	Responsible	Action plan
20	Loan Analyst	Limiting of the total amount of guarantees to the mutually connected group of clients
21	Chairman of the Board	Conformity to the existing established procedures and regulations

Source: authors' construction

Table 4

Assigned risk numbers for medium priority risks, responsible persons and action plan

No.	Responsible	Action plan
17	Chairman of the Board	Monitoring of the finance and capital markets
18	Chairman of the Board	Analysis of available information on Latvian banks, changes in credit ratings, loan policies, deposit rates, mortgage bonds, government bonds
19	Chairman of the Board	Monitoring of the questionable guarantees, cash flow planning and directing by disposal of free assets
14	Member of the Board	Continuous monitoring of legal issues, elaboration of proposals
4	Chairman of the Board	Hire of experts, allocation of budgeting for fees

Source: authors' construction

Table 5

Assigned risk numbers for medium priority risks, responsible persons and action plan

No.	Responsible	Action plan
10	Deputy Chairman of the Board	Selective checks on fulfilment of the obligations by database provider
11	Loan Analyst	Introduction of extra passwords, update of passwords
15	Member of the Board	New collaboration agreements with the banks, standardised guarantee agreement forms, scrutinising of the agreements before signing
2	Chairman of the Board	Regular training courses, counselling from other institutions
7	Chairman of the Board	Development and upgrading of the web page, regular provision of information to mass media
5	Chairman of the Board	Establishment of a competitive remuneration and bonus system according to the performance
6	Member of the Board	Development and upgrade of the website and provision of information to mass media on regular basis
9	Member of the Board	Preparation of new collaboration agreements with the banks and engagement of the representatives from the banks and clients to the Board meetings if decisions on rejecting the guarantee have been taken
12	Deputy Chairman of the Board, Loan Analyst	Continuous monitoring of the update of data and improvement of the database according to the requirements of recording and reporting functions
13	Chairman of the Board	Allocation of funds necessary for the upgrade of hardware and lease of servers
16	Member of the Board	Examining of the authorities necessary and elaboration of standardised guarantee agreement forms
1	Chairman of the Board, Deputy Chairman of the Board, Member of the Board	Establishment of proper motivation system and agreements on termination of the employment contracts on acceptable terms
3	Chairman of the Board	Announcement of the vacancy in due time and selection of the staff member upon the letters of reference with trial period
8	Chairman of the Board	Improvement of the controlling system

Source: authors' construction

As seen on the matrix, the main operational risks of the Fund are guarantee portfolio risk, single guarantee risk, risk of the insufficient diversification of the disposal of the assets, and risk of the deficient balance of the efficiency of the disposal of the assets with the safety. The actions of the risk management plan, their assigned numbers from Table 2 and responsible persons for high, medium and low priority risks are provided in Table 3, Table 4 and Table 5, respectively. Each row in a table contains the number of the risk, priority, responsible person and respective action plan. Rows in a table are sorted descending uponthe level of priority.

As seen in Table 3, high priority risks are associated with the guarantee portfolio and conformity to established procedures and regulations. The loan analyst is a sole responsible person for managing the guarantee portfolio risks.

The risk areas covered in Table 4 are diverse. The actions have to be performed exclusively by the Board.

The actions specified in Table 5 are the most numerous and diverse by area and responsible persons.

Conclusions, proposals, recommendations

The study has shown the necessity to elaborate a risk management plan as an important constituent of the mid-term strategy in providing loan guarantees to agribusinesses as stated by hypothesis.

The defensive strategy was selected.

The operational risks were identified, assessed, prioritised and evaluated.

The detailed risk management action plan was elaborated with responsible staff members appointed and their tasks assigned.

Considering the limitations to semi-quantitative research, it would be recommended to command a study based upon quantitative risk assessment methods.

Bibliography

1. Hoyt, R. E., Liebenberg, A. P. (2011). The Value of Enterprise Risk Management. *The Journal of Risk and Insurance, 2011,* Vol. 78, No. 4, pp. 795-822.
2. ISO 31000:2009 Risk Management - Principles and Guidelines.
3. Johnson, G., Scholes, K., Whittington, R. (2008). *Exploring Corporate Strategy, 8th Edition.* FT Prentice Hall, Essex.
4. Lamb, R. B. (1984). *Competitive Strategic Management.* Englewood Cliffs, NJ: Prentice-Hall.
5. Meulbroek, L. K. (2002) Integrated Risk Management for the Firm: A Senior Manager's Guide. *Journal of Applied Corporate Finance,* Vol. 4 (4), pp. 56-70.
6. NASA. (2005). New Millennium Programme Guidelines for Preparing Project Risk Management Plans.
7. Nocco, B. W., Stulz, R. M. (2006). Enterprise Risk Management: Theory and Practice. *Journal of Applied Corporate Finance, Volume 18 Number 4*. A Morgan Stanley Publication, Fall 2006.
8. Radu, L-D. (2009). Qualitative, Semi-quantitative and Quantitative Methods for Risk Assessment: Case of the Financial Audit. Professional Judgement and Testing Laboratories (Position Paper 1998-09). *Scientific Annals of the "Alexandru Ioan Cuza" University of Iasi, Economic Sciences Section,* Volume LVI.
9. Weihrich, H. (1982). The TOWS Matrix - A Tool for Situational Analysis. *Long Range Planning*, Vol. 15, No. 2, pp. 54 - 66.

Role of Communication for Development of Small and Medium Size Enterprises in the Regions of Latvia

Inara Kantane[1+], Mg.oec.; **Biruta Sloka**[2], Dr.oec., professor;
Anastasija Vilcina[3], Dr.oec., professor; **Ilona Ozoliņa**[4], Mg.oec.
[1,2,4] University of Latvia
[3] Latvia University of Agriculture

Abstract. Communication is an essential factor for implementation of effective entrepreneurship. It is an important part of the manager's world and it relates directly to the basic management functions: planning, organising, motivation, and controlling. Effective business communication has been studied in academic research, as it is one of the key factors for implementation of effective entrepreneurship, which promotes company development. Barriers hindering effective communication are often examined in academic research; among them – personal factors, differences in life perceptions, different communication skills, different experience and validity of information sources, and demographic differences. The authors have done an empirical research to explore how effectively small and medium size enterprise owners and managers use communication and to examine how communication influences the development of small and medium size enterprises in the regions of Latvia. Results of survey on 1464 entrepreneurs are used for data analysis. Research methods used - academic publications analysis, survey of entrepreneurs, and structured interviews of entrepreneurs. Descriptive statistics – indicators of central tendency or location and indicators of variability, and analysis of variance and cross tabulations are used for data processing. The study reveals that one of frequent mistakes in entrepreneurship regarding communication is too low evaluation of communication, especially in some regions of the country.
Key words: communication, management, SME, regions.
JEL code: M10, M12

Introduction

Small and medium size enterprises (SME) play a significant role in the growth of economy and employment in Latvia. In 2010, SMEs in Latvia constituted 99.7% of all economically active statistical units. The biggest number of SMEs was located in Riga region – 38.2%, while the smallest - in Zemgale region – 10.4% (Central Statistical Bureau, 2011).

Productive management communication has been studied in academic research, as it is one of the key factors for effective implementation of entrepreneurship. More and more serious academic research activities are devoted to the respective topic. Effective business communication promotes financial performance of a company. The research results have proved that companies that are highly effective communicators have 47% higher total returns over the past five years compared (2009/2010 Communication ROI Study Report, 2010), different criteria for effective organisational communication have been discussed (Marques, 2010) as well as very different methods have been used for the evaluation of effective communication (Nothhaft, 2010). In addition, a lot of attention of researchers has been devoted to communication climate (Hoof, et al., 2004).

The aim of the paper is to analyse how effectively small and medium size enterprise owners and managers use communication and to examine how significantly communication influences the development of small and medium size enterprises in the regions of Latvia.

The research methods used in the paper are academic publications analysis, survey of entrepreneurs (1464 entrepreneurs were interviewed in December 2010 – August 2011), and structured interviews of entrepreneurs. Descriptive statistics – indicators of central tendency or location and indicators of variability (variance, standard deviation, standard error of mean, range), analysis of variance as well as cross tabulations were used for data processing.

Theoretical background

Business communication is closely related with management functions - planning, organising, motivation, and control. There is a significant and positive relationship between strategic management and strategic behaviour, strategic management and strategic alignment, strategic alignment and motivation, and communication effectiveness and motivation (Jorfi et al., 2011). Favourable organisational climate leads to efficient job performance. One of the factors that affect organisational climate and job satisfaction is trusting relationship. Trusting relationship is positively related to measures of communication management, employees receiving positive communication are more likely to be motivated to form trusting relationships with the management level and involving employees in a company activity (Thomas et al., 2009). The research results have indicated even paradigm shift of employee communication and have realised the effect of management communication on trusting relationships (Jo, et al., 2005). Poor communication system negatively affects flow of information in organisations. Employees can work better and get more done in

+ *E-mail address*: Inara.Kantane@lu.lv.

Table 1

Market sector economically active statistical units by size group in statistical regions in Latvia, 2009 and 2010

	2009					2010				
	TOTAL	**Micro**	**Small**	**Medium**	**Large**	**TOTAL**	**Micro**	**Small**	**Medium**	**Large**
LATVIA	128609	115939	10254	2065	351	135139	123207	9643	1944	345
Riga region	50700	43637	5654	1163	246	51869	45283	5259	1088	239
Pieriga region	18646	17096	1262	258	30	20621	19064	1288	238	31
Vidzeme region	13905	13024	739	131	11	14533	13707	690	123	13
Kurzeme region	16236	15018	989	205	24	17074	15923	920	207	24
Zemgale region	12590	11647	768	159	16	14011	13134	716	143	18
Latgale region	16532	15517	842	149	24	17031	16096	770	145	20

Source: Central Statistical Bureau of Latvia, 2011

an environment where they feel informed (Suliman et al., 2005). Direct face-to-face communication from a direct supervisor to subordinate is most effective in increasing employee trust, satisfaction, loyalty, and productivity (Therkelsen et al., 2003). Influence of communication via Internet has increased during the past years. Communication via Internet has created big advantages but it has created also some problems (Kupritz et al., 2011). The research results of different authors have proved that business communication is not always effective in enterprises. SMEs owners and managers often consider communication as self-evident and not significant. They are often so preoccupied with running their businesses that may not pay attention to communication (Megginson et al., 2006).

Crisis management requires efficient internal and external communication, setting the persons and their roles expressed by special duties and responsibilities, effective collective decision making, control and collaboration responsibility (Valackiene, 2010). Communication plays an important role on supplier management performance (Large, 2005). The communication cultures of the supplier and buyer moderate the effects of organisation innovative orientation and technological uncertainty (Jean et al., 2010). Communication practices may need to be differentiated on the national or regional level (Cope et al., 2010). For communication climate, it is important the organisational commitment and use of knowledge sharing (Hooff et al., 2010).

Rapid development in communication technologies has developed new approaches and more effective tools for business communication. The Internet is creating new channels for communication, it has a great meaning for company management that changes organisation processes and outcomes (Kupritz et al., 2011; Perry et al., 2003; Lohrke et al., 2006) but still it is not always effectively used and even Internet is not always available in some rural areas in Latvia.

Despite the importance of communication for successful business, it is not always effective.

Research results and discussion

There are changes during the past years in the number of companies by size in different regions of Latvia. The number of companies by size group in the regions of Latvia is presented in Table 1.

Data of Table 1 indicate that the total number of companies and micro enterprises has increased, while the number of large, small, and medium size enterprises has decreased in 2010 in comparison with 2009.

The survey of SME owners and managers in Latvia was conducted in December 2010 - August 2011 and totally 7500 entrepreneurs in all regions of Latvia were approached and 1464 responses received (response rate 19.52%). The company register was used for selection of respondents: every fifth company was approached to ensure random selection of respondents. It was taken a special care to include companies from all regions and according the share of companies in each region of the country. For survey, entrepreneurs were asked to evaluate the significance of communication in company management. The scale 1 – 10, where 1 – not significant; 10 – very significant, was used for evaluations.

The research results proved that there were rather high evaluations for business communication in all companies in Latvia. The arithmetic mean for business communication evaluations was 7.16, the standard error of mean was 0.067 (in scale 1 - 10). Most of the evaluations of entrepreneurs were 8 and 10 (mode) and 50% of entrepreneurs evaluated communication significance in the company management with 8 and more points (median). The full possible scale for evaluations was used. Yet, still evaluations were quite homogeneous – it is proved by indicators of variability: standard deviation was 2.501 and coefficient of variability was 34.93% (Table 2).

Just 21.57% of respondents evaluated the role of communication with maximum 10 points, while 7 and more points were given by 68.63% of respondents, and minimum evaluation 1 point was given by 3.92% of respondents.

It was checked whether the average evaluation of communication was statistically different significant in the regions of Latvia, it was performed by help of analysis of variance. The analysis of variance has shown that mean differences of SME owners and managers for the evaluation of communication impact on the company management was statistically significant (p=0.000) in

Table 2

Statistical indicators of estimation done by SMEs owners and managers on significance of communication

Statistical indicators	Value of statistical indicators
Number of respondents	1377*
Mean	7.16
Standard Error of Mean	0.067
Median	8.00
Mode	8 and 10
Standard Deviation	2.501
Variance	6.255
Minimum	1
Maximum	10

* Number of respondents who answered this question

Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' calculations based on SME owners and managers survey in 2010 December - 2011 August (n=1464).

Table 3

Results of analysis of variance for communication significance in the regions of Latvia

	Sum of squares	df	Mean square	F	Sig.
Between groups	1132.537	4	283.134	50.392	0.000
Within groups	7101.888	1264	5.619		
Total	8234.426	1268			

Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' calculations based on SME owners and managers survey in 2010 December - 2011 August (n=1269).

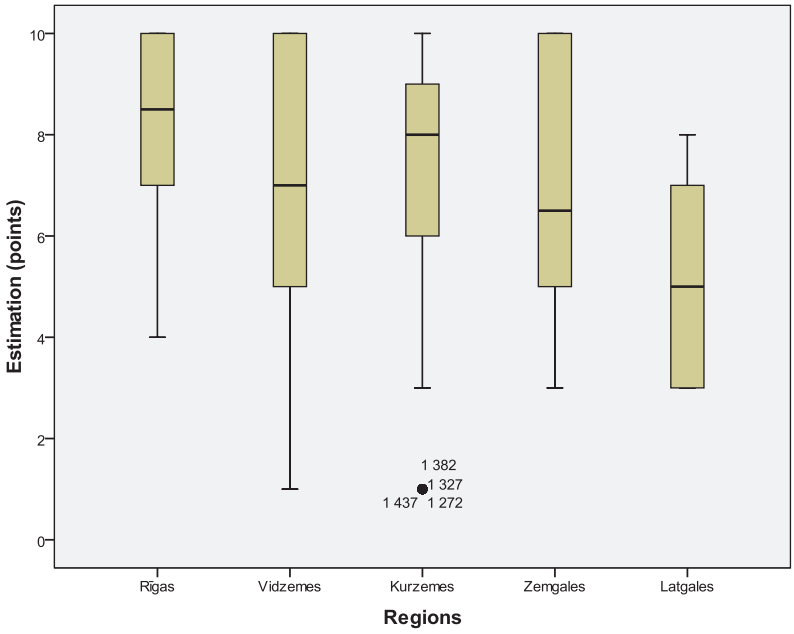
the regions of Latvia. The mean difference was significant (p=0.000) between Riga region and others regions of Latvia (Vidzeme, Zemgale, Kurzeme, Latgale) as well as between regions of Latgale and Vidzeme, Zemgale, Kurzeme (Table 3).

The communication importance was higher evaluated by SME owners and managers of Riga region, where the evaluations were more homogeneous (coefficient of variability 20.7%) than evaluations of SME owners and managers of Vidzeme, Zemgale, and Latgale regions. The lowest evaluation was given by managers of Latgale region. The biggest differences in the views of entrepreneurs were in Vidzeme and Zemgale (Figure 1).

Statistical indicators of SME owners and managers estimation of communication significance on company management are represented in Table 4. In Riga region, business communication evaluations were the highest, arithmetic mean was 8.21, standard error of mean was 0.087 (in scale 1 - 10). Most of the evaluations of entrepreneurs gave evaluation 8 (mode), while 50% of entrepreneurs evaluated communication significance on the company management with 8.5 and more points – it is indicated by median. The minimum evaluation was 4 (in scale 1-10), yet, quite different was the situation in Latgale, where the highest evaluation was 8 and the lowest evaluation was 3 (Table 4).

The evaluation of entrepreneurs in Riga region was quite homogeneous - standard deviation 1.7 and very small standard error of mean. The evaluations of communication significance were quite similar in the regions of Vidzeme, Kurzeme, and Zemgale, arithmetic mean in these regions was 6.70, 6.91 and 6.83 points respectively, and the highest variability was in the regions of Vidzeme (standard deviation 2.905) and Zemgale (standard deviation 2.68). In Zemgale region, most of the evaluations of respondents were 5 (mode), half of respondents gave the evaluation less than 6.5 and half of respondents gave more than 6.5 (median). In Latgale region, the evaluation of communication significance was the lowest: arithmetic mean was only 5.17, standard error of mean was 0.154 (in scale 1 - 10). Most of the evaluations of entrepreneurs (characterised by mode) gave only 3 points for significance of communication. The range of evaluations for communication significance by entrepreneurs of Latgale region was rated from 3 to 8 (in scale 1 - 10). In Latgale region, totally 50% of entrepreneurs evaluated communication significance with 5 and less points and 50% of entrepreneurs evaluated communication significance with 5 and more points (median). The evaluation was quite homogeneous - standard deviation 1.957.

There was a question: is there a difference in communication evaluations among the size of enterprises. The empirical research indicated that there were differences how the role of business communication was evaluated by micro, small and medium sized enterprises owners and managers in Latvia. Empirical research indicated that communication's role was higher evaluated



Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' construction based on SME owners and managers survey in 2010 December - 2011 August (n=1269).

Fig. 1. **Evaluation of SMEs owners and managers on communication significance in the regions of Latvia**

Table 4

Statistical indicators of estimation done by SMEs owners and managers on significance of communication on company management in the regions of Latvia

Regions	Number	Mean	Standard error of mean	Mode	Median	Standard deviation	Maximum	Minimum
Riga	378	8.21	0.087	10	8.5	1.700	10	4
Vidzeme	270	6.70	0.177	10	7.0	2.905	10	1
Kurzeme	297	6.91	0.150	8	8.0	2.579	10	1
Zemgale	162	6.83	0.211	5	6.5	2.680	10	3
Latgale	162	5.17	0.154	3	5.0	1.957	8	3

*Number of respondents who answered this question

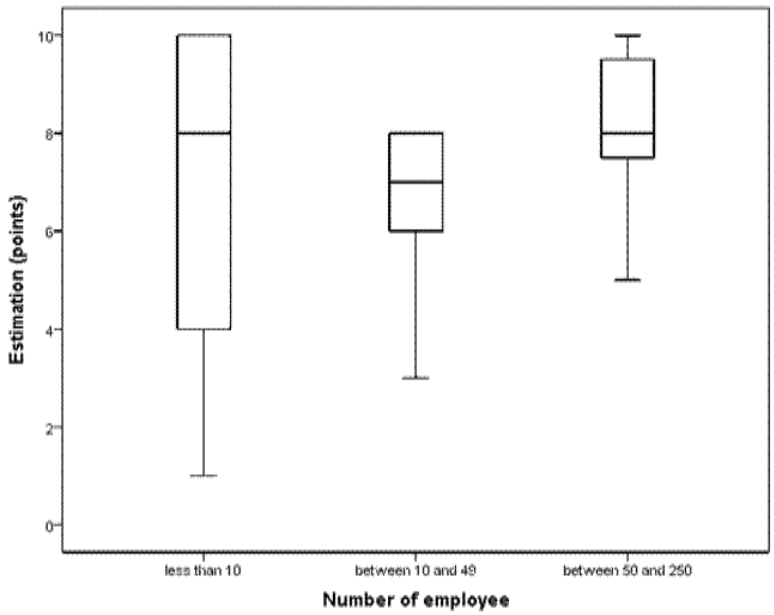
Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' calculations based on SME owners and managers survey in 2010 December - 2011 August (n=1269).

by medium sized enterprise managers, the evaluations were more homogeneous (with smaller variability) than the evaluations of micro and small enterprises owners and managers (Figure 2).

Some answers on the question - how the role of communication is evaluated in companies of different size are given in Table 5, where statistical indicators of evaluation of SMEs owners and managers on significance of communication on company management in companies with different number of employees are presented.

Evaluation of the medium sized enterprises owners and managers on business communication role arithmetic mean was 8.13, standard error of mean 0.105 (in scale 1 - 10). Most of the evaluations was 8 (mode), totally 50% of entrepreneurs evaluated communication impact on the company management with 8 and more points (median). The evaluation was homogeneous - standard deviation 1.540. Evaluations of the micro enterprises owners on business communication were lower than medium size managers, arithmetic mean was 6.94 points, standard error of mean was 0.101, frequency evaluation was 10 (mode), 50% entrepreneurs evaluated communication significance on company management with 8 and more points (median). It indicates that this role is evaluated really very high. The evaluations of micro enterprise owners had larger variation, standard deviation - 2.919. The lowest evaluation of business communication role was given by small size enterprise owners and managers, arithmetic mean was 6.80 points, standard error of mean was 0.090. Most often the evaluation was 8 (mode), 50% entrepreneurs evaluated communication significance on company management with 7 and more points (median). The evaluation was homogeneous - standard deviation 1.472. Entrepreneurs from this group have used



Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' construction based on SME owners and managers survey in 2010 December - 2011 August (n=1464).

Fig. 2. **Evaluation of SMEs owners and managers on significance of communication in companies with different number of employees (less than 10, between 10 and 49, between 50 and 250)**

Table 5

Statistical indicators of estimation done by SMEs owners and managers on significance of communication on company management in companies with different number of employees

Statistical indicators	Value of statistical indicators for number of employees		
	less than 10	between 10 and 49	between 50 and 250
Number of respondents	837*	270*	216*
Mean	6.94	6.80	8.13
Standard Error of Mean	0.101	0.090	0.105
Median	8	7	8
Mode	10	8	8
Standard Deviation	2.919	1.472	1.540
Variance	8.522	2.1682	2.370
Minimum	1	3	5
Maximum	10	8	10

*Number of respondents who answered this question

Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' calculations based on SME owners and managers survey in 2010 December - 2011 August (n=1464).

evaluations from 3 to 10 (in 1 – 10 point scale), it means that no one has used the lower possible evaluations. Even more, it is for bigger enterprises: the lowest point there given was 5, all indicators of central tendency or location has very high values: arithmetic mean: 8.13, median and mode 8. The analysis of variance has shown that mean differences of micro, small, and medium size enterprise owners and managers evaluation of communication influence on company management is statistically significant (p=0.000). Survey results indicate that business communication on company management is wider used by managers of medium sized companies than managers of micro and small sized companies.

Research results showed that medium sized company were more innovative than micro and small sized companies (Table 6).

Analysis of variance has shown that the evaluation of mean differences of micro, small, and medium size enterprise owners and managers on innovative activity of companies is statistically significant (p=0.000). There are statistically significant differences between micro and small size companies and medium size companies in their evaluation of innovative activities.

Table 6

Statistical indicators of evaluation of SMEs owners and managers on innovative activity of companies with different number of employees

Statistical indicators	Value of statistical indicators for number of employees		
	less than 10	between 10 and 49	between 50 and 250
Number of respondents	837*	324*	189*
Mean	5.26	5.42	7.00
Standard Error of Mean	0.083	0.137	0.191
Median	5	6	7
Mode	7	4	8
Standard Deviation	2.411	2.469	2.626
Variance	5.811	6.095	6.894
Minimum	1	2	2
Maximum	10	10	10

*Number of respondents who answered this question

Estimation scale 1 – 10 (where 1 – not significant, 10 – very significant)

Source: authors' calculations based on SME owners and managers survey in 2010 December - 2011 August (n=1464).

Conclusions, proposals, recommendations

1. Business communication is a significant factor for successful implementation of entrepreneurship. Effective communication increases trust, satisfaction, creativity, loyalty, and productivity of employees.
2. The research results have argued that in SMEs of Latvia, there are managers whose evaluations on the importance of communication have been rather low; lower evaluations are given in Latgale region.
3. There are significant differences on communication evaluations between SME owners and managers in the regions of Latvia and it is proved by the results of variance analysis.
4. Owners and managers of micro and small enterprises evaluate the role of communication lower than medium size managers.
5. Communication is one of the factors that statistically significantly affects the development of small and medium size enterprises.
6. For further research, it is necessary to evaluate the significance of internal and external communication on good SME management and the effectiveness of the use internal and external communication by managers.

Bibliography

1. Central Statistical Bureau Data Bases (2012). Market Sector Economically Active Statistical Units by Size Group in Statistical Regions in Latvia in 2009 and 2010. Retrieved: http://www.csb.gov.lv/en/dati/statistics-database-30501.html. Access: 3 January 2012.
2. Cope, S., Frewer, L. J., Houghton, J., Rowe, G., Fischer, A. R. H., Jonge, J. (2010). Consumer Perceptions of Best Practice in Food Risk Communication and Management: Implications for Risk Analysis Policy. *Food Policy*, Volume 35, pp. 349-357.
3. Hooff, B., de Riddeer, J.A. (2004). Knowledge Sharing in Context: the Influence of Organisational Commitment, Communication Climate and CMC Use on Knowledge Sharing. *Journal of Knowledge Management,* Vol. 8, No. 6, pp. 117 – 130.
4. Jean, R. J., Zolin, R., Sinkovics, R. R., Kim, D. (2010). Drivers and Performance Outcomes of Relationship Learning for Suppliers in Cross-Border Customer–Supplier Relationships: The Role of Communication Culture. *Journal of International Marketing*, Volume 18, Issue 1, pp. 63-85.
5. Jo, S., Shim, S. W. (2005). Paradigm Shift of Employee Communication: the Effect of Management Communication on Trusting Relationships. *Public Relations Review*, Volume 31, pp. 277-280.
6. Kupritz, V. W., Cowell, E. (2011). Productive Management Communication: Online and Face-to-Face. *Journal of Business Communication*, Volume 48, Issue 1, pp. 54-82.
7. Large, R. O. (2005). External Communication Behaviour of Purchasers—Effects on Supplier Management Performance. *Journal of Purchasing & Supply Management*, Volume 11, pp. 28-41.
8. Lohrke, F. R., McClure Franklin, G., Frownfelter-Lohrke, C. (2006). The Internet as an Information Conduit. *International Small Business Journal*, Volume 24, Issue 2, pp. 159–178.
9. Marques, J.F. (2010). Enhancing the Quality of Organisational Communication. A Presentation of Reflection – Based Criteria, *Journal of Communication Management*, Volume 14, No. 1, pp. 47-58.
10. Megginson, L. C., Byrd, M. J., Megginson, W. L. (2006). *Small Business Management 5th ed.* Boston: McGraw-Hill. p. 518.
11. Nothhaft, H. (2010). Communication Management as a Second – Order Management Function, Roles

and Functions of the Communication Executive – Results from a Shadowing Study, *Journal of Communication Management,* Volume 14, No. 2, pp. 127 – 140.
12. Perry, D. C., Maureen, T., Marya, D. L. (2003). Internet-Based Communication in Crisis Management. *Management Communication Quarterly*, Volume 17, Issue 2, pp. 206-232.
13. Redoli, J., Mompo, R., Garcia-Diez, J., Lopez-Coronado, M. (2008). A Model for the Assessment and Development of Internet – Based Information and Communication Services in Small and Medium Enterprises, *Technovation,* Volume 28, pp. 424 – 435.
14. Suliman, A. M., Abdulla, M. H. (2005). Towards a High-performance Workplace: Managing Corporate Climate and Conflict. *Management Decision*, Volume 43, Issue 5, pp. 720–733.
15. Therkelsen, D. J., Fiebich, C. L. (2003). The Supervisor: The Linchpin of Employee Relations. *Journal of Communication Management*, Volume 8, Issue 2, pp. 120-129.
16. Towers Watson Research and Publications. 2009/2010 Communication ROI Study Report. (2010). *Watson Wyatt Worldwide*, 18 p. Retrieved: http://www.towerswatson.com/research. Access: 22 December 2011.
17. Thomas, G. F., Zolin, R., Hartmen, J. L. (2009). The Central Role of Communication in Developing Trust and Its Effect on Employee Involvement. *Journal of Business Communication*, Volume 46, Issue 3, pp. 287-310.
18. Valackiene, A. (2010). Efficient Corporate Communication: Decisions in Crisis Management. *Commerce of Engineering Decisions*, Volume 21, Issue 1, pp. 99-110.

Trends of The Trade Show Industry in Latvia and Worldwide

Linda Kelle[1], Mg.oec, PhD student
Baiba Rivza, Dr.habil.oec., professor
Faculty of Economics, Latvia University of Agriculture

Abstract. International trade shows have become an integral part of corporate advertising budget and project planning. Around the world, they have been recognised as a successful product promotion and sales promotion tool. Trade shows serve as a mirror for technical development, information exchange, price ranges, and seller and buyer meeting place. This sector's contribution to the economy is several billion dollars per year.

The global economic crisis has changed a lot of things all over the world and the trade show industry is not the exception. Presently, it is very important to understand the future trends, so trade show organisers and trade show exhibitors can make the right decisions for sustainable development. The aim of the research is to analyse the future trends of the trade show industry. The research concludes that the significance of trade shows is expected to grow in the automotive, IT, and electrical/electronic industries as well as in the areas of environmental protection and healthcare. Asia, the Russian Federation, the Eastern Europe, and the Middle East are cited as the regions in which the scope of trade show activity will increase.

Key words: trade shows, trade show industry, future trends of trade shows.
JEL code: F1

Introduction

This paper aims to explore the trends that will shape the near future of trade shows in Latvia. Development of trade show industry in the world is obvious; the dynamic growth of the exhibition halls throughout the world demonstrates it. This sector's contribution to the economy is several billion dollars per year, and the state with the proper legal framework and business support can contribute to the development of this field. Trade show industry promotes investment inflow in the country, resulting in a direct form of portfolio investments as well the region benefits from the trade show grounds. Latvian trade show business is currently still in its initial development phase, although some of the trade shows are a serious announces to the international market. Lack of money and over-intensification of competition is now the problem to be solved in terms of Latvian trade show market.

The aim of the research is to analyse the future trends of the trade show industry in the world and in Latvia. The authors have set up the following **tasks** in order to achieve theaim:

1) to analyse the volume of trade show industry market in the world and in Latvia;
2) to determine possible future trends of the trade show industry.

This paper is based on the existing literature, different studies, scientific publications, and other materials. The research is mainly based on the monographic descriptive method and methods of analysis and synthesis. The research paper provides a list of important factors that most likely will influence the trade show industry in the near future.

Research results and discussion

1. The volume of the trade show industry

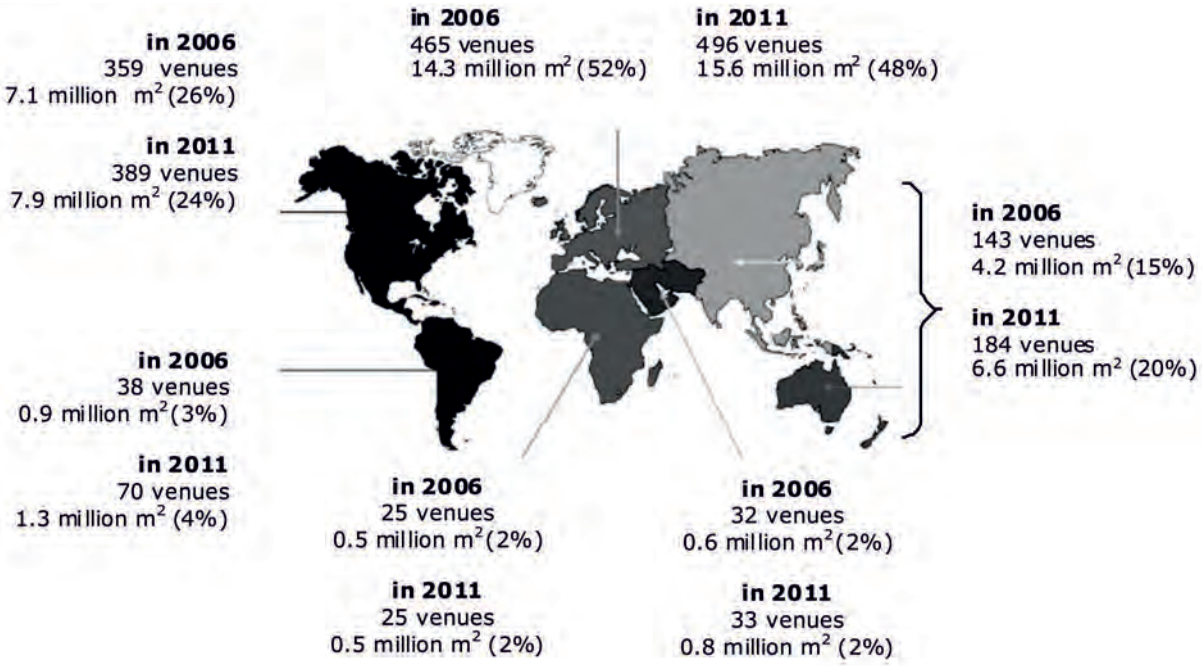
The national economic development is directly dependent on international trade and investment, the amounts of which, to a large extent, are affected by the trade show industry. International specialised exhibitions and trade shows have become an integral part of corporate advertising budget and project planning, which are based directly on old customer identification, achievement demonstration, establishment of new contacts, and attracting investment.

In general, trade shows are defined as market events of a specific duration, which are held at intervals and bring together a large number of companies to present their main product range to either business or private visitors (Kirchgeorg, Dornscheidt, Giese, Stoeck, 2005).

Trade shows have been recognised as a successful product and sales promotion tool all over the world for many centuries. They serve as a mirror for technical development, information exchange, price ranges, and seller and buyer meeting place. Trade show or exhibition is unique in the aspect that in a short period of time companies are able to get a lot of new contacts, meet and speak to their existing and potential customers as well as introduce new products to a large group of stakeholders. The trade show is an important tool in marketing strategy and company participation in trade shows can be very effective (Kelle, 2010).

In recent years, both - supply and demand - have increased, resulting in the development of new exhibition/ trade show venues. Global indoor exhibition space in 2011

[1] *E-mail address*: linda@kelle.lv



Source: authors' construction based on the UFI's research, 2011

Fig. 1. **Exhibition venues and indoor exhibition space available in the world in 2006 and 2011**

has reached 32.7 million square metres, and the figure continues to grow. According to a Global Association of the Exhibition Industry (UFI) research project in 2011, exhibition space has increased by 12% since 2006. The average annual increase is 2.3% against the 3.1% per year that has been anticipated in 2007 for the period of 2006-2010 - see Figure 1 (UFI, 2011).

The identified indoor areas around the world in 2011 have shifted a little comparing with 2006 (Figure 1). As shown, the largest exhibition space in 2011 was available in Europe - 48%, the North America - 24%, and Asia - 20%, thus, making 92% of the total available exhibition/ trade show and events venue area. The study identified 1062 venues with minimum 5000 m^2 exhibition space in 2006 and 1197 venues in 2011 (also with minimum of 5000 m^2 exhibition space). A total gross indoor venue space in the world is an area of 32.7 million m^2, which is 3.4 million m^2 more than in 2006. This increase of 54% is related to new venues and 46% - to extensions of the existing venues. In terms of countries, five of them – the USA, China, Germany, Italy, and France – account for 59% of the total world indoor exhibition space. Remarkable that China has increased the indoor exhibition space for 48% in 2011 since the year 2006 and operates the total of 4 755 102 square metres of exhibition space (UFI, 2011).

China, India, and Russia remain the predominant areas that are experiencing a tremendous growth in exhibition venues and trade shows. These developments suggest that trade shows have progressive development. Research authors are convinced it is of utmost importance to identify the criteria, which have ensured progressive development of the trade show industry during the past years; thus, giving possibility to ensure sustainable development of the trade show industry in the future.

Over the past decade, the pace of change in the market for trade show services has risen sharply. Hirn (2007), Khoo (2005), and Goldsmith (2004) state that trade shows face increasing competition from new media, and the globalisation of the market is adding ever more competition from new trade show organisers. These developments pose considerable challenges for trade show companies. More and more exhibitors and decision-makers in trade show companies are rightly seeking a clearer understanding of the conditions that will secure future success. As a result, one can observe the considerable attention currently being paid to trade shows by consulting the significant volume of literature that addresses the challenge of change to trade shows, for example, Friedman (2006), Dionisius (2006), Heckmann (2003), Von Zitzewitz (2003), and others.

Trade show industry is directly dependent on the clients, economic environment, financial stability, and relevant legislation. It seems logical chain that if the economic situation is better the trade show industry gains more. The people or companies have more funds the more they will spend. This quasi clear chain has not only emotional grounds but also statistical grounds. Such statement has to be grounded on the assessment of concrete indicators: first, trade show rented space; and second, exhibitor and visitor tendencies. Table 1 shows the comparison of different indicators of the UFI's audited trade shows in Europe in 2009 and 2010.

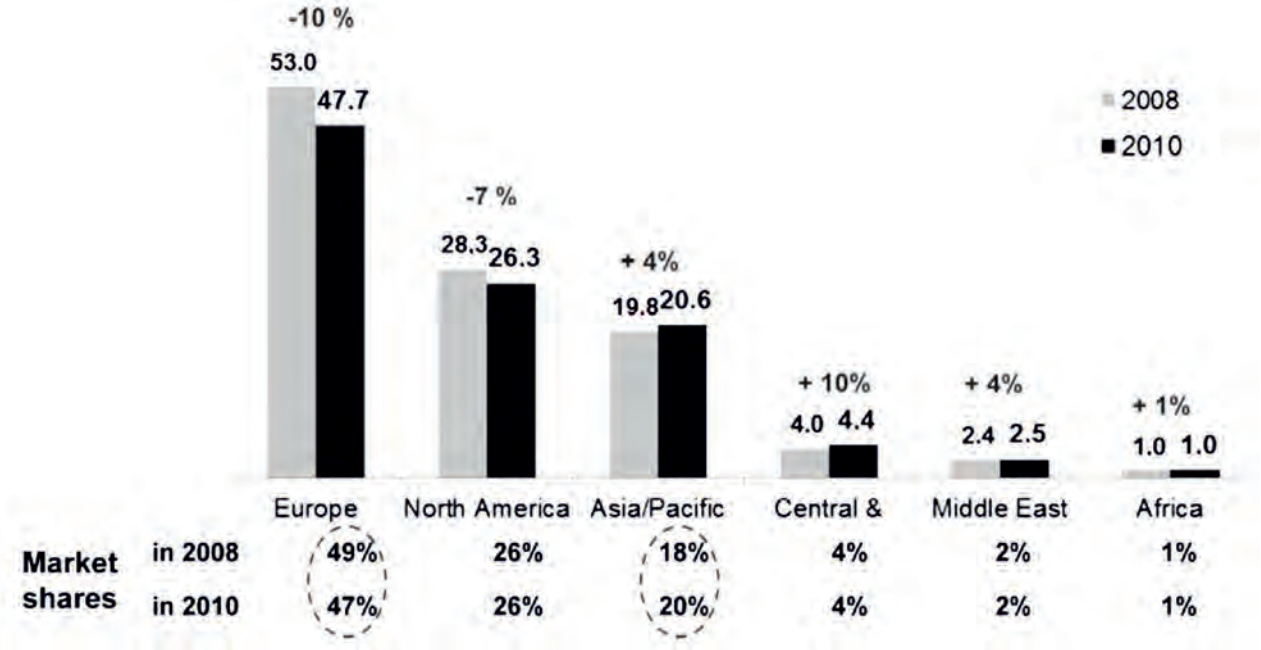
According to Table 1, in 2010, less trade shows are held, less organisers, and exponents participated in trade shows, however, more visitors attended and more net space was rented. This means that fewer companies have participated in the trade shows but they rented for 0.14 million m^2 more space.

Table 1

Key indicators for audited trade shows in Europe in 2009 and 2010

Indicator	2009	2010	Tendency 2010/2009
Audited trade shows/exhibitions in Europe	2.09 thousand	1.97 thousand	-0.12
Total of audited trade show organisers	450	434	-16
Total of audited trade show exponents	578.8 thousand	575.6 thousand	-3.2
Total of audited trade show visitors	50.8 million	52.2 million	+ 1.4
Total of net exhibition space rented	20.9 million m^2	21.04 million m^2	+ 0.14

Source: authors' calculations based on the UFI's research, 2011



Source: UFI, 2011

Fig.2. **Total net exhibition space rented by region in 2008 and 2010**

UFI studied the trade shows in Europe in 2009 and in 2010. The UFI research assumes that the audited trade shows in 2009 and also in 2010 are approximately only 40-45% of the European exhibition market in terms of net exhibition space rented.

Calculating the averages, the authors conclude that in 2010, one country in Europe held 94 trade shows on average (105 in 2009), each country has 21 exhibition/ trade show organisers (22 in 2009), participation of 292 companies (277 in 2009) for each show on average, each trade show was attended by 26 457 visitors (24 293 in 2009) on average, and each trade show grounds were approximately 10 664 m^2 (9 990 m^2 in 2009) of area.

The total net exhibition space rented has decreased from 109 million m^2 in 2008 to 103 million m^2 in 2010, which is 6% less (Figure 2). Significant change is the shift of 2% of the global market share from Europe to Asia/ Pacific; however, the European market is still more than double the size of the Asia/Pacific market (UFI, 2011).

The net rented area in each region, the percentage of the world total, and an increase or decrease in 2010 relatively to the 2008 has not changed a lot (Figure 2). The study found that in 2010, about 30 700 trade shows in the world took place (31 400 in 2008), rented 103 million m^2 of area (109 million m^2 in 2008), participated 2.8 million exhibiting companies (2.9 million companies in 2008), and the exhibition was visited by 260 million visitors and guests (260 million in 2008).

One can only guess how high is the turnover and profit of the trade show industry in the world. The authors, based on the currently available data on the participation fee in the trade shows, calculated averages of 12 different countries and various ongoing trade shows - how much one should pay for 1 m^2 in order to participate in the trade show/exhibition. The result is - 1 m^2 costs EUR 165.00 on average. This way it is possible to calculate sales volume for 2009 and 2010 - as showed in Table 2.

Data of Table 2 can be interpreted in different ways. The Baltic States calculations take into account that there are no precise data on the net rented exhibition space, so the total contribution of the Baltic States is EUR 14 million per year but this amount might be different. The future research in this field is needed.

Table 2

The preliminary net rented space indicators in 2009 and 2010 in terms of money with EUR 165.00 average price for 1 m² , EUR

Region of the world	Available indoor space for rent, million m²		Rented net space, million m²		Total amount, billion of EUR	
	2009	2010	2009	2010	2009	2010
Europe	14.3	15.6	53.0	47.7	8.74	7.87
*including **the Baltic States**:*	*0.086*	*0.086*	*...*	*...*	*0.14**	*0.14**
*including **Latvia***	***0.030***	*0.030*	*...*	*...*	***0.050***	***0.050***
Lithuania	*0.033*	*0.033*	*...*	*...*	*0.054*	*0.054*
Estonia	*0.023*	*0.023*	*...*	*...*	*0.038*	*0.038*
North America	7.1	7.9	28.3	26.3	4.67	4.34
South America	0.9	1.3	4.0	4.4	0.65	0.73
Africa	0.5	0.5	1.0	1.0	0.24	0.17
Pacific Territories	0.6	0.8	2.4	2.5	0.40	0.41
Asia and Oceania	4.2	6.6	19.8	20.6	3.27	3.40
TOTAL	**27.6**	**32.7**	**108.5**	**102.5**	**17.97**	**16.92**

* calculated only of available indoor space, assuming that all the available space is rented due to the lack of statistics on the Baltic States rented net exhibition space in 2009 and 2010

Source: authors' calculations

Authors assume that trade show industry or trade show organisation as a type of business is not likely to disappear in the near future.

2. The future trends of the trade show industry

Real economic life proves that the market and competition is the main mechanism for the development of modern economies. The higher is market functioning efficiency, the more active is the competition and the better are the conditions of its expression. To be competitive, every company wants to have continued success, the philosophy and operation shall be innovative. According to the economic experts, the region of the Southern and Eastern Europe with Croatia, Albania, Bosnia and Herzegovina, Bulgaria, Romania, Serbia, Montenegro, and Macedonia is besides China, India, Brazil, and Russia - the most successful emerging market worldwide. The positive impact of the following elements is directly connected with the results of the exhibition industry, for example, sustainability of the economy, market liberalisation and competition framework, privatisation, development of entrepreneurship and foreign investments, socio-ecological development level, increase of the standard of living and economic wealth. The countries in the Central and South East Europe are target of many companies from the Western Europe in terms of cooperation, and investments and trade, especially Germany, Italy and Austria. The main reasons are success of the political stabilisation process, and start of several reforms in the process of joining or approaching to EU (CEFA Market Report, 2009).

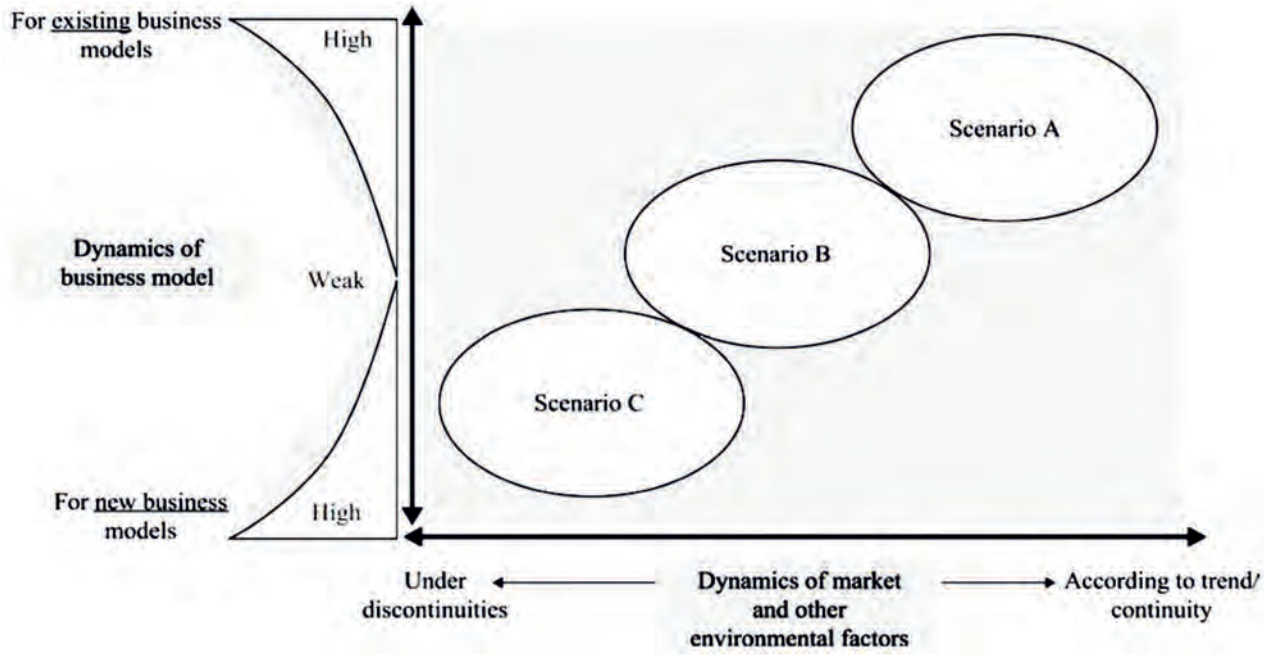
Kirchgeorg, Jung, and Klante made research on the future of trade shows. The analysis produced five factor groups as follows: international shift in demand and supply; communication patterns in business relationships, especially the importance of face-to-face communication; positioning strategies of trade show organisers; trade show efficiency and time pressures on exhibitors and visitors; and barriers to mobility and crises. Based on the fundamental idea of multiple outlooks for the future, the identified factor groups, varying intensities and their varying probabilities were combined in a coherent form that produced three possible future scenarios for trade shows (Figure 3) (Kirchgeorg, Jung, Klante, 2010).

Depending on the relative strength or weakness of the various factors of influence, three scenarios for the future were developed:

— trade show scenario A: personal – continental – high profile;
— trade show scenario B: networked – fragmented – eventful;
— trade show scenario C: virtual – need-oriented – ubiquitous (Kircheorg, Jung, Klante, 2010).

Kirchgeorg, Jung, and Klante propose Scenario A, which is based on considerable continuity in the evolution of environmental factors. It places trade show organisers under heavy pressure to develop and improve the existing business models continuously. In most cases, Europe and America have successfully defended their knowledge lead over Asia. The focus of demand, however, has shifted sharply toward Asia. International trade show groups and alliances shape the face of the industry.

"In Scenario B, globalisation is straining at the limits. Emerging countries have successfully surfaced as centres of economic gravity, whereas Europe now focuses primarily on trade and services but still possesses high innovative power. Exhibitors prefer to collaborate on individual projects in flexible networks, rather than merging to form gigantic corporate groups as in Scenario A. This makes it harder for trade show companies to retain exhibitors' loyalty in the international arena. This has clear consequences for trade show organisers' structures, as do other trends. In Scenario B, organisers,



Source: Kircheorg, Jung, Klante, 2010

Fig. 3. **Positioning of scenarios as a function of the dynamics of environmental factors and business models**

therefore, concentrate primarily on regional markets or continental clusters. Specialised trade shows are gaining ground at the expense of leading global trade shows" (Kircheorg, Jung, Klante, 2010).

"Scenario C represents very intensive and discontinuous changes. A resurgence of terrorism and the consequences of climatic change set the backdrop for this scenario, which experiences the strongest shift in supply and demand to Asia in a heavily polarised world. The importance of new technologies is growing extremely fast, while the role of face-to-face communication is diminishing sharply. Essentially, a large number of new styles of consumption have emerged. These conditions are placing completely new demands on the core competencies of trade show companies. New business models and new market players are springing up as a result" (Kircheorg, Jung, Klante, 2010).

Asia, the Russian Federation, the Eastern Europe, and the Middle East are cited as the regions in which the scope of trade show activity will increase. Only Asia is expected to bring forth leading international trade shows, however. These empirical findings are substantiated by a large number of other studies that also portray trade show growth in terms of increased quantity outside Europe (Kirchgeorg and Springer, 2006). Moreover, the significance of trade shows is expected to grow in the automotive, IT, and electrical/electronic industries as well as in the areas of environmental protection and healthcare (Kircheorg, Jung, Klante, 2010).

Ian Whiteling explores UFI's Delphi Study and remarks that one of the most enthusiastic hypothesis regarding the trade shows is that "trade shows should become thought leaders in their markets", trade shows should take the initiative to become "kings of content", and instead of selling space, the ability to supply clients with future-oriented information is seen as more and more important.

The research shows that many trends or activities that affect trade shows start with changes that happen outside of them but end up having consequences on trade shows anyhow (Thimmesch, 2010). According to Thimmesch, the trade shows in the future will grow as exhibitors are past their smaller budgets, companies invest in marketing to compete with aggressive competitors, and large number of new products needs to be introduced at shows. Thimmesch states that sustainable exhibiting will be the trend of the future and that more exhibitors will exhibit internationally.

Authors conclude that more exhibitors and trade show organisers will use social media to promote the trade shows/exhibitions, conference presentations, and exhibitor presentations will improve and be more interactive as technology and tools get better and more interactive.

Conclusions, proposals, recommendations

1. Trade shows bring multiple economic benefits and job opportunities to local communities and cities, these events connect individuals with feature product or service launches, problem solving, education, and networking opportunities.
2. Trade shows enable participants to stay on top of the latest industry trends, obtain competitor insights as well as get new information of different fields.
3. Trade shows have been recognised as a successful product and sales promotion tool all over the world for many centuries. They serve as a mirror for

technical development, information exchange, price ranges, and seller and buyer meeting place.
4. The significance of trade shows is expected to grow in the automotive, IT, and electrical/electronic industries as well as in the areas of environmental protection and healthcare
5. Asia, the Russian Federation, the Eastern Europe, and the Middle East are cited as the regions in which the scope of trade show activity will increase.
6. Instead of selling space, the ability to supply clients with future-oriented information is seen as more and more important.
7. The social media and new technologies will be more and more involved in the trade show organising and exhibiting at trade shows.
8. Latvia geographically has a potential to become a significant Baltic States centre of the trade shows but the proper legal framework is needed as well as Baltic governments should cooperate and create conditions for sustainable development in the trade show field.

Bibliography

1. CEFA Market Report (2009). Management Consulting & Business Building Company Ltd (Zagreb) on behalf of Central European Fair Alliance. Zagreb.
2. Huang, M. (2010). The Economic Impact of the Trade & Consumer Show Industry, Research paper.
3. Kirchgeorg, J., Jung, K., Klante, O. (2010). The Future of Trade Shows: Insights from a Scenario Analysis. Journal of Business & Industrial Marketing 25/4 (2010) p. 301–312.
4. Kirchgeorg, M., Dornscheidt, W.M., Giese,W., Stoeck, N. (Eds) (2005), Trade Show Management, Gabler, Wiesbaden.
5. UFI - Euro Fair Statistics (2010). The Global Association of the Exhibition Industry. Retrieved: http://ufi.org/Medias/pdf/publicationspress/2010_euro_fair_statistics.pdf. Access: 28 December 2011.
6. UFI - The Global Exhibition Industry statistics (2011). The Global Association of the Exhibition Industry. Retrieved: http://ufi.org/Medias/pdf/thetradefairsector/2011_exhibiton_industry_statistics.pdf. Access: 28 December 2011.
7. Thimmesch, M. (2010). Trades Show Trends: 21 Occasionally Silly Predictions for 2011. Retrieved: http://www.skylinetradeshowtips.com/trade-show-trends-21-occasionally-silly-predictions-for-2011/. Access: 18 December 2011.

Eco-Consumer and Changes in the Economy (Economic Conditions)

Jolanta Kondratowicz-Pozorska[1], PhD
University of Szczecin

Abstract. The article is trying to answer to the thesis put in the subject of this article. The discussion is held on conditions that are positively strengthening the role of eco-customer on the European market and that favour him from other customers. The aim of this article is to highlight factors, which can cause non-implementation of eco-consumer ideas. Consequently, this thesis has lead to the research to prove that the position of an eco-consumer in the society is still very important besides all economic circumstances.
The article holds discussion related to the notions like equal development, multifunctional development of rural areas, green and social marketing, and financial crisis.
Key words: eco-customer, equal development, multifunctional development of rural areas, green and social marketing, financial crisis.
JEL code: Q01

Introduction

The speed and character of changes, which are happening in the world in the 21st century, push to thoughts on future of socio-economic development. So far, socio-economic development focuses on the foundation of classical economics, which assumes maximisation of wealth as the total wealth of each citizen and the measured level of GDP. The consequences of this approach is to ignore environmental threats, actions aimed at the financial success of one generation only, skipping the emotional sphere, and all environmental activities are reported as an ending fashion. This leads to the four areas of imbalance (Luszczyk M., 2011):

— environmental - through overuse of resources;
— planning - through unequal population and urbanisation of the Earth;
— socio-economic – related to growing difference of income between the poorest and richest population;
— moral-ethical - incoming from value crisis, degradation of social relation, religious, clear development plan.

It can be clearly seen that classical economy in long term is not useful enough. It creates a deceptive vision of prosperity. The growing discourage of people to consumer life style and the growth of awareness that better wellbeing is not experienced only in consumption of goods can be taken as a confirmation. This was seen as the beginning of creation of an eco-consumer who combines the implementation of three purposes: economic, environmental, and social; while ensuring inside and intergenerational justice (Boris T., 2010). Although, the category of eco-consumer is not homogenous, and it can be distinguished into groups differentiated by motives used in daily life and shopping[2], all actions are focused on making a wise decision based on economic, ethical, and ecological needs.

Eco-consumers see the direct relation between the choice made by people during daily shopping and with what happens in the environment. They start to make relation between facts, and thus, gather information into one vision. Hence, they want to know the materials used to produce the product and, based on this knowledge, they try to change consumer habits by using products that are environment friendly (Kondratowicz-Pozorska J., 2011).

The analysis of economic reality shows that existence of the so-called "green consumer" has become a fact and producers could not ignore this fact. The behaviour called "ecological" would not necessarily mean "buying ecological products". It allows situation, when a consumer thinks that it is more ecological to reject buying a product f it is not really needed at the moment than to buy an ecological product just to have it bought. The decision of not purchasing a product is another instrument of influence on the market by consumer.

However, the idea of eco-consumer – being a derivative of conditions of equal development – comes from the assumption that the society experiences changes in the

[1] *E-mail address*: jolanta.pozorska@wzieu.pl

[2] Literature offers the following division:
— Consumers that represent common sense, meaning the ones who buy products based on knowledge and valuable information. Their ecological behaviour comes from the need to get a prestige and being well that is seen by the others. Such behaviour also shows high level of prosperity and highly developed awareness.
— Consumers focused on themselves who buy products only based on egoistic reasons and in deep confidence that this is healthy for them and their families.
— Ecological fanatics who see only ecological products as valuable. They usually initiate action aimed at protection of the environment. They can limit or decline consumption of some products just to protect environment.
The other division – based on the level of ecological awareness – presented in "Marketing ekologiczny" by S. Zaremba, Wyd. AE, Wroclaw 2004, s. 47. It presents 5 groups of eco-consumers marked with colours (starting from black to bright green).

value system. It is important to raise a question: is an eco-consumer a phenomenon of the past or does it have a brighter future on the conditions of crisis.

The main aim of this paper is to present arguments for the fact that eco-consumer and actions related to this idea are still topical not only in the political sphere (causing changes in the perception of economic results and changing ways of their achievement in the future) but also in daily activities and self awareness of a single person. Thus, the author has reviewed literature related to this subject and presented results of research done in selected countries of the EU. The scientific research was to verify the assumptions, that idea of eco-consumer in the EU society is so widespread that it has become a style of life. An additional aim, which was set by the author, is to present potential risks for further development of idea of eco-consumer in the countries affected by crisis.

The research encompasses approx. 1500 people, aged 18-65 years and selected (for the first phase of study) by a random choice. Population was surveyed in selected countries of the EU: Poland, Estonia, the Czech Republic, France, the UK, and Germany. In Poland, the study included 220 people, in Germany - 500, France - 310, Estonia - 90, the Czech Republic – 130, and the UK - 250. The research had a panel character, meaning, it was done on the same group in two different periods: in the beginning of 2008 and 2011. There were many questions in the survey and the most important were as follows:

1. What characteristics of a product do you consider as the most important when buying the product? Please prioritise.
2. Has the information on ecological production any value for you?
3. Would you buy more expensive product rather than its cheaper equivalent with the information that the expensive one is representing valid social, ecological, or economic goals?
4. What in your opinion is an eco-consumer?
5. Are you eco-consumers? If yes, please, provide information why you think so.

Fact, that at the end of 2008, a crisis started in Europe, caused additional value to the research. It was possible to:

— compare answers received before the crisis and during the economic difficulties;
— check the difference in awareness of the society affected by the support received from the EU institutions for many years. This support has promoted sustainable economic development reflecting ecological, social, and economic aspect.

Research results and discussion

The issue of eco-consumers should be considered because of diffusion of the European society assumptions: a programme of sustainable development, sustainable rural development, and green and social marketing.

1. Eco-consumer and sustainable development

For the first time "sustainable development" was mentioned in the report *Our Common Future* or the so-called Brundtland's report in 1987. At that time, it was already noticed that it was possible to have sustainable development, i.e. development where the needs of existing generation could be fulfilled without decreasing chances of such fulfilment for future generation. The programme of sustainable development offered two key definitions: concept of basic needs and idea of limited possibilities with special focus on strength of the global ecological system (Stappen R.K., 2006).

Definitions are as follows:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

— the **concept of "needs"**, in particular the essential needs of the world's poor, to which overriding priority should be given;
— the **idea of limitations** imposed by the state of technology and social organisation on the environment ability to meet present and future needs."

To have the above sentences defined in such a way, it was necessary for the society to achieve some high level of development that created conditions for full fulfilment of needs. For example, at the end of 20th century in the Western Europe, the level of life of average consumer was at the same level as consumer of the North America or Japan. On conditions of full fulfilment of needs, there was a dilemma if everything used by modern European individual is really needed for the daily life. Is it really necessary to continue stimulation of demand on additional goods? The special meaning of this problem became visible in relation to food products. It was observed as, on the one hand, these are goods needed for daily existence of human, and on the other hand, these are goods, for which demand is set on defined level (which, in fact, is really high in comparison with the level of usage of food in other continents). Besides, the food products are not prepared for long-term storing, so it is necessary to sell them quick (producer behaviour) or consume fast (consumer behaviour). However, Europe is having a problem with overproduction of food since the 1970s. Hence, the sales of bigger portion of products (food) on internal market are really a big problem. Besides, the consumers in Europe are people for which the level of goods saturation is very high, so they are not interested in buying more food. It came already to a curious situation, in which farmers are in permanent competition of production of bigger amount of rural goods. Costs of such production are increasing, while the income of farmers is not increasing. The reason: there are too many food products on the market! Meanwhile, intensification of rural production has overreached the accepted security level of natural environment. Besides, food products are more often the creation of chemists and biologists than the result of hard work of farmer.

With relation to this, there are support programmes created for farmers; whole societies are providing financial support for production … that they do not want! It is reasonable then, that Europe should search for new solutions, which define socio-economic development. It is necessary to change from quantitative to qualitative way of production. In Europe, it is necessary to find such ways of food production that would give higher happiness to consumer simultaneously decreasing loss of a natural environment and increasing profit for producer. It can be that the production on ecological farms is the right solution. Consumer gets a product that fulfils needs for

Table 1

People who declare the purchase of eco-products in selected countries, %

	Germany	France	UK	Poland	Czech R.	Estonia
total of respondents (people)	500=100%	300=100%	250=100%	220=100%	140=100%	90=100%
2008	78	54	74.4	41.8	35.7	37.8
2011	64	43.3	62.4	35	34.3	27.8

Source: author's calculations based on the empirical data

food and in addition, it has the social value for the health and taste. This means that products were produced without destruction of natural environment, so it is sustained for the future generation. Since the ecological production is less efficient, the problem of overproduction of food is solved naturally. Besides, there is noticed high decrease of costs for storing food, costs of utilisation of spoiled food, and social costs related to the restoration of destroyed environment. Decreased value of production is observed in a higher price of product, though; it is acceptable by richer society. This price includes not only costs of production, but also reasonable profit for producer and value of food that does not exist in a standard product.

The analysis of answers from the surveys shows a breakdown into two groups of answers: from people of the so-called Old and the New EU. In the first question, consumers had to sort out the good qualities they take into account when purchasing a product. Sorting had to be done from the most important to the least important features. The selection included such notions as: quality, design, usability, price, origin of the product, taste, stability, security, and other features that respondents could name themselves. In countries of the new EU, consumers mainly focus on such things of a product like usability, price, and quality. In countries from Old EU, the priority is set on quality, appearance, usage, price and others. Different approach to value the characteristics of goods comes from different level of income of societies in the East and the West. In 2008, only 23 people showed healthy aspect as the most important one. Thus, 8 persons came from Germany, 6 - from the UK, 5 - from France, 2 - from Poland, and 1 - from Estonia and the Czech Republic each. In 2011, the amount of people that were focused on ecological (healthy) aspect was higher - 243%. The highest change was noticed in Poland (8 answers) and Estonia (6 answers). In Germany, 15 people mentioned healthy aspect as the important characteristic, in France – 12, the UK – 11, and the Czech Republic - 4. The research showed that in 2008, only 23 people out of 1500 people were interested in characteristics of products, which was called the aspect of health (ecological), while in 2011, the number reached 56 people, though it is just less than 4% of the respondents.

Further questions were aimed to confirm whether health and ecological aspect are not so important for majority of the society. Profound research showed that conclusions taken from the first part of the research were wrong. Majority of the society in all countries mentioned that they wanted to have information whether a product was ecological and whether it was produced without destroying natural environment. In 2008, the above answers were approx. 76%. Out of 300 tested French people, 256 respondents confirmed that this information was important, thus, amounting to 85% of respondents. Next, comes Germany, where 420 of the 500 people tested (approx. 84%) gave a positive answer, in the UK - 205 of the 250 tested (i.e. 82%), Poland - 138 (approx. 63%), in the Czech Republic - 77 (55%), and Estonia - 44 people (approx. 49%). In 2011, the situation was even more favourable, as 82% of the respondents said that the label "product is ecological" was important and determined their choice of a product. Unfortunately, the percentage increase of positive answers is primarily due to changes in the attitudes of citizens in the old European Union countries. Germany previously showed 420 positive responses, while during the next study period - 451, it means that for more than 90% of the respondents it is an important factor when making decisions. At the same time, France follows with 284 (approx. 95%), the UK - 229 (approx. 92%), Poland - 141 (64%), the Czech Republic - 79 (approx. 56%), and Estonia 46 (51%) of positive responses. The worse statistics were achieved during the analysis of question related to buying a product with higher price but being more healthy and ecological. Summary of responses received to the third question may indicate to what extent buyers translate changes in the way of thinking (developing environmental awareness) to their choices on a daily basis in reality. Research shows that the German, French, and English people are the most outspoken eco-consumer who not only have knowledge on the economy's impact on the environment and human health, but they also choose those goods that are produced with respect for the resources, the environment and aim at maintaining the good health of people not only currently but also in the future. In Germany, 78% of answers were positive in 2008, while in 2011, only 64%. This means that 78 out of 100 people in 2008 would select a product serving the public and the environment, although it is more expensive than replacement, produced in traditionally way. Although, economic conditions within 3 years have deteriorated, the behaviour of Germans is still green. In the UK, there was a similar situation (from 65% in 2008 to 52% in 2011). In France, 62% and 52%, in Poland, 42% and 35%, in Estonia, 38% and 28%, and in the Czech Republic 36% and34% respectively (Table 1).

A special attention should be paid on decreasing amount of positive answers. It comes to the idea that, in general, the consumer is interested in the way of production of product whether it is ecological and pro-

environmental. However, the society has started to perceive money more careful during the crisis. However, the most important thing is that there is still some huge part of society that would buy more expensive product if it is healthier for customer and next generations. It is worth to pay attention to one more issue, which concerns the State of New Union. Namely, despite the difficult economic conditions, much lower income per capita, and less access to environmental goods on average, every third citizen is willing to choose consciously a more expensive product, though, better for human health and the environment.

In fact, consumers in Europe have been eco-consumers for a long time. They do not buy things that are not needed for them; they look for food that contains less chemical components. There is higher attention paid to the condition of production and ignorance on producers socially stigmatised. The consumers prefer to buy fewer products in quantity meaning but definitely with higher quality. The detailed result of research was presented in *The Role of the Modern Consumer in Shaping the Market Position of Polish Ecological Farms* (Kondratowicz-Pozorska J, 2011).

2. Sustainable development and multifunctional development of rural areas.

The main role of sustainable development – keeping equality between systems: social, economic, and natural – gets a special meaning in farming, the activity that is directly related to the environment. Both, in theory and practice, the idea of sustainable farming is implemented the best by ecological and integrated farming (Bednarek A., 1999).

The other idea proposed by the EU is multifunctional development of rural areas. In the Western Europe, there are three phases of rural development (Klodzinski M., 2008):

— phase one – focused on increasing level of life of rural families by modification of rural structure and farming;
— phase two – focused on keeping rural population in areas they live, by creation of work places outside of the farming; while in European economy, the process of small rural industrialisation together with revitalisation of small cities and increased need of citizens on rural recreation coincided with a decreased attention on industrialisation of rural areas with increased focus on the development of tourism;
— phase three – the most topical, was related to convincing local society, to self-analysis of socio-economic situation of their areas and based on the analysis that there should be proposals to create development programmes.

Countries, like Poland, are in situation, in which there is need to follow all of these three phases in parallel. Therefore, there is a research on such ways of management that would be useful for the development of farming, industrial, and service activities, and that would not destroy environment at the same time. These thoughts are expressed by ecological farms, which by means of ecological methods are good stimuli for the creation of places of work both in farming and producing (for example, in processing some products), transport (delivery of ready products to the sales points or directly to customer), or in trade (selling products on farm or in specialised sales points). The ecological farms are also involved in educational services, especially if they are involved in agro-touristic service. They bring to the visitors the rules of ecological farming, tell the history of the place, traditions. They propagate the values that are not only related to their activity but also to the region.

The activity of ecological farms has also another aspect. In a long term perspective, the everyday ecological education of farmers is visible in propagation in the society (especially young one), the rules of respecting the Earth, human, and its work. This favour the development and strengthening the idea of eco-consumer for future consumers. This creates groups of self-aware consumers who are (Kondratowicz-Pozorska J, 2011):

— **more competent** – they have much wider knowledge on ways of production, used technology, its influence on health and condition of human and natural environment. They pay attention on products. They check if the product they buy has usable value not only for them but also for others.
— **more analytic** – so the decision of buying for these customers is related with implementation of many targets at the same time. Customer has awareness of limited resources, environment requirements, and social expectations. Based on this, every such decision of buying is thought out in details.
— **more demanding** – such people have high expectation in regards to what they buy. The product that they buy shall fulfil requirements together with the environment friendly production.
— **more open to share strategic information –** eco-consumers expect more from producer and supplier, but they are also ready to give more themselves. They are more frank and share information. This is valuable for both parties.

3. Eco-consumer and green marketing (social marketing)

The continuous evolution of marketing definition has created the so-called "green marketing" definition, which is related with social marketing. The essence of this notion is to focus mainly the attention from companies, which exist on goods market, to natural environment. Such approach creates a positive logo of company in comparison with competitors. The main goal of green marketing is to focus attention on ecological nature of products and technologies, so their essence is:

— reduction of factors that poison the atmosphere, soil and water;
— moving away from non-renewable energy sources;
— energy savings in households and enterprises;
— reduction of toxicity used in packaging or reduction of unnecessary packaging;
— stimulation the savings in motor vehicles;
— promotion of ecological knowledge;
— improving the quality of water.

It is so more often that companies focus attention on ecological aspects of their activities. Green marketing is touching all these actions that are related with functioning of company in the way that it can show responsible, social, and of course, ecological aspects of its production. Therefore, such behaviours are visible in growing trust of

the current and future customer of that company, better position on market, good image etc.

Modern companies have pointed out that it is no longer enough to take care only of a single customer satisfaction by meeting needs and desires, but the enterprise shall take care of the characteristics of social orientation, by identifying and adjusting to meet the needs of consumers in such a way as to contribute to the formation of product, in general. Such actions are required by existence of bigger groups of eco-consumers. They and their awareness allowed developing by producers the initiatives of social marketing. The one that influences people's health, environment, and life style.

The research shows that despite crisis, huge amount of society in all countries included in the analysis is able to pay more for product with additional values. Based on this, companies cannot stop action that have already taken and get back to pro-ecological production. Besides, the level of eco-awareness in the society is increasing. In 2008, over half of the society properly named eco-consumer (over 56% (i.e. 840 people) with right answer and 12% (180 people) with understanding of some aspects of this definition). They also knew the idea behind sustainable development (approx. 33% - 495 people). After three years of management by governments that the only goal was set to support sustainable development, the amount of properly answered questions increased to 74% (i.e. before, 1020 people knew the correct definition of eco-consumer, in 2011, it was 1110 people). In 2011, the respondents had also much deeper knowledge of sustainable development. Three years before, the correct explanation of term was reported by 495 people, in 2011, already 570 people (38%) knew that concept. It can then be assumed that three of four people know goals of eco-consumer; though, much worse situation is seen with ideas of sustainable development. It is necessary to stress that eco-ideology is injected in the European societies. The idea that the main purpose of economic activity is not to increase production just to its growth but to fulfil needs of human with respect to its and environment requirements. So the main goal of action should be widely understood by optimising production and not maximising production at all costs.

4. Crisis and eco-consumers

The financial crisis that appeared in the United States of America by the end of 2007 speeded up and spread on Europe and Asia already in 2008. The reason of crisis was not the breakdown of credit system. It touched major problems that appeared in economies around the world. These are speculation boom on property market, overuse of financial lever by banks, excessive deficit in the current account, and overestimation of the currency (Roubini N., Mihm S., 2011). However, by clever management shown by governments, there is no call for radical changes of economies and reform of financial system. The problems that are base (reasons) of current crisis are still not solved and can hit at any time the economies of countries around the world. Despite fact that the chaos in financial world shown weaknesses of functioning of American and European financial market, defects in the system of supervision and regulation, there is still no action taken to fix it. Meanwhile, there is mood of waiting for "something" that still did not come but for sure, it would be. Such waiting arises from the fact that at the moment, countries have cleaned up just the recover their economies without deep analysis of real root cause. This decreases the GDP value of European countries. There is a visible decrease of level of life and decrease of trust in national institutions as well as banks. The anxiety also causes a reduction in consumption and decrease of demand on goods what is not helpful for the economic growth. Under such circumstances, it would be necessary to ask the question provided in the first part of this paper. Is there still the future for ideas of eco-consumers? The arguments that convince that eco-consumers are at the beginning of the expansion track were already presented and they are:

— beginning of research on getting new ways of the development evaluation of the EU countries;
— acceptance of Action Programme – **Agenda 21.** The paper shows ways of preparation and implementation of programmes for sustainable development;
— financial support from the EU founds for any pro-ecologic activity (especially implemented in rural areas);
— acceptance of multifunctional development of rural areas that allows direct support for ecological companies and implementation of the idea of "green consumer";
— strengthening of social marketing that is defined as adopting philosophy of marketing and adapting marketing techniques for stimulation of changes of human behaviours (Prochenko P., 2003). At the end, it will bring social expected changes in behaviour and value system.

However - as mentioned already - to have the results of the above theories and activities, it is necessary to achieve the high level of growth by the society that would assure fulfilment of needs. Meanwhile, the crisis that has been spreading around the EU since 2008 causes those EU economies slowing down, the production is decreasing together with the reduction of places of work. This causes that people have less income and there is a visible decrease in the level of fulfilment of needs. In addition, governments look for savings in national and European budgets. This causes risk on all activities related with financing from these budgets, for example, support of multifunctional development of rural areas, education, and pro-ecological activities. Besides, consumers with feeling that their current level of life is under risk, show greater caution in spending money. They are rather focused on savings. In area of their interest are such products that bring them maximum satisfaction on new conditions – the conditions of crisis. The consumers will think about fulfilling the current needs but not needs of future generations. They will consider the happiness of individual but not the society.

During the crisis, similar behaviour is observed in a group of producers. They move out from production of expensive goods (such goods are ecological gods), to which there is no demand on hazardous conditions. They focus on what can be sold. In addition, the lack of sources of financial support discourages producers to make experiments with new technologies, techniques, and methods of productions. In the scope of savings, producers have come to tested and cheapest methods of productions. To have bigger savings, they also decide to reduce social and green marketing.

Conclusions

It would appear that eco-consumer on current conditions of economy has no place for existence. Consumer itself moves out from what it has respected so far. In addition, it is hard for companies and governments to respect priorities that were set. However, it is hard to believe that once injected ideas of economic, social, and environmental equality will be ignored and not seen. In 2011, the research showed that, however, there was a decrease of interest in ecological products during the crisis (especially, if there was cheaper equivalent), this decrease was not going to zero and it took only few percents. Therefore, it can be concluded that there is a large part of society, which despite the worsening economic conditions will not change their current lifestyle, habits, or choices. A particular attitude of eco-consumer has the German, French, and English society. In these countries, the consumer- despite the crisis- depends on the fact that they could make alone a conscious choice between products deserving to be called Eco and conventional ones. In addition, the vast majority of the society from the Old Union declares that they are willing to acquire a better product, despite the higher price (everything depends on length and depth of the crisis). Therefore, the ordering features of the goods, they pointed to the first place was quality, by which they understand the care for the health and environment.

However, in countries belonging to the New Union (such as Poland, the Czech Republic, and Estonia), the research has shown that product ecological interest is slowly but steadily increasing. There are changes seen in consumer behaviour of these states and perception of reality. However, a barrier that restricts their activities and the choice is simply a lack of adequate purchasing power.

If all needed economy reforms (including financial systems) were implemented fast, then the decrease of level of life of European citizens would not be so strong to threaten factors influencing the idea of eco-consumer. The research shows that eco-awareness of society is high, and especially in Germany, France, and England. In countries, belonging to the New Union environment-friendly development of consciousness is not yet on the same level as in the Old Union countries but is improving steadily. Within three years, the research has shown an increased interest in the idea of eco-consumer by 6%, and sustainable development issues by 5%.

People start to understand that current activities will affect level and quality of life in future. Besides it cannot be allowed to suppress all spending for any purpose, because this would slow down the economic growth in future.

The research done in selected EU countries confirms that if there were proper financial level of society, then during buying goods, the main characteristics considered by customers would be quality and usability. Both of them contain health aspect, taste, care about environment both now and in future, helping others by buying this product. Therefore, knowledge on the relation of economy, human, and environment in the researched countries is such high that even if there is a crisis, the stopping of the eco-trend is not possible.

Bibliography

1. Bednarek, A. (1999). *Wielofunkcyjny i zrownowazony rozwoj obszarow wiejskich (*Multifunctional and Sustainable Rural Development). In: Marketing of Organic Products in North-Eastern Poland (ed). D. Metera, A.Bednarek. Fundacja IUCN Poland, Warszawa, pp. 29-40.
2. Borys, T. (2010). *Zrownowazony rozwoj jako wyzwanie edukacyjne (*Sustainable Development as an Educational Challenge). In: Education for Sustainable Development (ed.) T.Borys. Wyd. Ekonomia i Srodowisko, Bialystok, T.1, pp. 32-33.
3. Klodzinski, M. (2008). *Wielofunkcyjny rozwoj obszarow wiejskich w Polsce i krajach Unii Europejskiej* (Multifunctional Development of Rural Areas in Poland and the European Union). In: Environment and Natural Resources (ed.) H.Kubicka, IOS, Warszawa, No. 35/36, p. 11.
4. Kondratowicz-Pozorska, J. (2011). *Rola wspolczesnego konsumenta w ksztaltowaniu pozycji rynkowej polskich gospodarstw ekologicznych* (Role of the Modern Consumer in Shaping the Market Position of Polish Ecological Farms). In: The Enterprise and the Consumer in an Evolving Environment. Marketing of a Future. Trends. Strategies. Instruments (ed.) G.Rosa, A.Smalec. Research Journal of University of Szczecin, No 661, Economic Problems of Services, No. 73, Szczecin, pp. 112-113.
5. Luszczyk, M. (2011). *Ksztaltowanie relacji konsument-przedsiebiorstwo-srodowisko w okresie przemian cywilizacyjnych* (Relationships: Consumer-Business-Environment during the Civilisational transformantion). In: Behaviour of Consumers, Trends and Directions of Changes. Marketing of a Future. Trends. Strategies. Instruments (ed.) G.Rosa, A.Smalec, I. Ostrowska. Research Journal of University of Szczecin, No 660, Economic Problems of Services, No. 72, Szczecin, pp. 219-221.
6. Prochenko, P. (2003). A Social Marketing. Bardzo to mile, ale czy ma sens? OPOKA, biznes, spoleczenstwo, etyka. Retrieved: http://www.opoka.org.pl/biblioteka/X/XB/marketingspoleczny.html. Access: 3 January 2012.
7. Roubini, N., Mihm, S. (2011). *Ekonomia kryzysu (*Economics of the Crisis). Wyd. Oficyna a Wolters Kluwer business, Warszawa, p. 57.
8. Stappen, R.K. (2006). *A Sustainable World is Possibile – Der Wise Consensus: Problemlösungen für das 21. Jahrhundert*. Exkurs zu Nachhaltigkeitswissenschaft. Eichstätt, pp. 51-54.

Do Appropriate Technology View Holds in The EU: Explaining Cross-Country Labour Productivity Gaps Using DEA

Olegs Krasnopjorovs[1], Mg.oec.
PhD student, University of Latvia

Abstract. Standard Cobb-Douglas growth accounting framework could explain only minor part of cross-country labour productivity gaps, implying a big role of (unexplained) Solow Residual or Total Factor Productivity. However, the increased usage of non-parametric methods in a growth accounting, particularly Data Envelopment Analysis (DEA), showed that along with a direct effect on output, capital stock had a substantial indirect effect disregarded by a Cobb-Douglas framework. Higher capital stock allows a country to use a better technology - in line with appropriate technology hypothesis (Basu S., Weil D.N., 1998). This paper incorporates some Cobb-Douglas features in a DEA framework (i.e. Jerzmanowski M., 2007) showing that appropriate technology view is useful in explaining the sources of cross-country income gaps in the EU. Furthermore, the results are robust subject to assumptions on capital formation, and whether labour productivity was adjusted to the cross-country differences in sectoral composition of employment and natural resource endowment. Given both direct and indirect effects of cross-country differences in capital stock per hour worked (which are found to explain about 40% and 60% of labour productivity gaps respectively), capital accumulation proved to be much more important tool for income catch-up than it is usually considered by standard Cobb-Douglas framework.
Key words: production function, Data Envelopment Analysis, appropriate technology, capital stock, total factor productivity.
JEL code: C14, D24, E22, O47, Q32.

Introduction

Empirical research has shown that standard growth-accounting framework relying on Cobb-Douglas assumptions could account for only minor part of cross-country income gaps. For instance, summarising research during the past 25 years, physical capital accounts for about 20% of income differences across countries whereas human capital could explain another 10-30% (Hsieh C.T., Klenow P.J., 2010). This implies that the majority (50 - 70%) of income gaps remains unexplained (i.e. explained by Solow residual or Total Factor Productivity - TFP). Similar conclusion of earlier research efforts was made in Khan A. (2009): "TFP is found to explain between 50 and 75 percent of the observed differences in income per capita".

However, the usage of non-parametric research methods showed that the role of capital is significantly underestimated by a standard framework. For instance, departure from Cobb-Douglas assumption and usage of Data Envelopment Analysis (DEA) framework allowed (Jerzmanowski M., 2007) to decrease the fraction of cross-country income differences not explained by physical and human capital together from 68% to 45%. These findings are in line with an appropriate technology hypothesis proposed earlier (Basu S., Weil D.N., 1998): technology available to the country may depend on its capital endowment. Thus, capital accumulation has not only a direct effect on output (covered by the standard Cobb-Douglas framework) but also an indirect effect by allowing a country to use a more productive technology. Nevertheless, up to now, there is no empirical evidence regarding the Eastern European countries since the unavailability of reliable capital stock data.

The aim of the paper is to test empirically the relevance of an appropriate technology hypothesis in a sample of countries that includes the Eastern Europe, using econometric methods. First, the paper analyses the methodology to decompose labour productivity differences across countries using a standard growth accounting framework based on Cobb-Douglas assumptions as well as using a non-parametric DEA framework and a combination of these two frameworks. Second, the paper constructs capital stock data series for each of the Eastern European countries as well as adjusts labour productivity variable in order to account for the cross-country differences in a composition of employment and natural resource endowment. Third, the paper discusses the implications of the clear presence of an indirect effect of capital accumulation on labour productivity within the EU.

The paper is organised as follows. Section 1 reviews the methodology, Section 2 describes the data, while Section 3 reveals the results. Finally, the last section concludes with the main findings and suggestions for further research.

Research results and discussion

1. Methodology

Assuming no scale effect, unit elasticity of substitution between labour to physical capital and Hicks-neutral technology, production function in a Cobb-Douglas form is given by:

[1] *E-mail address*: olegkrasn@inbox.lv

$$Y_{it} = A_{it} K_{it}^{\alpha} L_{it}^{1-\alpha}, \quad (1)$$

where:

Y – Gross Domestic Product (Output) in real terms;

K – stock of physical capital in real terms;

L – hours worked (Labour);

A – level of technology (i.e., Solow residual or TFP);

α and (1-α) – GDP elasticity with respect to physical capital and labour respectively;

i and t – country and time period respectively.

Note that Y, A, K, and L in (1) are country and period specific, whereas α is assumed to be the same across countries and time.

Under the standard Cobb-Douglas decomposition, labour productivity (that in a neoclassical framework is equivalent to the income level) can be expressed as a function of capital stock per hour and Solow residual:

$$y_{it} = A_{it} k_{it}^{\alpha}, \quad (2)$$

where $y = \frac{Y}{L}$ and $k = \frac{K}{L}$ is labour productivity and capital stock per working hour respectively.

Under the non-parametric representation, labour productivity can be expressed as:

$$y_{it} = E_{it} \cdot F_t(k_{it}), \quad (3)$$

where:

$F(k)$ – production possibilities frontier (also referenced as the world technology frontier or the world production frontier), reflecting the highest attainable output given the endowments of physical capital and labour;

E – measure of output technical efficiency (for details see Coelli T., 1996).

Note the two differences between (3) and (2). First, non-parametric methods do not need an assumption about the elasticity of output to capital, which is allowed to vary with time. For each period, the world production frontier is estimated using empirical data. Therefore, an important drawback of DEA method is that it is less robust to the changes in the sample of countries. Furthermore, it is rather sensitive to outliers: if the world production frontier consists of one or more outliers, it may bias efficiency estimates for other countries.

Second, TFP term now is changed by a measure of technical efficiency. However, the interpretation of a country's position relatively to the world production frontier is broadly similar to that of TFP. World production frontier "should be interpreted quite broadly to encompass institutions and policies as well as purely technological phenomena" (Kumar S., Russell R.R., 2002).

Finally, incorporation of Cobb-Douglas assumption (namely, the 1/3 elasticity of output with respect to capital) into a DEA framework allows to perform a detailed decomposition of the sources of cross-country labour productivity gaps. After splitting the Solow residual into the world technology frontier T and efficiency E, labour productivity could be expressed as:

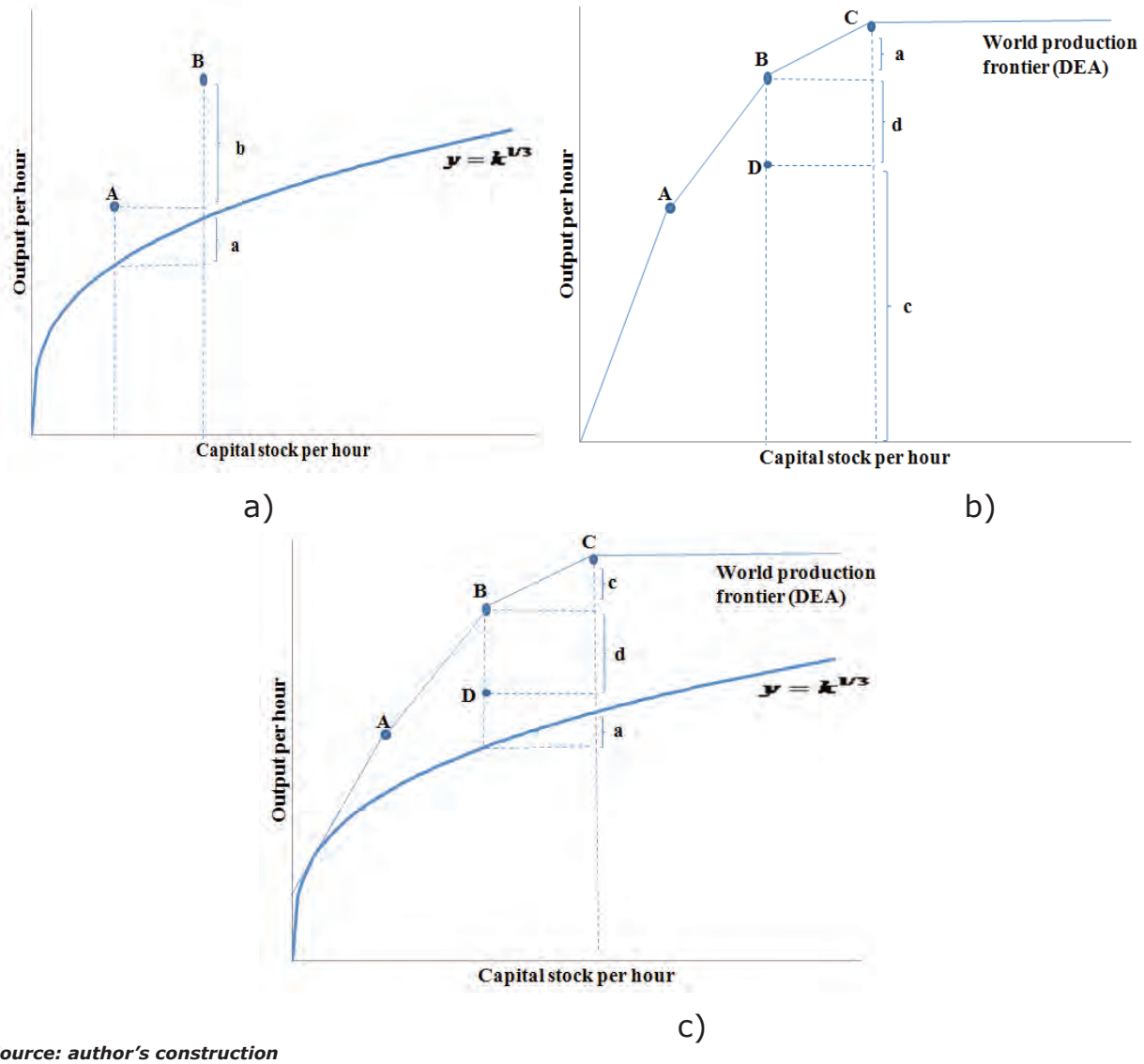
$$y_{it} = T_{it} \cdot E_{it} \cdot k_{it}^{\alpha} \quad (4)$$

Sources of income differences between any country and its peer could be assessed using Equations (2), (3) and (4). Figure 1 shows the sources of cross-country labour productivity gaps according to the three methods described above. Horizontal axis reflects the capital stock per hour worked, while vertical axis reflects labour productivity (output per hour worked). Assume that TFP exceeds unity so that labour productivity level in either hypothetical country is located above the $y = k^{1/3}$ curve.

Under the standard Cobb-Douglas decomposition, labour productivity difference between hypothetical countries A and B (which is equal to **b**) could be expressed as a sum of a contribution of capital (**a**) and a contribution of TFP (**b - a**; Figure 1a).

Under the non-parametric representation, first, the world production frontier is estimated using empirical data. World production frontier involves countries that achieve the highest level of labour productivity in the country sample given their endowment of the capital stock per hour worked. Figure 1b shows that three hypothetical countries (A, B, and C) belong to the world production frontier in a particular period and, thus, are considered efficient. At the same time, country D operates below the world production frontier and it is considered inefficient. While countries B and D have the same capital to labour ratios, country D achieves lower level of labour productivity. So that the whole labour productivity gap between countries B and D could be explained by the efficiency term. Note that country D achieved labour productivity level **c,** while given its capital endowment it could achieve the level of labour productivity equal to **c+d**. Thus, a vertical distance between a respective country and a frontier (**d**) is a measure of inefficiency (more specifically, output technical inefficiency). Efficiency level of country D (E_{Dt} from Equation 3) can be calculated (in % term) as $\frac{c}{d+c}$. Measuring the sources of income difference between countries C and D (which is equal to a sum of **a** and **d**), the contribution of capital stock is represented by **a,** whereas contribution of efficiency – by **d**.

When Cobb-Douglas and DEA frameworks are combined, again, the only source of labour productivity gap between countries B and D is the efficiency term **d** (Figure 1c). However, the labour productivity gap between any two countries with different capital to labour ratios could be assessed with three factors: capital, technology, and efficiency. For instance, note that the labour productivity gap between C and D is equal to **c + d**. First, the larger the capital stock, the more country can produce given the same level of labour and technology. This is a direct effect of capital stock



Source: author's construction

Fig. 1. **Measuring the sources of cross-country income gaps using: a) Cobb-Douglas framework; b) DEA framework; c) combination of Cobb-Douglas and DEA frameworks**

in line with a Cobb-Douglas framework and it is represented by **a**. Second, higher capital to labour ratio allows a country to use a more productive technology. This is an indirect effect of capital accumulation in line with an appropriate technology view, and is represented by **c – a**. Finally, a contribution of efficiency is represented by **d**.

In a sample of more than two countries, the sources of income differentials can be measured using variance decomposition exercise. For a Cobb-Douglas case, after taking logarithms of (2), labour productivity level could be decomposed by the sum of two components. The first component reflects unexplained part (Solow residual), while the second represents an explained part (capital).

$$\log y_{it} = \log A_{it} + \alpha \cdot \log k_{it} \tag{5}$$

After denoting $\log A_{it}$ as $\widetilde{A}_{it}$ and $\alpha \cdot \log k_{it}$ as $\widetilde{F}_{it}$, variance of labour productivity in a sample of countries could be represented by a sum of variances of the two factors and the double covariance between them:

$$Var(\log y_t) = Var(\widetilde{A}_t) + Var(\widetilde{F}_t) + 2 \cdot Cov(\widetilde{A}_t, \widetilde{F}_t), \tag{6}$$

where Var and Cov is variance and covariance respectively.

Splitting the covariance term equally between the two factors (Jerzmanowski (2007), the whole cross-country income difference could be assessed by a contribution of capital (%):

$$V_{F,t} = \frac{Var\left(\widetilde{F}_t\right) + Cov\left(\widetilde{A}_t, \widetilde{F}_t\right)}{Var\left(\log y_t\right)} \quad (7)$$

and the contribution of a Solow residual (%):

$$V_{A,t} = \frac{Var\left(\widetilde{A}_t\right) + Cov\left(\widetilde{A}_t, \widetilde{F}_t\right)}{Var\left(\log y_t\right)} \quad (8)$$

2. Data

While focusing on the EU Member States, this paper includes three other countries, which are often viewed to be among technology leaders and, thus, should be included in a DEA frontier in order to assess correctly the efficiency of the remaining countries – Norway, the USA, and Japan. Both capital stock and output data are expressed per hour worked and in euro PPP terms in order to take into account international price differences. Output, number of hours worked and PPP index data were obtained from Eurostat. Moreover, both input and output data were filtered with a HP filter in order to exclude the short-term cyclical impact on output and employment. Annual input and output time series for all countries involves the period of 1995-2010. Reliable macroeconomic data for the Eastern European countries are not available before 1995, thus, growth investigation usually starts at that year (i.e. Epstein N., Macchiarelli C., 2010; Melihovs A., Davidsons G., 2006; Vanags A., Bems R., 2005).

Capital stock data are based on Groningen Growth Accounting Database (GGAD) that is widely used in a recent growth research (i.e. Apergis N., et al., 2010; Ark B., et al., 2008). However, data cover only 16 countries (EU-15 and the USA) and the time span until 2004. The following rule-of-thumb assumptions were made regarding capital accumulation. For the EU-15 and the USA, capital stock data were extrapolated to 2005 – 2010 using perpetual inventory method and gross capital formation data from Eurostat. Capital stock time series for each of the EU-12 countries were constructed by assuming initial (in 1995) capital to output ratio to be 100% (150% for Norway and Japan). Capital stock annual depreciation rate was assumed 10% for all countries.

Moreover, exploring the possibility that capital stock depreciation rate may differ across countries as well as dealing with the possibility of imprecise initial capital to output ratio estimates, alternative capital stock estimation method was used as well (k adjusted).

First, implied capital depreciation rates were calculated for 16 countries included in GGAD during 1995-2004 (GGAD capital stock data and Eurostat fixed capital formation data were combined in a perpetual inventory method). The average implied capital depreciation rate for 16 countries was estimated at 10.2%, which is slightly higher than usually considered for advanced countries in a growth accounting research (for instance, a conventional estimate for the USA usually is 6% (Khan A., 2009) or 5% (Barro R., Sala-i-Martin X., 2004). Nevertheless, cross-country differences are significant with the highest depreciation rate observed in Portugal and Ireland (16.5% and 14.0% respectively) that is about two times as much as in France and Denmark (7.9% and 8.3% respectively).

Second, it was found that capital depreciation rate positively relates to the share of manufacturing in gross value added (GVA) and investment to GDP ratio, while negatively relating to the share of construction in GVA and initial capital to output ratio:

$$\hat{\delta} = 2.267 + 0.825 \cdot \frac{\bar{I}}{\bar{Y}} - 4.763 \cdot \left(\frac{\hat{K}}{Y}\right)_0 + 0.218\left(\frac{Ind}{VA}\right) - 0.982\left(\frac{Constr}{VA}\right) \quad (9)$$

p-value: (0.4647) (0.0011) (0.0002) (0.0011) (0.0402) R^2 = 0.872

where:

$\hat{\delta}$ – implied capital depreciation rate;

$\frac{\bar{I}}{\bar{Y}}$ – investment (gross fixed capital formation) as a share of GDP (1995–2004 average);

$\left(\frac{Ind}{VA}\right)$ – share of manufacturing in GVA (1995–2004 average);

$\left(\frac{Constr}{VA}\right)$ – share of construction in GVA (1995-2004 average).

As for the initial capital output ratios, the only factor that showed border significance (p-value is 0.0849) was the share of public services (public administration, education, and healthcare) in GVA, which could be regarded as one of the proxies of maturity of the economy.

Third, initial capital to output ratio and capital depreciation rate was estimated for the remaining 14 countries (the EU-12, Norway, and Japan). In line with an observation that capital depreciation rates may be generally higher in developing countries than in developed economies (i.e. Duma N., 2007), capital depreciation rate in the EU-12 is found to be significantly higher compared with the

Table 1

Sources of labour productivity gaps across countries in 2000-2010 using Cobb-Douglas and DEA decompositions separately, %

	Cobb-Douglas		DEA	
	Capital	Solow residual	Capital	Efficiency
No adjustments	34.6	65.4	102.8	-2.8
Y adjustment	39.9	60.1	95.5	4.5
K adjustment	40.4	59.6	103.8	-3.8
K & Y adjustment	46.9	53.1	91.2	8.8

Source: GGAD, World Bank and Eurostat data; author's calculations

Table 2

Sources of labour productivity gaps across countries in 2000-2010 using a combination of Cobb-Douglas and DEA decompositions, %

	Technology	Efficiency	Capital
No adjustments	71.9	-6.2	34.3
Y adjustment	54.2	6.0	39.8
K adjustment	79.4	-19.0	39.6
K & Y adjustment	41.5	11.6	46.9

Source: GGAD, World Bank and Eurostat data; author's calculations

EU-15 (14.9% and 10.2% respectively). Regarding the Baltic States, capital depreciation rate is estimated at 19.3%, 16.1%, and 12.5% for Estonia, Latvia, and Lithuania respectively. In its turn, initial capital to GDP ratio in the EU-12 is found to be somewhat lower than in the EU-15 and the USA (1.44 and 1.69 respectively). This result supports an argument that in order for investments flow from the Western Europe to the Eastern Europe, capital marginal product in the Eastern Europe should be higher than that in the Western Europe (Vanags A., Bems R., 2005). Assuming GDP elasticity to capital is similar across countries, this could be accomplished only if capital to output ratio is higher in the Western Europe than in the Eastern Europe. Regarding the Baltic States, the initial capital to GDP ratio was estimated at 1.594, 1.556, and 1.442 in Latvia, Lithuania, and Estonia respectively.

Along with unadjusted measure of labour productivity, the paper uses also adjusted level (y adjusted) taking into account the impact on aggregate labour productivity from cross-country differences in employment structure in a sectoral breakdown (Eurostat data) as well as differences in natural resource endowment (World Bank data). Thus, an adjusted labour productivity time series reflect hypothetical labour productivity values if the composition of employment in any country would be similar to the EU-27 average and in the absence of natural resources (energy and mineral resources as well as forest). The similar adjustments were made respectively by Barro R., Sala-i-Martin X. (2004), and Merkina N. (2009).

3. Results and discussion

Since the sample involves more than two countries, the only way to measure the sources of labour productivity gaps across countries is to perform a variance decomposition exercise (shown by equations 5-8 for a Cobb-Douglas case). Given the large impact of assumption about initial capital to output ratio on input variable during the beginning of the period, results are discussed for the period of 2000-2010.

Under the traditional growth accounting framework relying on a Cobb-Douglas framework, the contribution of capital is estimated between 34% and 47% depending on whether adjustments are taken into account. This reflects that about 53% to 66% of labour productivity gaps in the present sample of countries are not explained by a standard Cobb-Douglas framework, mirroring a role of Solow residual or TFP. The usage of DEA in measuring the sources of labour productivity gaps substantially increases the role of capital – almost to 100%. Thus, relaxing Cobb-Douglas assumptions yields that capital stock per hour differences accounts for almost whole cross-country labour productivity differences.

To clear up whether the difference in results is due to an indirect impact of capital to technology in line with an appropriate technology view, a detailed decomposition of the sources of cross-country labour productivity gaps is performed by combining Cobb-Douglas and DEA frameworks. Note that in the majority of cases, the indirect effect of capital accumulation is even more important than the direct effect, and it accounts for about 41% to 79% of labour productivity gaps (Table 2). Higher capital endowment (i.e. higher capital to labour ratio) allows a country to use a more productive technology, which, in its turn, has a positive impact on labour productivity.

The indirect effect of capital endowment on labour productivity is ignored by a standard Cobb-Douglas decomposition. While Cobb-Douglas assumes that A is not related to k, in reality, however, there is a strong positive relation between these variables. Using data with both input and output adjustments, about 71% of cross-country differences in Solow residual can be explained by the difference in capital stock (when none of the adjustments is used, relation is even stronger with $R^2 = 0.83$). The results prove that technology available to

the country depends crucially on its capital endowment (k = K/L), so that the difference between Cobb-Douglas and DEA frameworks when measuring the sources of cross-country income gaps can be explained by appropriate technology view. Given direct and indirect effect of capital accumulation, investments have a greater role in the economic growth than derived from standard (Cobb-Douglas) growth-accounting practices.

Note that the contribution of efficiency to cross-country income level differences is not robust (results are not stable and depend on assumptions used). This could reflect data measurement error. For instance, capital stock data are the least precise in almost all growth accounting literature. Therefore, the result of this paper should not be interpreted as a negative contribution of efficiency to labour productivity gaps.

The absence of robust relation between efficiency and income could be interpreted as rich countries on average are not more efficient than poor countries. This finding contradicts to the earlier results (Jerzmanowski M, 2007) that the contribution of efficiency to cross-country income gaps in 1995 exceeded 40%. The difference in results, apart from possible data measurement errors, may be driven by the fact that earlier findings used a wide country sample that included both the richest countries (i.e. the USA, Norway) and the poorest ones (i.e. Kenya, Zambia). In this case, a significant role of efficiency may reflect incomplete technology diffusion across the world. At the same time, the insignificant role of efficiency in explaining income gaps within the EU may point that technology could flow free through the borders within a particular sample of (relatively advanced, by the world standard) countries.

Conclusions, proposals, recommendations

The main findings of the paper are summarised as follows.

1. In line with an observation that capital depreciation rates may be generally higher in developing countries than in developed economies, annual depreciation rate of physical capital is found to be substantially higher in the Eastern European countries than in the Western European countries (14.9% and 10.2% respectively).
2. Initial capital to GDP ratio (in 1995) in the Eastern European countries is found to be somewhat lower than in the Western European countries (1.44 and 1.69 respectively). This is in line with a common view that capital marginal product is relatively higher in the Eastern Europe.
3. Using a standard Cobb-Douglas growth accounting framework, the contribution of capital to cross-country labour productivity gaps (in a country sample that consists of all 27 EU countries, Norway, the USA, and Japan; during 2000-2010) is about 40%, which is similar to the earlier empirical findings that were made subject to other country sample and time periods. This reflects the direct effect of capital accumulation on output: the increase of capital to labour ratio increases labour productivity given the same level of technology.
4. The usage of non-parametric DEA method allows increasing the contribution of capital in assessing the sources of cross-country labour productivity gaps to almost 100%. Thus, the indirect effect of capital accumulation is even stronger, and accounts for about 60% of cross-country labour productivity gaps. The interpretation in line with appropriate technology view is that the increase of capital to labour ratio allows a country to use a more productive technology.
5. Contrary to the earlier findings based on a wide sample of countries, rich countries are not found to be more efficient on average than the poor ones. The insignificant role of efficiency in explaining labour productivity gaps within the EU may point that while technology diffusion across the world is not full, it could flow free through the borders within a particular sample of advanced countries.
6. The conclusion regarding the presence of an indirect effect of capital accumulation is robust subject to the usage of alternative assumptions of capital formation as well an adjustment of labour productivity in respect to the structural composition of employment and natural resource endowment.
7. While the standard Cobb-Douglas growth accounting framework assumes that Solow residual is not related to capital endowment, empirical data point to the strong positive relation between these variables.

Further research efforts in testing the relevance of appropriate technology hypothesis should focus on the usage of other methods alternative to DEA (for instance, SFA: stochastic frontier analysis) and on assessing not only the sources of labour productivity gaps but also the sources of labour productivity growth as well as its growth differentials across countries.

It is possible that the contribution of efficiency was negative in some cases due to an uncertainty in estimation of the capital level in the Eastern European countries. One of the possible future research paths may be the econometric estimation of the capital depreciation rate as well as initial capital to output ratio using panel data. Allowing these indicators to vary not only across countries but across time periods would increase the sample size and, thus, help improve the estimation precision of capital time series.

Bibliography

1. Apergis, N., Panopoulou, E., Tsousmas, C. (2010). Old Wine in a New Bottle: Growth Convergence Dynamics in the EU. *Atlantic Economic Journal,* Volume 38. pp. 169-181.
2. Ark, B., Mahony, M. O., Timmer, M.P. (2008). The Productivity Gap between Europe and the United States: Trends and Causes. *Journal of Economic Perspectives,* Volume 22, Number 1. pp. 25–44.
3. Basu, S., Weil, D.N. (1998). Appropriate Technology and Growth. *The Quarterly Journal of Economics*. Volume 113, Issue 4, pp. 1025 – 1054.
4. Barro, R., Sala-i-Martin, X. (2004). *Economic Growth*. London: The MIT Press. p. 672.
5. Coelli, T. (1996). A Guide to DEAP Version 2.1. A Data Envelopment Analysis (Computer) Programme. *CEPA Working Paper,* Number 96 / 08, p. 50. Retrieved: http://www.owlnet.rice.edu/~econ380/DEAP.PDF. Access: 29 December 2011.

6. Duma, N. (2007). Sri Lanka's Sources of Growth. *International Monetary Fund Working Paper*, Number 07 / 225, p. 25. Retrieved: http://www.imf.org/external/pubs/ft/wp/2007/wp07225.pdf. Access: 29 December 2011.
7. Epstein, N., Macchiarelli, C. (2010). Estimating Poland's Potential Output: a Production Function Approach. *International Monetary Fund Working Paper*. Number 10 / 15, p. 20. Retrieved: http://www.imf.org/external/pubs/ft/wp/2010/wp1015.pdf. Access: 29 December 2011.
8. Hsieh, C.T., Klenow, P.J. (2010). Development Accounting. *American Economic Journal: Macroeconomics*, Volume 2. pp. 207-223.
9. Jerzmanowski, M. (2007). Total Factor Productivity Differences: Appropriate Technology vs. Efficiency. *European Economic Review*, Volume 51, Issue 8, pp. 2080 – 2110.
10. Khan, A. (2009). Accounting for Cross-Country Differences in Income Per Capita. *Business Review*, Q1 2009, pp. 11-18.
11. Kumar, S., Russell, R.R. (2002). Technological Change, Technological Catch-up, and Capital Deepening: Relative Contributions to Growth and Convergence. *The American Economic Review*, Volume 92, Issue 3, pp. 527 – 548.
12. Melihovs, A., Davidsons, G. (2006). The Role of Production Progress and Human Capital in the Economic Growth of Latvia. *Bank of Latvia Working Paper*. Number 1 / 2006. p. 31. Retrieved: http://www.macroeconomics.lv/role-production-progress-and-human-capital-economic-growth-latvia. Access: 29 December 2011.
13. Merkina, N. (2009). Technological Catch-up or Resource Rents: a Production Function Approach to Growth Accounting. *Journal of International Economics and Economic Policy*, Volume 6, pp. 59 – 82.
14. Vanags, A., Bems, R. (2005). The Baltic Growth Acceleration: Is It Sustainable*? BICEPS Working Paper*. p. 35. Retrieved: http://www.biceps.org/files/Growth%20Acceleration%20in%20the%20Baltic%20states.pdf. Access 29 December 2011.

The paper has been supported by the European Social Fund within the project "Support for Doctoral Studies at the University of Latvia".

Knowledge as Social Provision for Successful Entrepreneurship

Maiga Kruzmetra[1], assistant professor emeritus; **Baiba Rivza,** Dr.hab.oec., professor;
Laura Rivza, Master student
Latvia University of Agriculture

Abstract. At the beginning of the 21st century, tourism has become one of the models of farm diversification in rural areas, as small-sized farms cannot provide sufficient revenues only from agriculture production. The majority of farms in Latvia are small regarding both their area and the amount of agricultural land. As in any business, the outcome of economic activity in farms depends not only on unbiased life circumstances for entrepreneurial activities but also on farmers' personality, knowledge, skills, and willingness to improve their knowledge and skills. Knowledge and skills play an increasing role in the process of farm diversification. Within the framework of the research on significance of social provision in expanding rural entrepreneurship, the survey was carried out among a group of farm managers who have chosen tourism in addition to traditional farming as farm diversification model. The results of the survey revealed that the lack of knowledge and skills was considered a significant problem by respondents.
Keywords: agro-tourism, management problems, knowledge role.
JEL code: A 13

Introduction

Tourism as an industry. Tourism industry continues to grow in Europe and worldwide, diversifying economy and providing jobs and work opportunities. The EU tourism industry generates more than 5% of the EU GDP, with about 1.8 million enterprises employing around 5.2% of the total labour force (approximately 9.7 million jobs). When related sectors are taken into account, the estimated contribution of tourism to the GDP is much higher: tourism indirectly generates more than 10% of the European Union's GDP and provides about 12% of the labour force (European Commission. Supporting...).

Tourism business has been expanding in Latvia. The goal of the government is to encourage tourism as a significant branch of industry, and to increase its share in the direct and indirect revenues as well as to develop an attractive image of Latvia and to promote Latvia as a tourist destination in the international tourism markets (Strategy of National Economy, 2004).

Agro-tourism has also developed rapidly. The data of the agro-tourism association "Lauku celotajs" revealed that in 2010 there were 492 places of accommodation with 9,361 beds, compared with 275 places of accommodation with 4,137 beds in 2003 (Ziemele A.). According to the data of the Central Statistical Bureau, totally 13.2 million people participated in intra-country travel around Latvia in 2010, out of which 3.3 million were holiday trips with staying overnight (CSB). The types of accommodation on offer include farmhouses, holiday houses, guest houses, campsites as well as castles and manors; however, unfortunately, without any percentage distribution for each of the listed alternatives.

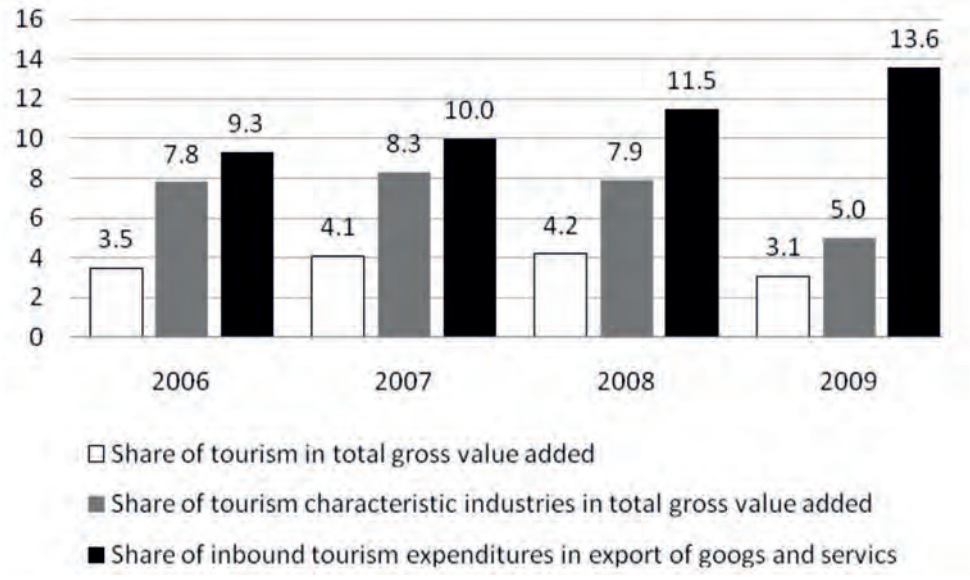
The aim of the study is to examine the role of social factors in starting micro-entrepreneurship and the conditions for their provision. To achieve the aim, within the framework of the research, the object of the research was chosen - farmers starting tourism as a diversification model. The task of the research was to find answers on two questions: what characterises a manager of a farm who chooses tourism as a supplementary branch to agricultural production when looking for the variants of business diversification and what are the main issues or fields of risks for providing a successful operation in farmers' opinion.

The methods of research. General methods of research and sociological methods: comparative analysis, synthesis, and surveys were used in the research. Managers of rural farms (N=543) in Zemgale planning region were interviewed, focusing on the respondents who have chosen agro-tourism for their farm diversification and identifying a range of problems farmers meet starting this kind of an innovative activity.

Methodology of the research. The present study is based on the theories of innovations and risk reductions.

Innovative activities fostered success in business already in the 20th century but at the beginning of the 21st century, successful entrepreneurship is unimaginable without an innovative operation (Drucker P. F., 2006; Bessant J., Tidd J., 2007; Wong P.K., Ho Y. P., Autio E., 2005; Bolsakovs S., 2008 etc.). The concept of innovation system can be understood in both a narrow and a broad sense (Piirainen and Koski, 2004). The narrow definition of the innovation system primarily incorporates the R&D functions of universities, public and private research institutes and corporations, reflecting a top-down model of innovation. A broader concept of the innovation systems is more interactive and bottom-up including "all parts and aspects of the economic structure and the institutional set-up affecting learning as well as searching and exploring" (Lundvall B., 1992). To perform the research, the authors choose this broader understanding of the innovations system, which comprises not only information disseminators / innovation developers but also their consumers, without whom a real introduction of the innovation to life is impossible. The publication of the OECD member states, devoted to innovation strategy, admitted that the renewal of the significance of start-ups and small businesses in the economic life

[1] *E-mail address*: Maiga.Kruzmetra@llu.lv.



Source: authors' construction based on the data of the Central Statistical Bureau (CSB)

Fig. 1. **Indicators characterising the significance of tourism industry, %**

Table 1

Size of farms engaged in tourism

Results of business	Size		Total
	Up to 70 ha	70.1 ha and more	
With profit	18 – 94.7%	1 – 5.3%	19 – 100%
Without profit	27 – 71.1%	11 – 28.9%	38 – 100%
Plan to start	7 – 63.6%	4 – 36.4%	11 – 100%

Source: authors' calculations based on the survey results

and the promotion of innovations were new tendencies of the 21st century. One of the reasons that new start-ups and small firms have become more important today is that innovation in the knowledge economy is coming from creativity and it can be more often visible in the operation of new and small enterprises than in the operation of large enterprises (CMEs, Entrepreneurship.., 2010).

Any innovative activity is associated with problems or risk situations. Risks can be classified and grouped. In terms of their location, risks are divided into internal and external risks (Pettere G., 2004). A. Giddens divides risks into external risks and manufactured risks (Giddens A., 1999). If risks are regarded as decisions, it is accepted to consider them as internal, if risks are regarded as events, they are - external.

Risks are thoroughly characterised by Alfon Bora. He states that a risk is a question of complete or incomplete knowledge. Characterising risk theories in social sciences, A. Bora points out that risk can be the result of an individual decision, group decision, or actions of the whole social system. Thus, A. Bora suggests that in the light of any approach, risk reduction depends on the decision makers' knowledge in the specific area in which the decision is made (Bora A., 2006).

Niklas Luhmann's views should be mentioned analysing risks. Lumann admits the influence of the external environment on the human activities and emphasises a close connection of the risk with the possibility of choice, underlying that the choice means the presence of variants but the choice of the variant is in the hands of an individual (Luhmann N., 1993).

Research results and discussion

Farms and tourism as farm diversification alternatives

The findings of the survey among the farm managers of Zemgale planning region confirm the choice of tourism as a significant alternative of farm diversification (Liscova A. et al., 2011; Liscova A., 2011). Sixty-eight respondents out of 543 or 12.5% indicated tourism as a part of their business. Geographically, the respondents represent all the municipalities of Zemgale region. A more detailed analysis of the survey data allowed the authors to distinguish several features of farmers and the main problems they face in their entrepreneurial activities.

The tourism related group of respondents is internally differentiated.

There are three mutually related subgroups in the tourism related group: the first one includes respondents who already earn profit from tourism as farm diversification. The second subgroup includes respondents who have got involved in tourism but who, in

Table 2

Distribution by age of tourism related respondents – farm managers

Results of business	Age					Total
	Up to 40	41-55	56-62	Above 62	No response	
With profit	3 – 15.8%	8 – 42.1%	2 – 10.5%	6 – 31.6%	-	19 – 100%
Without profit	9 – 23.7%	14 – 36.8%	10 – 26.3%	4 – 10.5%	1 – 2.6%	38 – 100%
Plan to start	7 – 63.6%	2 – 18.2%	2 – 18.2%	-	-	11 – 100%

Source: authors' calculations based on the survey results

Table 3

Distribution by education of tourism related respondents - farm managers

Results of business	Education					Total
	Practical experience	Basic training	Practical experience and basic training	Vocational education	Higher education	
With profit	5 – 26.3%	2 –10.5%	-	6 – 31.6%	6 – 31.6%	19 – 100%
Without profit	9 – 23.7%	3 – 7.9 %	1 – 2.6%	13 – 34.2%	12 – 31.6%	38 – 100%
Plan to start	2 – 18.2%	1 – 9.1%	1 – 9.1%	-	7 – 63.6%	11 – 100%

Source: authors' calculations based on the survey results

Table 4

Distribution of basic problems of the tourism related respondents – farm managers (frequency of chosen answers)

Problem groups	Operate in tourism business	Including	
		with profit	without profit
Workload	18x – 31.6%	5x – 26.3%	13x – 34.2%
Knowledge and skills	15x – 26.3%	8x – 42.1%	7x – 18.4%
Resources	7x – 12.3%	2x – 10.5%	5x – 13.2%
Financial problems	12x – 21.1%	2x – 10.5%	10x – 26.3%
Family support	6x – 10.5%	2x – 10.5%	4x – 10.5%

Source: authors' calculations based on the survey results

their opinion, do not earn any profit from it; and the third one - refers to respondents who are still planning start tourism as farm diversification model. In total, 27.9% of the respondents refer to the first group, 55.9% - to the second, and 16.2% - to the third.

The obtained figures reflect the real situation in entrepreneurship. Not everyone, who starts a new form of business, immediately gains profit from it. Irrespective of this fact, interest in tourism as a model of farm diversification is growing (many are planning to get involved in it); moreover, this tendency can be observed in all the municipalities of Zemgale region.

Up to now, mainly **farms with the size** less than 70 ha were the ones who had started tourism in addition to traditional farming. However, the number of farms with the size more than 70.1 ha, interested in tourism as a form of their farm diversification, is growing due to objective processes demanding the increase of competitiveness.

The number of young farmers who are interested in having tourism in addition to traditional farming is growing. There are 31.6% of retired persons among profitable farmers, 10.5% of retired persons among farmers without profitable result, while there are no retired persons among the farmers who are still planning to start tourism business as farm diversification model.

The education level of farmers involved in tourism as a type of diversification has started to change. The proportion of those farmers who have only practical experience is decreasing. The number of those farmers who have basic training has decreased slightly. However, the number of the farmers who have obtained vocational training is increasing. This means that the significance of vocational education among farmers is growing. People with higher education dominate among the farmers who are planning to get involved in tourism business.

Thus, regarding Zemgale region, people, who have started tourism as a model of their farm diversification, have the following characteristics: they possess mostly small farms – up to 70 ha, they are older than 40 and they have a rather high level of education (one third of respondents have higher education). The group of people who plan to start tourism includes a large number (64%)

Table 5

Problem distribution based on the respondents – farm managers' education level

Education	Level of business activity	
	With profit	Without profit
Practical experience	Knowledge and skills, finance	Workload dominates
Basic training	Workload, knowledge and skills are equally significant	Financial problems dominate
Vocational education	Knowledge and skills dominate	Financial problems dominate
Higher education	Knowledge and skills dominate	Financial problems dominate

Source: authors' calculations based on the survey results

Table 6

Problem distribution by respondents – farm managers' age

Age	Level of business activity	
	With profit	Without profit
Up to 40	Knowledge and skills, finance	Workload dominates
41 – 55	Knowledge and skills dominate	Workload dominates
56 – 62	Concentrated in workload and resources	Finance dominates, followed by workload
Above 62	Knowledge and skills dominate	Knowledge and skills, resources and family support are equally significant

Source: authors' calculations based on the survey results

of young farmers (up to the age of 40), thus, almost two thirds of them have obtained higher education. The owners of larger farms (more than 70.1 ha) are also starting to consider tourism business as an option in addition to agricultural production.

Any business activity including tourism management is associated with **problems and their solutions.** Therefore, it was important to identify the main problem groups encountered by farm managers and to examine the significance of each problem group. The empirical material obtained by the authors gave the opportunity to distinguish among five problem groups – workload, knowledge and skills, resources, financial problems, and family support.

The frequency of chosen respective answers (respondents could choose several problem groups, thus, the total of the answers may exceed 100%) indicates that workload as well as knowledge and skills are in the focus of all farm managers involved in tourism business. A range of problems varies depending on the amount of profit. Managers from farms with profit emphasise knowledge and skills, followed by workload, while farm managers from farms without profit mention finance as the central problem in addition to workload. Thus, farm managers from farms with profit see the main problem in themselves – they think the risk could be caused by the lack of knowledge and skills. Farm managers from farms without profit assign larger significance to unbiased factors. The family support as a problem is equally important for both groups of farms.

Taking into account the age and the education level of the farm managers involved in tourism business, the authors performed additional calculations with the aim to find out whether there is any correlation between the above mentioned problems and farm managers' age and education.

The analysis of the information obtained during the survey allows to conclude that any farm manager, irrespective of his/her level of education, feels the lack of knowledge and skills and this, according to A. Bora, could be "specific non-knowledge", which directly refers to the specific business area. If "unspecific non-knowledge" was meant, the indicators of the education level groups should exhibit some differences (Bora A., 2006).

A similar situation can be observed when analysing the farm managers' identified problem groups by respondents' age.

If the farm managers who work without profit in all age groups, except the ones above the age of 62, mention workload as the main problem, then farm managers working with profit, of all age groups, except the ones from 56 to 62 years, mention the lack of knowledge and skills as the most significant problem. This fact repeatedly confirms A. Bora's thought that a person may not have enough knowledge and skills but he/she could be aware of the lack of knowledge, and thus, they could also have the understanding of the need to enrich their knowledge.

Therefore, the attention was paid to the willingness of the respondents, farm managers, to acquire new knowledge. The majority of the farm managers were involved in different forms of training already upon starting a multifunctional business.

As the respondents indicated the lack of knowledge and skills as a significant business problem, the authors analysed the readiness of respondents – farm managers to continue improving their knowledge with the help of consultations or attending seminars.

Farm managers working with profit are comparatively less willing to enrich their knowledge and improve skills; however, it has to be admitted that almost a half of

Table 7

Options of studies by respondents – farm managers

Results of business	I learned to start a new business activity		If yes, what option of learning was chosen			
			Training	Exchange of experience	Courses	Reading literature
With profit	No - 10.5%	Yes – 89.5%	4 – 23.5%	5 – 29.4%	8 – 47.1%	5 – 29.4%
Without profit	No – 5.3%	Yes – 94.7%	13 – 36.1%	11 – 30.6%	13 – 36.1%	10 – 27.8%

Source: authors' calculations based on the survey results

Table 8

Willingness of the respondents - farm managers to enrich their knowledge

Types of training		With profit	Without profit	Plan to start
Consultations	No willingness	9 – 47.4%	15 – 39.5%	3 – 27.3%
	Willingness	10 – 52.6%	23 – 60.5%	8 – 72.2%
Seminars	No willingness	10 – 52.6%	9 – 23.7%	-
	Willingness	9 – 47.4%	29 – 76.3%	11 – 100%

Source: authors' calculations based on survey results

them are willing to learn, which is a high number. Farm managers from farms without profit are more willing to learn than farm managers working with profit; the largest group of those willing to learn account for the farm managers who are still planning to start tourism business. Consequently, an assumption can be made that a great number of farm managers involved in farm diversification understand the relationship between the outcome of the business activity and their level of knowledge and skills, although a sufficiently close correlation (with 95% credibility) is observed only between the factors: "What are the main problems in a diversified business activity" and "Education of the farm manager" in the respondents' group with profit from agro-tourism. It means that more detailed research of the outcome of the business activity and the farmers' knowledge and skills is necessary, focusing on both "specific non-knowledge", "unspecific non-knowledge", and the depth and amount of knowledge and skills.

Conclusions, proposals, recommendations

1. The survey of the farmers of Zemgale region confirms that farm diversification as a form of economic activity in Latvia is expanding and tourism is one of the significant alternatives in diversification as 12.5% of the respondents have already started tourism business or plan to do it in the near future. The characteristics of the incoming people (age, education) demonstrate a positive tendency – they are young people with a high level of education.
2. The knowledge and skills in tourism as a form of farm diversification is a precondition of successful entrepreneurship in farm managers' opinion. The lack of knowledge and skills as a problem enhancing factor is indicated by every fourth respondent involved in tourism business (26.3%); almost one half of the profit gaining farm managers (42.1%) mention it.
3. Respondents demonstrate rather high willingness to enrich their knowledge and improve their skills. They are ready to attend consultations, take courses, participate in experience exchange trips, and read published materials. However, the study did not provide with sufficient information to be able to conclude what knowledge exactly is necessary to acquire, and whether it is "specific non-knowledge" or "unspecific non-knowledge".
4. Tourism business as a form of farm diversification needs further research to identify the content and form of the knowledge in demand and the possibilities of the supply.

Bibliography

1. Bessant, J., Tidd, J. (2007). *Innovation and Entrepreneurship*. John Willey and Sons, p. 476.
2. Bolsakovs, S. (2008). *Inovativa darbiba Latvija (Innovative Actions in Latvia).* Jumava, p.324.
3. Bora, A. (2006). Risk, Risk Society, Risk Behaviour, and Social Problems. In: *The Blackwell Encyclopedia of Sociology.* Ritzer G. Eds. VIII, pp. 3927-3932.
4. CSB. Turisms (Tourism). Retrieved: http://www.csb.gov.lv/statistikas-temas/turisms.html. Access: 25 November 2011.
5. Drucker, P.F. (2006). *Innovation and Entrepreneurship*. HarperBusiness, p. 227.
6. European Commission. Supporting European Tourism. Retrieved:http://ec.europa.eu/enterprise/sectors/tourism/index_en.htm. Access: 5 December 2011.
7. Giddens, A. (1999). *Risk and Responsibility.* Modern Law Review 62(1), pp. 1-10.
8. Lenz, R. (2008). *Special Features of Tourism Marketing.* Scholarly Essay. Verlage fur Akademische Tekste.
9. Liscova, A. (2011). *Saimniekosanas dazadosanas iespejas Zemgales planosanas regiona lauku saimniecibas* (Possibilities of Business Diversification

in Farms of Zemgale Planning Region). Promocijas darba kopsavilkums. LLU, Jelgava.
10. Liscova, A., Rivza, B., Kruzmetra, M. (2011). Farm Diversification Models: Causes and Tendencies. *The International Scientific Conference "Economic-Managerial Aspects of Regions and Organisations of Sustainable Development."* 8-9 April 2011, Klaipeda, Klaipeda University.
11. Luhmann, N. (1993). *Risk: a Sociological Theory*. N-Y, Aldine de Gruyter.
12. Lundvall, B-A. (ed.) (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning.* London: Pinter.
13. Organisation for Economic Cooperation and Development (2010). *CMES, Entrepreneurship and Innovations.* OECD Innovation Strategy. Paris, OECD, p. 212.
14. Pettere, G., Voronova, I. (2004). *Riski uznemejdarbiba un to vadiba* (Business Risks and their Management). Apgads Rasa ABC, Banku augstskola, 7.-31. lpp.
15. Piirainen, T., Koski, P. (2004). Integrating Workplace Development Policy and Innovation Policy. A Challenging Task. Experiences from the Finnish Workplace Development Programme, in Fricke, Werner and Totterdill, Peter (eds.). Action Research in Workplace Innovation and Regional Development. Amsterdam: John Benjamins, pp. 313–331.
16. Slokenbergs, A. (2011). Turisma forums (Tourism Forum). Retrieved: http://www.em.gov.lv/em/2nd/?cat=30115. Access: 13 December 2011.
17. Tautsaimniecibas vienota strategija (Strategy of National Economy) (2004). Ministru kabineta 2004.gada 18.augusta rikojums Nr.568. Retrieved: http://www.likumi.lv/doc.php?id=92534&from=off. Access: 13 December 2011.
18. The European Tourism Forum 2011. 5 – 7 October 2011, Krakow. Retrieved: http://ec.europa.eu/enterprise/sectors/tourism/promoting-eu-tourism/european-tourism-forum/index_en.htm. Access: 18 December 2011.
19. UNESCO Universal Declaration on Cultural Diversity. Adopted by the General Conference of UNESCO Paris, 2 November 2001. Retrieved: http://unesdoc.unesco.org/images/0012/001271/127160m.pdf. Access: 9 December 2011.
20. Vike-Freiberga, V. (2010). *Kultura un latvietiba* (Culture and Latvianship). Riga, Karogs. 232. lpp.
21. Wong, P.K., Ho, Y. P., Autio, E. (2005). Entrepreneurship, Innovation and Economic Growth: Evidence from GEM Data. In: *Small Business Economics*, 2005, 24, pp. 335-350.
22. Ziemele, A. Lauku celotajs. 2010. gada paveiktais (Country Tourism. Progress of 2010). Retrieved: http://ebookbrowse.com/a-ziemele-lauku-celotajs-pdf-d63673817 . Access: 6 December 2011.

Methodological Model for Measurement of Territorial Development of Latvian Regions

Jelena Lonska[1], Mag.sc.soc.
Daugavpils University, PhD student (Latvia), Rezekne Higher Education Institution, accountant, Head of Student Credit Granting Commission

Abstract. A variety of measurement tools – indicators, indices etc. is used in order to evaluate territorial development in the world. These measurement tools are applied for measuring certain regions of the country as well as evaluating the development of the country and comparing the countries with each other or in relation with the previous years. Parallel to the official methodology, scientists and researchers of the world always suggest using alternative methods and indices for measuring territorial development. The author believes that quality and suitability of all these methods cannot be determined or challenged until the theoretically methodological concept of territorial development is created, and the scientific product of which would be a methodological model for measurement of territorial development. This model should answer one particular question: what a "developed territory" is itself as well as in comparison with other territories. Having analysed various theoretical approaches of a relatively new direction of the economic science within the framework of Economics of Development, the author offers her own perception of the conceptual nature of territorial development as a result: the main indicator of any territorial development relates to People, their existence, material well-being and health, level of education, spiritual development, and overall satisfaction with life. In this article, the author describes her newly developed methodological model for measurement of territorial development in a detailed way and provides the empirical interpretation of its indicators, taking into consideration the official statistical data and qualitative research data.
Key words: territorial development, economics of development, methodological model, human, indicators of territorial development.
JEL code: O47

Introduction

"People are the real wealth of a nation," with these words, "the Human Development Report" launched its energetic campaigns towards the new approaches to support the development in 1990. The idea that the basic objective of development is to create an enabling environment for people, which allows living long, healthy and creative lives, today may seem obvious. However, it was not always like that. The main objective of the report, over the past 20 years, has been to emphasise the fact that development itself is directly intended for people (Klugman J., 2010).

Any territory is a land with its inhabitants and all life diversity, it also includes the land's natural resources, infrastructure, culture, history, relationships with other territories (inhabitants), and many other aspects that turn this territory into what it is, forming its identity. The change of all these aspects at a time forms the content, which shall be considered in order to understand the development. Therefore, researchers seek to create measurement methods of development that would combine many (or at least some of the most important) development aspects in a single numerical index. In these measurements, the most important issues are: to what extend people are ensured equally in the distribution of material wealth, and whether equal opportunities are created in relation to employment, education, livelihood (food provision, shelter); regarding healthcare; availability of leisure time and the use of it; security as well as political and cultural life. The most marked material factors in this group, such as material wealth, food, and shelter, are often connected with the concept — standard of living but less material factors (health, leisure, cultural life) with the concept — quality of life.

The aim of the research is, basing on the theoretical assumption that "region's development equals people's life-sustenance, self-esteem, and freedom", to describe the newly developed methodological model for measurement of territorial development in a detailed way and to offer the empirical interpretation of its indicators, taking into consideration the available official statistical data and quantitative research data.

Research tasks:
1) to justify the theoretical substantiation of the research regarding the development as a process and the outcome of this process;
2) to construct the methodological model of measurement of territorial development;
3) to show empirical interpretation of indicators on the example of planning regions of Latvia.

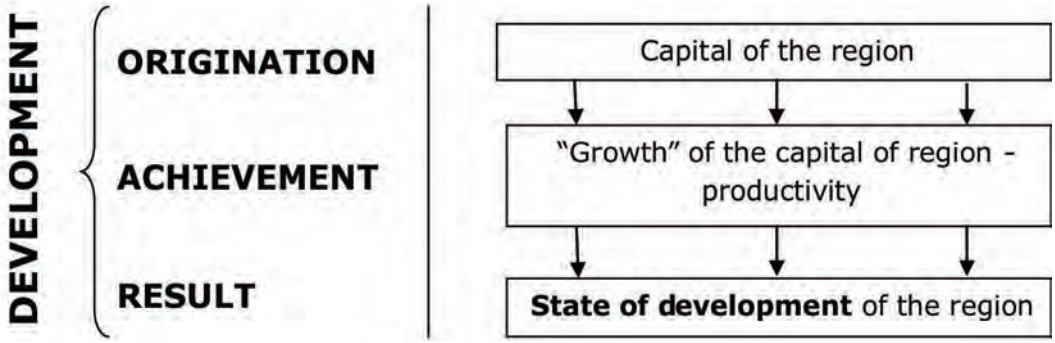
Research object – territorial development.

Research subject – evaluation methodology of territorial development.

Research hypothesis – the key indicator of the evaluation methodology of territorial development is people – their existence and quality on the surveyed territory.

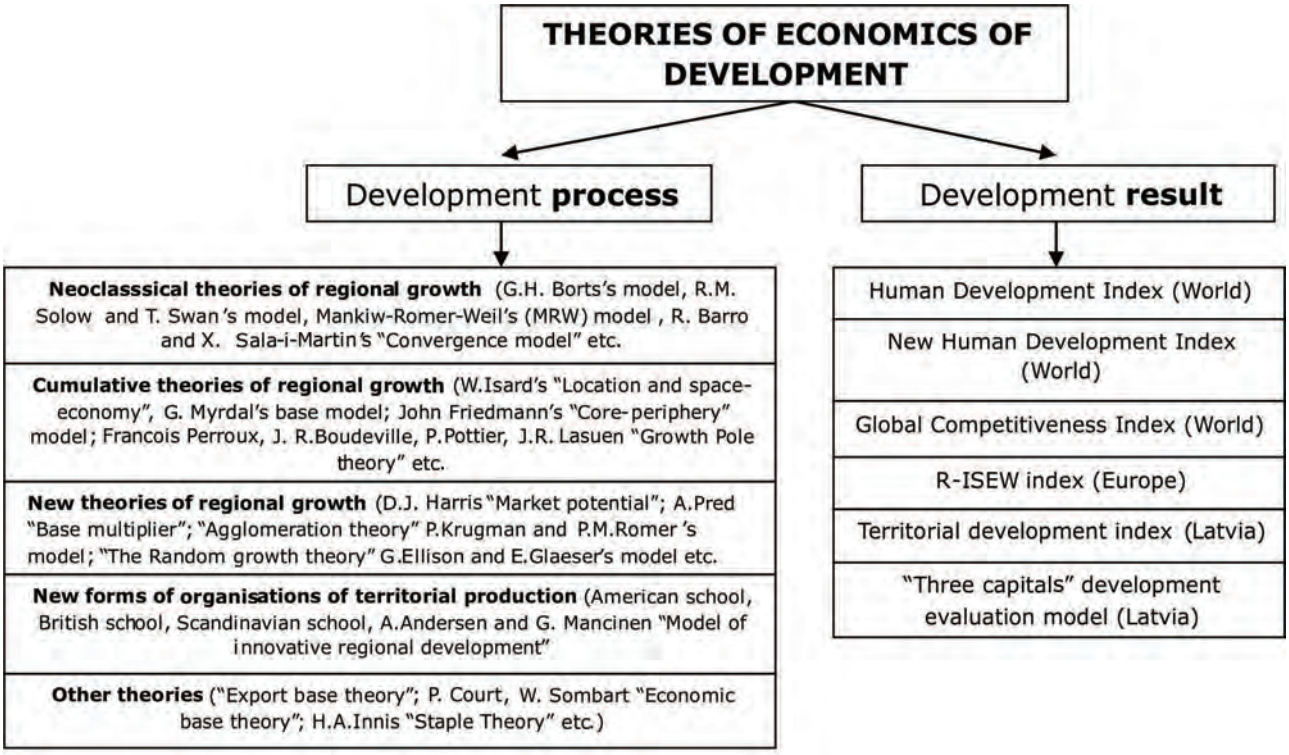
Research methods: monographic method, logical analysis and synthesis method, deduction method.

[1] *E-mail address*: Jelena.Lonska@ru.lv



Source: author's construction based on Boronenko V., 2007

Fig. 1. **Development stages of development as a process**



Source: author's construction based on the analysis of literature on the economic science and world's regional development reports and Gadziyev, 2008

Fig. 2. **Components of Economics of Development**

Theoretical research substantiation

The research is based on the theoretical evolution of economics of development, which explain the concept of economics of development, and the aims and tasks of this branch of economics.

Economics of development – the study of how economies are transformed from stagnation to growth and from low-income to high-income status, and how they overcome problems of absolute poverty (Todaro M.P., Smith S.C., 2011). Economics of development seeks to understand and explain why some countries (territories) are poor and others rich, and how to reduce poverty in poor countries (territories) to give everyone on the planet a minimum standard of life and freedom from hunger and fear of the future (Thirlwall A.P., 2011).

The study of economics of development as a separate subject in economics is a relatively new phenomenon. Academic interest in the mechanics of growth and development is a renewed interest rather an entirely new preoccupation of economists. The progress and material well-being of people and nations have traditionally been in the centre of economic writing and enquiry. It constituted one of the major areas of interest of the classical economists. Adam Smith, David Ricardo, John Stuart Mill, and Karl Marx all dealt at some length with the causes and consequences of economic advance. The list of modern–day economists who have

turned their fertile minds to the study of economic development is the following: Paul Krugman, Joseph Stiglitz, Walt Rostow, Joan Robinson, Harry Johnson, Amartya Sen etc.

The concept *"development"* has two meanings: it can be viewed as both operational process, in this case it is *"growth",* and the result achieved in this process – *"state of development"* (Figure 1).

Analysing Figure 1, it can be concluded that development without growth is hardly conceivable, while growth is possible without development. On the contrary, development is hardly possible without growth, while development is possible without a rise in per capita income. Living standards and welfare shall be improved for the ultimate rationale of development, and while an increase in measured per capita income may not be a sufficient condition for an increase in individual welfare, it is a necessary condition in the absence of radical institutional innovations, such as an increase in public goods (Thirlwall A.P., 2011).

Relatively new branch of the economic science – Economics of Development – is based on theories of economic growth, which explain and measure region's development process. Based on these theories of economic growth, world researchers and scientists provide the instruments for measuring the result of development process (Figure 2). The author provides titles of theories in original.

Development has traditionally meant achieving sustained rates of development of **income per capita (PCY)** to enable a nation to expand its output at a rate faster than the growth rate of its population. **Gross national income (GNI)** per capita is often used as a summary index of the relative economic well-being of people in different nations. It is calculated as the total domestic and foreign value added claimed by a country's residents without making deductions for depreciation (or wearing out) of the domestic capital stock. **Gross domestic product (GDP)** measures the total value for final use of output produced by an economy, by both residents and non-residents (Todaro M.P., Smith S.C., 2011).

When using PCY figures to classify countries into rich and poor and to compare the rate of development in different countries over time, there are certain difficulties evaluating the income. This leads to the topic of **purchasing-power parity (PPP)** (a *real* exchange rate between countries) estimates of PCY (Thirlwall A.P., 2011).

What about of the use of **PCY** figures as an index of development, it is still very convenient to have a readily and easily understandable criterion for classifying countries, and *perhaps* PCY is the best single index we have. PCY may be used as a starting point for classifying *levels* of development, and can certainly be used to identify the need for development. The difficulty of using PCY for the latter purpose is the obvious one that if, in a particular period, PCY did not grow because population growth matched the growth of a country's total income, one would be forced into the odd position of denying that a country had developed even though its national product had increased. *This is an inherent weakness of linking the concept of development to a measure of living standards* (Thirlwall A.P., 2011).

To overcome the limitation of taking a single measure of PCY as an index of development and the problem of using PCY as a measure of living standards, the United Nations Development Programme (UNDP) has developed two alternative indices by which to compare the level of development and the progress of countries: the **Human Development Index (HDI)** and the **Human Poverty Index (HPI).** These indices give alternative measures of the economic well-being of nations that do not necessarily accord with the usual measure: the level of per capita income. The UNDP defines human development as "a process of enlarging people's choices". This depends not only on income but also on other social indicators such as life expectancy, education, literacy, and health provision (Thirlwall A.P., 2011).

The **HDI** is based on three variables:

1) *longevity* or life expectancy at birth;
2) *knowledge* or educational attainment, measured by a combination of adult literacy (1/3 weight) and combined primary, secondary and tertiary school enrolment ratios (1/3 weight);
3) *standard of living* measured by real GDP per capita at PPP of each country's currency to reflect cost of living and for the assumption of *diminishing marginal utility* of income.

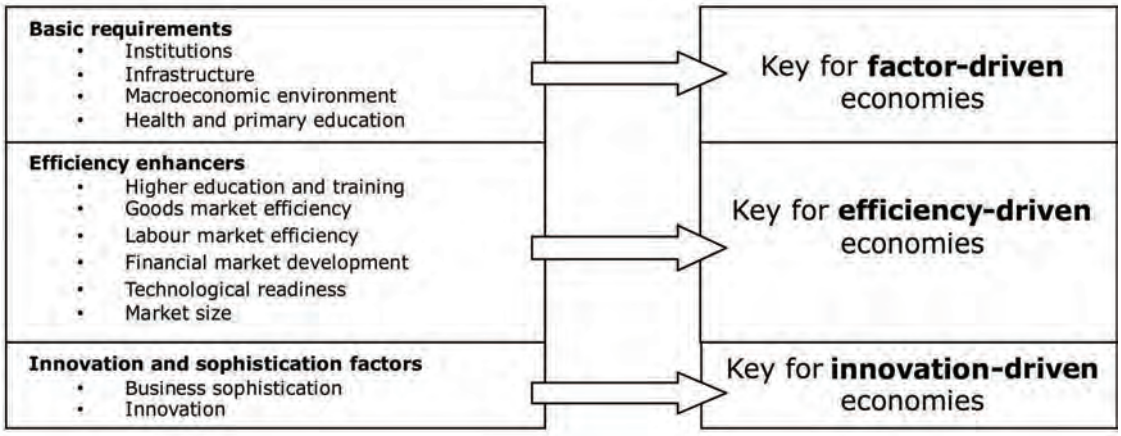
The major advantage of the HDI is that it does reveal that a country can do much better than might be expected at a low level of income and that substantial income gains can still accomplish relatively little in human development. Further, the HDI points up that disparities in income are greater than disparities in other indicators of development, at least health and education. Moreover, the HDI reminds that by development one clearly means broad human development, *not just higher income*. Health and education are inputs into the national production function in their role as components of *human capital,* meaning productive investments embodied in persons (Todaro M.P., Smith S.C., 2011).

In November 2010, the UNDP introduced its **New Human Development Index (NHDI),** intended to address some of the criticism of the HDI. The index is still based on standard of living, education, and health (Klugman J., 2010).

The **HPI** is based on three main indices:

1) the percentage of the population not expected to survive to the age of 40;
2) the adult illiteracy rate;
3) a deprivation index based on an average of two variables: the percentage of the population without access to safe water and the percentage of underweight children under age of five years.

Recently a new regional competitiveness index – **the Regional Index of Sustainable Economic Well-being (R-ISEW)** has been created for all Europe NUTS 2 regions to capture aspects of sustainable economic development left out of account by conventional measures of economic progress. R-ISEW includes costs and benefits not traditionally measured in monetary terms, bringing together a wide range of economic, social and environmental aspects. The basis is consumer expenditure, which is then adjusted to take account of both positive and negative social, economic, and environmental factors (Breska, E., 2010).



Source: Global Competitiveness Report 2011-2012

Fig. 3. **The twelve pillars of competitiveness**

R-ISEW consists of eleven pillars based on a total of 69 indicators organiSed into three groups. These indicators span a far wider range than only narrow economic aspects and include many indicators relating to quality of life, AND life expectancy adjusted by perception of health and trust.

Each of these pillars allows the performance of a region to be assessed in relation to all the other EU regions. As a result, they can be seen as indicating the strengths and weaknesses of every NUTS 2 region in an EU perspective (Breska, E., 2010).

The world's most famous product related to countries' competitiveness is *The Global Competitiveness Report*, which every year is developed by the *World Economic Forum (WEF*), which allow to rank countries comparing them to the rest of the world and to evaluate their development at the same time. **Global Competitiveness Index (GCI)** consists of three sub-indices, which generally consist of 12 indices –"pillars" (Figure 3) (Schwab K., 2011).

All the summarised indices, related to the evaluation of the level of territorial development, mentioned above to greater or smaller extend are trying to find and display the most objective criteria according to their developers' view that in the most complete and comprehensive way would be able to characterise the main conditions and principles of a developed territory. According to the opinion of the author of this article, the most objective one, from all evaluation indices of territorial development level applied in the world today, is the Human Development Index but, nevertheless, this index is unable to fully comprehend and evaluate the spheres of people's lives that from the author's point of view are essential in the development process of any territory: these are life-sustenance and human self-esteem as well as sense of freedom.

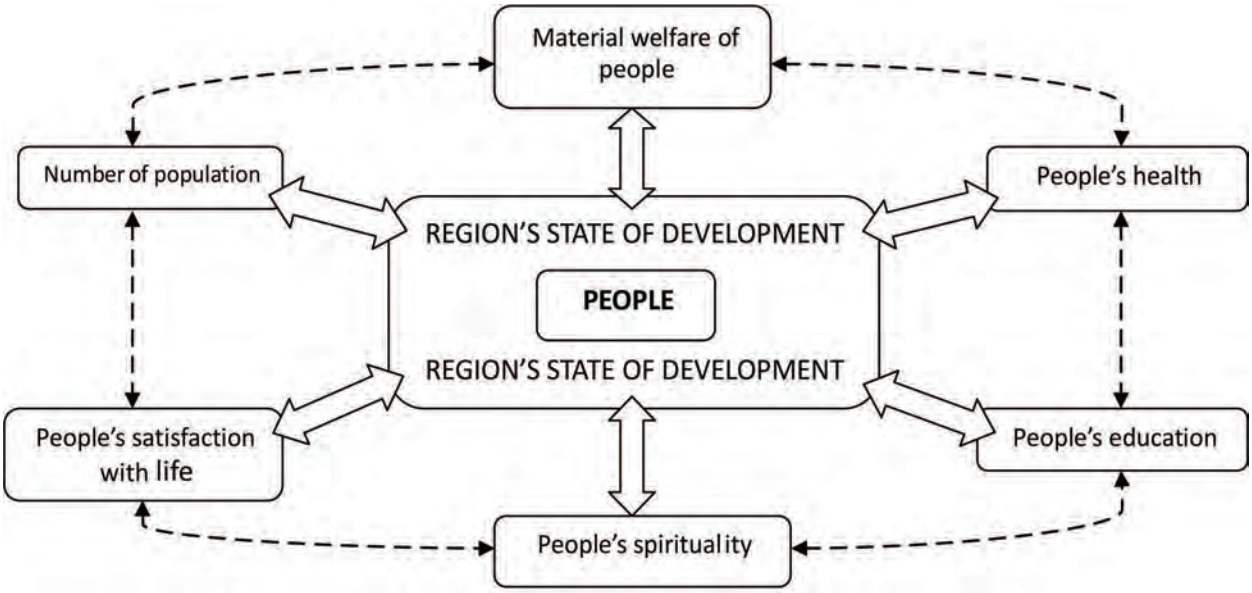
Methodological grounding of the research

The economists Denis Goulet and Amartya Sen argue that **economic development** shall mean much more than just a rise in the average level of per capita income of a country. A concept of development is required that embraces all of the economic and social objectives and values that countries strive for – not simply material progress but, in particular, the self-esteem of peoples and nations, and freedom (Thirlwall A.P., 2011).

Goulet's three core components of development are related to Amartya Sen's vision of development defined in terms of the expansion of entitlements and capabilities, the former giving **life-sustenance** and **self-esteem**; the latter giving **freedom**. Sen defines entitlements as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and obligations that he or she faces", and entitlements generate the capability to do certain things. Economic development should be thought of in terms of the expansion of entitlements and capabilities, which are not necessarily well captured by aggregate measures of output growth. For most people, entitlements depend on their ability to sell their labour and on the price of commodities. It is not only the market mechanism that determines entitlements, however, but also such factors as power relations in society, the spatial distribution of resources in society, such as schools and health care, and that individuals can extract from the state. Sen views freedom as the primary objective of development as well as the principal means of achieving development (Thirlwall A.P., 2011).

Life-sustenance is concerned with the provision of basic needs. The basic needs approach to development was initiated by the World Bank in the 1970s. No country may be regarded as fully developed if it cannot provide its entire people with such basic needs as housing, clothing, food, and minimum education. A major objective of development must be to raise people out of primary poverty and to provide basic needs simultaneously.

Self-esteem is concerned with the feeling of self-respect and independence. No country can be regarded as fully developed if it is exploited by others and does not have the power and influence to conduct relations on equal terms. All peoples and societies seek some basic form of self-esteem, although they may call it authenticity, identity, dignity, respect, honour, or recognition. The nature and form of this self-esteem may vary from society to society and from culture to culture.



Source: author's construction

Fig. 4. **Key elements of the newly developed methodological model of measurement of territorial development and their interrelation**

Freedom refers to that people are more able to determine their own destiny. No person is free if it cannot choose; if it is imprisoned by living on the margin of subsistence with no education and no skills. The advantage of material development is that it expands the range of human choice open to individuals and societies at large. Freedom here is to be understood in the sense of emancipation from alienating material conditions of life and from social servitude to nature, other people, misery, oppressive institutions, and dogmatic beliefs, especially that poverty is predestination.

All three of these components are interrelated. Lack of self-esteem and freedom result from low levels of life sustenance, and both lack of self-esteem and economic imprisonment become links in a circular, self-perpetuating chain of poverty by producing a sense of fatalism and acceptance of the established order – the "accommodation to poverty" as Galbraith (1980) once called it (Thirlwall A.P., 2011).

Summarising the above mentioned, development has occurred when there has been an improvement in basic needs, when economic progress has contributed to a greater sense of self-esteem for the country and individuals within it, and when material advancement has expanded people's entitlements, capabilities, and freedom.

Empirical indicators of the newly developed methodological model of measurement of territorial development

The author of the research suggests to ground the evaluation of the level of territorial growth on the newly developed methodological model of measurement of territorial development, the indicators of which are focused directly on the human existence and determination of the level of his/her welfare.

This model consists of **six key elements:**

1) *number of population;*
2) *material welfare of people;*
3) *people's health;*
4) *people's education;*
5) *people's spiritual media;*
6) *people's satisfaction with life* (Figure 4).

For measuring these elements, the following **indicators** are offered:

1) the changes in the number of inhabitants over the last 5 years (or over any other period of time);
2) GDP per capita;
3) healthy life expectancy after 65 years of age or the rate of mortality after the age of 50;
4) the total number of students in higher education institutions (or the proportion of students in any age group);
5) religiosity, attendance of public places of entertainment, or the proportion of expenses related to cultural events in the household budget;
6) the suicide rate or the rate of satisfaction with life.

The choice of indicators is directly dependant on the availability of statistical data, which is severely limited.

The approbation of this model is shown on the example of the planning regions of Latvia within the period of time from 2008 to 2010 (Table 1).

Analysing the findings, it can be concluded that except Kurzeme planning region, the rest of indicators of the planning regions of Latvia contain at least one indicator with the lowest value (in the case of mortality – the highest). The highest is ranked Kurzeme planning region with no indicators with the lowest value, then follows Riga and Vidzeme planning regions, which have only one indicator with the lowest value, then Zemgale planning region is ranked with two indicators, which have the lowest value and, finally, the last place is given to Latgale planning region with

Table 1

The evaluation method of indicators of key elements of the newly developed methodological model of measurement of territorial development according to the planning regions of Latvia for the period of 2008-2010

Regions / Indicators	Riga planning region	Kurzeme planning region	Zemgale planning region	Vidzeme planning region	Latgale planning region
Changes in the number of inhabitants % 2010/2005	0.3	-3.2	-2.7	-4.6	***-6.4***
GDP per capita (LVL) (2008)	9840	5579	4378	4503	***3926***
Mortality after the age of 50-69 (people per 1000 inhabitants of the respective age) (2010)	28.9	31.1	32.2	32.1	***41.4***
Distribution of students, enrolled in the basic studies of higher education institutions, colleges according to their place of residence (2010)	11786	2833	2717	***2386***	3053
Number of cultural centres and libraries (2010)	259	250	***240***	280	338
Coefficient of satisfaction with life (2008)	***5.6***	6.0	***5.6***	6.2	5.9

Source: author's construction based on the LR CSB data and data of sociological survey carried out for "Latvia. Human Development Report 2008/2009"

three indicators having the lowest value. It should be emphasised that in regard to Riga planning region this result differs according to the distribution of places in relation to the index of territorial development level of Latvia (and changes of the level), where Riga planning region is the leader. This new methodology questions the status of Riga planning region being the most developed region in Latvia. It can be explained by the fact that currently, officially adopted evaluation methodology of the level of region's development of Latvia is mainly based on the economic development indices, for instance, GDP per capita, the amount of paid income tax per capita, unemployment rate etc., as regards to which, Riga planning region, in reality, is far ahead of the rest of the regions of Latvia. However, as already mentioned above, the author of the article wants to show that the result of development is not only the standard of living that is generally measured mainly in monetary terms but also the quality of life.

In relation to the selection of indicators regarding each element of this methodology, it can be admitted that it is a rather controversial and debatable issue; the choice was made on the basis of the availability of statistical data. One can consider the suitability of some indicators to reflect the real situation because, for instance, in order to evaluate the state of people's health, the life expectancy indicator would suit best. However, it is not calculated according to the planning regions of Latvia, the indicator of the mortality rate, which relates to inhabitants of 50-69 was taken in this case. Similarly, the education indicators are debatable, the author wanted to apply the proportion of people with higher education regarding the total number of inhabitants. However, this indicator will be available after the results of the Population Census 2011 are published; the proposed indicator of the distribution of students enrolled in basic studies of higher education institutions according to the place of residence may be rather controversial because it is directly dependent on the number of inhabitants in regions.

Conclusions, proposals, recommendations

The science of economics of development explores territorial development processes and conditions for growth, where the development outcome is evaluated applying various development evaluation tools – evaluation indices of territorial development. Gathering information on the world's most widely applied evaluation indices of development and basing on the scientists research related to the economics of development, the author has worked out her own methodological model of measurement of territorial development, based on six key elements, which reflect not only material development level but also "quality" of the territory inhabitants (health and education level) and satisfaction with life.

The author of the research believes that the newly developed methodological model of measurement of development of regions shows that calculation of the level of development of regions cannot be mainly based only on the material wealth and income. Based on the world-wide researchers' studies, development is seen as primarily, people's and inhabitants well-being, self-esteem and freedom, which are not directly dependent on their income and material conditions. It should be emphasised that one should find such indices and indicators that would be able to evaluate such aspects of human life as human spiritual media and life perception.

Bibliography

1. Barro, R., Sala-i-Martin, X. (1992). Convergence. *Journal of Political Economy*, University of Chicago Press, vol. 100(2), pp. 223-251.
2. Boronenko, V. (2007). *Klasteru pieeja regionu attistibai zinasanu ekonomikas apstaklos. (*Cluster Approach to Regional Development on the Conditions of Knowledge Economics). Daugavpils: DU akademiskais apgads "Saule", 2007. 348 lpp.
3. Boudeville, J. R. (1966). *Problems of Regional Economic Planning*. Edinburgh: Edinburgh University Press.

4. Breska, E. (ed.) (2010). *Investing in Europe's Future.* Fifth Report on Economic, Social and Territorial Cohesion. European Commission. Luxembourg: Publications Office of the European Union, pp. 68-72.
5. Friedmann, J. (1966). *Regional Development Policy: A Case Study of Venezuela*. Boston: MIT Press, p. 279.
6. Gadziyev, J.A. (2008). Neoclassical and Cumulative Theories of Regional Economic development and Growth. Retrieved: http://www.koet.syktsu.ru/vestnik/2008/2008-1/1/1.htm. Access: 10 November 2011.
7. Johnson, H.G. (1966). The Neoclassical One-sector Growth Model: A Geometrical Exposition and Extension to a Monetary Economy. *Economica*, Vol. 33, pp. 265-287.
8. Klugman, J. (2010) *Human Development Report 2010—20th Anniversary Edition.* United Nations Development Programme. Palgrave Macmillan.
9. Krugman, P. (1991). *Geography and Trade.* MIT Press: Cambridge.
10. Lasuen, J. R. (1969). *On Growth Poles,* Urban Studies, 6, pp. 137-161.
11. Locane, V., Peipina, I., Brunenieks, J. et al. (2011). *Regionu attistiba Latvija 2010. (*Regional Development in Latvia 2010), Riga: Valsts regionalas attistibas agentura, 69.,72.,73.,74. lpp.
12. LR Centrala Statistikas parvaldes datu baze (Database of Central Statistical Bureau of Latvia). Retrieved: http://www.csb.gov.lv/. Access: 14 December 2011.
13. Mankiw, N.G., Romer, D., Weil, D. (1992). A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics*, MIT Press, vol. 107(2), pp. 407-437.
14. Pred, A. (1966). *The Spatial Dynamics of U.S. Urban-Industrial Growth*, Cambridge: MIT Press.
15. Rostow, W. (1960). *The Stages of Economic Growth: A Non-Communist Manifesto*. Cambridge: Cambridge University Press.
16. Sen, A., (1983). Development: Which Way Now? *Economic Journal,* Royal Economic Society, vol. 93(372), pp. 742-762.
17. Sen, A. (1991). Welfare, Preference and Freedom. *Journal of Econometrics*, Elsevier, vol. 50(1-2), pp. 15-29.
18. Solow, R. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics.* Vol. 70, No. 1, pp. 65-94.
19. Swan, T. (1956). Economic Growth and Capital Accumulation. *Economic Record*, Vol. 32, No. 2, pp. 334-361.
20. Schwab, K. (2011). *The Global Competitiveness Report 2011-2012.* World Economic Forum.
21. Thirlwall, A.P. (2011). *Economics of Development.* Palgrave Macmillan, p. 678.
22. Todaro, M.P., Smith, S.C. (2011). *Economic Development (11th Edition).* Pearson Series in Economics. Prentice Hall, p. 801.
23. Vanags, E., Krastins, O., Vilka, I., u.c. (2005). *Dazada Latvija: pagasti, novadi, pilsetas, rajoni, regioni. Vertejumi, perspektivas, vizijas (*Diverse Latvia: Parishes, Municipalities, Cities, Districts, Regions. Evaluation, Perspectives, Vision). Riga: Latvijas Statistikas instituts, Valsts regionalas attistibas agentura, 539 lpp.
24. VRAA petijums "*Regionalas politikas un teritoriju attistibas novertesanas metodologiskie risinajumi"* (SRDA study "Methodological Solutions for the Evaluation of Regional Policy and Territorial Development"). Riga: VRAA, 2009. Retrieved: http://www.vraa.gov.lv/uploads/petnieciba/petijumi/Metodologiskie_risinajumi_GALA_zinojums.pdf. Access: 10 September 2011.

Local Food Systems for Sustainable Rural Development

Ligita Melece[1], Dr.oec.
Head of Department of Latvian State Institute of Agrarian Economics

Abstract. The issues related to local food systems and its wider social, cultural, economic, and environmental implications have flourished amongst scholars and policymakers over the past decades. The hypothesis of study, which this paper is based upon, is that local (alternative) agrifood or food systems will be a suitable tool for further development of sustainable agrifood sector as well as development of rural communities and rural areas. The tasks of study are to clarify the concept of local food systems; to investigate the food system relationship with further sustainable development of rural communities; and to seek the Baltic States consumers' preferences related to the locality of food. The results of study reveal the following factors, which are fundamental to the idea of sustainable further development of agrifood sector and local food systems. They are the concerns of climate change and the greenhouse gas emissions from the food chain; transportation of food - 'food miles', problems of the human health, caused by unhealthy, mainly industrial, food; and issues connected with the farmers' and rural community prosperity and well-being. Although, there is no consensus among scholars regarding the definition of the local food system, nevertheless, the local food systems or alternative food networks are no less important and suitable tool for solving environmental, economic (increasing of farmers and rural inhabitants income) and social issues, and they facilitate further sustainable development of rural areas and communities.
Key words: agrifood, alternative, local, system, rural.
JEL code: N 50**,** Q 10, R 10, L 29, H 49

Introduction

Starting from the 1960s, the European Union's (EU) Common Agriculture Policy (CAP) has been applied to facilitate a viable agricultural sector and this was done through production subsidies and mechanisms for guaranteed prices for agricultural commodities. Ever since then, the strict rural and environmental policies have become additional major elements of the CAP and, as regards Latvia; they apply to the following areas in particular: the support of organic farming; support of environmentally-friendly agriculture; and support of activities differentiation in the rural areas. Apart from the liberalisation of agricultural trade, the EU agricultural policy and the associated technological change have forced a rapid reduction in the number of farms (Kahiluoto H. et al., 2006), *inter alia* in Latvia (European Commission…, 2011b). Moreover, in the EU-27 there has been a gradual decrease (-10% in the EU-27) of the number of small farms (European Commission…, 2011a). Close to 40% of the persons working in the European holdings work in a farm with less than 1 ESU. According to Eurostat (European Commission…, 2011a), there is a strong tendency for the reduction of the share of persons working on the small farms. Because agrifood production has always played a central role in rural vitality (OECD, 1996 cited by Kahiluoto H. et al., 2006), this development has led to unemployment, out-migration, and disintegration of social structures in the rural regions of all industrialised countries in Europe. Dahlberg K. (1993) argued that current industrial structures, which were complicated but inflexible and the criteria of production and productivity needed to be supplemented by criteria relating to the health and regenerative capacity of food.

The aforementioned issues determined the hypothesis of this study – local or alternative food systems will be a suitable tool for further development of sustainable agrifood sector as well as development of rural communities and rural areas. The aim of the study or overview is to evaluate possibilities of further agrifood sector development, taking into account published research results, policy statements and social activities forward sustainable local food systems. The tasks of study are to clarify the concept of local food systems; to investigate the food system relationship with further sustainable development of rural communities; and to seek the Baltic States consumers' preferences related to locality of food. The principal materials used for the studies are as follows: different sources of literature, research papers, and the reports of institutions. The research methods used in the study are mainly qualitative: analysis and synthesis, logical and abstract, constructive and expert etc. However, the issues of local food systems have not been analysed by Latvian researchers in the context of sustainable rural development.

Research results and discussion

1. The impact of global processes and globalisation on food systems

The factors, fundamental to the idea of alternative agrifood (food) systems, are the following: the concept of sustainable development; the concerns of greenhouse gas (GHG) and fuel emissions from agrifood chain and climate change; human health problems caused by unhealthy, mainly industrial, food; and earnings of farmers and rural inhabitants through value-added (Hinrichs C., 2010; MacLeod M., Scott J., 2007; Maxey L., 2007; Martinez S. et al., 2010; Nicholson C. et al., 2011; Sautereau N., Bellon S. 2010). Hines C. (2004) argues that the corporate globalisation is the

[1] *E-mail address*: ligita.melece@lvaei.lv

Global	Local
Market economy	Moral economy
An economics of price	An economic sociology of quality
Transnational Corporations dominating	Independent artisan producers prevailing
Corporate profits	Community well-being
Intensification	Extensification
Large-scale production	Small-scale production
Industrial models	„Natural" models
Monoculture	Bio-diversity
Resource consumption and degradation	Resource protection and regeneration
Relations across space	Relatices of proximity
Commodities across space	Communities in space
Big structures	Voluntary actors
Technocratic rules	Democratic participation
Homogenization of foods	Regional palates

Source: author's adaption based on Hinrichs C. C., 2003

Fig. 1. **Attributes associated with global and local food systems**

ever-increasing integration of national economies into the global economy through trade and investment rules and privatisation, aided by technological advances. The process is driven by the widespread lobbying of the governments by large corporations, who use the theory of comparative advantage, the goal of international competitiveness and the growth model to maximise their profits, and it is occurring increasingly at the expense of social, environmental and labour improvements, and rising inequality for most of the world (Hines C., 2004). Scholars (Sautereau N., Bellon S. 2010; Scrinis G., 2007) argue that agrifood corporations have been extending the ownership and control of agricultural production throughout the twentieth century, but it is in the last couple of decades that corporate concentration has been consolidated. Corporatisation or corporate integration is one of the defining economic and structural characteristics of the contemporary agrifood system. Food retailing worldwide is characterised by the rise to dominance of large national and transnational supermarket chains that typically control a large fraction of the food retail in the local markets (Scrinis G., 2007). However, the power of supermarkets extends well beyond their control of the food retail sector, for supermarkets are now recognised as the most powerful corporate players and the most powerful institutions across the entire agrifood system (Scrinis G., 2007). This approach transforms the role of international institutions into one of facilitating increased local control and co-ordinating national policies only for matters where the interests of nations are inherently intertwined, for example, climate change. Under localisation, the aims of such global bodies would include protecting and rebuilding local economies and supporting a democratic commitment to self-determination and the terms to describe this process differ but include localisation; local economies first; protect the local globally; from global to local; and going local (Hines C., 2004).

The "food mile" is the distance a particular food travels from farm to plate. The term "food miles" was coined by a British non-profit organisation now known as Sustain UK in a 1994 report. The trend towards increasing distances between producers and consumers has prompted many to question the environmental and social sustainability of food choices (Berman E., 2011; MacLeod M., Scott J., 2007). Furthermore, increased distances, as an effect of globalisation and functional differentiation, are closely connected to specialisation and intensification (Alroe H., Kjeldsen C., 2006). The specialisation is one of the means to achieve efficiency of agro-industrial sector, but it causes a host of ecological problems, and these problems include elimination of biodiversity that is essential to resilience and productivity of any ecosystem (Kirshenmann F. et al., 2008; MacLeod, M., Scott J., 2007). The problem of localness is not distance in itself but the connected consequences for ecology, animals and people, in form of external costs of transport and distribution, commodification, unfair trade, lack of transparency and participation, loss of food sovereignty etc. (Alroe H., Kjeldsen C., 2006). It is clear that this increasingly globalised and industrialised food system is not benefiting the majority of family farmers and the consequences of this are that the current agrifood system is in crisis and at the core of this crisis is a constellation of escalating inequalities (Allen P., Wilson A., 2008). Moreover, Van der Ploeg J. (2008) argued that "industrialisation implied the destruction of ecological, social, and cultural capital".

Hines C. (2004) stressed that the world needed a radically new approach - 'localisation', which had the potential to radically increase all aspects of democratic participation and was a necessary precondition for improvements in the current food systems, environment and society worldwide. The social aspect of sustainability, *inter alia* food system has been recognised by Dahlberg K. (1993) who points out that sustainable agriculture can only be sustainable when it is recognised that other portions of the food system, and the larger society, also become sustainable; in other words, for food systems to be truly sustaining they need to include social perspective.

Rojas A. et al. (2011) note that the global problems on the local level require a participatory approach, because the dynamics of the globalised food system hinder the development of food citizenship, like food sovereignty. Van der Ploeg J. (2008) argued, "the principle of food sovereignty was in relation to the essential needs for food security, food quality, and the protection of valuable landscapes and the defence of biodiversity". Food sovereignty is very close associated with food security and for being a more food secure, the society must decrease the reliance on imported foods and develop policies that support local food production. The policy of local food supply would be a key step in supporting this movement towards a local sustainable food system (Barret D., 2006).

The current directions in the development of food systems have fundamentally changed, where disempowering local rural actors - not only farmers but also retailers and small-scale processors (Kahiluoto H. et al., 2006). The main differences between global and alternative or local food systems are detailed in 14 positions (Figure 1), which show the environmental, economic, and social benefits for the community, particularly rural, of local agrifood systems.

2. Alternative or local food systems

The term "food system" is used to describe the complex and interconnected activities of agricultural food production, processing, marketing, consumption, and ultimately disposal. "Food systems" is not a true discipline but an emerging area of interdisciplinary study that brings together scientists, social scientists and humanists to help address the cultural, social, ecological, physical, ethical, and political aspects of food (Berman E., 2011). Some scholars (Goodman D., Goodman M., 2007; Maxey L., 2007) describing the alternative food systems use term 'Alternative Food Networks' (hereinafter referred to as AFNs), though other terms have been used, for example, 'alternative agrifood networks', incorporated in these networks 'organic', the 'local,' the 'regional,' and the 'alternative' food. Other authors suggest using term 'alternative agrifood system' (Scrinis G., 2007) or alternative food system. AFNs are new and rapidly mainstreaming spaces in the food economy defined by—among other things—the explosion of organic, fair trade, local, quality, and premium specialty foods. In these networks, it is claimed that the production and consumption of food are more closely tied together spatially, economically and socially; however, the politics and practices of AFNs have more recently come under critical scrutiny (Goodman D., Goodman M., 2007). AFNs provide new bases for rural development (Goodman D., 2009).

There is no consensus on a definition of 'local' or 'local food systems' in terms of the geographic distance between production and consumption. Yet, Martinez S. et al. (2010) argue that defining 'local' based on marketing arrangements, such as farmers selling directly to consumers at regional farmers' markets or to schools, is well recognised. For smaller farms, direct marketing to consumers accounts for a higher percentage of their sales than for larger farms. Findings are mixed on the impact of local food systems on local economic development and better nutrition levels among consumers, and sparse literature is so far inconclusive about whether localisation reduces energy use or greenhouse gas emissions (Bloom J., Hinrichs C., 2010). Support for local food systems is growing in popularity but the definition of what constitutes local food remains vague (Linthicum A., Beatley T., 2007). M. S. Hand and S. Martinez (2010) argue that the local food and its proponents have origins in the 'Slow Food' movement and organic agriculture, and it is common to hear arguments for a re-localisation of the food system, however, recent interest in local food suggests that the term 'local' is being used in new and different ways, and by people and organisations that would have previously had no interest in movements that challenge the mainstream food system.

It is argued (Hand M., Martinez S., 2010) that some consumers may seek out food produced in an environmentally or socially sustainable way. For example, consumers may patronise local food markets to express support for small farmers. Halweil B. (2002) points out that the local crops bring more dollars to the local economy than imported crops, stating: „A study by the New Economics Foundation in London found that every £10 spent at a local food business is worth £25 for the local area, compared with just £14 when the same amount is spent in a supermarket. That is, a pound (or dollar, peso, or rupee) spent locally generates twice as much income for the local economy. The farmer buys a drink at the local pub; the pub owner gets a car tune-up at the local mechanic; the mechanic brings a shirt to the local tailor; the tailor buys some bread at the local bakery; the baker buys wheat for bread and fruit for muffins from the local farmer. When these businesses are not owned locally, money leaves the community at every transaction". Moreover, Rojas A. et al. (2011) argue that the goals of alternative food system include improved access by all community members to an adequate, nutritious diet; a stable base of family farms that use more sustainable production practices; marketing and processing practices that create more direct links between farmers and consumers; food and agriculture-related businesses that create jobs and re-circulate financial capital; improved working and living conditions for farm and other food system labour; and food and agriculture policies that promote local food production, processing, and consumption. Other contributors describe the local food system similarly - local, alternative, fair-trade, quality, sustainable, and regenerative (Dalberg K., 1993; Hinrichs C., 2010; Whatmore S., Thorne L., 2008).

The results of research provided by Harris E. (2011) on AFNs has highlighted the centrality of place embedment as a strategy in constructing alternatives to conventional agri-

Health	Improved individual and community nutrition. Reduced obesity and diet-related healthcare costs. Improved soil, water quality, and environment. Improved food security for individuals and households. Increased food recovery, reuse, and recycling.
Wealth	Increased sales and net income for local farms and food enterprises. Increased number of locally owned, independent businesses. Increased employment in production, processing, distribution, and retail. Increased choices and opportunities for farmers and consumers due to a diverse, robust agricultural economy.
Connection	Increased direct connections among farmers, producers, wholesalers, retailers, manufacturers, processors, distributors, public health providers, and consumers. Expanded farm-to-school, farm-to-university, and other institutional programs. Increased local government efforts to expand local markets and access for local products. Recognized by the community food system as an asset-based social and economic development strategy.
Capacity	Improved storage, processing, and distribution infrastructure. Increased educational training and networking from farm, to table, to fork. Increased production and consumption of locally grown foods. Expanded protection of working landscapes and retention of local arable farmland for present and future food production. Improved community resilience.

Source: author's adaption based on Bendfeldt E. S. et al., 2011

Fig. 2. **Potential outcomes of a vibrant, community-based food system**

industrial food systems, and has illustrated the political nature of these strategic localisms. The embedment is the degree to which individuals or firms are enmeshed in a social network (Winter M., 2003). Allen P. (2010) stresses that for alternative agrifood social movements, food-system localisation is both an ideal and a pathway to resolve environmental, social, and economic issues in the food system. Although, there are many proponents of local food systems, nevertheless, some of scholars, mainly human geographers and sociologists, are critical regarding them. Harris E. (2011) stressed that, recently, some "critical publications had drawn on relational theory to criticise the localism of AFNs as representing a politics of place which is un-reflexive or defensive". He pointed out that some readings of AFN argued that they reproduced the very neoliberal subjectivities that they sought to oppose.

Nicholson C. et al. (2011) describe that researchers are turning their attention to the ability of supply chains to meet consumer demands for increased localisation, where in these studies, the 'food-miles' concept often is employed to measure the degree of supply chain localisation because this concept is easy to communicate to consumers. The factors affecting the success of more localised food supply chains, including ability of growers to integrate into local food networks, diversification of distribution channels and opportunities for product differentiation, among others. However, the share of local foods in total food intake is still small due to difficulties that localised food supply chains face to enter mainstream channels or to compete with them (Nicholson C. et al., 2011). According to Bendfeldt E. et al. (2011), the potential outcomes of a vibrant, community-based food system, could be sorted in four groups (Figure 2), which have positive influence on all community, particularly rural community in all aspects: health of inhabitants, wealth of farmers and rural citizens, connection of different groups of community and society, and capacity of different improvements on local or region level.

Face-to-face or direct	Proximal	Extended
Farm shops	Farm shop groups	Certification labels
Farmer markets	Regional hallmarks or brands	Production schemes
Roadside sales	Community supported agriculture	Reputation effects
Pick-up-own-farms	Thematic routes	
Box schemes	Special events and fairs	
Home deliveries	Local shops, restaurants, tourist enterprises, dedicated retailers etc.	
Mail order		
e-commerce	Catering for institutions	

Source: author's construction based on Renting H. et al., 2003

Fig. 3. **Local food system or short food supply chains characteristics**

Table 1

Associative characteristics of qualitative food by the Baltic States' consumers, 2011

Category	Latvia	Estonia	Lithuania
Local	30%	70%	30%
Fresh	53%	56%	76%
Wholesome or healthy	45%	45%	68%
Clean (no additives)	63%	46%	68%
Tasty	17%	30%	30%

Source: author's construction based on Petijums par..., 2011

The local food movement has grown significantly, and the value of local food systems has become almost common sense for those working in the alternative agrifood movement and the context for local food systems has been constructed by longstanding historical material and cultural practices (Allen P., 2010). Moreover, the local food systems create possibilities for seeing the real people, social relations, and conditions involved in the food system (Allen P., 2010). In relation to economics, one of the more direct benefits of local food procurement is the increased financial resources that remain in the local economy. That is, the more money is made by farmers, the more money they have to spend at local businesses and employ others in their communities, and the money spent on local food stays within the local economy to generate further benefits (MacLeod, M., Scott J., 2007). The local food system or chain has been characterised by different activities on three levels: face to face or direct selling, proximal selling and activities, and extended activities using several certification systems and branding (Figure 3).

Nevertheless, regarding the preference of local food systems an opposite view exists, for example, Born B. and Purcell M. (2006) argue that "local food systems are no more likely to be sustainable or just than systems at other scales". This point of view is accepted by institutions and organisations, which are involved in the global and intercontinental food systems and some scholars who stressed some negative aspects of local food, for example, the small amounts of production, difficulties with delivering, and the higher price (Gardner R., 2008).

One of the main driving forces for local food systems' development is the consumers' demand for local or alternative food. Many scholars worldwide argue that consumers' preferences for local food are high (e.g. Brown C., 2003; Zepeda L., Leviten-Reid C., 2004). In Latvia, there is a limited source of consumers' preferences studies in recent years. The author found only one, which was conducted by company McDonald's (Petijums par..., 2011). Comparing the Baltic States consumers' expectations or associations for qualitative food (Table 1), one can see that Estonian consumers rank the locality of food (70%) in the 1st place, considering it very important, while Latvian and Lithuanian consumers view the locality of food more than twice (30%) less important than other quality characteristics.

Conclusions, proposals, recommendations

1. The corporatisation or corporate integration is one of the defining economic and structural characteristics of the contemporary agrifood system, boosting the dominance of large national and transnational supermarket chains, which causes undesirable consequences for sustainable development of rural communities and areas.

2. Although, there is no consensus among scholars on the definition of the local food system, nevertheless, there is worldwide acceptance that negative effects of globalisation could be solved by re-localisation policies and activities, and support of local food systems.
3. Many scholars, *inter alia* European, argued that alternative or local food systems or networks were no less important and suitable tool for solving environmental, economic (increasing of farmers and rural inhabitants income) and social issues, and they facilitate further sustainable development of rural areas and rural communities.
4. Estonian consumers especially associate the quality of food with locality (70%), as opposed to the Latvian and Lithuanian consumers for whom the locality of food is more than twice less important (30%).
5. In line with the new CAP, it is necessary to conduct more detailed investigations of local food issues in Latvia, *inter alia* restrictive factors, aimed at clarifying the potentialities of state support. The state research grants should be allocated for implementation of some concrete investigations.

Bibliography

1. Allen, P. (2010). Realising Justice in Local Food Systems. *Cambridge Journal of Regions, Economy and Society*, Volume 3, Issue 2, pp. 295-308.
2. Allen, P., Wilson, A. B. (2008). Agrifood Inequalities: Globalisation and Localisation. *Development,* Volume 51, Issue 4, pp. 534-540.
3. Alroe, H. F., Kjeldsen, C. (2006). How to Measure and Regulate Localness? *Proceedings of the European Joint Organic Congress "Organic Farming and European Rural Development"*, 30 and 31 May 2006, Odense, Denmark, pp. 142-143.
4. Barret, D. M. (2006). Maximising the Nutritional Value of Fruits & Vegetables. Food Technology, Volume 61, Issue 4, pp. 40-44.
5. Bendfeldt, E. S., Walker, M., Bunn, T., Martin, L., Barrow, M. (2011). *A Community-Based Food System: Building Health, Wealth, Connection, and Capacity as the Foundation of Our Economic Future*. Blacksburg: Virginia Polytechnic Institute and State University, p. 40.
6. Berman, E. (2011). Creating a Community Food System: The Intervale Centre. *Journal of Agricultural and Food Information*, Volume 12, Issue 1, pp. 3-11.
7. Bloom, J. D., Hinrichs, C. C. (2010). Moving Local Food through Conventional Food System Infrastructure: Value Chain Framework Comparisons and Insights. *Renewable Agriculture and Food Systems*, 26, Volume 1, pp. 13–23.
8. Born, B., Purcell, M. (2006). Avoiding the Local Trap: Scale and Food Systems in Planning Research. *Journal of Planning Education and Research*, Volume 26, Issue 2, pp. 195-207.
9. Brown, C. (2003). Consumers' Preferences for Locally Produced Food: A Study in Southeast Missouri. *American Journal of Alternative Agriculture*, Volume 18, Issue 4, pp. 213-224.
10. Dahlberg, K. (1993). *Regenerative Food Systems: Broadening the Scope and Agenda of Sustainability*. In: Allen, P. (eds.) Food for the Future. New York: John Wiley and Sons, pp. 75-102.
11. Farm Structure Evolution (2011a). European Commission, Eurostat. Retrieved: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Farm_structure_evolution. Access: 11 December 2011.
12. Farm Structure in Latvia (2011b). European Commission, Eurostat Retrieved: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Farm_structure_in_Latvia. Access: 13 December 2011.
13. Gardner, R. (2008). The Case Against Local Food. Retrieved: http://www.thelocalbeet.com/2008/09/21/the-case-against-local-food/. Access: 9 December 2011.
14. Goodman, D., Goodman, M. K. (2007). Alternative Food Networks: Entry for the Encyclopaedia of Human Geography. Retrieved: http://www.kcl.ac.uk/content/1/c4/98/59/DGMKGAFNJulyFinal.pdf. Access: 7 December 2011.
15. Goodman, D. (2009). *Place and Space in Alternative Food Networks: Connecting Production and Consumption*. London: King's College London, p. 36.
16. Halweil, B. (2002). *Home Grown: The Case for Local Food in A Global Market*. Danver: Worldwatch Institute, p. 83.
17. Hand, M. S., Martinez, S. (2010). Just What Does Local Mean? *Choices: The Magazine of Food, Farm, and Resource Issues*, Volume 25, Issue 1, pp. 3-6.
18. Harris, E. M. (2011). Neoliberal Subjectivities or a Politics of the Possible? Reading for Difference in Alternative Food Networks. *Area*, Volume 41, Issue 1, pp. 55–63.
19. Hines, C. (2004). *A Global Look to the Local: Replacing Economic Globalistion with Democratic Localisation*. London: The International Institute for Environment and Development, p. 68.
20. Hinrichs, C. C. (2003). The Practice and Politics of Food System Localisation. *Journal of Rural Studies*, Volume 19, Issue 1, pp. 33–45.
21. Hinrichs, C. C. (2010). *Conceptualising and Creating Sustainable Food Systems: How Interdisciplinarity Can Help.* In: Blay-Palmer, A. (eds.) Imagining Sustainable Food Systems: Theory and Practice. Farnham, Surrey (UK): Ashgate Publishing Limited, pp. 17-35.
22. Kahiluoto, H., Berg, P. G., Granstedt, A. et al. (2006). *The Power of Local - Sustainable Food Systems around the Baltic Sea*. Uppsala: Swedish University of Agricultural Sciences, p. 67.
23. Kirshenmann, F., Stevenson, G. W., Buttel, F. T. et al. (2008). *Why Worry about the Agriculture of the Midle?* In Lyson, T. et al. (eds). Food and the Mid-Level Farm. MIT Press, Cambridge, Massachusetts. pp. 3-22.
24. Linthicum, A., Beatley, T. (2007). *Quantifying Access to Local Food.* Virginia: University of Virginia, p. 24.
25. MacLeod, M., Scott, J. (2007). *Local Food Procurement Policies: A Literature Review*. Nova Scotia, Canada: Ecology Action Centre, p. 47.
26. Martinez, S., Hand, M., DaPra, M. et al. (2010). *Local Food Systems: Concepts, Impacts and Issues.*

Washington, D.C.: U.S. Department of Agriculture, p. 80.
27. Maxey, L. (2007). *From 'Alternative' to 'Sustainable' Food.* In: Maye, L. Holloway, M. Kneafsey D. (eds.) Alternative Food Geographies. Oxford: Elsevier Ltd., pp. 55-75.
28. Nicholson, C.F., Gomez, M.I., Gao, H. (2011). The Cost of Increased Localisation for a Multiple-Product Food Supply Chain: Dairy in the United States. *Food Policy*, Volume 36, Issue 2,pp. 300-310.
29. Petijums par kvalitativu partiku (2011). Retrieved: http://ezerzeme.lv/index.php?action=show&type=news&id=11293&eventid=20110329. Access: 7 December 2011.
30. Renting, H., Marsden, T. K., Banks, J. (2003). Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development. *Environment and Planning*, Volume 35, pp. 393-411.
31. Rojas, A., Valley, W., Mansfield, B. et al. 2011, Toward Food System Sustainability through School Food System Change: Think&EatGreen@School and the Making of a Community-University Research Alliance. *Sustainability*, Volume 3, pp. 763-788.
32. Sautereau, N., Bellon, S. (2010). *Stimulate Transitions Towards Sustainable Agri-Food Systems: the Contribution of Conversion to Organic Food and Farming to Analyse Dynamics and Governance*. Avignon: INRA, p. 14.
33. Scrinis, G. (2007). From Techno-Corporate Food to Alternative Agri-Food Movements. *Local Global,* Volume 4, pp. 112-140.
34. Van der Ploeg, J. D. (2008). *The New Peasantries: Struggles for Autonomy and Sustainability in an Era of Empire and Globalisation*. London: Earthscan, p. 356.
35. Whatmore S., Thorne, L. (2008). *Nourishing Networks: Alternative Geographies of Food*. In: Barnes, T. J. et al. (eds.) Reading Economic Geography. Oxford: John Wiley and Sons, pp. 235-247.
36. Winter, M. (2003). Embedment, the New Food Economy and Defensive Localism. *Journal of Rural Studies*, Volume 19, pp. 23–32.
37. Zepeda, L. Leviten-Reid, C. (2004). Consumers' Views on Local Food. Journal of Food Distribution Research, Volume 35, pp. 1-6.

Polish Agriculture in The Common Agricultural Policy After 2013

Antoni Mickiewicz[1], PhD, professor
Faculty of Economics, West Pomeranian University of Technology in Szczecin

Abstract. The paper presents the vision of Polish agriculture after 2013 in a new financial perspective. The Polish Government approach to the reform of CAP in the EU Member States is presented in the paper. It is underlined that common debate about the shape of future CAP has been initiated and become especially important in the context of dynamic changes in international agriculture market, increasing social expectations in the range of food and environmental safe and also in consideration of fundamental meaning of that policy in the process of European integration.
Key words: rural development, support instruments, CAP after 2013, Polish agriculture, reforms of agriculture.
JEL code: Q18

Introduction

The effected reform of the Common Agricultural Policy in 2003 in Luxembourg was a response to the new challenges appearing in the Community and moreover as an after-effect of the accession of new Member States. It was stated regarding the reforms in the communication of the European Commission (EC) of 20 November 2007, titled "Preparing for the Health Check of the CAP", that the Common Agricultural Policy during the past 15 years had undergone radical changes in response to the pressure by the European society and developing economy. As positive change was reckoned the introduction of the direct payments not connected with the level of production within the framework of the Single Payment Scheme (the SPS) separately for the first pillar of the CAP and strengthening of the rural areas development policy, in the context of the second pillar of the CAP. Such processes were accompanied by reforms in the sector of sugar (2006) and in the sector of fruit and vegetables (2007). An advantageous phenomenon is the support of agricultural producers irrespective of the taken decisions (Analysis of Selected... FAPA, 2008).

According to the communication of the European Commission on the review of the Common Agricultural Policy (the Health Check), the support for producers is at present to a large extent unaffected by the production decisions, which allows the EU agricultural producers to make their own choices constituting their response to the market signals and based on the production capacities of their farms and preferences in the context of adaptation to the changes occurring in their economic environment as well as contributing to the improvement of competitiveness in the agricultural sector. In this connection, results of the CAP reform were as expected, namely, the departure from the product support, perceived as a reason for the problems of excess occurring in the past, took place. The reduced EU intervention prices everywhere are close to the prices on the world markets. Competitiveness of the EU agriculture in key sectors was increasing in spite of drop in the EU share on the majority of commodity markets. The EU is currently the biggest exporter of agricultural products, predominantly high quality products. It is also the biggest importer in the world and remains the biggest market for the developing countries. Furthermore, the CAP has more and more contributed to the counteraction against the environmental deterioration and to the supply of many public goods expected by the society. The support for producers depends nowadays on the observance of standards on the environmental protection, food safety, and quality as well as the welfare of animals. Finally, the strengthened policy of rural areas development was supporting the natural environment and countryside protection, generating the economic growth and new jobs, and bringing innovations to the rural areas. Despite the fact that more and more EU rural areas will be affected by extra-agricultural factors, the backward, depopulated or to the large extent dependent on farming areas will have to pit itself with new challenges referring to the sustainable economic and social development (Preparations to Conducting an Assessment of CAP Reform Functioning, Brussels, 2007).

For that reason, the part played by the food and agricultural sector, which still constitutes over 4% of total GDP and 8% of the total employment, is still critical in many rural areas. The abovementioned changes indicate that this CAP fundamentally differs from that policy, which was conducted in the past, irrespective of the frequently appearing paradoxical differences between results of the CAP reform and some remarks regarding it (majority of them have an importance for the time preceding the reform). However, to ensure the importance of the CAP now and in the future, it is necessary to subject its instruments to assessment and check whether they act properly as well as to define actions, which have to be undertaken to obtain the assumed objectives and to cope with the new challenges. Undertaking of the greater number of actions is unavoidable – every established policy will become outdated in the fast changing environment. The CAP has demonstrated that the EU agriculture is able to successfully undertake such actions as well as subject itself to changes; however, it is necessary to enable the farmers to adapt themselves in the context of the foreseeable policy development track.

The 2003 Reform was the first step towards adjusting the CAP in such manner that it fulfils requirements of the twenty first century. Consensus with regard to all

[1] *E-mail address*: Antoni.Mickiewicz@zut.edu.pl.

elements of the 2003 Reform could not be achieved at one go. Therefore, many review clauses had been foreseen in the final arrangement only, likewise it took place later during the successive reforms effected after 2003. Those review clauses, without implying the fundamental reform of policies in force, enable further adjustment in accordance with the development, also in accordance with the market development. In this study, the subject matters of those clauses have been collected under the name "the functioning assessment". Their objective was to analyse the following three issues:

— what has to be done to ensure the more efficient, more effective and simpler Single Payment Scheme?
— what has to be done to ensure further usability of support instruments originally developed by the Community consisting of six member states in the more and more global world and the EU consisting of 27 members?
— what has to be done to cope with the new challenges, starting from the climate changes to the growth in the context of biofuels and water management and with those already existing, as for example the biodiversity, by adapting themselves to new threats and possibilities?

As regards the direct payments, it has been found that the Member States had the possibility to preserve some forms of direct assistance connected with a particular form of production (partly related aid) in the situation when it was acknowledged as necessary to ensure the minimum level of producing activity and generate the environmental benefits. They could also retain up to 10% of the national ceilings for support of the agricultural activity significant for the national environment or for the improvement in quality and sales of agricultural products (Art. 69 of the Council Regulation (EC) No. 1782/2003). Both the historical and regional approach to separating the payment from the production achieve the objective of providing agricultural producers with the possibility to select what they will produce, instead of being governed at the selection by the support connected with the given product. However, the individual level of support in case of both approaches, although to the different extent, is still based on the previous production levels and as the years go by it will be more and more difficult to justify differences within the framework of such support, especially in case of the historical model. Therefore, enabling the Member States adaptation of the model selected by them to the flat rate for the period of 2009-2013 seems to be a proper solution. In such context, one has also to take into consideration whether the Member States, which already use the Single Area Payment Scheme, should have the possibility of using it until 2013. Furthermore, in connection with the fact that more sectors have joined the Single Payment Scheme at that time and that a suitable experience has been acquired during functioning of the Scheme, some decisions and principles connected with the implementation seem to be unnecessarily too rigorous and complex. The assessment of functioning is an appropriate possibility to present proposals of changes, which, without modifying the Scheme's basic structure, adapt and simplify its implementation.

The "Health Check" review had a corrective nature and it did not assume the conducting of far-reaching policy reforms but set out directions for future changes, in particular by defining the so-called new challenges for the CAP. The CAP evolution should take into consideration the climate changes, renewable energy, water economy, and biodiversity (Preparations to Conducting an Assessment of CAP Reform Functioning, Brussels, 2007).

Aim and scope of the paper

A fundamental aim of this paper was to present the vision of Polish agriculture after 2013 in a new financial perspective. The paper presents assumptions and preliminary proposals of the Ministry of Agriculture and Rural Development. The second part of the paper includes the author's presentation of the position of the Republic of Poland Government on the future of the EU Common Agricultural Policy after 2013.

Results and discussion

1. Polish vision of the Common Agricultural Policy after 2013 – assumptions and preliminary proposals of the Ministry of Agriculture and Rural Development

The new Member States (including Poland) became a part of the European Union in 2004, i.e. one year after the decisions being taken in Luxembourg when the shape of the Common Agricultural Policy (CAP) conducted until 2013 was defined. Discussion about the future of the CAP after 2013 had been initiated during the Health Check completed in 2008, within the framework of which the CAP instruments had been modified without infringement of their structure (not making vital changes in the amount of national ceilings and the amount of support in individual areas). The Health Check did not make plans for carrying its far-reaching reforms but set out directions of future changes. First of all, new challenges were defined and appended to the list of CAP objectives, including: climate changes, renewable energy, water economy, biodiversity, accompanying activities in the dairy sector, and innovativeness within the scope of the first four challenges. The arrangement concluded within the framework of the Health Check also contains two elements especially vital from the point of view of the discussion on the CAP future. One of them is the obligation of the European Commission and the Council to analyse the problem of considerable diversification between the direct payments within the EU and presentation of proposed relevant solutions as soon as possible. The second element is the appropriation of additional means for the new Member States to supply the ceilings (the so-called envelopes) of direct payments in the years 2010-2012 (Position of the RP Government on the CAP Future, 2009).

The first political debate of the Member States on the CAP shape after 2013 took place during an informal meeting of the EU Ministers for Agriculture and Fisheries, which took place from 20 to 23 September 2008 in Annecy, France. During the Council's session on 28 November 2008 an attempt was undertaken to work out the Council Conclusion on the CAP after 2013 based on conclusions from the discussion conducted in September in Annecy. The document titled "The Common Agricultural Policy after 2013 – Assumptions and Preliminary Proposals" drawn up by the Ministry of Agriculture and Rural Development and

accepted by the European Committee of the Council of Ministers on 21 November 2008 was the basis for active participation of representatives of the Government of the Republic of Poland in the discussion on the future of the CAP. That document was also a subject of consultation in the course of which the Ministry of Agriculture and Rural Development received comments and proposals from numerous respondents, including the social organisations and scientific institutions being engaged in the problems connected with agriculture and rural areas.

According to the MoAaRD, the Common Agricultural Policy after 2013 will still play the key part in ensuring within the EU: food security, sustainable development of agriculture and rural areas, equal competitive conditions on the uniform food market as well as the strong competitive position of the EU on the global agricultural market. Owing to multifunctionality of the agriculture and rural areas, the CAP after 2013 should be an instrument oriented on the new Community challenges connected with the environmental protection, climate changes, water economy, biodiversity, and renewable energy.

To ensure the effectiveness of the CAP after 2013 in execution of the abovementioned tasks, the successive changes of such policy should:

— fully retain its Community nature, especially in the financial dimension, thus ensuring equal competitive conditions on the uniform EU market;
— depart from the obsolete and in the current situation unjustified historical ceilings of the direct payments reflecting the intensity and level of agricultural production in the Member States a dozen or so years ago (EU-15). Without the quick departure from the hitherto existing distribution of means into national envelopes, the improvement in effectiveness and efficiency of that Community policy is impossible;
— be a simple and stable policy – it has to be intelligible and clear to farmers and taxpayers and this will not be possible without its substantial simplification.

The MoAaRD is of opinion that in consideration of the abovementioned conditions, it is necessary to preserve the existing CAP structure, i.e. two pillars: the first pillar of the CAP - Single Payment Scheme and the second pillar of the CAP – rural areas development policy. However, in opinion of the MoAaRD, one should also consider changes in the shape of selected financing instruments and mechanisms on these areas (Mickiewicz A., Wawrzyniak B. M., 2008).

In connection with the Community market opening to the external competition and the increasing instability of international agricultural markets, it would be unjustified to further limit the market intervention in the Community legislation. The CAP should preserve effective instruments of market intervention launched in special situations (big drop in prices, increase in price fluctuations). Preservation of some market support possibilities would be essential in the sectors playing a special role for the environment and regions (e.g. cattle and sheep breeding and rising in the mountain regions). Effective instruments of market stabilisation are particularly important for small and medium farms, which have lower financial possibilities and do not cope in the crisis situations. In opinion of the Government of the Republic of Poland, financial means released from the limitation of market intervention should be appropriated for promotional activities (both on the EU and international markets) and for support of risk management (yields variability, price fluctuations, increasing liberalisation of trade on agricultural market, increase in prices of the means of production) and crisis management (droughts, pathogens of animals and plants).

Direct payments should remain one of the main CAP instruments responsible for:

— support and stabilisation of the agricultural revenues;
— making up for the costs connected with the fulfilment of high Community standards;
— preservation of the agricultural production in the regions with the most difficult farming conditions;
— ensuring equal competitive conditions on the uniform agricultural and food market.

Direct payments should serve to ensuring the economic stability of agriculture as well as the food and environmental security. The direct payments system requires an urgent amendment, consisting in its further simplification and standardisation throughout the EU. New system of payments should be connected with the area of arable land, take into account the implementation of requirements within the scope of environmental protection and make provisions for an additional financial support in case of areas with unfavourable farming conditions. The system based on uniform payment rate in the whole EU would better serve the implementation of current and future CAP objectives than the current system (Rural Development Plan, 2010).

2. Position of the Republic of Poland Government on the future of the EU Common Agricultural Policy after 2013

It is stated in the position taken up by the RP Government that the discussion about future of the Common Agricultural Policy (CAP) after 2013 was initiated during the Health Check completed in 2008, within the framework of which instruments of the current CAP without any infringement of their structure were modified and above all not making vital changes at the amount of national ceilings (envelopes) and at the amount of support in individual areas. Although, the Health Check did not assume the effecting of any radical reforms of that policy, it had set out directions of the future changes. First, the so-called new challenges had been defined and appended to the list of CAP objectives, including climate changes, renewable energy, water economy, biodiversity, accompanying activities in the dairy sector, and innovativeness within the scope of the first four challenges. Those issues probably will play an important part in the further debate on the future of the Common Agricultural Policy and updating of its objectives. The arrangement concluded within the framework of the Health Check also contains two elements especially vital from the Polish point of view in the discussion on the CAP future. One of them is the obligation of the European Commission and of the Council to analyse the problem of considerable diversification between the direct payments within the EU and presentation of proposed relevant solutions as soon as possible. The second element is the appropriation of additional means for the new Member States to supply the ceilings (envelopes) of direct payments in the years 2010-2012. These both issues show the still existing diversification, both in the level of

support and the agricultural development in the states of EU-15 and NEU-12 (Mickiewicz A., Mickiewicz B., 2010).

The position taken up by the RP Government on the future of the Common Agricultural Policy after 2013 was a successive stage of works on the Polish proposal regarding the common rules and assumptions for the future agricultural policy in the European Union. Such position was presented by the Republic of Poland Government on the forum of the European Union with a view to convince other States to assumptions therein and to obtain the support for Polish suggestions within the framework of the Community. The position taken up by the RP Government on the CAP future was also an element in preparation of the Poland's comprehensive approach to the EU budget and the policies financed therefrom.

The Common Agricultural Policy in opinion of the Republic of Poland Government also after 2013 will play a key part in ensuring for the EU:

— food security;
— sustainable development of the agriculture and rural areas;
— equal competitive conditions on the uniform food market as well as;
— strong competitive position of the EU on the global agricultural market.

Owing to the multifunctionality of agriculture and rural areas, the CAP after 2013 should also be an instrument oriented on the new Community challenges, among other things connected with the environmental protection, climate changes, water economy etc. (Position of the RP Government on the CAP Future, 2009).

The Community direct payments in opinion of the Republic of Poland Government should remain the CAP instrument responsible for: support and stabilisation of agricultural revenues, keeping the arable land in good agricultural condition, meeting the environmental requirements, making up for the costs connected with the fulfilment of Community requirements (in relation to the production quality and methods) connected with the implementation of non-production public goods as well ensuring equal competitive conditions within the framework of the uniform agricultural and food market. The function within the scope of revenues support and keeping the arable land in good agricultural condition is especially important in the regions with worse natural farming conditions, since the departure or substantial limitation of direct payments within the CAP would threaten with the permanent relinquishment of agricultural activities in many such EU regions, and excessive concentration and intensification of the agricultural production in other regions. Therefore, the direct payments should still serve ensuring the economic stability and sustainable development of the Community agriculture as well as the EU food and environmental security. Their part in such scope may increase in the future in the scenario of low agricultural prices on the international markets or in the situation of limiting the market intervention effectiveness within the framework of the CAP.

According to the Republic of Poland Government, the high usefulness of such instrument in the future CAP will decide its compatibility with the WTO criteria, relatively low implementation costs, both on the part of the public administration and beneficiaries, and first and foremost the effectiveness in promoting the multifunctionality of the Community agriculture. The amount of financial means for the EU-27 appropriated to the direct payments should in opinion of the Republic of Poland Government take into consideration the scale of current and future public tasks put into effect within the framework of support for the EU agriculture and should be no lower than the level implemented in the current financial perspective (Position of the RP Government on the CAP Future, 2009).

The RP Government is of opinion that the direct payments system requires an urgent amendment consisting in its further simplification and the unification of its use throughout the EU. In opinion of the Republic of Poland Government, it is necessary to depart from the current solutions in which the amount of payments (the SAPS rate or average value of eligibility to the SPS) and national ceilings (envelopes) reflect the historical levels and intensity of agricultural production in individual Member States a dozen or so years ago. The new payment system should be connected with the area of arable land (simplified current SAPS), take into account the implementation of requirements within the scope of environmental protection and make provisions for an additional financial support in case of areas with unfavourable farming conditions. In judgment of the Republic of Poland Government, the system based on the uniform area rate in the whole EU would better serve the implementation of current and future CAP objectives than the current system.

The proposed changes would allow for: limitation of implementation costs, both on the part of the public administration and farms, maintenance of the universal nature of that basic support instrument within the framework of the CAP, elimination of the negative effect of current solutions on competitive conditions on the uniform market as well as ensuring the better reflection of current common agricultural policy functions in the financial structure, thus improving the effectiveness of the CAP instrument (Mickiewicz A., Wawrzyniak B. M., 2010).

Results of the debate within the framework of the Health Check show in opinion of the Republic of Poland Government that the grounds for the policy of rural areas development increase. The emphasis should be laid on the part played by the second pillar of the CAP in the process of structural transformations and modernisation on the rural areas and in agriculture, including the acceleration of the catching up process, which is especially important for the new Member States. In consideration of the foregoing, the RP Government proclaims itself in favour of maintaining the strong policy for rural areas development after 2013. Instruments for the rural areas development also play an increasing part in the implementation of task connected with the new challenges standing before the Community, which require the involvement of the European agriculture and rural areas. The policy of rural areas development seems to be a good tool to implement the currently defined new CAP functions connected with "the new challenges" (climate changes, renewable energy, water economy, biodiversity, accompanying activities in the dairy sector, and innovativeness). However, it is important for the

investments within the scope of new challenges to be accompanied also by the outlays for innovative ventures aimed at the set up of modern infrastructure for broadband internet access in the rural areas. Only the compact and cohesive implementation of all the above-mentioned actions will lead to the improvement in economic situation of the rural areas and ensure their stable and sustainable development in the long-term perspective. Continuing also after 2013 the actions connected with the modern information and communication technologies, initiated within the framework of the European Programme of Economic Recovery, will allow for the increase in attractiveness of the rural areas and reduction of the distance separating them from the urban areas (Position of the RP Government on the CAP Future, 2009).

Conclusions

In many EU regions, especially in the new Member States, the agriculture is a main landholder of rural areas. The second pillar of the CAP plays an important role in the process of modernisation and structural transformations in the rural areas. Poland proclaims itself in favour of the strong policy of rural areas development after 2013. The amount of funds designed for the implementation of such policy should not be lower than in the period from 2007 to 2013.

The changing Cohesion Policy and instruments of the second pillar of the CAP should constitute an important source of changes in the rural areas and reduce differences in the level of development between the EU regions as well as reduce the distance between countries and towns. Further, discussion on the future of the Common Agricultural Policy shall go on with taking into account the amount of budgetary funds for the CAP and the changes occurring on the global agricultural market (obligations to the World Trade Organisation – WTO).

The Republic of Poland Government wants to emphasise that the manner of financing new challenges through the mechanism of modulation (transfer of means from the first to the second pillar), adopted within the framework of the Health Check, is an improper solution because it petrifies the manner of distributing the means in direct payment envelopes on the basis of the historical production level, which is unfavourable for the new Member States. In opinion of the RP Government taking into consideration the increasing needs within the scope of supporting the adaptation processes of the Community agricultural sector to the global competition and the extension of the scope of tasks, which are addressed in that part of the CAP by the new Community challenges, it would be justified to keep the budget for the second pillar of the CAP at the present level or its increase.

Bibliography

1. Analysis of Selected Topics Presented in the Communication of the European Commission (2008). Foundation of Assistance Programmes for Agriculture (FAPA), Warsaw.
2. Mickiewicz, A., Wawrzyniak, B. M. (2010). Problematyka realizacji doplat bezposrednich w rolnictwie polskim w latach 2004-2009 (Problems of Implementation of Direct Payments in Polish Agriculture in 2004-2009). Roczniki Naukowe SERIA, Zeszyt 2, Warszawa.
3. Mickiewicz, A., Mickiewicz, B. (2010). System doplat bezposrednich w dawniejszych krajach UE-15 w porownaniu do nowych panstw czlonkowskich NUE-12 (System of Direct Payments in Old Member States of the EU-15 in Comparison with New Member States NEU-12). Roczniki Nauk Rolniczych, T. 97, Zeszyt 3.
4. Mickiewicz, A., Wawrzyniak, B. M. (2008). Wlasciwosci Programu Rozwoju Obszarow Wiejskich obejmujacego lata 2007-2013 do poprzednich rozwiazan legislacyjnych (Features of RDP 2007-2013 to Previous Legal Solutions). Akademia Rolnicza, Szczecin.
5. Position of the RP Government on the CAP Future (2009). Ministry of Agriculture and Rural Development, Warsaw.
6. Preparations to Conducting an Assessment of the CAP Reform Functioning (2007). European Commission. Brussels.
7. Rural Development Plan 2007-2013 (2010). Ministry of Agriculture and Rural Development. Warsaw.

Perspectives of Agricultural Policy for The European Union Member States After 2013

Bartosz Mickiewicz[1], PhD, professor
Faculty of Economics, West Pomeranian University of Technology in Szczecin

Abstract. The paper presents future perspectives of changes in the European agriculture after 2013 caused by the necessary modification of the Common Agricultural Policy. The CAP has undergone fundamental reforms over time, which demonstrates its proven capacity to respond to the changing economic conditions as well as societal expectations and demands. In this process, the CAP has moved to a policy putting emphasis on the market orientation and competitiveness, income support, environment, and the development of rural areas. The paper presents the Common Agricultural Policy in the opinion of the European Parliament and the European Commission.
Key words: rural development, support instruments, CAP, European Union agriculture.
JEL code: Q18

Introduction

Agriculture in Europe is expected to fulfil a variety of functions. It contributes to the supply of European citizens with safe and high quality food in a competitive market, maintenance of valuable cultural landscapes across Europe through sustainable land management, and helping rural areas to remain attractive and viable. At the same time, agriculture is undergoing fundamental changes, which require farmers to adapt to the new conditions and seize new opportunities. Particular challenges will result from the need to adapt to climate changes.

The Common Agricultural Policy (CAP) of the EU aims at responding to the public demand for a sustainable agricultural sector in Europe by enhancing the competitiveness of agricultural sector, ensuring sufficient and secure food supply, preserving the environment and the countryside, while providing for a fair standard of living for the agricultural community.

The latest reform of the EU Common Agricultural Policy (CAP), which started in June 2003 refers to making European farming more competitive in a global world and more sustainable by meeting the expectations of the public as well as developing rural areas from the environmental, social, and economic point of view. Farmers and other rural businesses should improve their capacity to respond to the new challenges. For the new Member States, the accession to the European Union represents a major economic and social opportunity and a pressure for fundamental changes in micro and macro management. It is also a new step in reconsidering agriculture and rural areas in the process of sustainable development (Reforma Wspolnej ... 2008).

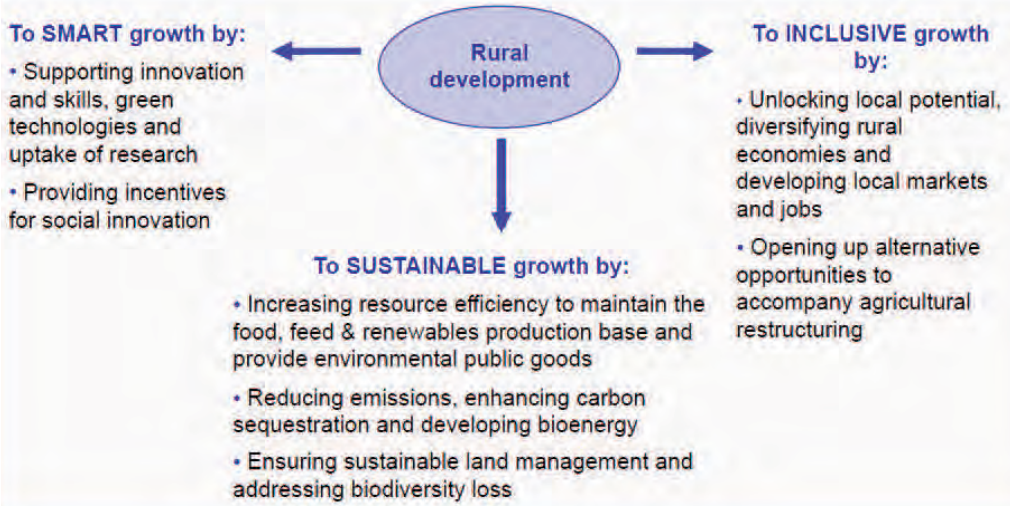
The debate about the future of rural development is part of the broader debate about the future of the CAP, its link with the Europe 2020 strategy and with the budgetary framework of the next Financial Perspectives. This means that one cannot look at rural development in isolation but must also take into account changes in direct payments and market instruments as well as the broader policy context.

In the face of the multiple challenges for agriculture and rural areas, rural development aims at enhancing agricultural competitiveness, improving the sustainable management of natural resources and promoting a balanced territorial development across the EU. A fundamental question, especially given the broad scope of rural development policy, is how to ensure the best fit with the EU priorities, notably the Europe 2020 strategy for smart, sustainable, and inclusive growth. A lot of attention in the debate on the future of the policy revolves around the policy's contribution to enhancing resource efficiency for the purpose of helping rural economies exit the crisis, while addressing the climate changes and other pressures on resources. Seen in this light, fostering innovation, fighting climate changes, and mobilising the full potential of rural areas emerge as important priorities that cut across all policy objectives (Agricultural Policy Perspectives Briefs, 2011).

Another recurrent theme in the debate on the future of rural development policy is how to ensure a more efficient and effective policy. Setting priorities is one thing, then comes actual delivering on them. This is particularly important for a policy, which operates on many levels, from defining a strategic framework on the EU level drawing national programmes for the implementation by local administrations, and seeking to promote bottom-up approaches (such as initiatives taken by local groups).

In this context, there is a need to capture better the impact of the policy with a view to guiding future policy choices as well as demonstrating its value added and thus enhancing its credibility. Hence, this calls for moving away from a spending towards an outcome-oriented approach, with clear targets at EU level linked to the Europe 2020 agenda. Work on improving the common monitoring and evaluation framework (CMEF), including the design of indicators, is also under way (Rural Development Plan 2007-2013... 2010).

[1] *E-mail address*: Bartosz.Mickiewicz@zut.edu.pl.



Source: Agricultural Policy Perspectives Briefs, Brussels, 2011

Fig. **Rural development contribution to Europe 2020**

Objective and scope of the paper

A fundamental objective of the paper is to present changes and perspectives of modifications and reforms of the Common Agricultural Policy in the European Union. Two chapters present the Common Agricultural Policy in opinion of the European Parliament and Position of the European Commission on the future of the Common Agricultural Policy after 2013.

Results and discussion

1. Common Agricultural Policy in opinion of the European Parliament

The European Parliament at its plenary sitting on 8 July 2010 has adopted a resolution on the future of the Common Agricultural Policy after 2013. The document does not have the binding force of legislation but reflects the position of eurodeputies in the debate on the future of the CAP. Since coming of the Treaty of Lisbon into force, the European Parliament has been co-determining, together with governments of the Member States, the acceptance of legal enactments regulating the CAP shape for the years 2014-2020, which are proposed by the European Commission. The adopted resolution is a succession of works carried out by the EP Commission on Agriculture and Rural Development and concerning the future shape of the CAP (Resolution of the European Parliament on the Future of the Common Agricultural Policy, 2010).

The report lays emphasis on the fact that the European model of agriculture not only ensures the food security to its citizens and takes part in supplying food to the whole world but also better and more cohesively cooperates with the rest of the world, in particular with the developing countries, to assist them in the long-term development of agricultural sectors in the sustainable manner. The European Parliament states that the knowledge on the local level should be maximally increased, keeping in mind that in the present situation, when the total number of starving people exceeds one billion and more than 40 million people lack food in the European Union, the scientific progress should be used to provide proper solutions aimed at the appeasement of hunger in the world, especially through more efficient utilisation of resources.

The global food demand according to the FAO's data will double by 2050, whereas the world population may increase from the current 7 billion to 9 billion. The world's food production will have to increase respectively in the context of the pressure connected with the natural resources, which means that the food production in the world will have to increase at the simultaneous decrease in water, energy, fertilisers, and pesticides consumption and at the lower area of lands.

The Lyon's report states that the CAP aims mentioned in Art. 39 of the Treaty on the Functioning of the European Union (TFUE) are, i.e. increase in agricultural output, ensuring proper living standard for rural people, market stabilisation, and guaranteeing availability of supplies and reasonable prices of supply to consumers. Up to now, the Common Agricultural Policy has achieved to a large extent its objectives and contributed to supporting the EU integration, territorial cohesion in Europe, and functioning of the common market. However, it has only partly contributed to ensuring the proper living standard for rural people and still has not achieved the market stabilisation, since the markets have become exceptionally unstable and constitute a threat to the food security. The agriculture and forestry remain an important sector of the economy and at the same time they supply necessary public goods while preserving the natural resources and landscapes of cultural values, which make a necessary condition of any human activities in the rural areas with having in regard that the same sector is already instrumental to a predominant extent in achieving the European climatic and energy objectives in the EU, especially the aims concerning the renewable energy coming from the agricultural and forestry biomass. Their share in implementation of those aims still has to increase in the future and with keeping in mind that such biomass sources also contribute to the reduction in the EU energy dependence and, in the context of going

up energy prices, to creation of new jobs and increase of revenues in the sector (Rural Development in the European ..., 2011).

It is demonstrated in the report that the EU citizens derive considerable advantages from the CAP as regards the availability and selection of safe food at reasonable prices and of high quality, food security, environmental protection, creation of jobs, and means of preventing the climatic changes.

Furthermore, it is indicated that 13.6 million people are currently directly employed in the sectors of agriculture, forestry, and fishery, while another 5 million work in the agricultural and food industry (Resolution of the European Parliament on the Future of the Common Agricultural Policy, 2010).

2. Position of the European Commission on the future of the Common Agricultural Policy after 2013

The Commission of European Communities has published a communication titled "The Common Agricultural Policy (CAP) towards 2020: Meeting the Food, National Resources and Territorial Challenges of the Future". The reform is aimed at the increase in dynamics and competitiveness of the European agricultural sector and at the more effective implementation of the Europe 2020 strategy and its vision of stimulating the sustainable, intelligent, and promoting social inclusion development. The document presents three variants of the further reforms. After the discussion on the mentioned concepts, the Commission will submit formal legislative motions in the middle of 2011.

Mr. Dacian Ciolos, the European Commissioner for Agriculture and Rural Development, emphasised in his presentation of the position taken by the European Commission the importance of making the CAP "more ecological, fair, efficient, and effective". He added: "The CAP is not only for the farmers but for all EU inhabitants – consumers and taxpayers. Therefore, it is important to design such policy in the manner more intelligible for the public at large and demonstrating the public advantages, which are ensured by farmers to the whole society. The European agriculture should be competitive not only with regard to the economy but also in relation to the environmental protection".

The Commission conducted a public debate and organised a large conference on the future of the CAP at the beginning of 2010. The prevailing majority of opinions expressed in the course of the public debate indicated for three chief objectives of the CAP:

— profitable food production (sufficient quantity of safe food supplies in the context of growing world demand for food, economic crisis, and still bigger and bigger market volatility with a view to ensure the food security);
— sustainable management of natural resources and actions in the field of climate (farmers often have to give priority to the environmental reasons over the economic reasons, and the market does not compensate costs incurred by them on such account);
— maintenance of the territorial equilibrium and diversification of rural regions (the agriculture remains the main driving force of the economic and social development of rural regions and an important factor of their activation) (Piskorz W., 2009).

An analysis of future instruments, which can help in implementation of the mentioned objectives, is carried out in the discussed communication. The EC position presents importance of the direct payments, redistribution, redesign, and better orientation of support on the basis of objective criteria and in the manner intelligible to taxpayers. Such criteria should include the economic criteria (indicating for "the income support" as an element of direct payments) and environmental criteria (reflecting the public goods supplied by the farmers), and the support should be better oriented to the vocationally active farmers. A new and more fair distribution of the funds should be designed in the manner executable both politically and economically, with the respectively long transient period to avoid any serious disturbances. One of the possibilities would be the establishment of a basic payment supporting revenues (which can be identical in a certain region but not flat-rate for the whole EU – based on new criteria and limited to some fixed level); together with the obligatory (annual) environmental payment for the additional actions outside basic assumptions of the cross-compliance (such as the green cover, crop rotation, permanent pasture, and ecological set-aside) with the payment for the particular natural limitations (set out on the European level), and supplementary amounts paid out within the framework of funds for rural areas development. Furthermore, with the option of limited payment depending on the volume of production, provided for especially sensitive types of agricultural economy (similar to the current variant, implemented (by the virtue of Art. 68) within the framework of the assessment of CAP functioning). A simple, special support programme should increase the competitiveness of small farms, limit administrative burdens, and contribute to the rural areas animation (Position of the European Commission on the CAP, 2009).

In case of the market measures, such as the public intervention and aid for private storage, there can exist the demand for improvement and simplification measures and for introduction of new elements with reference to the improvement of food chain functioning. Although, the mentioned mechanisms were traditional CAP instruments, the consecutive reforms strengthened the market orientation of the EU agriculture and limited them to the measures within the scope of "the safety provisions" to such extent that public stocks in practice have ceased to exist. In 1991, totally 92% of the CAP budget was appropriated for the market measures; whereas in 2009, they constituted only 7% of spent measures (Position of the European Commission on the CAP, 2009).

The EC position states that the rural areas development policy helped increase the economic, environmental, and social sustainability of the rural areas and agricultural sector, however, there are still opinions expressed that the issues of environmental protection, climate change and innovations should be included in the horizontal manner to all existing programmes. Please, note the importance of the direct sale and local markets as well as the needs of young farmers and new entities. The LEADER approach also will be taken into consideration to the greater extent. The idea of change in the approach to another one more oriented on the results and possible

Table 1

Variants of development directions for the Common Agricultural Policy after 2013

	Direct payments	Market measures	Rural areas development
Variant 1	Introduce greater fairness in distribution of the direct payments between the Member States (leaving the current direct payments system without change)	Strengthen risk management tools. Improve and simplify the existing market instruments where it is relevant.	Maintain the direction of actions resulting from the assessment of the CAP reform functioning, i.e. appropriation of the bigger quantity of funds for challenges connected with the climate changes, water, biodiversity, renewable energy, and innovations.
Variant 2	Introduce more equality in process of distributing the direct payments between the Member States and a significant change in their structure. Direct payments will be composed of: - basic rate serving as the income support; - obligatory additional aid for special, "ecological" public goods, obtained by means of simple, general, annual and extracontractual actions, determined on the basis of additional costs for carrying out the mentioned actions; - additional compensation payment for the areas of special natural limitations; - voluntary support component connected with the production for specific sectors and regions. Set up a new programme for small farms. Introduce the limitation of basic rate, at the same time taking into account that big farms provide employment in the rural areas.	Improve and simplify market instruments, where it is relevant.	Adapt and supplement the existing instruments to ensure their compliance with the EU priorities, and the support should concentrate on the environmental protection, preventing climate changes and/or restructuring, innovations and increase in the number of local initiatives. Strengthen the existing risk management tools and introduce an optional income stabilisation tool in compliance with the WTO green category, aimed at the compensation of considerable loss of income. The provision for redistribution of means between the Member States on the basis of objective criteria should be made.
Variant 3	Withdraw from the direct payments in the present form. Instead of that, limited payments designed for environmental public goods as well as additional payment for the areas with special natural limitations should be ensured.	Abolish all market means, possibly with the exception of clauses applied in case of market disruptions, which can be used in the event of sharp crisis.	The measures will mainly concentrate on the environmental aspects and climate change.

Source: author's studies, 2011

definition of qualitative goals was put forward to achieve the higher effectiveness (Scenario Study on Agriculture..., 2007).

One of new elements of the future rural areas development policy should be the development of a risk management tool set to undertake proper actions in the event of market uncertainty and in case of revenues variability. The Member States should have the possibility of reacting to the threats connected with the production and revenues by means of such instruments as the new income stabilisation tool meeting the WTO standards or through the increased support of the insurance instruments and mutual funds. Similarly, as in case of the direct payments, one should design a new distribution of funds based on the objective criteria, and at the same time limit any significant disruptions coming from the current system (Strategiczne wytyczne..., 2009).

The EC position presents three variants for the direction of CAP development, aimed at coping with the following challenges:

— adjustment of the most urgent CAP irregularities by means of gradual changes;
— CAP transformation into a more ecological, fair, efficient, and effective policy; and
— withdrawal of the market and income support measures.

The Commission makes in all three variants a provision for preservation of the current system consisting of 2 pillars including the first pillar comprising the direct payments and market measures with the rules clearly defined on the EU level and the second pillar, which is composed of many years' means for rural areas development. Then, the option frameworks are determined on the EU level, however, the final decision

regarding the programme is left to the Member States or regions coming within a common management. The next common element of all three variants is the opinion that the future system of direct payments cannot be based on the historical reference periods but should be connected with the objective criteria.

The presented three options for the EU agricultural policy reform aim at ensuring the food supply safety, sustainable agriculture development and rural areas development. Although, the options of reform on the direct payments system foresee a greater equality in the distribution of means between the EU Member States, they are still territorially differentiated. Furthermore, the introduction of aids will be calculated based on such factor as the environmental protection. The initiated discussion on the options (variants) will be based on social consultations. Results of the debate will be taken into consideration at the preparation of the legal act draft by the European Commission in 2011.

Conclusions

This reform accelerates the process of integration of environmental requirements. It introduces a strong greening component into the first pillar of the CAP for the first time, thus, ensuring that all EU farmers in receipt of support go beyond the requirements of cross compliance and deliver environmental and climate benefits as part of their everyday activities. Thirty percent of direct payments will now be tied to greening, and these payments will ensure that all farms deliver environmental and climate benefits through the retention of soil carbon and grassland habitats associated with permanent pasture, the delivery of water and habitat protection by the establishment of ecological focus areas and improvement of the resilience of soil and ecosystems through crop diversification. They will reinforce the ability of land and natural ecosystems to contribute to address the major EU biodiversity and climate change adaptation objectives. Cross compliance will still underpin direct payments and it will be further focused to provide protection for wetlands and carbon rich soils, while at the same time being streamlined to reduce administrative burdens. The Commission is committed to the introduction of the Water Framework Directives within the remit of cross compliance when all Member States will have fully implemented them in particular with clear obligations for farmers. Within rural development also, the objectives of the sustainable management of natural resources and climate action are prioritised through the restoration, preservation, and enhancement of ecosystems as well as the promotion of resource efficiency, low carbon and climate resilient agriculture. Rural development will allow contributing significantly towards the completion of the implementation of both the Natura 2000 and Water Framework Directives and to the achievement of the EU's 2020 biodiversity strategy.

Bibliography

1. Piskorz, W. (2009). Rola polityk wspolnotowych w rozwoju obszarow wiejskich. (Role of Common Policy in Rural Areas Development) W: General Directorate for Regional Policy. European Commission, Brussels.
2. Position of the RP Government on the CAP Future (2009). Ministry of Agriculture and Rural Development, Warsaw.
3. Reforma Wspolnej Polityki Rolnej w kontekscie potrzeb i interesow polskiego rolnictwa (2008). (Reform of Common Agricultural Policy in Context of Needs and Interests of Polish Agriculture). Ekspertyza UKiE, Warszawa.
4. Resolution of the European Parliament on the Future of the Common Agricultural Policy (2010). European Parliament, Brussels.
5. Rural Development in the European Union. Statistical and Economic Information (2011). W: Directorate-General for Agriculture and Rural Development. European Commission. Brussels.
6. Rural Development Plan 2007-2013 (2010). Ministry of Agriculture and Rural Development. Warsaw.
7. Scenario Study on Agriculture and the Rural World European Communities (2007). European Commission, Brussels.
8. Strategiczne wytyczne Wspolnoty Europejskiej dla rozwoju obszarow wiejskich (Okres programowania 2007–2013) (2009). (Strategic Features of European Union for Rural Areas Development (Programming Period 2007-2013). Rada Europy. Bruksela.
9. The Future of Rural Development Policy (2011). Agricultural Policy Perspectives Briefs, European Commission Brussels.

Evaluation of Triple Helix Model in The Regions of Latvia

Andris Ozols[1], M.B.A., **Janis Eglitis**, assoc.prof., Dr.oec.
Daugavpils University,
Elena Ozola, Mg.psych.
Ventspils University College

Abstract. In the time of globalisation, information society and knowledge-based economy, the innovation system is an important ingredient of the country's success. Introduced by H.Etzkowitz and L.Leydesdorff in the mid 1990s, the Triple Helix (TH) model of innovations - interaction between university, industry and government - has well explained the questions of economic development in many countries and may be implemented in Latvia as well in order to boost its innovative development. The implementation of the model depends on reliable and relevant tools of the assessment of its economic effects considering the levels of development in different countries and regions. The problem is the lack of methods of evaluation proven the best option specifically for Latvia and its regions, as the comprehensive evaluation of TH model is not applied in Latvia yet. The aim of the paper is to define the optimal methods of evaluation of economic effects of TH model in the regions of Latvia. The authors have defined the main sources of appropriate data, reviewed seven methods of evaluation of TH model aspects, and explained the reasons why not all of them are quite applicable in Latvia. Among the main reasons, there is the shortage of available information and feedback. The recommendations for the data collection and processing for the development of innovation system and evaluation of Triple Helix model in Latvian regions were made in the research.
Key words: regional economy, innovative development, Triple Helix model, regions of Latvia, evaluation of Triple Helix model.
JEL code: R11

Introduction

Globalisation is a significant force reorganising the world's economy through new knowledge and technology (Carnoy, Rhoten, 2002). In the time of globalisation, information society and knowledge-based economy, the innovative development is a vital necessity for countries wishing to take respectful place in the modern world. Innovative development is imperative for Latvia (Eglitis, Panina, 2010b). Worked out by Henry Etzkowitz and Loet Leydesdorff in the mid 1990s, a Triple Helix (TH) model of innovative interaction between university, industry and government has worked well in many countries from the United Kingdom and Sweden to Singapore (Coenen, 2007; Wong, Ho, Singh, 2006). It could boost the regional innovation system development.

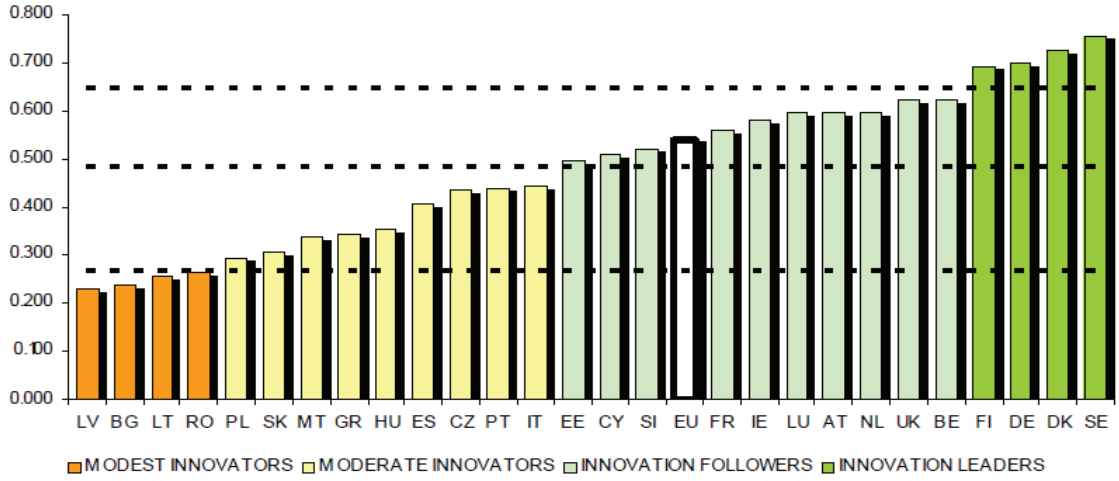
In order to evaluate the TH model in Latvia, there is a need of having a reliable and relevant tool of the assessment of its economic effects. It would give an opportunity to implement principles of result oriented higher education system and more competitive and effective regional higher education institutions (HEIs).

The problem is that the TH model has been applied neither in the elaboration of national and regional development plans nor in the administration of higher education system in Latvia yet. Thus, the major problem is the lack of methods of evaluation of the TH proven to be the best option specifically for Latvia and its regions. Thus, we should either design our own approaches and methods, or adapt an existing one. If we review the existing methods of the evaluation of the TH model's economic effect, only some of them will be suitable for the regions of Latvia due to some reasons. Therefore, the aim of the paper is to define the optimal methods of evaluation of the TH model's economic effect for the regions of Latvia. Among the tasks, there is specification of the suitable quantitative methods, reliable data sources and ways of data processing. Monographs, scientific articles, official documents, bulletins and statistical data of Latvian government, higher education institutions (HEIs), regional governments of Latvia, Centres of Technology Transfer, and the Investment and Development Agency of Latvia were reviewed and analysed for purposes of the study. The novelty and topicality of the research is in the attempt to define the methods for evaluation of the TH model specific for the regions of Latvia, which may be further used as a tool for the development of innovation system in Latvia, rising effectiveness of the system of higher education and higher education institutions as well as competitiveness of regions. The results given in the paper is the part of a wider research devoted to the application of the Triple Helix innovative development model in the regions of Latvia.

Research results and discussion

"Latvian National Development Plan 2007-2013" prepared by the Ministry of Regional Development and Local Governments (MRD&LG) of the Republic of Latvia that became the basis of the EU National Strategic Reference Framework 2007-2013, suggests: "…it is necessary to create favourable conditions for innovative development directed at employing internal intellectual resources (endogenous). Greater use should be made in the economy of intellectual property (inventions, technologies, products) created in Latvia…; this would increase the number of patents developed in Latvia (especially in the field of high technology), develop the

[1] *E-mail address*: andris.a.ozols@gmail.com



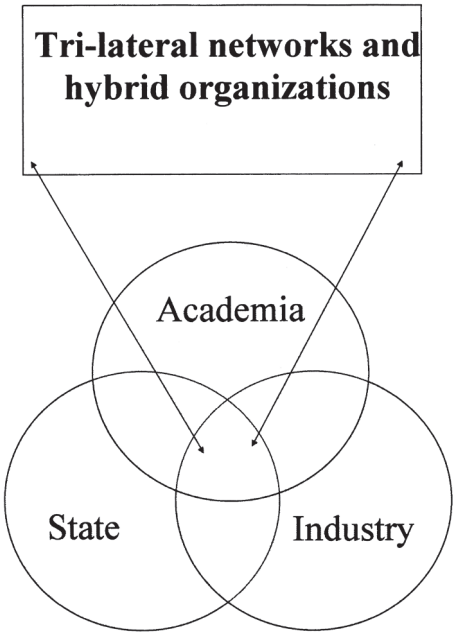
Source: Innovation Union Scoreboard 2011

Fig. 1. **The EU Member States' Innovation Performance**

science and technology commercialisation structure and create closer ties between the research and scientific institutions, companies, and the ties of these institutions with the real market situation" (MRD&LG, 2006). However, five years after adoption of this plan, a report by the Innovation Union Scoreboard (IUS) revealed that in 2011 Latvia ranked 27th in the EU in terms of innovation (IUS, 2012) (Figure 1).

In general, innovations require appropriate environment, institutions, financial investment but first and foremost intellectual investment. The level of intellectual capital in the country is one of the major means for survival in the global world. The intellectual capital is created through the system of education and brining-up, health care, values, "brains import"; however, it is worth remembering that in the knowledge economy, the main driving force is tertiary education (Eglitis, Panina, 2010a).

One of the models of innovative development that reflects the modern increase of influence of higher education institutions is the Triple Helix model. According to this model, an innovation or, more broadly, knowledge based economy, can be considered as an outcome of interaction among different social coordination mechanisms - markets, knowledge production, and (public or private) governance. Three selection environments or functions are specified in the model: 1) wealth generation (industry), 2) novelty production (academia), and 3) public



Source: Etzkowitz, Leydesdorff, 2000

Fig.2. **The Triple Helix Model of University – functions of Industry–Government Relations**

control (government) (Etzkowitz, Leydesdorff, 2000). The model "enables the analyst to specify the relations between private property and profit maximisation, public control functions as legislation and regulation, and the innovative dynamics of the techno-sciences in empirical instances, and thus to contribute to the development of solutions to problems at interfaces among the central functions of today's society" (Leydesdorff, Meyer, 2010).

According to the TH model, the innovations arise in the area of Trilateral Relations, the focal point of the three spheres overlapping (Figure 2) (Etzkowitz, Leydesdorff, 2000).

Figure 3 shows the relation of these components with a geographical factor that is important for the development of innovation system ("innovation system synergy") in regional economies (Lengyel, Leydersdorff, 2011).

Yet, in different countries and regions, this triadic configuration has specific features (Martin, 2011). There are various environments, interrelation and correspondence of the spheres, development of economy, maturity of social institutions, intensity and direction of HEIs, historical background etc. Due to this fact, the question arises how to evaluate an economic effect of the TH interaction correctly? What indicators can make such effect visible, considering the different weight of components?

A single indicator of the economic effect of the TH model has not yet been created (Leydesdorff, 2012). Therefore, currently, various components are measured separately and then compared, with the result that identifies the linear and nonlinear interaction and patterns.

To measure the first component - the university - the principles of bibliometrics and scientometrics, and related metering parameters are applied – citation analysis, number of publications in refereed journals, citation indices, the number of patent applications, and the number of patents granted (Leydesdorff, Shin, 2011). However, none of the theses describes the economic effects of HEI.

To measure the second component - business (understood as a technology business that focuses on the introduction of high technology products in the industry) – economic indicators are used, such as the number of high-tech enterprises, start-ups and spin-offs, the volume of output of their new products, the number of employees of high-tech enterprises, their productivity etc.

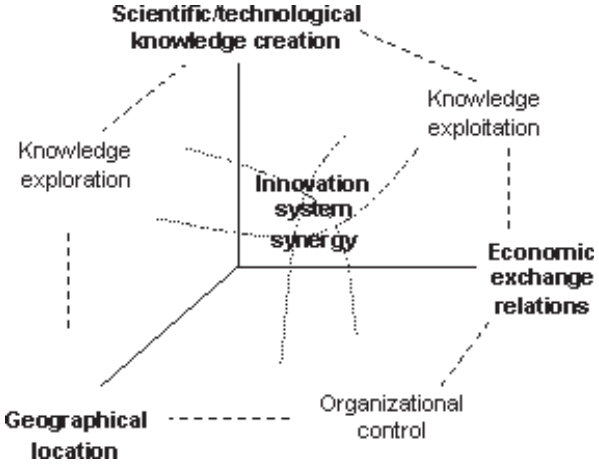
At the junction of the above two components, the number of created on the basis of new patents or know-how high-tech enterprises (start-ups) are measured, including enterprises with the participation of universities (spin-offs), and evaluating their performance of economic indicators.

The third component - government - makes decisions on the national and local level that affect the statistics of the first two. Laws, financing, tax breaks, special economic zones, and other measures directly stimulate the activity of universities and business. It also has indirect incentives (infrastructure projects, labour regulation, commercial law etc.) (Etzkowitz, 2008).

All indicators of the first and second components are primary statistical data and can be effectively taken into account with the methods of descriptive statistics: monitoring, reporting and summary statistics, and the subsequent grouping of primary data into variables and further analysis to identify patterns. Proposed indicators are rather general; they can describe a whole state, and even calculated scientifically, can hardly be applied on the regional level. They do cover significant factors of effectiveness of a single HEI, for instance, regional development and competitiveness of a region, where HEI is located, or in a broader sense the development and competitiveness of the whole state.

Currently, there are at least seven main methods of the assessment of the TH economic effect.

1. Mutual (configuration) information among three helices (Martynovich, 2011). The positive or negative overlap may be operationalised through the mutual information shared among the three helices in a system, which can, therefore, measure the degree of integration and differentiation in the system's configuration in terms of relative frequencies of relations among overlapping helices at each moment of time, measuring the knowledge base of an economy in terms of:



Source: Lengyel, Leydesdorff, 2011

Fig.3. **Synergy of knowledge an innovation system**

- — TH of university, industry, and government (publications, mutual information in Mbits);
- — Quadruple Helix of university, industry, government, and international co-authorship relations;
- — technology, organisation, and territory.

2. φ-coefficients and partial correlation. φ-coefficients are used for the analysis of bilateral relations and reflect the same dynamics as mutual information among two variables but they are easier to calculate. In case of three variables, partial correlation coefficient may be used, which corresponds to partial mutual information indicators (Martynovich, 2011).
3. Embeddedness indicators are concentrated on the level of individual researchers and their networks. The main idea is that the nature and the structure of the researchers' informal networks ("relational embeddedness") determine their research output in terms of publications. Different types of publications are given different weights depending on their supposed level of influence and effort spent on a preparation (Martynovich, 2011).
4. Graphical representation of TH relations using the Vector Space model that considers variables as vectors and allows analysing relations between different variables as a degree of their multiple occurrences in a data sample (Garcia, 2006).
5. Patent-based indicators given in the manual of the Organisation for Economic Co-operation and Development:
   - — *total Inventive Activity of the University* - a share of patents granted to university researchers in the total number of patents granted to a country;
   - — *concentration of Patents* - reflects the shares of particular universities in the total number of university-granted patents;
   - — *share of Patents Utilised in Start-Up Companies and Share of Patents Utilised in Large Companies and Established SMEs* – indicate the degree, to which academic entrepreneurship or university-industry relations act as drivers for applied research at universities (OECD, 2009).
6. Regression models do not directly contribute to development of the TH indicators; however, they may help reveal some important characteristics of TH relations. Such indicators may be used as:
   - — regression model with regional economic performance (measured as regional gross value added) acting as a dependent variable;
   - — R&D expenditures;
   - — share of employees in the private sector, which main activities are concentrated on R&D;
   - — average amount of industrial grants per researcher etc. (World Bank, 2011).
7. Some authors, using the method of analogies, find parallels between the TH model of innovative development and some physical processes, like helical instability of the electron-hole plasma or oscillatory effect. Using the mathematical apparatus of oscillatory effect, they try to show the interdependence among the components of the TH model. Generally, it takes the same incoming data as the abovementioned methods but reveals a closer correlation with the third TH component – government (Teterkina, Drobot, Drobot, 2010).

The application of abovementioned methods, used in combination or separately, depends on the availability of data. The available data sources in Latvia could be:

- — Central Statistical Bureau of Latvia;
- — Technology Transfer Centres of HEIs that are located in regions (however, not all HEIs have such centres);
- — Lursoft database;
- — reports on Science and Innovations of Latvian HEIs;
- — results of interviewing of the model participants. A special survey should be carried out, since it is not available in general.

Upon reviewing the Latvian data sources and given information, the following findings were made:

- — the easiest assessment of the TH could be done calculating the patent-based indicators. However, only patent-based indicators do not reflect full amount of the process and results of innovation;
- — the innovative start-ups and spin-offs of HEIs do not appear in statistical reports. The term "spin-off" is rather vague and has no clear legal definition. Spin-offs may be considered as: 1) any new firm, which includes a university employee as a founder; 2) any new firm, which licenses technology from a university; 3) any new firm, which includes a student or alumnus as a founder; 4) any new firm that started in an incubator or technology park affiliated with a university; and 5) any new firm in which a university has made an equity investment (Callan, 2001);
- — the most difficult data to obtain are informal research data for embeddedness indicators;
- — the information streams between scientists and companies (in Mbits) are not being traced yet;
- — regional statistics are not sufficiently provided;
- — so for the education planners and managers there are no relevant tools.

Conclusions, proposals, recommendations

The Triple Helix model of innovative development is topical for the regions of Latvia as it allows one to connect the intellectual potential of HEIs to the development of regional innovation systems and to evaluate the efficiency of HEI. Each component of the model has its own qualitative and quantitative characteristics that depend on the numerous internal and external factors. The methods of evaluation of the TH model's economic effect need to be worked out in order to benefit from this model. Such methods should consider the interrelations between all three components. Among the existing methods of the evaluation of the TH model's economic effect there are mutual (configuration) information among three helices; φ-coefficients and partial correlation; embeddedness indicators; graphical representation with the Vector Space model; patent-based indicators; regression models; and method of analogies with other processes. Only some of these methods are suitable for the evaluation of the regions of Latvia due to the shortage of necessary primary data. On this basis, the following recommendations can be made:

1. Latvia is a "modest innovator" according to IUS terms; the innovation system of Latvia needs further

development. The central government needs tools to be designed for better evaluation of how well administrative resources and the system of higher education cooperates for the regional development and competitiveness.
2. The Triple Helix model of innovative development should be applied in evaluation of the effectiveness of regional HEIs and regional development agencies.
3. As HEI is located in each region of Latvia, the Central Statistical Bureau should provide more detailed statistical data related to the innovative development on the regional level.
4. It is necessary to specify the term "spin-off" and introduce it into statistical data.

Bibliography

1. Callan, B. (2001). Generating Spin-offs: Evidence from across the OECD. *Science, Technology, Industry Review*, No.26.
2. Carnoy, M., Rhoten, D. (2002). What Does Globalisation Mean for Education Change? A Comparative Approach. *Comparative Education Review*, Vol. 46, Issue 1, pp. 1-9.
3. Coenen, L. (2007). The Role of Universities in the Regional Innovation Systems of the North East of England and Scania, Sweden: Providing Missing Links? *Environment and Planning C*, Vol. 25, pp. 803–821.
4. Eglitis, J., Panina, L. (2010a). Education and Sustainable Development. *Perspectives of Innovations, Economics & Business, Volume 4, Issue 1*, pp. 93-97.
5. Eglitis, J., Panina, L. (2010b). Education Market Failure or Victory – the Context of the Economic Crisis in Latvia. *Economics and Management: Current Issues and Perspectives*, No. 4 (20), pp. 30-39.
6. Etzkowitz, H. (2008). *The Triple Helix: University–Industry–Government Innovation in Action*, Routledge, N.Y., London.
7. Etzkowitz, H., Leydesdorff, L. (2000). The Dynamics of Innovation: From National Systems and ''Mode 2'' to a Triple Helix of University–Industry–Government Relations. *Research Policy*, Vol. 29, No. 2.
8. Garcia, E. (2006). *The Classic Vector Space Model*. Mi Islita.com. Retrieved: http://www.miislita.com/term-vector/term-vector-3.html. Access: 21 December 2011.
9. Innovation Union Scoreboard 2011 (2012). *The Innovation Union's Performance Scoreboard for Research and Innovation*. *7 February 2012*. p. 4. Retrieved: http://www.proinno-europe.eu/metrics. Access: 8 February 2012.
10. Lengyel , B., Leydesdorff, L. (2011). Regional Innovation Systems in Hungary: The Failing Synergy at the National Level. *Regional Studies*, No. 45(5), pp. 677-693.
11. Leydesdorff, L. (2012). The Triple Helix, Quadruple Helix, …, and an N-tuple of Helices: Explanatory Models for Analysing the Knowledge-based Economy? *Journal of the Knowledge Economy* (in press; doi: 10.1007/s13132-011-0049-4). Retrieved: http://www. leydesdorff.net/ntuple/ntuple.pdf. Access: 20 December 2011.
12. Leydesdorff, L., Meyer, M. (2010). The Triple Helix Model and the Knowledge-Based Economy. *Journal of Northeastern University (Social Science)*, 12(1).
13. Leydesdorff, L., Shin, J.C. (2011). How to Evaluate Universities in Terms of Their Relative Citation Impacts: Fractional Counting of Citations and the Normalisation of Differences Among Disciplines. *Journal of the American Society for Information Science and Technology*, 62(6).
14. Martin, M. (ed.) (2011). *In Search of the Triple Helix. Academia-industry-government Interaction in China, Poland and the Republic of Korea*. International Institute for Educational Planning, Paris.
15. Martynovich, M. (2011). *On the Way to Developing the Triple Helix Indicator. Contribution from Quantitative Empirical Studies*. Lunds universitet/Ekonomisk-historiska institutionen, Sweden.
16. Ministry of Regional Development and Local Governments of the Republic of Latvia (2006). *Latvian National Development Plan 2007-2013,* Jelgava: Jelgavas tipogrāfija, p. 18.
17. Organization for Economic Co-operation and Development (OECD) (2009). *OECD Patent Statistics Manual*. OECD.
18. Wong, P.-K., Ho, Y.-P., Singh, A. (2006). *Towards an "Entrepreneurial University" Model to Support Knowledge-Based Economic Development: The Case of the National University of Singapore.* Entrepreneurship Centre, National University of Singapore.
19. Teterkina, N., Drobot, P., Drobot, D. (2010). Problem of Qualitative Analysis in Triple Helix Model. Tusur, Tomsk. Retrieved: http://www.tusur.ru/media/cms_page_media/136/Quantitative-Analysis_1.pdf. Access: 22 December 2011.
20. World Bank (2011). *Indicators*. The World Bank. Retrieved: http://data.worldbank.org/indicator. Access: 20 December 2011.

The paper was prepared with the support of ESF.

Role of Information in Agritourism (Comparison of Two Regions- Mazowieckie Voivodship and Kiev Region)

Maria Parlinska[1], Dr.hab., professor; **Iryna Petrovska**, Mgr., PhD student
Faculty of Economic Sciences, Warsaw University of Life Sciences

Abstract. The article describes the important role of information in agritourism. The development of agritourism of two countries (Poland and Ukraine) was observed in this research. The comparison was made based on the Internet sources available on each country's web sites. A nonparametric statistical method AHP developed by T.Saaty was used for the estimation purpose. One region of each country (Kiev region and Mazowieckie voivodship, respectively) was chosen for this purpose. The comparison between these regions was made using the program Super Decision Software. The authors have concluded that the Polish agritourism is more developed and has better qualitative characteristics than the Ukrainian one.
The main aim is to determine the importance of information through the comparison of agribusiness activity in two different countries. Another aim is to analyse the development of agritourism in the two countries in order to define the main problems existing in this sector of economy in both countries.
The data sources for the research were taken from the Internet, since the importance of Internet is growing from year to year and it has become the most popular place for finding information.
Key words: information, agritourism, Analytic Hierarchic Process (AHP).
JEL code: C14

Introduction

Agritourism is becoming more and more popular from year to year. This type of activity is profitable and new in some countries. The following definition of agritourism is given on the US Small Farm Programme web site: "agricultural tourism is a commercial enterprise at a working farm, ranch, or agricultural plant conducted for the enjoyment or education of visitors, and that generates supplemental income for the owner".

There exist different types of agritourism such as farm stands, farm tours for families and school children, interactive outdoors and educational activities, tours, festivals, fairs, pumpkin patches, winery weddings, Christmas tree farms, u-pick produce, orchard dinners, barn dances, youth camps, hunting or fishing, guest ranches, petting zoos, hay or sleigh rides, and overnight stays in a bed and breakfast (US Small Farm Programme, 2009 ; Marshfield Clinic Research Foundation, 2011).

The farmers see agricultural tourism as a way to get income, entertain the public, and educate people to farming (Marshfield Clinic Research Foundation, 2011).

The set of hypothesis is:

1) promotion of agritourism in Poland via website is better provided than in Ukraine;
2) the price for customers is the most important criterion of choosing agritouristic farm.

The following tasks are presented in the research:

— to define the terms of information and agribusiness;
— to define the problems caused by asymmetric information;
— to assess the quality of information distribution;
— to make comparison of agribusiness development between two different regions using information presented on the Internet;
— to analyse the quality level in agritourism using statistical methodology AHP.

The objects of research are agribusiness farms of capital regions of Poland and Ukraine. The following methods such as information gathering and processing and the statistical method AHP were used in the research.

The main problem is that people cannot use the available information in proper way. The farmers also depend on the Internet a lot, as their services are promoted mostly by this source. Therefore, the process of gathering, processing, and displaying of information shall be done very carefully and accurately.

The Oxford American Dictionary gives the following definition of word "data": "facts or information to be used as a basis of discussing or deciding something." Here, the word information means "facts told or discovered or facts to be fed to a computer". Thus, the meanings of data and information are assumed the one thing. Yet, they have different meanings in the information processing. Data are the gathering of observations and they can be truthful or not. Hence, data might not be the facts. The processed data can be called "information". All errors should be deleted for processing data and the level of unreliability should be decreased. The last stage of information processing is organising of data in a proper way, which gives an opportunity for users of information to understand it clearly (Health System Administration, 2011).

Nowadays, computers are everywhere and the number of their users is growing. Mostly, the Internet has the same tendency. Internet influences decision-making process in an organisation a lot. Computers and Internet affect the organisation of work. Therefore, the organisation should spend a lot of time and money for

[1] *E-mail address*: maria_parlinska@sggw.pl.

Source: http://agroturystyka.pl

Fig. 1. **Map of agritourism in Poland**

information management, since it brings big gains in the future.

The information also plays an important role when farmers make decision on entering the agribusiness market. There, they can get all needed data about risk, possibilities, profits and losses in this area, in other words – to observe the economic situation on the market.

The role of information and knowledge in agricultural sector is emphasised in works of such scientists as Theodore W.Schultz and Artur W.Lewis. Schultz wrote that the important factor, which should be taken into account, was the level of education of farmers and access to the information. The economist wrote that the quality of these two characteristics should be improved (e.g. Parlinska M. 2008).

An American economist, Kenneth J.Arrow who is related with the universities of Stanford and Harvard, paid attention in his works to the problem of the asymmetric information. He described it like the result of not equal access to the information for different consumers of it that could have bad influence on the market effects (e.g. Parlinska M. 2008).

An estimation of two agribusiness regions in different countries was made based on this theoretical introduction.

Research results and discussion

1. Development of agritourism in Poland and Ukraine

It is not so easy to make a comparison between these two countries, because one can make assumption that agritourism in Poland is more developed and mostly has become as separate branch. The same cannot be said about Ukraine, which has just started this activity.

The easiest way to promote this type of tourism it is to advertise it through the Internet.

In Poland, there is a special web site (http://agroturystyka.pl), where it is possible to observe all available places for visiting. In Ukraine, there also exists such kind of service, which is available on the web site of rural tourism of Ukraine (http://ruraltourism.com.ua).

In Poland, people can mostly go to each region of the country; it means that the agritourism is developed throughout the territory. The web site presents a map for choosing the place to visit.

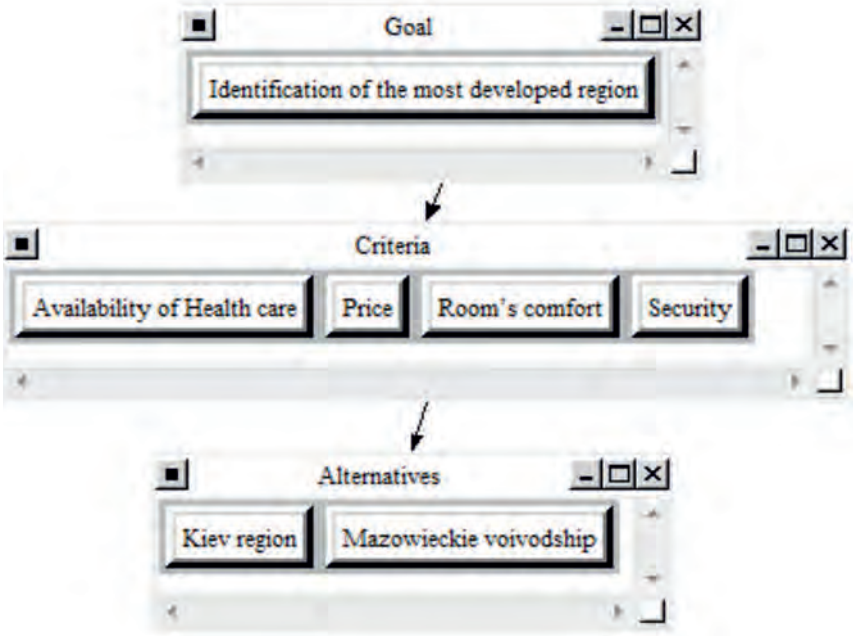
In Ukraine, agritourism is not developed in all the regions. There are also regions where there is just one place to visit. The largest number of agribusiness farmers is presented in Kiev, Zakarpatsk, Lwow, Ivano-Frankiwsk, Poltava, and Crimea regions.

Nevertheless, it could be said that Ukraine is now at the beginning of development of agritourism and its development rate is growing from day to day (http://ruraltourism.com.ua).

The description of regions, information on the climate etc. is also presented on the Ukrainian site. It could also be found that there are other places to visit abroad, which are connected not only with rural tourism. Polish web sites provide only information on rural tourism. It is so, because this type of tourism is not so popular in Ukraine, as the Ukrainian people prefer to go abroad for vacation, and they very often complain for the Ukrainian service in comparison with other countries. At the same time, the costs could be even higher in Ukraine than, for example, in Turkey. The paradox of Ukrainian tourism is that it is cheaper to go to Egypt, Turkey, or any other place than to rent a place in Crimea or somewhere else inside the country. The quality of service of Ukrainian touristic zones does not correspond to the money it costs.

Speaking about accommodation, it could be said that rooms have better comfort level in Poland and more services are provided there, besides these services are of better quality.

The prices are mostly the same in the two countries. Though, if one compares them with the salaries people



Source: authors' construction based on the calculations

Fig. 2. **Hierarchy structure of decision making process**

have in Ukraine and Poland, it could be said that people in Poland can afford going to the rural farms for vacation more often than the Ukrainians, as they have bigger incomes.

One should mention another important thing such as the possibility to invite foreigners. Hence, there is a question of language knowledge. In Poland, the farmers can speak at least two foreign languages, what cannot be said about Ukraine, where people mostly speak the Russian language. This information is available on the web sites, where people can read about services proposed before going to an agritourism farm.

It is important to emphasise a very big importance of Internet and role of information available there. Farmers should not only display the services they provide but also to make a research of the market and analyse the information to define the needs of customers.

2. Analysis of the quality level of agritourism in Kiev region (Ukraine) and Mazowieckie voivodship (Poland) using the AHP methodology

The AHP methodology is one of the decision-making methods, which gives possibility to estimate qualitative data. Using this method, the alternatives are rated by the scale from 1 to 9. The criteria of importance should be chosen at the beginning of the comparison process. In this stage, decision makers shall think what is the most important for them, i.e. what gains they want to get (in other words – the goal should be set) (Saaty T., 1980).

The goal of the estimation is to define better place for vacation: Kiev region or Mazowieckie voivodship. The research provides two choices – Kiev region and Mazowieckie voivodship. The Agritourism activity of these two regions of the countries is estimated according to the following criteria:

— availability of Health care;
— security;
— comfort of rooms;
— price.

Agritourism farmers should be prepared for visits of their farms. They shall provide such services as health and safety, protection of children and adults from injury, proper facilities, and sanitation against pathogens. This preparation process requires making careful planning and continuous quality control should be provided to the visitors (Marshfield Clinic Research Foundation, 2011).

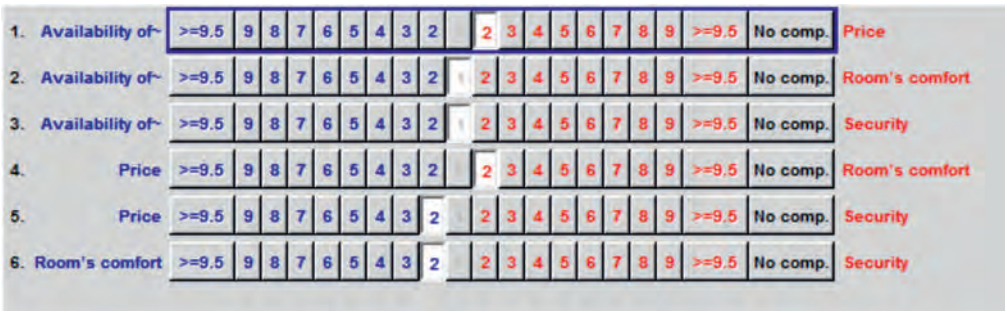
At the beginning, the hierarchy structure should be built, which includes the goal, criteria and alternatives. The following structure of the hierarchy was used in the research (Figure 2).

Next step is the calculation of weights for criteria of importance. Decision Making Software, which is called Super Decision Software developed by T.Saaty will be used for this purpose. All criteria will be the rates on the scale from 1 to 9 (e.g. Saaty T., 1980).

Figure 3 outlines the comparison scale between criteria of importance. The presentation is made according to the idea given by T. Saaty.

The scores to each criterion in comparison with another one were found using this scale. The inconsistency, which can be simply calculated by Super Decision Software and which gives an opportunity to make proper evaluation and estimation of scores for the criteria, should also be taken into account. This coefficient shall be less than 0.1. The weights for criteria were found after making the comparison. They are shown in Table 1, which was constructed based on the authors' calculations (e.g. Parlinska M., 2005).

According to the data of Table 1, it is seen that the most important criterion in the research is the comfort of rooms (the weight of importance is equal to



Source: authors' construction based on the calculations (using Super Decision Software)

Fig. 3. **Comparison scale between criteria**

Table 1

Weights for the criteria of importance

No.	Name of the criterion	Weights
1	Availability of health care	0.205
2	Price	0.286
3	Room's comfort	0.346
4	Security	0.163

Source: authors' construction based on the calculations (using Super Decision Software)

0.346 (34.6%)). The security is less important for visitors than the price, availability of health care, and comfort of rooms. These data were obtained by questioning people in Ukraine and Poland. The group of observation consists of 40 people for both countries.

The next and last step is the evaluation of scores for each alternative according to each criterion. These calculations are also done by Super Decision Making Software. MS Excel could be used for this purpose as well.

The following step is calculating the final score using Table 1 and Super Decision Software. Here, all weights are multiplied by the responding scores and then they shall be added together to get one score for each region.

According to the results, a better place for visiting is Mazowieckie voivodship than Kiev region, due to the obtained values 67 and 33% respectively. Together they make 100%. This means that Mazowieckie voivodship got 67% according to the preference scale.

This method provided a simple example how the qualitative characteristics can be transformed into the quantitative data and estimated in numbers. Therefore, the information should be organised and gathered properly.

All two estimations (qualitative and quantitative) were made using the information about agribusiness presented by both countries. Unfortunately, not always this information is truthful, very often data can be hidden.

Conclusions, proposals, recommendations

The article presented the situations of agritourism in Ukraine and Poland. The authors described the big importance of the information for the current life and economy. The following conclusions were made thereafter.

1. Information plays one of the major roles for agritourism farmers. Proper gathering and using of the information gives the opportunity to get big gains in the future.
2. Agritourism depends on the Internet a lot. People (customers) usually look for place to spend vacation through the web sites.
3. Polish and Ukrainian web sites mostly present all information customers need. According to the done research, it could be said that Polish web site of agritourism is better organised than the Ukrainian one; more clear information and maps are presented there.
4. According to the quality of agritourism service, it can be said that Polish farmers propose better living conditions for the visitors. Thanks to the ability to speak foreign languages, they can invite wide range of customers. Ukrainian farmers mostly speak the Russian and Ukrainian languages.
5. According to the results obtained by using the statistical method AHP, it was also confirmed that the Polish agritourism is better developed than the Ukrainian one. Ukraine should pay attention to this sphere because investing in agritourism may bring future benefits to the country budget.
6. Farmers should pay more attention to the process of information distribution, take into account market situations and needs of customers. The rural tourism service needs improvements to raise the its quality.
7. Farmers should organise the Internet page in proper way, where users of this information are able to see clear all the services included. It is important to show the information on service available not only on the farm but also in other places close to this farm. The distance to get there should be presented as well.

8. The more information farmers have on the required services, the better they are able to organise their offers. The farmers should observe not only the situation on domestic market but also the tendencies on the foreign markets. The experience of other countries usually is very useful, as the farms can have the possibility to be the first introducer of new services or strategies in their country.

Bibliography

1. Health System Administration (2011). Retrieved: http://gunston.gmu.edu/healthscience/740/oleOfInformationInOrganizations.asp?E=0.
2. Marshfield Clinic Research Foundation, (2011). Retrieved: http://www.marshfieldclinic.org/nccrahs/default.aspx?page=nccrahs_ag_tourism.
3. Parlinska M. (2008). Rola informacji w gospodarce rynkowej na podstawie wybranych rolnych rynkow hurtowych. Wydawnictwo SGGW.
4. Parlinska, M. (2005). Hierarchy of Decision Making Process. Monografii: Studia Universitatis Babes-Bolyai; *Oeconomica*, Printed by Economics Faculty, Babey's Bolays University of Cluj Napoca, Romania, pp. 73-78.
5. Polish Village Invites You (2011). Retrieved: http://agroturystyka.pl.
6. Rural Tourism in Ukraine (2011). Retrieved: http://ruraltourism.com.ua.
7. Saaty, T. (1980). The Analytic Hierarchy Process Planning. Priority Setting. Resource Allocation. MacGraw-Hill, New York International Book.
8. US Small Farm Programme (2009). Retrieved: http://sfp.ucdavis.edu/agritourism/.

Evaluation of Administrative Burden in Municipalities of Latvia

Irina Pilvere[1], Dr.oec.; **Aleksejs Nipers**[2], Dr.oec.; **Ilze Upite**[1], Dr.oec; **Zane Bulderberga**[1], Mg.oec.; **Dina Popluga**[1], Dr.oec.; **Aina Dobele**[1], Dr.oec., **Lasma Dobele**[1], Mg.oec.
[1] Faculty of Economics, Latvia University of Agriculture
[2] Research Institute of Economics and Business, Riga International School of Economics and Business Administration

Abstract. According to the statistical data, there are approximately 26 companies per 1000 inhabitants in Latvia and it is considerably behind the result of West–European countries (ca. 50 companies per 1000 inhabitants). One of the factors discouraging the development of business activities and decreasing the competitiveness of companies in Latvia is the existing administrative burden for the companies. Such appraisal of situation determined the joint aim of this research – to make quantitative assessment of administrative burden on enterprises in the municipalities of Latvia and to find solutions for the reduction of administrative burden on enterprises. Two methods – standard cost model and customer journey mapping – were applied to eliminate and decrease the administrative burden maintaining the positive influence of the regulation. In general, the results of the research showed that the total administrative burden for Latvian businessmen in such fields of the normative regulation as personal information; events and advertisement; entrepreneurship; public tenders; construction, development and planning; land and property issues; and real estate tax could be LVL 25.5 million annually. Suggestions were developed and changes initiated for decrease of the burden on the national level. The suggestions developed and offered to the ministries shall enable reduction of the administrative burden at all state municipalities by another 13% (calculating with reciprocal date, the administrative burden in 2010 would decrease by 12% but on medium term (5–7 years) – by 14%).
Key words: administrative burden, municipalities, Latvia.
JEL code: K2, L5, O52.

Introduction

The global financial crisis has considerably affected the national economy of Latvia (Engdahl, 2009) and presently, when in Latvia as well as in the world one can observe a slow increase of economic development, it is important to ensure the population with an opportunity to create additional income and to preserve the present living standard (Bruna, Sneidere, 2011). One of the topical and important ways for the population to gain this income is starting the entrepreneurship. However, according to the statistical data, business activities in Latvia are poorly developed. There are approximately 26 companies per 1000 inhabitants in Latvia and it is considerably behind the result of West–European countries (ca. 50 companies per 1000 inhabitants). One of the factors discouraging the development of business activities and decreasing the competitiveness of companies in Latvia is the existing administrative burden for the companies. In this context, the administrative burden means the administrative requirements for the companies from the public institutions, namely – preparation of different applications, submission of reports, receiving of licences and permits, inspections and other administrative activities (SCM Network, 2005). Furthermore, it is recognised that administrative burden, which comes from administrative activities that businesses conduct only because regulation requires (SCM Network, 2005), affects mostly small and medium enterprises, as regulatory compliance with the administrative rules, regulations and procedures involves important financial resources (GTZ, 2006). Some authors even suggest that administrative burden that comes from the EU and national regulations is becoming a real threat to the efficient operation of enterprises around Europe (Moussis, 2009). There has been recognition in many countries of the need for a review of regulation and its impacts on business, the economy, and societal well-being (Red Tape Reduction..., 2007; Malyshev, 2006). A number of surveys reports that worries about the burdens of regulation, as sources of inefficiencies in the economic system, have become important in Europe (Wegrich, 2009; Beremmers *et al.*, 2008; Cavallo *et al.*, 2008; Scheeder *et al.*, 2002).

Traditionally, efforts of the administrative burden reduction reform have been applied on the national level. However, a new understanding has emerged that unnecessary rules and regulations, and a lack of service orientation may have a major negative impact on local economic growth (GTZ, 2006; Hindson, Hindson, 2006). In many countries, sub–national political entities (states, provinces, regional governments, and municipalities) have an important function in fostering a sound business climate. In this context, some authors (Sislen *et al.*, 2007) even point out that local government is often the first point of interaction for businesses and very often the highest administrative burden is concentrated directly on local level. The World Bank experts (Sislen *et al.*, 2007) suggest that municipal level red tape reduction is an effective measure for improving investment climate and is becoming increasingly important.

In this context, the author collective of the present paper decided to carry out research from the completely different point of view and so far unused in Latvia, i.e. administrative burden assessment on municipal level. Appraisal of current situation allows highlighting the following **hypothesis** – administrative burden exists in the municipalities of Latvia and it requires reduction measures.

Defined hypothesis emphasised the **aim** of the study – to make quantitative assessment of administrative burden on enterprises in the municipalities of Latvia and to find solutions for reducing the administrative burden on enterprises.

In accordance with this aim, the following research **objectives** were defined:

— to make an indicative administrative burden assessment in the municipalities of Latvia;
— to identify fields with the largest administrative burden and to draw recommendations for reduction of the administrative burden.

The regulatory enactments of the Republic of Latvia, scientific publications, and special literature related to the research topic were applied to meet the study objectives. To carry out this study, two methods – standard cost model and customer journey mapping – were applied in order to estimate and reduce the administrative burden maintaining the positive influence of the regulation. Application of standard cost model enabled discovering branches where the most administrative burden forms for the companies subject to the regulatory enactments and to define particular suggestions for reduction of the administrative burden as well as to determine the level – state or municipal – where the introduction should take place. The customer journey mapping model enabled to find out and describe customers experience when receiving different services, thus, helping develop suggestions for improvement of the mapping.

This paper presents results of the research that was conducted during 2010 and 2011 with the main research subject being the municipality of Jelgava and other municipalities in Latvia.

Research results and discussion

1. Indicative administrative burden assessment in the municipalities of Latvia

In order to get valid results, the research was conditionally divided into two main steps. First – precise and accurate assessment of the administrative burden in one particular municipality, and second – extrapolation of the obtained information to other municipalities of Latvia. Such approach gave the opportunity to get indicative results on the overall situation in the municipalities of Latvia.

Jelgava

A detailed assessment of the administrative burden consistent with the standard cost model method and customer journey mapping method was carried out in Jelgava municipality. The situation analysis showed that the administrative burden of LVL 1.12 million was formed in Jelgava municipality in 2010.

The absolute majority or 81% of the total administrative burden consists of construction. Then, the real estate tax follows constituting 8% of the total burden. A comparatively low administrative burden is observed in the other fields of services provided by the municipality, i.e. personal information, events, and advertisement.

Within the research, the perspective scope of administrative burden in the medium term was calculated assuming that the national economy gradually overcomes the crisis and the economic situation improves in the country. It was concluded that in the perspective of medium term (5–7 years), the administrative burden could increase to LVL 2.29 million. Besides, such an increase of the administrative burden would be mainly facilitated by activation in the field of construction.

The estimations and conclusions based on the administrative burden estimation results of Jelgava municipality, allowed assuming that it was possible to make an indicative administrative burden assessment of other municipalities in Latvia. Thus, it would be possible to gain concept on the development of administrative burden for companies in Latvia in the following fields personal data; events and advertising; entrepreneurship; public procurements; construction, development and planning; land and property matters; and property tax.

Riga

Riga is the capital of Latvia concentrating the largest population. Its economic activity prevails over other cities of Latvia and the number of companies is remarkably higher than in other cities of Latvia. At the same time, the administrative processes require more resources than in other municipalities. Therefore, in order to assess the administrative burden of companies operating in Riga municipality, it was not enough just to extrapolate the data of Jelgava municipality. Hence, to obtain proper data, precise information was needed on the activity of companies and the number of submitted applications/ permits/licenses of the investigated fields. Thus, the possible administrative burden of Riga municipality was estimated based on Riga City Council's information on the activity of companies and estimations made in Jelgava municipality on the administrative burden on average per application. The administrative burden estimation results of companies located in Jelgava and Riga municipalities are summarised in Table 1.

The estimations (Table 1) show that the activity of companies in Riga, as outlined by applications submitted and permits/licenses issued by the municipality, is almost 9 times higher than in Jelgava. In total, it was estimated that due to the various administrative activities in Riga municipality, the administrative burden is LVL 11.3 million high of which LVL 9.2 million or 81% are observed in the field of construction, development, and planning.

The information summarised in Table 2 evidences that the activity of companies in Riga in such fields as personal data and entrepreneurship is significantly higher than in Jelgava. Whereas, the companies of Jelgava are more active in the field concerning property tax. In other fields, the activity of companies in Jelgava and Riga is analogous.

Other municipalities

The data of Jelgava and Riga were used in order to estimate the administrative burden of other municipalities in Latvia. It was assumed that the activity of companies, i.e. the number of submitted applications and received licenses/permits of the investigated fields depend on the population of the city.

In general, the presumable administrative burden for each municipality of Latvia was estimated according to Formula 1:

Table 1

The administrative burden of the investigated service fields of Jelgava and Riga municipalities in 2010, LVL

Municipal services	Number of applications/ permits/licenses		Administrative burden, LVL	
	Jelgava	***Riga***	***Jelgava***	***Riga***
Personal data	3 858	102 740	20 466	209 437
Events and advertising	281	2 799	35 162	412 652
Entrepreneurship	333	15 150	22 145	610 087
Public procurements	111	821	28 347	209 666
Construction, development and planning	2 003	22645	904 246	9 191 982
Land and property matters	483	3 711	17 221	113 348
Property tax	35 600	230 096	89 867	574 538
TOTAL	**42 669**	**377 962**	**1 117 454**	**11 321 709**

Source: authors' calculations

Table 2

The assumptions for administrative burden estimation in other municipalities of Latvia

Municipality services	Share of applications vs. total population of the city, %		Administrative burden, LVL per application
	Jelgava	***Riga***	
Personal data	5.94	14.54	5.30
Events and advertising	0.43	0.40	125.13
Entrepreneurship	0.51	2.14	66.50
Public procurement	0.17	0.12	255.38
Construction, development and planning	3.09	3.21	451.45
Land and property matters	0.74	0.53	35.65
Property tax	54.86	32.57	2.52

Source: authors' calculations

$$AB = AB_J + AB_R + \sum (I_{rp} \cdot S_{rp}) + \sum (I_{cp} \cdot S_{cp}), \quad (1)$$

where:

AB – total administrative burden, LVL;

AB_J – total administrative burden in Jelgava, LVL;

AB_R – total administrative burden in Riga, LVL;

I_{rp} – number of applications/ permits/ licenses in other cities of Latvia;

S_{rp} – average administrative burden per one application/ permit/ license in other cities of Latvia, LVL;

I_{cp} – number of applications/ permits/ licenses in other municipalities of Latvia;

S_{ap} – average administrative burden per one application/ permit/ license in other municipalities of Latvia, LVL;

As already mentioned, the number of applications in Jelgava and Riga was set compiling the statistics. The number of applications in other cities and municipalities was set indicatively. Formula 2 was used to calculate the number of applications in other cities and other municipalities:

$$I_n = \frac{I_J}{P_J} \cdot P_n \cdot k_n, \quad (2)$$

where:

I_n – number of applications/ permits/ licenses in other cities and municipalities of Latvia;

I_J – number of applications/ permits/ licenses in Jelgava;

P_J – population in Jelgava;

P_n – population in other cities and municipalities of Latvia;

k_n – coefficient of administrative activity.

The coefficient of administrative activity was set indicatively. For cities (except Jelgava and Riga) this coefficient was 1 compared with Jelgava level; while for other municipalities this coefficient was 1/3 compared with Jelgava level. Such a difference is essentially related to the low activity in construction.

Table 3

The indicative assessment of the administrative burden of municipalities of Latvia, 2010

City	Population	Number of applications	Administrative burden, LVL
Jelgava	64 279	42 669	1 117 454
Riga	700 107	377 962	14 847 611
Other cities	371 788	197 437	6 463 324
Other municipalities	1 157 746	230 557	6 641 830
Total in all municipalities of Latvia			25 544 317

Source: authors' calculations

The average administrative burden on a single application for all cities and municipalities was estimated using the data on Jelgava.

The indicative assessment of the administrative burden of municipalities of Latvia in 2010 is summarised in Table 3.

Overall, the investigation results showed that the total administrative burden on companies in such fields of the normative regulation as personal data; events and advertising; entrepreneurship, public procurements; construction, development and planning, land and property matters; and property tax might be LVL 25.5 million per year.

On the national level, this administrative burden comprised 0.2% of Latvia's Gross Domestic Product (GDP) in 2010. This figure is impressive taking into account fact that the administrative burden was evaluated only in certain areas.

2. Possibilities for the reduction of administrative burden

The reduction of administrative burden on businesses enhances their competitiveness and productivity. Furthermore, reducing the administrative burden on businesses also has a positive impact on the national economy and increase in exports due to the improved price competitiveness. For example, according to an estimate by Finnish economists, alleviation of the burden by 25% from the initial 1.2% of GDP by 2012 would lead to a 0.35% burden of GDP by 2025 in Finland (Ministry of Employment..., 2011). Therefore, the last stage of this research was the development of proposals for reduction of the administrative burden in municipalities of Latvia.

The experience of other countries (Sense Consulting, 2010; Stevens, 2009; National Audit Office, 2008; Cavallo *et al.*, 2008; OECD, 2007; World Bank Group, 2007) indicates that there are numerous opportunities how to do this, for example, by removing, reducing, merging or improving regulations; simplifying the process to comply with the regulations; providing better guidance and information etc. The authors used the following approach in developing proposals – after evaluating other countries' experience and consultations with specialists from Jelgava City Council and leading experts from different public institutions in Latvia, the authors accurately reviewed the existing regulations and looked for the possibilities to:

— delete the requirements, which do not reach goal or are not efficient enough in achieving the target by getting rid of unnecessary procedures;
— introduce new technologies;
— streamline the processes.

As a result, the authors drafted 97 proposals for reduction of estimated administrative burden. It should be noted that, taking into account specificity of the research, 68 proposals or 70% of total proposals were addressed directly to one particular municipality, i.e. Jelgava municipality, where the administrative burden was assessed. For example, typical areas, where the administrative burden emerges mainly from the municipal level regulations and changes and it should be implemented in the binding regulations and forms of Jelgava municipality, are - personal data; public procurement; and events and advertising.

Other 29 proposals or 30% of total number of proposals were related to the changes in national level regulatory enactments and affected such areas as:

— public activities: meetings, processions and pickets; coordination of public entertainment or festivity events;
— land and property issues: land allotment; lease of municipal land;
— construction, development and planning: optimisation of the administrative procedures; costs of construction design; review of a construction design and issue of a construction permit; waiting time for passing technical regulations; simplified renovation and reconstruction;
— entrepreneurship: commercial transportation of passengers by taxi; obtaining of a licence for implementation of informal/interest education;
— real estate tax.

These proposals were sent to responsible institutions – Ministry of Justice, Ministry of Transport, State Revenue Service, National Metrology Service, Ministry of Education and Science, Ministry of Economics, and Ministry of Environmental Protection and Regional Development.

It was calculated that proposals developed and offered to the ministries shall enable reduction of the administrative burden at all state municipalities by another 13% (calculating with reciprocal date, the administrative burden in 2010 would decrease by 12% but on medium term – by 14%). It means that the average decrease of administrative burden in the municipalities of Latvia shall equal to LVL 3.3 million annually.

Conclusions, proposals, recommendations

1. In general, the results of the research showed that the total administrative burden for Latvian

businessmen in such fields of the normative regulation as personal information; events and advertisement; entrepreneurship; public tenders; construction, development and planning; land and property issues; and real estate tax could be LVL 25.5 million annually.
2. The calculated administrative burden, which annually emerges in the municipalities of Latvia, comprised 0.2% of Latvia's Gross Domestic Product (GDP) in 2010. This figure is impressive taking into account fact that the administrative burden was evaluated only in certain areas, thus, requiring administrative burden reduction measures.
3. Therefore, 97 proposals for reduction of estimated administrative burden were drafted within the research. Taking into account specificity of the research, 70% of total proposals were addressed directly to one particular municipality, i.e. Jelgava municipality, where the administrative burden was assessed. The other 30% of total proposals were related to the changes in the national level regulatory documents having effect on all municipalities of Latvia.
4. The suggestions developed and offered to the responsible ministries shall enable reduction of the administrative burden at all state municipalities by another LVL 3.3 million annually or 13%; thus, increasing the competitiveness of Latvian entrepreneurs both in internal and external markets.

Bibliography

1. Beremmers, H., Poppe, K.J., Wijnands, J., van der Meulenet, B. (2008). Administrative Burdens and Dairy Industry Competitiveness. *Paper Prepared for Presentation at the 11th EAAE Congress, 24-27 August, Copenhagen, Denmark*. Retrieved: http://ageconsearch.umn.edu/bitstream/44275/2/574.pdf. Access: 13 December 2011.
2. Bruna, I., Sneidere, R. (2011). The Practice of Small Business Activities in Latvia. *Proceedings of the International Conference on Applied Economics 2011*, pp. 93-102.
3. Cavallo, L., Coco, G. and Martelli, M. (2008). Evaluating Administrative Burdens through SCM: Some Indications from the Italian Experience. Retrieved: http://www.administrative-burdens.com/filesystem/2008/05/evaluating_admin_burdens_through_scm_-_italian_experience_may_2008_483.pdf. Access: 13 December 2011.
4. Engdahl, F.W. (2009). Latvia Economic Crisis as Thatcher Free Market Model Collapses. *Recession 2008 – 2010*. Retrieved: http://www.marketoracle.co.uk/Article12508.html. Access: 12 December 2011.
5. GTZ (2006). *Local Red Tape Reduction to Improve the Business Climate*. Eschborn: GTZ. p. 49.
6. Hindson, V., Hindson, D. (2006). *Resource Handbook for Cutting Red Tape to Improve the Local Business*. Eschborn: GTZ. p. 35.
7. Malyshev, N. (2006). Regulatory Policy: OECD Experience and Evidence. *Oxford Review of Economic Policy*, Vol. 22, No. 2, pp. 274-299.
8. Ministry of Employment and the Economy (2011). Initial Level of Administrative Burden on Businesses. Retrieved: http://www.tem.fi/index.phtml?l=en&s=4406. Access: 14 December 2011.
9. Moussis, N. (2009). *Access to European Union: Law, Economics, Policies - 18th Revised Edition*. Rixensart: European Study Service. p. 555.
10. National Audit Office (2008). *The Administrative Burdens Reduction Programme, 2008*. London: The Stationery Office. p. 49.
11. OECD (2007). *Cutting Red Tape: Comparing Administrative Burdens across Countries*. Paris: Organisation for Economic Co-operation and Development. p. 189.
12. Red Tape Reduction Task Force (2007). Report of the Red Tape Reduction Task Force to the Minister of the Department of Business. Retrieved: http://www.gov.nl.ca/redtape/taskforcereport.pdf. Access: 13 December 2011.
13. Scheeder, T., Moog, M. and Borchert, H. (2002). Bureaucratic Financial Burdens on Privately Owned Forest Companies: Results of a Case Study in Three German Federal States. *Forest Policy and Economics*, Vol. 4 Issue 1, pp. 21-31.
14. SCM Network (2005). International Standard Costs Manual: Measuring and Reducing Administrative Burdens for Businesses. Retrieved: http://www.oecd.org/dataoecd/32/54/34227698.pdf. Access: 12 December 2011.
15. Sense Consulting (2010). Croatian Approach to Estimating Administrative Cost Savings from Regulatory Guillotine Project. Retrieved: http://senseconsulting.eu/hr/grabfile.php?id=19. Access: 13 December 2011.
16. Sislen, D., Samad, T., Anthony, S., Haggarty, L. and Artemiev, I. (2007). Cutting Red Tape in Lima: How Municipal Simplification Improves Investment Climate. *EnBreve*, No 99, pp. 1–4.
17. Stevens, L.G.M. (2009). Customised Regulations: How the Dutch Experienced the Reduction of the Burdens Imposed by Regulations, in Nijsen, A. et al. (ed.) *Business Regulation and Public Policy. The Costs and Benefits of Compliance. Series: International Studies in Entrepreneurship*, Vol. 20, Springer, New York, pp. 1-14.
18. Wegrich, K. (2009). *The Administrative Burden Reduction Policy Boom in Europe: Comparing Mechanisms of Policy Diffusion*. London: London School of Economics and Political Science. p. 27.
19. World Bank Group (2007). *Review of the Dutch Administrative Burden Reduction Programme*. Washington: The World Bank. p. 22.

Acknowledgements

The research reported here reflects the main conclusions of the project LLII-070 "Reduction of Administrative Burden for Enterprises in Latvia – Lithuania Border Regions", which was developed thanks to Latvia–Lithuania Cross Border Cooperation Programme and cofinancing provided by th ERDF.

Estonian Farmers' Opinions on Their Environmentally Friendly Behaviour and Knowledge

Anne Poder[1], PhD student; **Argo Moor**, PhD, associate professor; **Leo Luks** PhD, associate professor
Institute of Economics and Social Sciences, Estonian University of Life-Sciences

Abstract. The topic of farmers' environmental knowledge and behaviour is highly relevant due to the recent environmental catastrophes being a major source of concern for wider public, and the rise of fuel and food prices, and the objectives set by the CAP having raised discussion of the role on agriculture and its connection with sustaining environment. The aim of the research is to study the opinions of Estonian farmers on their interest towards and knowledge on the nature and environmental behaviour based on their self-evaluation on the intensity of their agricultural production as well as characteristic traits of certain types of environmentally friendly behaviour to them. The data from a survey of Estonian farmers conducted in 2008 is used in the research. The relationships between the variables are analysed using the Kendall's rank correlation. On average, farmers have reported high interest and good knowledge on the nature and environmentally friendly behaviour like preference of Estonian products, sparing use of water and electricity, sorting of waste, composting, consumption of organic and preservative free food, and limiting the use of household chemicals that is very or rather characteristic of them. The significant positive correlations appeared between the variables of environmentally friendly behaviour.
Key words: environmental behaviour, environmental knowledge, Estonian agriculture, Kendall's rank correlation.
JEL code: Q50

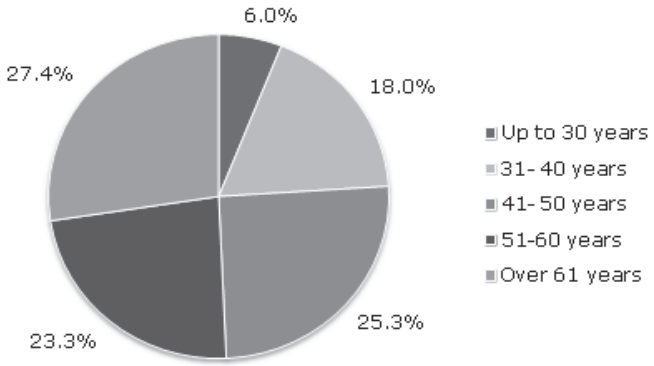
Introduction

Environmental issues have a considerable effect on the European agriculture as the improving the environment and the countryside is the environmental objective that forms one of the thematic axis of the EU Rural Development Policy 2007-2013 (Directorate-General ..., 2011). The Axis II accounts for 39% of the funds of Estonian Rural Development Plan 2007- 2013 (Ministry of Agriculture, 2008). In order to receive the supports, the farmers have to meet the cross-compliance requirements of statutory management requirements and keeping the land in good agricultural and environmental condition. Therefore, the operation of the farm is considerably affected by the environmental issues and policy goals. The push towards more sustainable, environmentally friendly agriculture is not only characteristic of Europe but concern in other countries as well (Palacios S.P.I., 2005; Kash J.P., 2008).

The environmental problems have pushed themselves to the public awareness starting from the accumulation of evidence on environmental deterioration from in the 1950s to the 1970s, when the environmental problems as crisis of survival rose to prominence (Eckersley R., 1992). The modern environmentalism was born in the 1970s, in the following 1980s and 1990s among the many developments and the appearance of new threats and environmental issues, the concept of sustainable development took central stage (United Nations Environment ..., 2002). It was defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on ..., 1987). The environmental catastrophes have kept this challenge in the public awareness. As the Eurobarometer (European Commission ..., 2011) on the environmental attitudes of European citizens state – the recent events such as the Gulf of Mexico oil spill, the Fukushima nuclear accident, and the rise of fuel and food prices have prompted the debate on human influence, energy and fuel costs, and nature of farming. The results of the Eurobarometer showed that 95% of the EU citizens felt that protecting the environment was important to them personally and most of people felt that more should be done for environment. Therefore, the environmental behaviour is a topic of wide interest. This has been demonstrated also by the several Estonian studies (Raudsepp M., 2003; Saastva Eesti Instituut, 2008) indicating that the majority of Estonians declare that they are concerned about the environmental issues.

However, while people express the concern, the environmental attitudes and knowledge do not necessarily materialise in people's behaviour or governmental policy (Harris P.G., 2008). As K.D. Arbuthnott (2010) points out that a change from short-term thinking to long term thinking and especially to actual behaviour— acting of long term intentions is needed in order to achieve more environmentally sustainable behaviour. K-W. Brand (2000) emphasises that the environmental consciousness does not automatically translate to environmentally sound behaviour because the behaviour is dependent on different individual, group, and context specific factors. One of the frameworks explaining the connection between the environmental values and behaviour has been proposed by S. Barr et al (2001) who suggested that the environmental values were connected with their environmental behaviour; yet, they were mediated by psychological and situational factors that affected the formulation of behavioural intentions and influenced the relationship between the intentions and behaviour.

[1] *E-mail address*: anne.poder@emu.ee.



Source: authors' calculations based on the survey data

Fig. 1. **Breakdown of the farmers according to their age groups, %**

The aim of the present research is to study the opinions of Estonian farmers on their interest towards and knowledge on the nature and their environmental behaviour based on their self-evaluation on the intensity of their agricultural production as well as characteristic traits of certain types of environmentally friendly behaviour to them. The data of a survey of Estonian farmers conducted in 2008 is used thereof. **The following research tasks** were set: to give an overview on the survey and the main characteristics of farmers; to study the farmers' opinions on their interest and knowledge on nature, the intensity of their agricultural production and their environmentally friendly behaviour; and to study the relations between the aforementioned variables themselves and between the farmers' age and agricultural land in order to detect significant relationships between the variables. **The following methods** have been used: descriptive method, analysis and synthesis, and graphical analysis; Kendall's rank correlation is used to study the relationships between the variables. **The delimitations**: the data on environmental behaviour are based on the self-report of the respondents that may differ from the actual behaviour. Therefore, the analysis is on the farmers' opinions. The disadvantages of bivariate correlations may also affect the study, e.g. the effect of some third variable on the pair of variables studied; besides the correlation does not mean causation.

Research results and discussion

1. Overview on the survey

In 2008, the survey "Agricultural Producers' Readiness for Change Through Ecological Awareness, Values and Different Practices" was financed by the Estonian Ministry of Agriculture (Institute of Economics ... 2009). The main goal was to study the farmers' opinions on environmental and economic issues as well as their values and practices. Only a part of the data collected during the survey is studied in the present paper. A postal questionnaire survey was used to the gather data. The sample was formed based on the Estonian Agricultural Registers and Information Board's list on receivers of agricultural supports in 2007: the farmers who had received single area payments and at least one another agricultural support were selected threof. A random selection was made among the producers and the total of 605 questionnaires was mailed out. While all the farmers in the selection had been informed beforehand, however, just 303 filled questionnaires were received back.

The analysis of socioeconomic data of the respondents showed that they presented the issues characterising problems of Estonian farmers well. For example, the average age of the farmers was high: 50.78 years. More than half of the farmers were older than 50 years (Figure 1) and only 6% of farmers were younger than 30, referring to one of the most pressing issues of Estonian agriculture today – the lack of young people taking over the farms.

The share of men and women among the respondents were 56.1% and 43.9% respectively. The share of commercial companies (public limited companies and private limited companies) among the respondents was just around 5%, all the other respondents were households (63.2%) and sole proprietors (close to 1/3). One third of respondents stated that they had virtually no revenue from the agricultural activity, indicating that those farmers were involved mostly in agriculture to sustain their lifestyle. This could be expected with more than half of the respondents declaring that they are households and so they use the availability of supports for the maintenance of their land and not for the development of commercial agricultural enterprise.

The smallest farmer declared that it only had 0.01 ha of agricultural land; the largest farmer had 5000 ha of land. The average size of agricultural land was 81.7 ha but the median for size of agricultural land was considerably smaller – 19 ha. The size of the farms varied considerably as demonstrated by the standard deviation that was 351.41 ha (Table 1). Generally, 22.6% of farmers in the study had more than 50 ha of land (Figure 2), however, the largest of them were that of over 1000 ha or even more.

Most of the producers were not highly specialised to a certain type of production as over half of the producers in the survey had combined production of crop production and livestock production.

2. Farmers' opinions on their environmental knowledge and behaviour

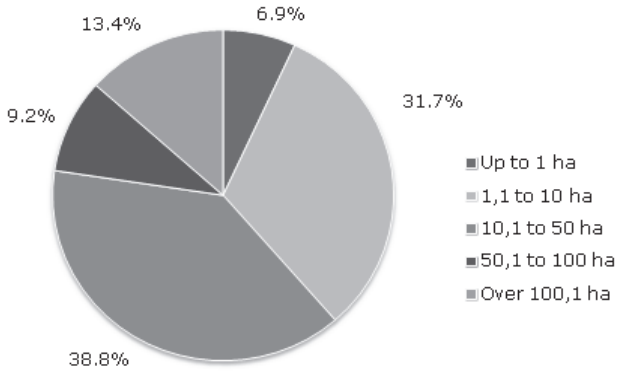
In the present paper, the knowledge of the farmers and their environmental behaviour are studied on the

Table 1

Descriptive statistics of the variables

Variable	Definition	Scale/ measurement	Mean	Std. deviation
age	Age of the farmer	years	50.78	13.31
area	Agricultural area of the holding	ha	81.73	351.41
intensity	How intensive is the current production?	5- totally intensive, 4- rather intensive, 3- in between, 2- rather organic, 1 - totally organic	2.34	1.09
interest	My interest towards the nature	5- very big interest, 4- rather big interest, 3- average, 2- rather little interest, 1- very little interest	3.81	0.72
knowledge	My knowledge on the processes of the nature	5- very good, 4- rather good, 3- average, 2- rather bad, 1- very bad	3.41	0.64
electricity	I use electricity sparingly	5- very characteristic of me, 4- rather characteristic, 3- characteristic on the average, 2- rather not characteristic, 1- not characteristic at all	3.99	0.84
water	I use water sparingly		3.81	0.86
chemicals	I limit the use of household chemicals		3.78	0.91
compost	I compost garden and kitchen waste		3.90	1.19
consumption	I rather consume organic and preservative free food		3.86	1.08
public transport	I use public transportation instead of the car		2.33	1.32
Estonian products	I prefer products of Estonian origin		4.34	0.79
waste	I sort my waste		3.91	1.06

Source: authors' calculations based on the survey data



Source: authors' calculations based on the survey data

Fig. 2. **Breakdown of the farmers according the size group of their agricultural land, %**

basis of the farmers' self-evaluation on the questions on their knowledge and interest of nature, the intensity of their current production and a set of statements related to characteristics of their environmentally friendly behaviour like sparing of water, electricity, composting etc. (Table 1). The farmers were asked to evaluate those questions in the scale of 5 (see Table 1 for the scales). Some of the statements (sparing of electricity, water, waste sorting etc.) used in the survey were partially based on the questions used in a survey in 2002 by Tallinn University (Raudsepp 2003). However, as that study used different scales for some of the questions, adjustments were made in the present study and the results are not comparable one-to-one.

Two thirds of all the farmers in the study reported that their interest towards the nature was either very

big or rather big, so the mean score was high – 3.81 in the scale of 5. However, their knowledge was lower on average (mean score 3.41).

The answers to the statements on the environmentally friendly behaviour showed that with the exception of the use of public transport, in case of all the other statements at least half of the respondents declared that this behaviour was very characteristic or rather characteristic to them and, thus, the mean scores were high. For example, totally 80% of respondents reported that they preferred (it is very or rather characteristic) local Estonian products and so, the statement had the highest mean score (4.34). Hence, at least in words, farmers considered that they generally acted in environmentally friendly way as they thought that they tended to save water, electricity, compost etc.

The use of public transportation was an exception, since 64.5% of farmers reported that it was not characteristic of them. It has to be taken into account that the issue is not connected so much with the environmental behaviour but with the poor availability of public transportation in rural areas of Estonia that makes very difficult to try to manage a farm while relaying on it. As own car is a must in most of the Estonian rural areas, this statement does not work very well as an indicator for environmental behaviour.

The farmers were also asked to self-report how intensive or organic their current production was. The lower the score (in the scale of 5), the more organic was the production. As 25.3% of farmers reported that their agricultural production is totally organic and 35.8% of farmers thought that it was rather organic, 15.5% of farmers reported that it is in between, 15.5% - that it is rather intensive and 2.6% - that is totally intensive, the intensity was generally low (mean score 2.34).

The relatively organic production can be expected if one takes into account that the majority of them were rural households and relatively small and so they mostly produce for their own consumption without the commercial outlet.

3. Correlation of the variables

One of the tasks of the research was to study if there were significant relationships between the age of farmer, agricultural area, intensity of the production, and the environmental behaviour (Table 1). It was decided to use the correlation analysis to study how the variables relate to one another. Especially in case of the 8 statements on how characteristic the environmentally behaviour is to the respondent, the expectation was that those variables are strongly correlated with one another. The initial analysis of the data showed that in case of some variables the assumption of normal distribution was violated, so the non-parametric Kendall's rank correlation and its coefficient Kendall's tau, τ, was used. The matrix (Table 2) presents the correlation coefficients and statistically significant relationships are noted by the asterisks and highlighted according to effect size in grey. Out of the 78 individual correlations, 50 correlations were statistically significant; however, in most cases the τ shows that the size of the effect is small.

The age correlated significantly with agricultural land, sparing use of electricity, use of public transportation, and consumption of organic and preservative free food, however, the size of the effect was small in all cases (coefficients between -0.09 and 0.15). Agricultural land correlated positively with the intensity, so one can assume that the larger is the farm, the more likely its production is intensive. Interesting was the small positive significant correlation between the land and knowledge of the nature, so the managers of larger farms are not necessarily less knowledgeable. A strong correlation appeared between the knowledge of the nature and the interest towards the nature as it can be logically assumed that those farmers who gave higher scores to their interest in nature also gave higher scores to their knowledge of the nature. The strongest positive relationship appeared between the sparing use of water and electricity ($\tau = 0.67$, $p < 0.05$), so one can assume that saving electricity and water is likely to go hand in hand.

The assessment on the intensity of the production was significantly negatively correlated with limiting the use of household chemicals, composting the garden and kitchen waste, consumption of organic and preservative free food, and use of public transportation. The effect size was small in all cases, besides the consumption of organic food in case of which the $\tau = -0.34$ showed a moderate effect.

The positive relationship appeared between the interest towards the nature and sparing use of electricity, limiting the use of household chemicals, composting, consumption of organic food, the preference of Estonian products, and waste sorting. One can assume that despite the small effect size, the people who are more likely to show interest in the nature, are more likely to behave in environmentally friendly manner. Interestingly, the assessments on the knowledge on nature correlated significantly only with three variables: interest, agricultural land, and composting but not with others.

In case of the 8 statements on how characteristic certain environmentally friendly behaviour is to the farmers, all the statements correlated positively with each other. Using the τ to measure the size of the effect, it can be seen that the strongest relationships were between the limiting of the use of household chemicals and sparing use of electricity and water; between consumption of organic and preservative free food and preference of Estonian products, and between composting of garden and kitchen waste and sorting of waste. So, one can conclude that the respondents did not contradict themselves as those are relations indicating logical behaviour.

Conclusions and recommendations

1. The aim of the present research was to analyse the opinions of Estonian farmers on their knowledge and interest of nature and environmental behaviour based on their self-evaluation on the intensity of their agricultural production as well as characteristic traits of certain types of environmentally friendly behaviour. The data of Estonian farmers' survey from 2008 was used. The majority of receivers of agricultural supports were rural households and sole proprietors with limited agricultural land producing for their own consumption mostly in organic or rather organic manner. Besides them, there was a

Table 2

Correlation matrix

Variable		age	area	intensity	interest	knowledge	electricity	water	chemicals	compost	consumption	public transport	Estonian products	waste
age	т	1												
area	т	-0.09 *	1											
intensity	т	-0.08	0.22 **	1										
interest	т	-0.02	0.08	-0.08	1									
knowledge	т	-0.02	0.10 *	-0.07	0.52 **	1								
electricity	т	0.12 **	-0.12 *	-0.10	0.13 *	0.05	1							
water	т	0.08	-0.11 *	-0.05	0.06	-0.01	0.67 **	1						
chemicals	т	0.07	-0.09	-0.16 **	0.14 **	0.09	0.42 **	0.44 **	1					
compost	т	0.03	-0.03	-0.13 *	0.21 **	0.14 **	0.39 **	0.36 **	0.34 **	1				
consumption	т	0.15 **	-0.15 **	-0.34 **	0.12*	0.03	0.31 **	0.24 **	0.42 **	0.38 **	1			
public transport	т	0.11 *	-0.17 **	-0.16 **	0.01	-0.06	0.19 **	0.18 **	0.14 **	0.10 *	0.23 **	1		
Estonian products	т	0.06	-0.02	0.02	0.13 *	0.07	0.25 **	0.19 **	0.28 **	0.29 **	0.44 **	0.12 *	1	
waste	т	0.06	-0.05	-0.06	0.14 **	0.06	0.40 **	0.34 **	0.31 **	0.49 **	0.30 **	0.13 **	0.26 **	1

* Correlation is significant at the 0.05 level (2-tailed);

** Correlation is significant at the 0.01 level (2-tailed)

Source: authors' calculations based on the survey data

small number of very large commercial enterprises that in most cases were highly intensive.

2. Farmers reported high interest and good knowledge on the nature on average and that environmentally friendly behaviour like preference of Estonian products, saving water and electricity, sorting of waste, composting, consumption of organic and preservative free food, and limiting the use of household chemicals is very or rather characteristic of them. This relates to the results of Raudsepp (2003) referring that Estonians generally declare high interest and knowledge on nature and willingness to act environmentally friendly way at least in words.
3. The inevitable shortcoming of the survey is that the lack of data may not disclose if the willingness for this behaviour would materialise in the actual behaviour. This could be partially addressed adding the data on the supports (organic production, environmental supports etc.) received by the individual farmers to the analysis.
4. The significant positive correlations between those variables of environmentally friendly behaviour showed that farmers did not contradict in their statements as those reporting environmentally friendly behaviour in case of one variable, reported it also in cases of other variables. This should be considered in the design of future surveys that could broaden the scope of questions to study the actual behaviour.
5. The variable of the use of public transportation does not reflect the environmentally friendly behaviour, when it is unclear if the suitable public transportation was available at all in the area. As the lack and quality of public transportation is a pressing issue for Estonian rural areas, the use of own car is not a question of choice but may be an only option if one wants to live in the countryside.
6. A strong positive correlation appeared between the interest in the nature and the knowledge on the nature. Interestingly enough, while the interest in

nature had significant relationship with most of the statements on the behaviour as can be logically expected, the knowledge on the nature had only significant correlation with the statement on composting the garden and kitchen waste but not with the other statements, as it would be logical to assume that better knowledge would manifest itself also in behaviour.

7. Age of the farmer and agricultural land produced some significant correlations but the effect size was small. In the further analysis, it should be studied if some other variables affect the results and may be better for the study with other types of correlations. For example, in case of the age and agricultural land, the type of enterprise (household, commercial enterprise etc) should be studied as it is more likely that older farmers have rural households with limited land and in the households they are more likely to have totally organic production for their own consumption. Another variable that could considerably be affecting the results may be economic well-being of the respondents as for those who are poorer, the saving of electricity, water, consumption of food they have produced themselves etc, may be resulting from the need to save money and from the lack of financial means, instead of environmental considerations.

Bibliography

1. Arbuthnott, K.D. (2010). Taking the Long View: Environmental Sustainability and Delay of Gratification. Analyses of Social Issues and Public Policy, Volume 10, Issue 1, pp. 4-22.
2. Barr, S., Gilg, A.W., Ford, N.J. (2001). A Conceptual Framework for Understanding and Analysing Attitudes Towards Household Waste-Management. Environment and Planning, Volume 33, Issue 11, pp. 2025–2048.
3. Brand, K-W. (2000). Environmental Consciousness and Behaviour: The Greening of Lifestyles. Redclift, M.R., Woodgate, G. (eds.) The International Handbook of Environmental Sociology. Cheltenham: Edward Elgar, pp. 204–217.
4. Directorate-General for Agriculture and Rural Development. (2011). Rural Development in the European Union. Statistical and Economic Information. Report 2011. Retrieved: http://ec.europa.eu/agriculture/agrista/rurdev2011/RD_2011.pdf. Access: 5 January 2012.
5. Eckersley R. (1992). Environmentalism and Political Theory: Toward an Ecocentric Approach. London: UCL Press, p. 288.
6. European Commission, TNS Opinion & Social. (2011). Special Eurobarometer 365. Attitudes of European Citizens Towards the Environment. Retrieved: http://ec.europa.eu/environment/pdf/EB_summary_EB752.pdf. Access: 15.December 2011.
7. Harris P.G. (2008). Green or Brown? Environmental Attitudes and Governance in Greater China. Nature and Culture, Volume 3, Issue 2, pp. 151–182.
8. Institute of Economics and Social Sciences. (2009). Agricultural Producers' Readiness for Change Through Ecological Awareness, Values and Different Practices. Survey report. Tartu: Estonian University of Life-Sciences.
9. Kash, J. P. (2008). Enemies to Allies: The Role of Policy-Design Adaptation in Facilitating a Farmer–Environmentalist Alliance. The Policy Studies Journal, Volume 36, Issue 1, pp. 39- 60.
10. Ministry of Agriculture. (2008). Estonian Rural Development Plan 2007- 2013. Tallinn. Retrieved: http://www.agri.ee/public/juurkataloog/MAK/RDP_2007-2013.pdf. Access: 5 January 2012.
11. Palacios S.P.I. (2005). Farmers' Attitudes towards Sustainable Agriculture in Japan. Japanese Studies, Volume 25, Issue 2, pp. 187- 202.
12. Raudsepp, M. (2003). Kui keskkonnasobralikud on eestlased? (How Environmentally Friendly are Estonians?) Oja, A. (ed.) Keskkonnaeetikast saastva uhiskonna eetikani. SEI valjaanne nr. 5. Tallinn: Saastva Eesti Instituut, pp. 109- 120.
13. Saastva Eesti Instituut, (2008). Inimene ja keskkond 2007. (Human and Environment 2007) SEI valjaanne nr. 10. Retrieved: http://www.seit.ee/failid/311.pdf. Access: 19 December 2011.
14. United Nations Environment Programm. (2002). Global Environmental Outlook 3. London, Sterling: Earthscan Publications. Retrieved: http://www.unep.org/geo/GEO3/english/pdfs/prelims.pdf. Access: 15 January 2012.
15. World Commission on Environment and Development. (1987). Our Common Future. Oxford: Oxford University Press, 400 p.

Acknowledgement

The survey "Agricultural Producers' Readiness for Change Through Ecological Awareness, Values and Different Practices" was financed by the Estonian Ministry of Agriculture's within the national programme: "Agricultural Applied Research and Development Activity in 2004- 2008", Contract no. 8-2/T8024MSMS.

Development of Business Incubators: Case Study of Latvia

Dina Popluga[1], Dr.oec.
Faculty of Economics, Latvia University of Agriculture,
Ligita Melece, Dr.oec.
Latvian State Institute of Agrarian Economics

Abstract. Business incubation is increasingly playing an important role for new start–ups around the globe. In a growing number of countries, incubators that support the development of young, innovative firms are introduced as a way to strengthen the entrepreneurial activity (number of start–ups) and the ability for new companies to survive. This paper focuses on exploring the current situation in business incubation in Latvia. The research was based on the study of the regulatory enactments of the Republic of Latvia, scientific publications, and special literature related to the research topic. Adequate research methods – analysis and synthesis, logical and abstract constructive, data interpolation and expert - were used to carry out this study. The results of study showed that the development of business incubators in Latvia dated back to 1993 when the first establishment of this kind – the Latvian Technological Centre – was founded. Since that time, the number of business incubators in Latvia has grown to 17 (with 18 developed subsidiaries). It was also concluded that business incubators were distributed geographically throughout Latvia, thus providing balanced regional development. Finally, networking, which is in line with the latest development trends of business incubators all around the world, can be mentioned as a positive development tendency of Latvian business incubators.
Key words: business incubators, innovation, Latvia.
JEL code: O31, O38.

Introduction

Once the famous economist J.A. Schumpeter (1962) has said: "*The fundamental impulse that keeps the capital engine in motion comes from the new consumers' goods, the new methods of production and transportation, the new markets … [The process] incessantly revolutionises from within, incessantly destroying the old one, incessantly creating a new one.*" This idea of J.A. Schumpeter clearly underlines the important role that new firms play in the development of economies, and particularly, in the development of certain industry sectors and geographic regions. It has been estimated that young firms are a major source of new jobs, sales and innovation in most economies (Stangler, Litan, 2009; Davis et al., 2008; OECD, 2000). However, young firms are fragile and very often new entrepreneurs face serious barriers to survive and thrive during the gestation period (Pena, 2004). To respond to this general concern and to stimulate new business creation, business incubators have emerged around the world.

The phenomenon of business incubators appeared spontaneously in the United States in the 1950s and 1960s (Sofouli, Vonortas, 2007). Since then, many European governments have tried to emulate this process and generate conditions appropriate for science and technology parks, technopoles and other similar concentrations of scientific, technological, industrial, and commercial activities (Abetti, 2004). Targeted European Union (EU) action towards development of new firms and innovative environment has been successful and today there are more than 1000 business incubators in the EU. The EU takes the second place after the North America where the highest number of business incubators concentrates compared with other regions. This can be explained by the strong tradition of incubators as the first ones appeared in the United States (Callegati et al., 2005).

To understand the meaning of business incubators, Hackett and Dilts (2004) offer the following definition: "A business incubator is a shared officespace facility that seeks to provide its incubators (i.e. ''portfolio–'' or ''client–'' or ''tenant–companies'') with a strategic, value–adding intervention system (i.e. business incubation) of monitoring and business assistance. This system controls and links resources with the objective of facilitating the successful new venture development of the incubators, while, simultaneously containing the cost of their potential failure". Thus, business incubators are designed specifically to help start–up firms. They usually provide:

— flexible space and leases, many times at very low rates;
— fee–based business support services, such as telephone answering, bookkeeping, secretarial, fax and copy machine access, libraries and meeting rooms;
— group rates for health, life and other insurance plans;
— business and technical assistance either on site or through a community referral system;
— assistance in obtaining funding;
— networking with other entrepreneurs.

Therefore, it is not surprise that in recent years the topic of business incubation has been examined by a growing body of literature (NESTA, 2008; Sofouli, Vonortas, 2007; Pena, 2004; Hackett, Dilts, 2004). Most of these studies provide detailed case study analyses where the

[1] *E-mail address*: dina.popluga@llu.lv.

unit of analysis is the incubation centre. However, most of scientific literature on business incubators covers mainly developed OECD member countries (OECD, 1999); some newly industrialising countries like the Middle East and the Central Asia (Johnsrud, Springs, 2004) and the economies in transition (Sipos, Szabo, 2006). In between these, there is a large set of small and medium–sized countries, like new European Union Member States, for which one knows less. The following **hypothesis** – business incubators in Latvia facilitate the emergence of new and innovative companies is highlighted to appraise the current situation.

Defined hypothesis emphasised the **aim** of the study – to explore the current situation on business incubation in Latvia.

The following research **tasks** are defined consistent with the set aim:

— to summarise the development tendencies of business incubators in Latvia;
— to characterise the specifics of Latvian business incubators;
— to assess the importance and necessity of business incubators in the formation of new enterprises.

The regulatory enactments of the Republic of Latvia, scientific publications, and special literature related to the research topic were used to meet the study objectives. The following adequate research methods: analysis and synthesis, logical and abstract interpretation and data interpolation were used to carry out this study.

Research results and discussion

Regional and national competitiveness and economic growth are increasingly dependent on the underlying conditions supporting risk–taking and innovative ideas (Callegati et al., 2005). As a result, innovation has become a priority for firms, organisations, and governments in most countries throughout the world, including Latvia. This, in turn, has contributed to increased political and economic recognition of business incubation as essential element for strengthening the development of young, innovative firms.

1. Development of business incubators in Latvia

The development of business incubators in Latvia dates back to 1993 when the first establishment of this kind – the Latvian Technological Centre – was founded (with funding provided by the Ministry of Education and Science). At that time, the Latvian Technological Centre was the first and only on the innovation and technology development oriented business support structure in Latvia. Currently, the Latvian Technological Centre continues to provide incubation services (currently running 27 companies), as well as it works with other innovation–related activities, for instance, it is involved in the Enterprise Europe Network.

In 1996, the Latvian Technology Park partially fulfilling the business incubation function was established at Riga Technical University. The Latvian Technology Park still partially fulfils the functions of the incubator, as one of its activities is the creation and development of innovative companies.

In 1997, Liepaja business incubator was established; however, in 2001, it was closed up due to the failure of its operational policy and lack of funding.

New business incubators in Latvia were not developed in the following years. Latvia's accession to the European Union in 2004 and access to the EU co–financing gave a new impetus to the development of this area. In 2006, three new business incubators were established – Livani Engineering and Innovation Centre, Ogre Business and Innovation Incubator, and Ventspils Business Incubator through the financing from the PHARE 2003 programme for Economic and Social Cohesion.

Active development of new business incubators continued in 2007, when the Ministry of Economics launched the implementation of "Innovation Centre and Business Incubator Development Programme". During 2007 and 2008, five innovation centres and six business incubators were established in order to improve the innovation infrastructure and provide incubation services to young innovative companies in their formation and development stage. During this period, the following business incubators were established: Valmiera Business Incubator, Jelgava Innovation Centre Business Incubator, Tukums Business and Technology Incubator, Business and Technology Incubator "Valdeka BITIS" of Latvia University of Agriculture, Riga Biomaterials Innovation and Development Centre Business Incubator, and VHTP Business Incubator in Ventspils.

In 2009, the implementation of new support programme "Business Incubators" was launched as the move towards development of new business incubators. Generally, this programme addresses simultaneously two challenges faced by the national economy of Latvia – first, the low number of innovative companies, and, second, the marked regional disparities (including uneven distribution of entrepreneurial and innovative activities) present in the country. It is intended that this support programme will work until 2014 and its total costs are LVL 20.2 million, of which 85% is financed from the European Regional Development Fund and 15% from the Latvian State budget. Overall, nine contracts for offering the business incubator services have already been signed in the framework of this programme.

Although business incubation in Latvia is still in its early stage of development and most incubators have started operating in the early 2000s, the previous and current state policy as well as business incubator's development intensity may be evaluated as very successful. In 2011, there were already developed 17 business incubators in Latvia. Furthermore, several business incubators have expanded their activity by setting up subsidiaries in other cities or rural areas; thus creating network of business incubators in Latvia. Such progress in the establishment of business incubator network should be continued, as it brings the numerous advantages to improve the service quality for business incubator, and is in line with the latest development trends of business incubators all around the world. According to Rong (2006), the establishment of business incubator network brings the following advantages:

— for the new established incubator, the network could improve its management and service capability through exchange of experience;

Source: authors' construction

Fig. 1. **Territorial distribution of business incubators in Latvia, 2011**

— in the incubator network, there are much more tenant companies than in a single incubator, which means that there will be much more potential clients for incubator;
— it is possible to reduce the cost of services through the network;
— it is possible to create some special service programmes that are impossible to have in a single incubator.

More detailed information on the territorial distribution of business incubators and established business incubators' networks is shown in Figure 1.

From the information summarised in Figure 1 it can be concluded that business incubators are fairly evenly located all over the territory of Latvia, thus, creating favourable development conditions for those firms, which are located outside Riga and the major cities. Overall, at present about 580 new firms operate in 17 business incubators and their developed 18 subsidiaries. If one compares Latvia with other countries, then, for example, in Chile, which is almost eight times larger than Latvia, there are approximately 25–30 incubators primarily supported by a coalition of the government and universities. It is considered that business incubation in Chile is nascent, but growing business incubation industry makes it the second largest incubation market in the South America after Brazil (Chandra, Narczewska, 2009). Against this background, the situation in Latvia can be regarded as promising. More information on the specifics of Latvia's business incubators is analysed in the next sub–part.

2. Specifics of Latvia's business incubators

According to Lalkaka (2001), three "generations" of business incubators can be identified:

— in the 1970s and early 1980s, incubators were basically providing selected firms with low–priced room and collective services;
— in the 1990s, incubators started benefiting from additional facilities, such as counselling, training and networking services, and access to professional support and seed capital;
— starting from 1998, a new incubation model appeared in parallel, aimed at mobilising information and communication technologies (ICT), focusing exclusively on high–tech based ventures and relying more and more on intangible assets and services.

If one looks at the situation in Latvia, then Latvian business incubators represent a combined second and third generation of incubators. They seek to promote job creation, economic development, innovation, and high growth by providing a wide variety of services that are typical to most incubators: physical space and infrastructure, business consulting and training, help with funding applications (government and private), patenting assistance and protection, technology transfer, and networking. The main focus, however, seems to be on internal and external networking, assisting incubates with finding funding, and providing specialists expertise to the start–ups.

Assessing the activity of Latvian business incubators, it appears that their activity is mainly based on the development of businesses with very broad-spectrum activities. For example, 10 business incubators or 59%

Table 1

Characteristics of business incubators in Latvia, 2011

Region	Number of incubators	Number of incubated firms	Priority areas
Riga	8	208	– Supporting areas determined by the Ministry of Economics of the Republic of Latvia[2] – High technologies – Electronics and electrical engineering, ICT – Creative industry
Zemgale	2	96	– Supporting areas determined by the Ministry of Economics of the Republic of Latvia – Agrobiotechnologies and environmental technologies
Kurzeme	3	116	– Supporting areas determined by the Ministry of Economics of the Republic of Latvia – ICT, electronics, telecommunications, mechanical engineering, automation, computer design and satellite technologies – Manufacturing, computers, scientific research, architecture and design, design services
Latgale	2	93	– Supporting areas determined by the Ministry of Economics of the Republic of Latvia
Vidzeme	2	68	– Supporting areas determined by the Ministry of Economics of the Republic of Latvia – ICT, products with high added value, in–depth woodworking, design, environmental technologies

Source: authors' summarisation

of all business incubators support only firms representing industries such as mining industry and quarrying; manufacturing; electricity; gas supply; heating and air conditioning; water supply; wastewater and waste management, remediation; construction; information and communication services; professional, scientific and technical services; administrative and support services as well as other services.

While five business incubators or 29% of all incubators support firms with narrower specialisation – those that run only on high–tech field. One business incubator supports firms dealing with agrobiotechnologies and environmental technologies.

In Latvia, a specific business incubator that supports only the creative industry firms has been operating since 2010. These are the companies operating in architecture, design, film, art, music, TV, radio, interactive media, advertising, computer games and interactive software, heritage, culture, education, entertainment, and leisure areas.

More detailed information on the number of business incubators in the regions of Latvia, the number of incubated firms as well as the priority areas of Latvian business incubators are summarised in Table 1.

In general, Latvian business incubators mainly support business ideas related to different types of technologies: ICT, environment, telecommunications, electronics, engineering, computer design etc., as well as areas related to production – creating products with high value added and export opportunities. Incubators do not support agricultural production, fisheries and aquaculture, coal, shipbuilding, financial intermediation, trade, commercial, transport, alcoholic beverages, tobacco, and gambling.

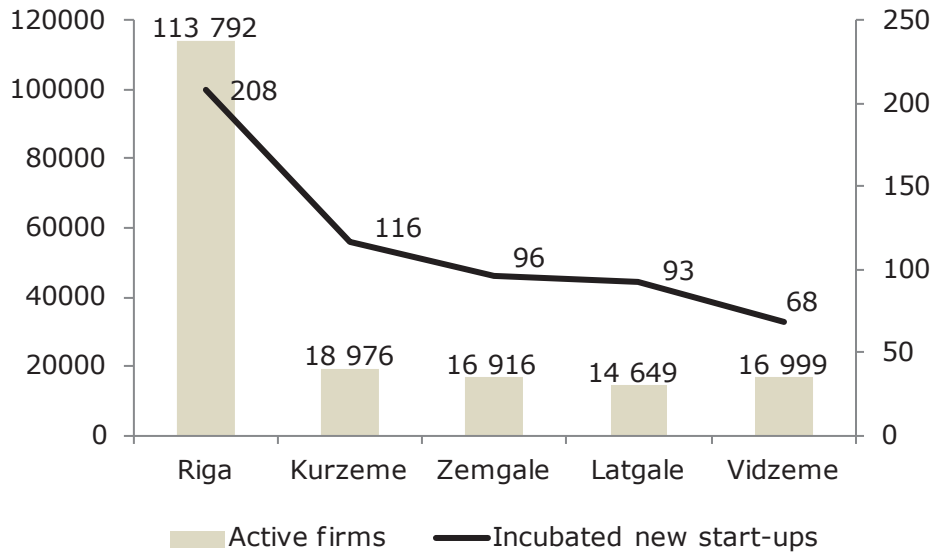
However, practice shows that it is not easy to attract technology–intensive manufacturing companies in Latvia. Demand for business incubator services mostly exists in the areas outside the high–tech industry, as production companies are less active. Therefore, this is the key area where Latvian business incubators shall continue developing.

3. Role of business incubators in the formation of new and innovative firms in Latvia

According to statistical data (Lursoft, 2012) on January 1, 2012, there were operating 181 332 companies in Latvia. Most of them or 63% are located in Riga region, followed by Kurzeme region with 10% of all active companies, and Vidzeme and Zemgale regions with 9% of all companies. The lowest entrepreneurial activity can be observed in Latgale region – with 8% of all companies located there. Unfortunately, the statistical information does not disclose the number of innovative and technologically oriented companies, and the fact whether their produced products or services are of considerable value added.

However, it is known that at present about 580 new and innovative companies operate under the umbrella of business incubators. Although, they represent only

[2] Mining industry and quarrying; manufacturing; electricity; gas supply; heating and air conditioning; water supply; wastewater and waste management, remediation; construction; information and communication services; professional, scientific and technical services; administrative and support services as well as other services.



Source: authors' construction based on Lursoft database

Fig. 2. **Total number of companies and incubated new start–ups in the regions of Latvia, 2011**

0.32% of the total number of companies, it indicates on good start in the development of science and innovation based entrepreneurship. The breakdown of total number of companies and incubated new start–ups by regions of Latvia are represented in Figure 2.

According to the data provided by the European Commission (2002), the operation of European business incubators has assisted in creating 29 000 new sustainable jobs every year in companies. Similar situation can be observed in Latvia – business incubators have positively affected the labour market and contributed to the employment in the regions of Latvia. According to the information provided by the Ministry of Finance of the Republic of Latvia (Finansu ministrija, 2010), emerging small and medium sized companies having received the support from business incubators have created 621 new workplaces by Quarter 2 of 2010. This means that business incubators foster not only the development of new start–ups but also a balanced regional development. Similar opinion has Callegati with co–authors (2005) emphasising that in societies with little entrepreneurial dynamism (like Latvia), the role of business incubators has turned out valuable for local development. For example, Valmiera Business Incubator has proven itself as an effective business support tool – more than 60 new jobs have been created in the region as well as a significant amount of taxes has been provided both from the domestic and export transactions. Furthermore, it has been proved that such incubated companies are much more viable than enterprises set up outside incubators. According to empirical estimations (NESTA, 2008) new firms drive the employment growth, with 4% of surviving start–ups responsible for 50% of the jobs created by all new firms over a 10–year period.

Despite the progress achieved, the number of incubated new start–ups as well as innovative companies in both Riga and other regions of Latvia lags far behind the EU level. However, a similar situation can be observed in other new EU Member States, like, Greece (Sofouli, Vonortas, 2007). Therefore, taking into account the current government policy, which anticipates continuation of support for the development of business incubators in Latvia, it is expected that the number of new and innovative companies will continue to grow within the next two years. It is regarded as a positive signal for the regional development and overall development of Latvian economy.

Conclusions

1. The first business incubator in Latvia, Latvian Technological Centre, was started in 1993 by the Ministry of Education and Science, with the objective to support innovative and technology-based businesses and to create new jobs. The number of business incubators in Latvia has grown to 17 (with 18 developed subsidiaries) since that time.
2. The incubators are distributed geographically throughout Latvia, so that every region has the capacity, resources, and expertise to support potentially high–impact and creative business.
3. The focus of Latvian incubators is on a wide variety of industries: ICT, environment, telecommunications, electronics, engineering, computer design etc., as well as areas related to production – creating products with high value added and export opportunities. However, practice shows that it is not easy to attract technology–intensive manufacturing companies in Latvia. Demand for business incubator services are mostly in the areas outside the high–tech industry, as production companies are less active.
4. Business incubation in Latvia is still in its early stage of development and most incubators have started operating in the early 2000s. Therefore, historically there has not been a strong networking tradition. Only in the past few years several business incubators have expanded their activity by setting up subsidiaries in other cities or rural areas, thus

creating network of business incubators in Latvia. Such progress in the establishment of business incubator network should be continued, since it brings the numerous advantages to improve the service quality for business incubator, and is in line with the latest development trends of business incubators all around the world.

5. In Latvia, business incubators have a positive development of new companies, thus, affecting the labour market and contributing to the development of the regions of Latvia –more than 620 new jobs have been created and a significant amount of taxes from both the domestic and export transactions has been provided through the operation of business incubators.

Bibliography

1. Abetti, P.A. (2004). Government–supported Incubators in Helsinki Region, Finland: Infrastructure, Results and Best Practices. *Journal of Technology Transfer*, Volume 29, pp. 19–40.
2. Callegati, E., Grandi, S. and Napier, G. (2005). *Business Incubation and Venture Capital – An International Survey on Synergies and Challenges*. Rome: IPI, p. 49.
3. Chandra, A. and Narczewska, M. (2009). *Business Incubator Financing and Financial Services in Chile*. Indiana: Networks Financial Institute, p. 23.
4. Davis, S.J., Haltiwanger, J., Jarmin, R. (2008). Turmoil and Growth: Young Businesses, Economic Churning and Productivity Gains. Kansas City: Ewing Marion Kauffman Foundation, p. 12.
5. European Commission (2002). *Benchmarking of Business Incubators*. Brussels: European Commission, p. 47.
6. Finansu ministrija (2010). Finansu ministrijas informativais zinojums par arvalstu finansu resursu (ES strukturfondu un Kohezijas fonda, Eiropas Ekonomikas zonas finansu instrumenta, Norvegijas valdibas divpuseja finansu instrumenta un Latvijas un Sveices sadarbibas programmas) apguvi lidz 2010.gada 30.junijam. Retrieved: www.mk.gov.lv/doc/2005/FMzino_110810_ES_fondi.2237.doc. Access: 30 January 2012.
7. Hackett, S.M. and Dilts D.M. (2004). A Systematic Review of Business Incubation Research. *The Journal of Technology Transfer*, Volume 29, Number 1, pp. 55–82.
8. Johnsrud, C., Springs H. (2004). Business Incubation: Profitability vs. Economic Development. *Proceedings of "International Association for Management of Technology"*, Washington, April. pp. 1–15.
9. Lalkaka, R. (2001). Best Practices in Business Incubation: Lessons (yet to be) Learned. International Conference on Business Centres: Actors for Economic & Social Development. Brussels, 14–15 November. Retrieved: http://www.bii.ge/eng/studies_&_Papers/LALKAKA_UK.pdf. Access: 4 January 2012.
10. Lursoft (2012). Lursoft statistika. Retrieved: http://www.lursoft.lv/lursoft–statistika/Aktivo–un–likvideto–uznemumu–skaits–sadalijuma–pa–Latvijas–rajoniem&id=52. Access: 4 January 2012.
11. NESTA (2008). Business Incubation in Challenging Times. Retrieved: http://www.nesta.org.uk/library/documents/Business–incubators.pdf. Access: 4 January 2012.
12. OECD (1999). *Business Incubation: International Case Studies*. Paris: OECD. p. 176.
13. OECD (2000). Enhancing the Competitiveness of SMEs through Innovation. Report from Conference of Ministers responsible for SMEs and Industry Ministers Bologna, Italy, 14–15 June 2000, p. 37.
14. Pena, I. (2004). Business Incubation Centres and New Firm Growth in the Basque Country. *Small Business Economics*, Volume 22, Numbers 3–4, pp. 223–236.
15. Rong, W. (2006). Making Incubators More Effective: China's Networking Systems for Business Incubators. Retrieved: http://www.techmonitor.net/tm/images/8/8c/06july_aug_rong.pdf. Access: 4 January 2012.
16. Schumpeter, J.A. (1962). *Capitalism, Socialism and Democracy.* 3rd edition. New York: Harper Perennial, p. 431.
17. Sipos, Z., Szabo, A. (2006). Benchmarking of Business Incubators in CEE and CIS Transitio Economies. Retrieved: http://www.erenet.org/papers/download/benchmarkingbusinessincubation.pdf. Access: 3 January 2012.
18. Sofouli, E., Vonortas, N.S. (2007). S&T Parks and Business Incubators in Middle–sized Countries: the Case of Greece. *The Journal of Technology Transfer*, Volume 32, pp. 525–544.
19. Stangler, D., Litan, R.E. (2009). *Where Will the Jobs Come From?* Kansas City: Ewing Marion Kauffman Foundation, p. 16.

Impact of the European Union Emissions Trading System on Sustainable Development of Latvia's Agriculture

Ilze Pruse[1], PhD candidate
University of Latvia

Abstract. Latvia has been included in the European Union Emissions Trading System (EU ETS) since 2005. Participants of the EU ETS are companies operating in certain economic sectors – mainly, power sector or industry sector but some also in other sectors. The aim of this paper is to analyse general impact of the EU ETS on sustainable development of Latvia's agriculture. At the beginning of this paper, the author has described the concept of sustainable development as well as outlined general requirements of the EU ETS from the perspective of agriculture. Further, the author has identified whether some of the participants of the EU ETS that are registered in Latvia are agricultural companies and analysed the general impact of the EU ETS on their operation. The author has concluded that although the EU ETS does not have a significant impact on Latvia's agriculture, in some particular situations the EU ETS might have contributed towards the sustainable development of Latvia's agricultural companies or at least created possibilities for such contribution.
Keywords: tradable permits' system, European Union Emissions Trading System, sustainable development, agriculture.
JEL code: Q12, Q27

Introduction

The European Union Emissions Trading System (EU ETS) covers around 11 000 installations in 30 countries (27 European Union Member States as well as Iceland, Liechtenstein, and Norway). According to estimations of the World Bank, the value of the EU ETS transactions' main currency – European Union Allowances (EUAs) – was USD 119.8 billion in 2010 (Linacre N., Kossoy A., Ambrosi P., 2011). Participation in the EU ETS may bring many opportunities for profits but at the same time, it is important to recognise that it imposes also certain responsibilities.

One of the primary economic sectors for every country is agriculture. In Latvia, in 2010 the agriculture produced LVL 510 056 thousand (in current prices) or 4% of Latvia's Gross Domestic Product and provided work places for around 9% of Latvia's working population. The total number of companies operating in this area was 972, though, there were also 306 individual entrepreneurs, 14 793 self-employed persons etc. (data from Latvia's Central Statistical Bureau). With regard to the above mentioned, it is important to research the EU ETS impact on Latvia's agriculture.

The aim of this paper is to analyse the general impact of the EU ETS on the sustainable development of Latvia's agriculture. The hypothesis of this paper – the EU ETS does not have a significant impact on the sustainable development of Latvia's agriculture. The main tasks of the paper are to collect the relevant data with respect to the EU ETS and agricultural companies registered in Latvia, to determine and to analyse their interconnectedness, *inter alia*, using methods of statistical analysis (dynamics analysis, correlation analysis etc.), and to discuss the obtained results.

Taking into account the fact that the EU ETS started operation in 2005, the principal analysis within this paper is done for the period of 2005-2010. Unless specified otherwise, the analysis is based on the data obtained from the official database regarding companies registered in Latvia (*Lursoft*), the official web site of the EU ETS and the official web site of its Community Transaction Log (CTL) hosted by the European Commission (data about installations and transactions), and leading provider of carbon credits markets' news and research – *Thomson Reuters Point Carbon* (data about the EUAs' prices). Being aware of the fact that on 30 May 2011 European Commission filed an appeal, the author does not consider the implications of the ruling of the Court of Justice of the European Union dated 22 March 2011, which implies that Latvia is to receive 14.3 million additional EUAs (*Official Journal of the European Union*, C 139/15, 7 May 2011). Due to the lack of data on companies' output and costs, the EU ETS impact on companies' production is analysed considering the investments in fixed assets (assumingly – technologies), while the EU ETS impact on companies' finance – considering their turnover and profits. For the purpose of this paper, costs of transactions are not taken into account, within estimations of profits / losses from the trading of EUAs.

This paper has been supported by the European Social Fund within the project "Support for Doctoral Studies at the University of Latvia".

Research results and discussion

Concept of sustainable development

The most widely accepted definition of sustainable development states that sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations, 1987). However, interpretations of this definition are different. According to the author's observations, interpretations of the definition of sustainable development are oriented towards either environment, economy, or social aspects. These three

[1] *E-mail address*: ilze.pruse@yahoo.com

groups of interpretations correspond also to the most frequently distinguished three dimensions of sustainable development. However, it is interesting to note that all interpretations have some conceptual contiguity with justice, for example, G.B. Asheim's interpretation (Asheim G. B., 1991) as well as D. W. Pearce's, E. W. Barbier's, and A. Markandya's interpretation (Pearce D. W., Barbier E. W., Markandya A., 1990) implies justice between present and future generations, B.Hettne's interpretation (Hettne B., 1990) – justice between problems' solutions and culture, ecology etc. With regard to the above mentioned, the author concludes that in order to assess sustainability of the development, it is essentially important to consider environmental, social, and economic dimensions with a view that in every and each of them it is important to ensure justice to the extent possible. For example, to use resources in a manner that there are enough of them for everyone, i.e. if economically viable and socially acceptable, use renewable resources and reduce hazardous impact on the environment, whenever possible.

General requirements of the EU ETS and agriculture

The EU ETS is the world's largest tradable permits' system, whereas tradable permits' system is an economic instrument that establishes a tradable permits' market with an aim at minimum costs to achieve the rationalisation of the volumes of certain assets denoted by permits. The concept of tradable permits' systems first was formulated at the end of the 1960s by T. Crocker (Croker T., 1966) and J. Dales (Dales J., 1968), and later formalised by W. D. Montgomery (Montgomery W. D., 1972) and T. H. Titenberg (Titenberg T. H., 1985). Main elements of tradable permits' systems are tradable permits, permits' registries, and participants of permits' markets (either direct or indirect). The author concludes that the principal idea of the tradable permits' systems complies with the essence of the concept of sustainable development. The author recognises that considering the specifics of agricultural companies most likely they can be only direct participants of the tradable permits' systems, i.e. they can be potential sellers and buyers of permits (they cannot be indirect participants – supervision authorities, verifiers, exchanges, brokerage companies etc).

The EU ETS promotes reductions of greenhouse gas (GHG) emissions in a cost-effective and economically efficient manner. The author recognises that since large amount of GHG emissions arise from agriculture, this sector conceptually may be a part of the EU ETS. Whereas assuming that the reduction of GHG emissions is not viable without improving and rationalising the company's operation, the reduction of GHG emissions definitely can also contribute to sustainable development of agricultural companies.

The EU ETS covers emissions from installations such as power stations, combustion plants, oil refineries, and iron and steel works as well as factories making cement, glass, lime, bricks, ceramics, pulp, paper, and board. Yet, from 2012, it includes also GHG emissions from air flights to and from European airports (Directive 2003/87/EC, OJ L 275, 25 October 2003). The author recognises that agriculture is not listed as one of the sectors covered by the EU ETS. However, installations covered might be used therein; for example, combustion plants might be used to produce energy for the daily operation of agricultural company. In addition, agriculture might be influenced also by the EU ETS indirectly, i.e. the EU ETS covers energy sector as well as such energy intensive industry sector as European fertiliser industry.

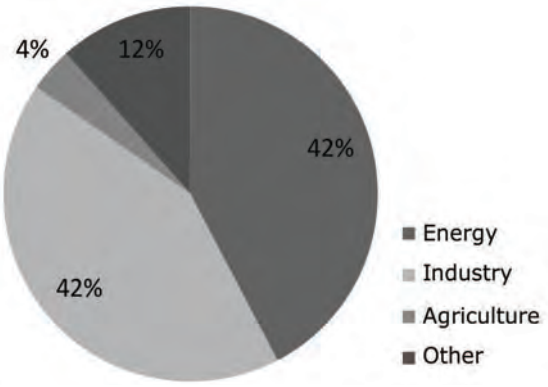
The EU ETS direct participants are the operators of respective installations, hereto, there are not only mandatory but also voluntary participants (Directive 2003/87/EC, OJ L 275, 25 October 2003). The author recognises that the EU ETS is providing opportunity for anyone who is interested, i.e. agricultural companies, to participate therein.

The EU ETS is an internationally regional "cap and trade" type tradable permits' system because of the absolute cap on amount and the ability to trade permits under the cap, keeping in mind the requirement that the amount of permits, which corresponds to the predetermined cap must be surrendered or else penalty shall apply (Markandya A., Harou P., Bellú L. G., Cistulli V., 2002). So far, most permits (EUAs) have been allocated to participants of the EU ETS free of charge — at least 95% during the first period and at least 90% in the second period. However, in future more and more EUAs will be auctioned. Operation of the EU ETS is structured into partly linked trading periods – the first period was from 2005 to 2007, the second one is from 2008 to 2012, but the third one will start in 2013 and continue until 2020. The EUAs allocated for the current year are issued by the end of each year's February. Permits issued for the first trading period are valid for the use in the first trading period and after that they are cancelled; whereas, EUAs issued for the second trading period will be valid also in the third trading period. EUAs are to be used for covering installations' GHG emissions (surrendering of EUAs); whereas respective emission amounts are established through emission audits (verifications). Each installation has an obligation to surrender EUAs equal to the total emissions in each calendar year, as verified, within four months following the end of that year (Directive 2003/87/EC, OJ L 275, 25 October 2003). The author recognises that there are equal requirements for all participants of the EU ETS, *inter alia*, potential agricultural companies; however, in specific cases specific conditions may apply.

The author concludes that acknowledging the general mechanism of the operation of the EU ETS, this system may influence agriculture through agricultural companies participating therein or through companies participating therein and providing services to agricultural companies. However, further in this article unless specified otherwise due to the lack of data on the composition of costs of agriculture companies, the author shall not consider the latter and analyse companies participating in the EU ETS whose primary economic sector of operation is agriculture, according to the data by *Lursoft* and 2.0 revision of statistical classification of economic activities in the European Community (NACE).

Latvia's agricultural companies being participants of the EU ETS

Totally, 79 companies and 1 municipal agency registered in Latvia have participated in the EU ETS



Source: author's construction based on the data from CTL and Lursoft

Fig. 1. **Companies participating in the EU ETS according to their economic sectors of primary operation[2]**

since 2005. However, some of them owned more than one installation participating in the EU ETS. The total number of installations ever participated in the EU ETS from Latvia are 108. More than half of these installations (58 installations or 55%) are operated in the energy sector and that corresponds to 42% of companies (33) participating in the EU ETS (Figure 1).

Equal number of companies, i.e. 33 companies, are industry sector companies but they operate only 31 installations (30%), mostly manufacturing industry. Three installations (4%) are operated in the agricultural sector and each of them is owned by different company (*Balticovo JCS*, *Jekabpils labiba JSC,* and *Sabiedriba Marupe Ltd*). Yet, 13 installations (12%) owned by 9 different companies (12%) are from other sectors, e.g. transport sector (3 installations), construction sector (2 installations), and others. In addition, it is important to mention that some companies, *inter alia*, one company from agricultural sector (*Carnikavas darznieks Ltd*), applied for participation in the EU ETS before 2005, but afterwards reconsidered and recalled its participation therein. The author concludes that, acknowledging the composition of participants in the EU ETS, in Latvia the direct impact of the EU ETS on agriculture sector of Latvia is insignificant. However, it might be significant for a certain companies, thus, further in this section, the author shall analyse the impact of the EU ETS on a separate agricultural companies.

Balticovo JSC is a poultry farming company, *Jekabpils labiba JSC* is a pig-breeding company, and *Sabiedriba Marupe Ltd* is the so-called mixed-agricultural company, i.e. doing both crop farming and livestock farming. All three abovementioned agricultural companies are mandatory participants of the EU ETS. However, they are the participants of the EU ETS not because they are agricultural companies, but because they own combustion installations with a rated thermal input exceeding 20 MW. In other words – these companies' participation in the EU ETS is not directly caused by their primary activities and, if they would decide to close down their combustion plants and use energy from central networks, they would not have to be mandatory participants of the EU ETS. Accordingly, two of these companies have been the participants of the EU ETS since 2005 and they are still continuing their participation therein, but one company (*Jekabpils labiba JSC*) discontinued its participation in the EU ETS after the end of the first trading period of the EU ETS (2005-2007) because it reduced its energy producing capacity below 20 MW and mandatory participation obligation was not anymore referable to it.

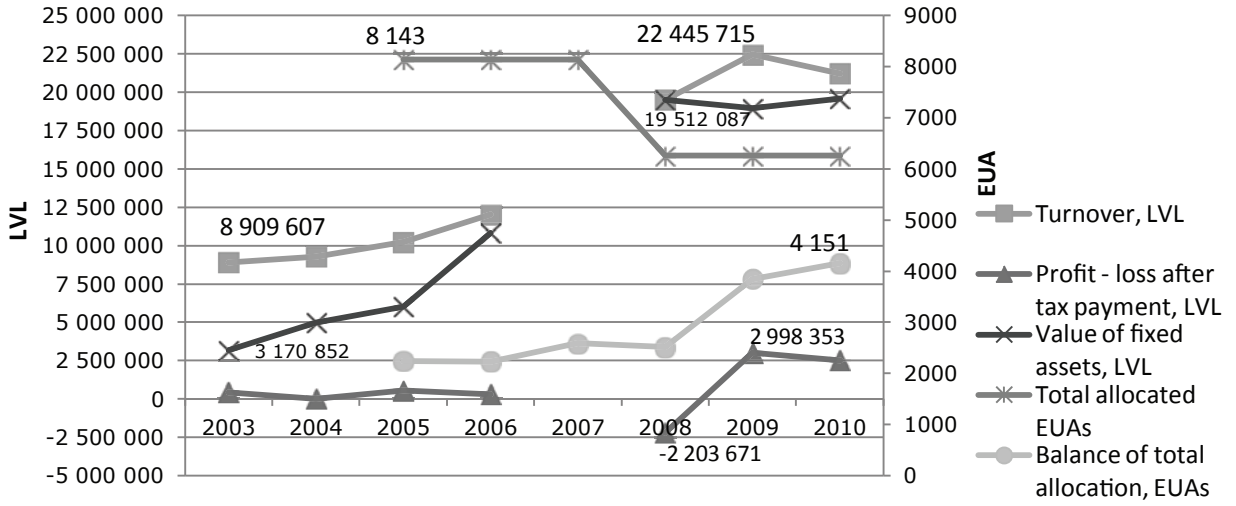
Considering the financial data, *Balticovo JSC* is the most successful of three above-mentioned companies. Using the data about the number of its employees (their number has decreased from 450 in 2003 to 190 in 2010) and turnover (varied from LVL 8 909 607 to LVL 22 445 715), the author has identified that it is a medium size company. Within the period of 2003-2010, the largest turnover (LVL 22 445 715) and the largest profit after tax payments (LVL 2 998 353) was gained in 2009 (Figure 2).

However, it is interesting to note that this significant rise of turnover is right after the year 2008, when it had considerable losses (LVL -2 203 671). Most likely these loses were due to the investments for improvement of n technologies (the author has determined a rapid increase of value of company's fixed assets as well as important decrease of GHG emissions expressed in carbon dioxide (CO_2t) equivalents and related increase of surplus EUAs). The correlation coefficient between the company's value of fixed assets and turnover is 0.974186. Evidences of investments in technologies are also seen in key indicators for energy consumption (Figure 3).

Notwithstanding the increase in turnover, the use of natural gas has decreased from 3 140.300 thousand m^3 in 2005 to 900.187 thousand m^3 in 2010. Similar decrease can be observed also in heat production (29 359 MWh in 2005 and only 10 439 MWh in 2010), with the largest decrease for heat produced for production processes (more than 80% decrease between the years 2008 and 2010), while heat produced for heating network even increases during that period. Correlation coefficient between data on the use of natural gas and data on the total verified emissions is 0.997344, between data on the use of natural gas and data on the total produced heat 0.997216, and between data on the value of fixed assets and total produced heat -0.902400.

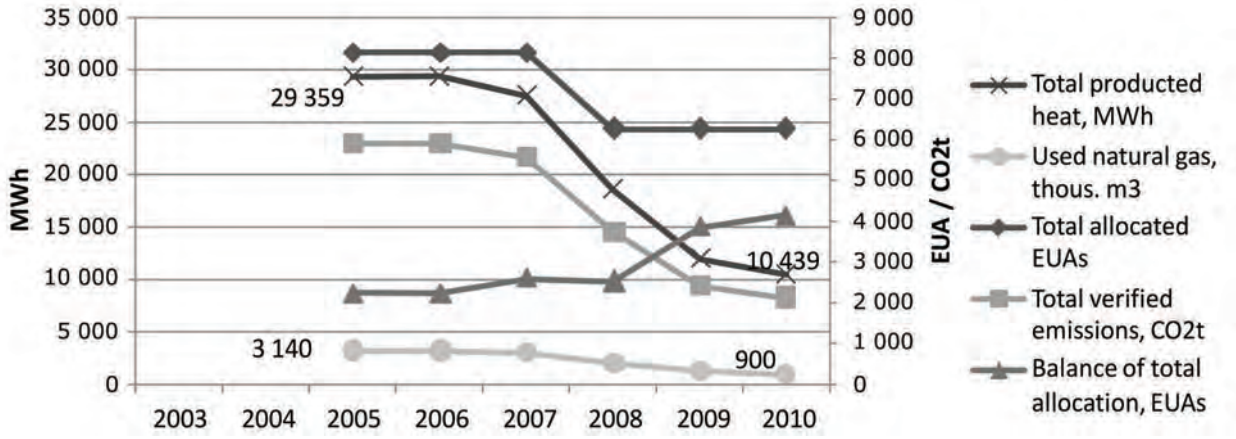
With respect to *Balticovo JSC* participation in the EU ETS, it is important to mention that since the beginning of the EU ETS this company had surpluses of EUAs (positive balance of total allocation of EUAs), and

[2] Note: it is assumed that each company has one sector of primary operation



Source: author's construction based on the data from CTL and Lursoft

Fig. 2. ***Balticovo JSC*** **key financial indicators and key indicators with respect to its participation in the EU ETS[3]**



Source: author's construction based on the data from CTL and Reports on GHG Emissions prepared by Balticovo JSC

Fig. 3. ***Balticovo JSC*** **key indicators on energy consumption and key indicators with respect to its participation in the EU ETS[4]**

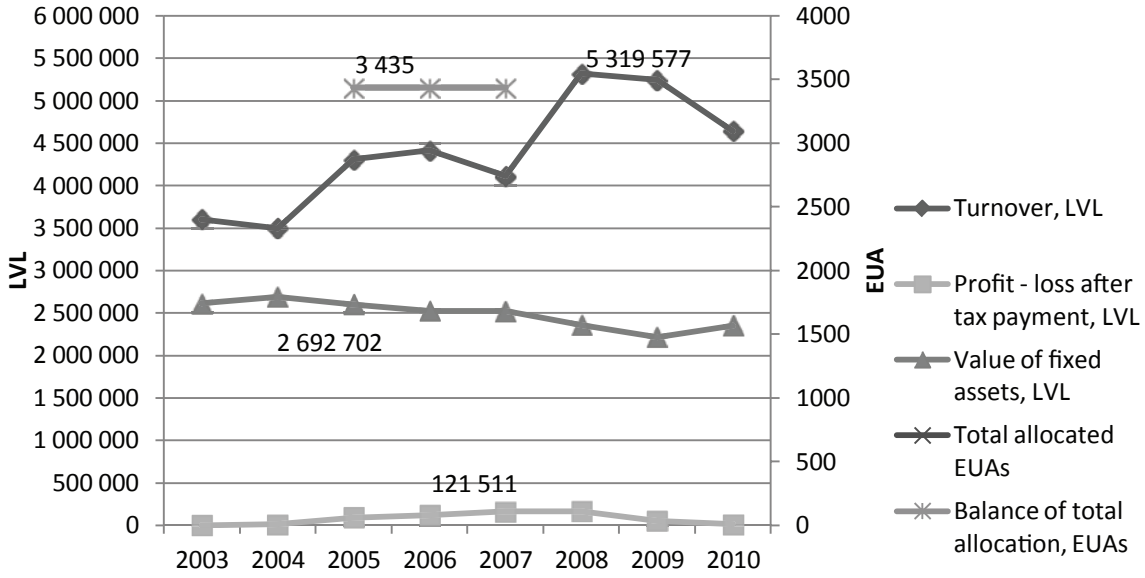
thus, it was able to sell them gaining additional profits. Using data about EUAs prices (source: *Point Carbon*), the author has estimated that the total value of these surpluses was LVL 261 775 (considering the average prices of each year from which surpluses are acquired) or even LVL 362 708 (considering the highest prices of each year from which surpluses are acquired). However, since up now the data on transactions are published only for 2005-2006, it is not possible to establish how much *Balticovo JSC* has used this opportunity for additional profits during 2007-2010. The author has recognised that *Balticovo JSC* had no transactions in 2005, but in 2006, it had two transactions (one sale and one purchase of 5 000 EUAs) as a result of which it earned LVL 21 250. The author concludes that it is very likely that *Balticovo JSC* within the EU ETS largely follows profit-making strategy (Pruse I., 2011) and besides others is participating also in speculative transactions.

With regard to the abovementioned, acknowledging the rapid decrease of GHG emissions and decrease of used fossil energy as well as significant increase of value of fixed assets, turnover and profits, especially profits from EUAs trading, the author concludes that *Balticovo JSC* participation in the EU ETS most likely has contributed towards its sustainable development.

The Company *Jekabpils labiba JSC* has completely different situation. It has been using biomass since 2005. Thus, while it participated in the EU ETS, i.e. 2005-2007, it did not have any GHG emissions (GHG emissions from using biomass in energy production for the purposes of the EU ETS are considered at "0" value) and all EUAs allocated to it were equal to EUAs being surplus.

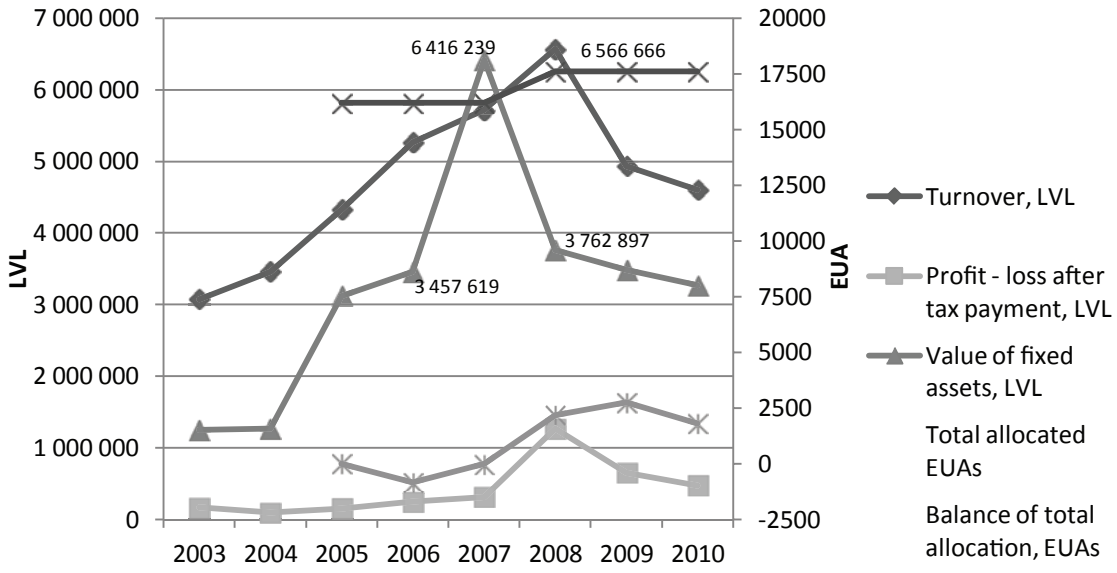
[3] Note: financial data on the year 2007 are not available; data with respect to the EU ETS are available from 2005, since earlier the EU ETS was not operational

[4] Note: Data are available since the year 2005 because earlier the EU ETS was not operational and company did not submit information about its operation



Source: author's construction based on the data from CTL and Lursoft

Fig. 4. ***Jekabpils labiba JSC*** **key indicators on energy consumption and key indicators with respect to its participation in the EU ETS[5]**



Source: author's construction based on the data from CTL and Lursoft

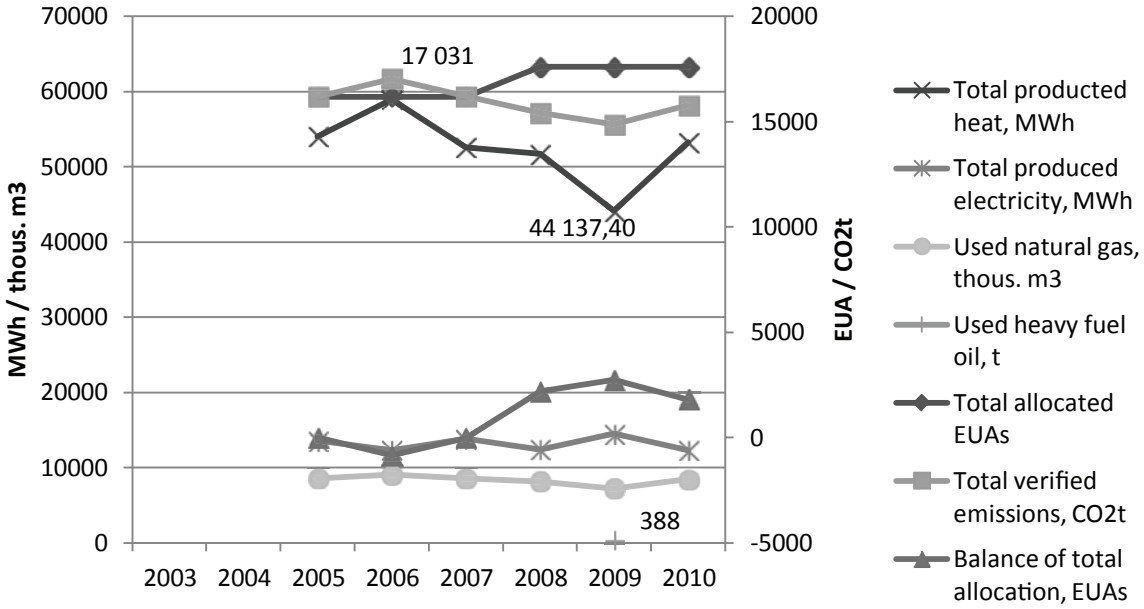
Fig. 5. ***Sabiedriba Marupe Ltd*** **key indicators on energy consumption and key indicators with respect to its participation in the EU ETS[6]**

Considering the noticeably large amount of allocated EUAs (EUAs to be allocated free of charge are determined based on the company's historic GHG emissions) as well as obvious decrease of value of fixed assets most likely investments in technology conversion from fossil to renewable was done several years before 2005 and finalised in 2004 (Figure 4).

However, it is interesting to note that according to the data from *CTL, Jekabpils labiba JSC* did not trade with EUAs in 2005-2006. The author has recognised that if it had done that in 2007, its profits would be close to zero; since due to large surpluses of EUAs in 2007, the price of EUAs fell very low, i.e. to EUR 0.03. The author has estimated that the value of *Jekabpils labiba*

[5] Note: data with regard to the EU ETS are available from 2005 because earlier the EU ETS was not operational

[6] Note: data are available from 2005 because earlier the EU ETS was not operational



Source: author's construction based on the data from CTL and Reports on GHG Emissions prepared by Sabiedriba Marupe Ltd

Fig. 6. ***Sabiedriba Marupe Ltd*** **key indicators on energy consumption and key indicators with respect to its participation in the EU ETS[7]**

JSC surplus EUAs, if sold at each year's average prices, was LVL 137 331 but if sold at each year's maximum prices – LVL 225 473. That is obviously significant amount of additional profits in comparison with *Jekabpils labiba JSC* existing profits (e.g. LVL 121 511 in 2006).

With regard to the above mentioned, acknowledging the surpluses of EUAs resulting from the use of biomass, the author concludes that *Jekabpils labiba JSC* could have benefitted from its participation in the EU ETS but most likely has lost this opportunity, and thus, the EU ETS has not contributed towards its sustainable development.

Data about the third agricultural company participating in the EU ETS, *Sabiedriba Marupe Ltd* (until 2007 known as *Marupe Ltd*), are slightly contradictious, i.e. overall patterns are not so clear, because some data points significantly differ from others (Figure 5). It is also interesting to mention that according to the author's estimations, *Marupe Ltd* was a large company for several years (for example, in 2004 it had 508 employees and its turnover was almost LVL 3.5 million). However, for the last few years it is to be classified as a medium size company (in 2010, it had only 59 employees and its turnover was only a little bit more than LVL 4.5 million).

According to the data from *Lursoft,* in 2007, *Sabiedriba Marupe Ltd* invested in its technologies almost LVL 3 million (total value of fixed assets was LVL 6 416 239 in 2007). However, afterwards the value of its fixed assets returned to almost pre-2007 level. It is also interesting that in 2008 there was a sharp increase of both turnover and profits; whereas GHG emissions as well as total produced heat gradually decreased starting from 2007 (Figure 6).

It is interesting to note that most likely the decrease of GHG emissions might have been even larger if the company would not have used heavy fuel oil (in 2009, it used 288 t of heavy fuel oil). Whereas speaking about sufficiency of allocated EUAs – *Sabiedriba Marupe Ltd* is the only company from those analysed in the paper and one of very few companies in Latvia (4 companies in 2006 and 3 companies in 2007), which had deficits of allocated EUAs. The total deficit of this company was 837 EUAs. The value of this deficit was around LVL 14 618 (using average prices in estimations) and LVL 25 408 (using maximum prices in estimations). During 2005-2006, *Sabiedriba Marupe Ltd* did not participate in the trading of EUA. The author is convinced that assuming that in order to cover its deficit of EUAs within the first trading period it purchased EUAs most likely only in 2007, since then the price of EUAs was close to "0", the deficit did not cause significant costs. In the first part of the second trading period of the EU ETS, i.e. 2008-2010, *Sabiedriba Marupe Ltd* had already significant surplus of EUAs – 6 757 EUAs at the value of LVL 114 890 (using average prices in estimations) and LVL 145 978 (using maximum prices in estimations).

With regard to the above mentioned, acknowledging the investments in technologies as well as overall favourable situation in the allocation of EUAs, the author concludes that participation in the EU ETS could have contributed towards *Sabiedriba Marupe Ltd* sustainable development. However, recognising the decrease in the company's turnover visible after 2008 most likely it has severely suffered from the economic crisis in Latvia.

Conclusions, proposals, recommendations

The hypothesis of this paper is that the EU ETS does not have significant impact on the sustainable development of Latvia's agriculture. As demonstrated in the

[7] Note: data are available from 2005 because earlier the EU ETS was not operational and the company did not submit information about its operation

previous discussion, both the number and turnover of companies participating in the EU ETS is relatively small in comparison with the size of Latvia's agricultural sector. However, almost every agricultural company uses electricity produced in companies participating in the EU ETS. Therefore, although the direct impact of the EU ETS on Latvia's agricultural sector is minor, it is necessary to explore further its indirect impact. Whereas, at the same time it is also important to note that for certain companies (those, which have relatively large combustion plants where fossil fuel is burnt), if EUAs price level is appropriately motivating in comparison with fossil fuel prices, the EU ETS definitely can be an opportunity to attract additional financing for investments in technology improvement or even technology conversion (the case of *Balticovo JSC*, where close correlation was determined between key financial indicators, indicators on energy consumption, and indicators with respect to the company's participation in the EU ETS). With regard to the above mentioned, the author has concluded the following.

1. The EU ETS does not have significant impact on Latvia's agriculture, and thus, previously stated hypothesis of this paper is proved correct.
2. Agricultural companies are potential direct participants of the EU ETS.
3. In some particular situations, the EU ETS might have contributed towards the sustainable development of Latvia's agricultural companies or at least, created possibilities for such contribution, whereas there are no clear examples that the EU ETS has had negative effect on them.
4. In order to complete the analysis of the impact of the EU ETS on Latvia's agriculture, it is necessary to analyse composition of costs of agricultural companies, especially the share of energy costs and costs of fertilisers as well as consider the providers of previously mentioned products.

Bibliography

1. Asheim, G. B. (1991). *Defining Sustainability When Resource Management Does Not Have Deterministic Consequences*. Oslo: University of Oslo. p. 22.
2. Central Statistical Bureau. Employment and Unemployment. Retrieved: http://data.csb.gov.lv/DATABASE/Iedzsoc/Ikgad%C4%93jie%20statistikas%20dati/Nodarbin% C4%81t%C4%ABba/Nodarbin%C4%81t%C4%ABba.asp. Access: 10 January 2012.
3. Central Statistical Bureau. Gross Domestic Product. Retrieved: http://data.csb.gov.lv/ DATABASE/ekfin/Ikgad%C4%93jie%20statistikas%20dati/Iek%C5%A1zemes%20kopprodukts/Iek%C5%A1zemes%20kopprodukts.asp. Access: 10 January 2012.
4. Central Statistical Bureau. Number of Companies. Retrieved: http://data.csb.gov.lv/ DATABASE/uzreg/Ikgad%C4%93jie%20statistikas%20dati/01_skaits/01_skaits.asp. Access: 10 January 2012.
5. Community Transaction Log. Accounts. Retrieved: http://ec.europa.eu/environment/ ets/account.do?languageCode=en. Access: 20 December 2011.
6. Community Transaction Log. Allocation / Compliance. Retrieved: http://ec.europa.eu/ environment/ets/allocationComplianceMgt.do?languageCode=en. Access: 20 December 2011.
7. Community Transaction Log. Transactions. Retrieved: http://ec.europa.eu/environment/ets/ transaction.do?languageCode=en. Access: 20 December 2011.
8. Crocker, T. (1966). Structuring of Atmospheric Pollution Control Systems. *The Economics of Air Pollution*. New York, W.W. Norton & Co. pp. 61-86.
9. Dales, J. H. (1968). *Pollution, Property and Prices: an Essay in Policy-making and Economics*. Toronto: University of Toronto Press. pp. 109-111.
10. Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61/EC, OJ L 275, 25.10.2003 [Consolidated version of Directive with amendments until 23 April 2009]. Retrieved: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003L0087:20090625:EN:PDF. Access: 20 December 2011.
11. Hettne, B. (1990). *Development Theory and the Three Worlds*. New York: John Wiley & Sons. pp. 120-190.
12. Judgment of the General Court of 22 March 2011 — Republic of Latvia v Commission (Case T-369/07), Official Journal of the European Union, C 139/15, 7 May 2011.
13. Latvian Environment, Geology and Meteorology Centre. National GHG Emission Quota Register – Reports on GHG Emissions Prepared by EU ETS Operators. Retrieved: http://www.meteo.lv/public/SEG_registram.html. Access: 20 December 2011.
14. Linacre, N., Kossoy, A., Ambrosi, P. (2011). *State and Trends of the Carbon Market 2011*. Washington: World Bank. p. 78.
15. Lursoft. Companies Registered in Latvia. Retrieved: http://www.lursoft.lv. Access: 20 December 2011.
16. Markandya, A., Harou, P., Bellu, L. G., Cistulli, V. (2002). *Environmental Economics for Sustainable Growth.* United Kingdom: Edward Elgar & The World Bank. p. 568.
17. Montgomery W. D. (1972). Markets in Licenses and Efficient Pollution Control Programmes. *Journal of Economic Theory*, Vol. 5, No. 3, pp. 395-418.
18. Pearce, D. W., Barbier, E. W., Markandya, A. (1990). *Sustainable Development*. London: Earthscan. p. 24.
19. Point Carbon. EUA OTC Assessment. Retrieved: http://www.pointcarbon.com/news/ marketdata/euets/forward/eua/. Access: 20 December 2011.
20. Pruse, I. (2011). Participation in International Tradable Permit's System as an Opportunity for Company's Development, *New Socio-Economic Challenges of Development in Europe – 2010: Conference Proceedings*. pp. 394-404.
21. Tietenberg, T. H. (1985). *Emissions Trading: An Exercise in Reforming Pollution Policy*. Washington DC: Resources for the Future, p. 238.
22. United Nations (1987). Report of the World Commission on Environment and Development:

Our Common Future – Transmitted to the General Assembly as an Annex to document A/42/427, UN. Retrieved: http://www.un-documents.net/. Access: 20 December 2011.

23. United Nations (1998). Kyoto Protocol to the United Nations Framework Convention on Climate Change. Retrieved: http://unfccc.int/resource/docs/convkp/kpeng.pdf. Access: 20 December 2011.

Sustainable Development of Rural Regions Through Project Management Process

Emils Pulmanis, MSc.proj.mgmt; **Silvija Bruna**[1], MSc.proj.mgmt
Professional Association of Project Managers
Zaneta Ilmete, Dr.oec.
University of Latvia

Abstract. The regional development planning is aimed at resource mobilisation to achieve the regional development goals. This is the reason why it is import to obtain sufficient knowledge on the scope, amount, quality, and specific location aspects of available resources before planning, and to assess realistically their future use prospective. Since efficient application of resources for the purposes of development is closely related to formulation of the development policies, and this indicates the direction of the local development processes, the available resources shall be evaluated based on the possibility to invest them efficiently in the achievement of such objectives.
The article analyses the project management process assessment based on the survey of municipality employees involved in project management. The aim of the study is to establish the approach and problems of project management processes in Latvia's regional municipalities in the implementation of projects co-financed by various financial tools. As a result of the study, it was concluded that there were still inconsistencies with regard to the professional knowledge, competence, and experience of the specialists involved in project implementation as well as administrative obstacles and bureaucracy from the side of supervising and responsible institutions.
Key words: project management process.
JEL code: O22

Introduction

Sustainable development is the development where satisfying of today's needs does not threaten the chances of future generations to satisfy theirs. There are three dimensions - the economic, social, and environmental. Under the changeable economic circumstances and at a time when the economic recession is beginning in Latvia, the issue of sustainable and efficient financial resource administration is ever more topical. The municipality finance is limited for the regional development and growth, so the appropriate development can be encouraged via foreign financial tools and investment.

Regional development policy is a set of particular principles, methods, means and measures, which are referred to as the instruments for regional development. The following types of instruments are needed to support regional development:

— organisation (laws, decisions, explicitly defined functions and procedures);
— finance;
— promotion of innovations;
— territorial planning (Hardi, Zdan, 1997).

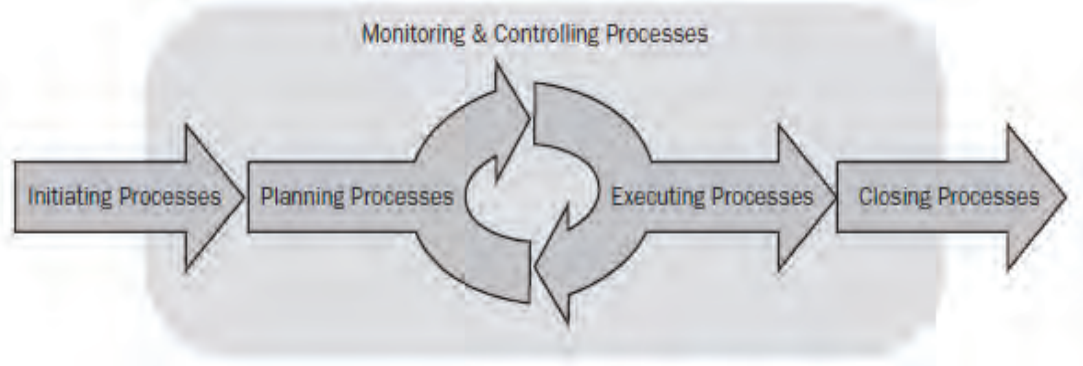
Attracting various foreign financial tools and investment is done using project-oriented process approach, which means that municipalities shall carry out careful planning and project development for the sake of regional development. In the planning period of 2007-2013, Latvia has over EUR 4 million available from the EU Structural Fund resources, where the financing is allotted based on detailed high-quality project submittals. Along with the European Union Structural Funds, the regional development is also envisaged in Latvia-Switzerland cooperation programmes, bilateral cooperation programme of the government of Norway and the European Economic Area, the European Agricultural Fund for Rural Development (EAFRD), and other financial tools.

Regional development planning aims at the mobilisation of resources for the achievement of regional development goals. For that reason, it is essential for planning to acquire sufficient knowledge on the scope, volume, quality, and specific locational aspects of resource availability, and to assess realistically its prospects for future utilisation. Since the effective use of resources for development purposes is intricately linked to the formulation of development policies, which state the direction of the local development process, resources inventoried have to be assessed according to their effective contribution to the accomplishment of such goals (Audinet, Haralambous, 2005).

In light of these facts, the authors of the article carried out research on project management processes in the regional municipalities of Latvia and analysis of the existing problems inhibiting successful regional development through projects corresponding to the needs of the municipalities. An online survey was carried out, targeting Latvia's regional municipality employees involved directly in development and introduction of various projects for rural development. A total of 136 respondents participated and answered questions structured in line with the project management standard phase model.

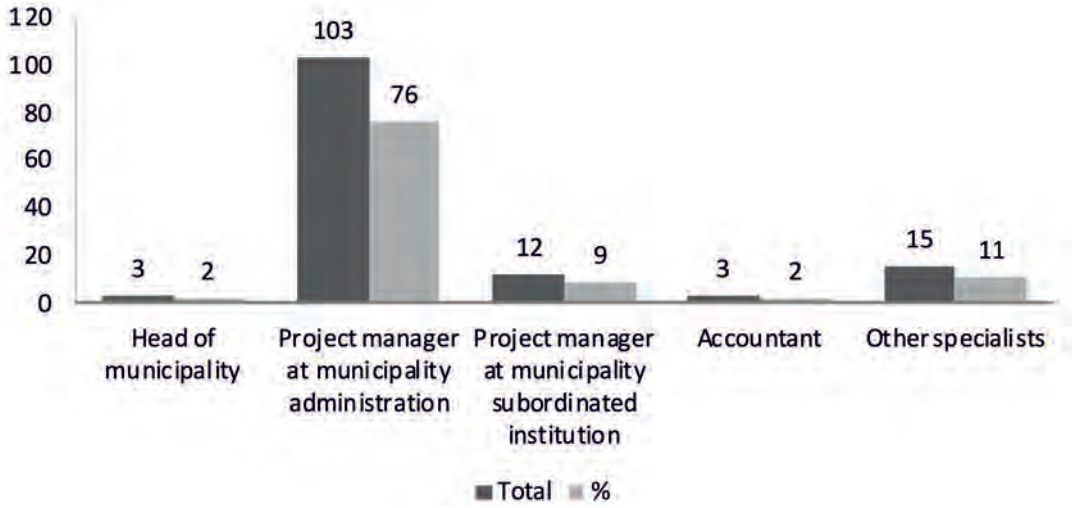
The methodological basis for the article is made up of the guidelines of the EU and the Republic of Latvia as well as works of foreign authors, and research carried out by the authors.

[1] *E-mail address*: silvija.bruna@gmail.com



Source: A Guide to the Project Management Body of Knowledge, 2008

Fig. 1. **Example of a single-phase project**



Source: authors' construction based on the survey

Fig. 2. **Structure of respondents**

The listing of literature provides references to works of foreign authors, and sources of publicly available information.

Research results and discussion

1. Project management process

Project management is the skills, tools, and management processes required to under-take a project successfully (Westland J., 2007).

A process is a defined sequence of tasks, which requires the cooperation of several roles from one or several organisations. Elements of processes are tasks, decisions, interrelationships between the tasks and decisions, and organisational responsibilities. A process is not an organisation itself but a sequence of tasks, which runs horizontally through one or several organisations (Gareis R., Stummer M., 2008).

The context of the project management process in terms of time is the project assignment and the investment controlling process. In terms of content, these are the content related business processes (Gareis R., 2005).

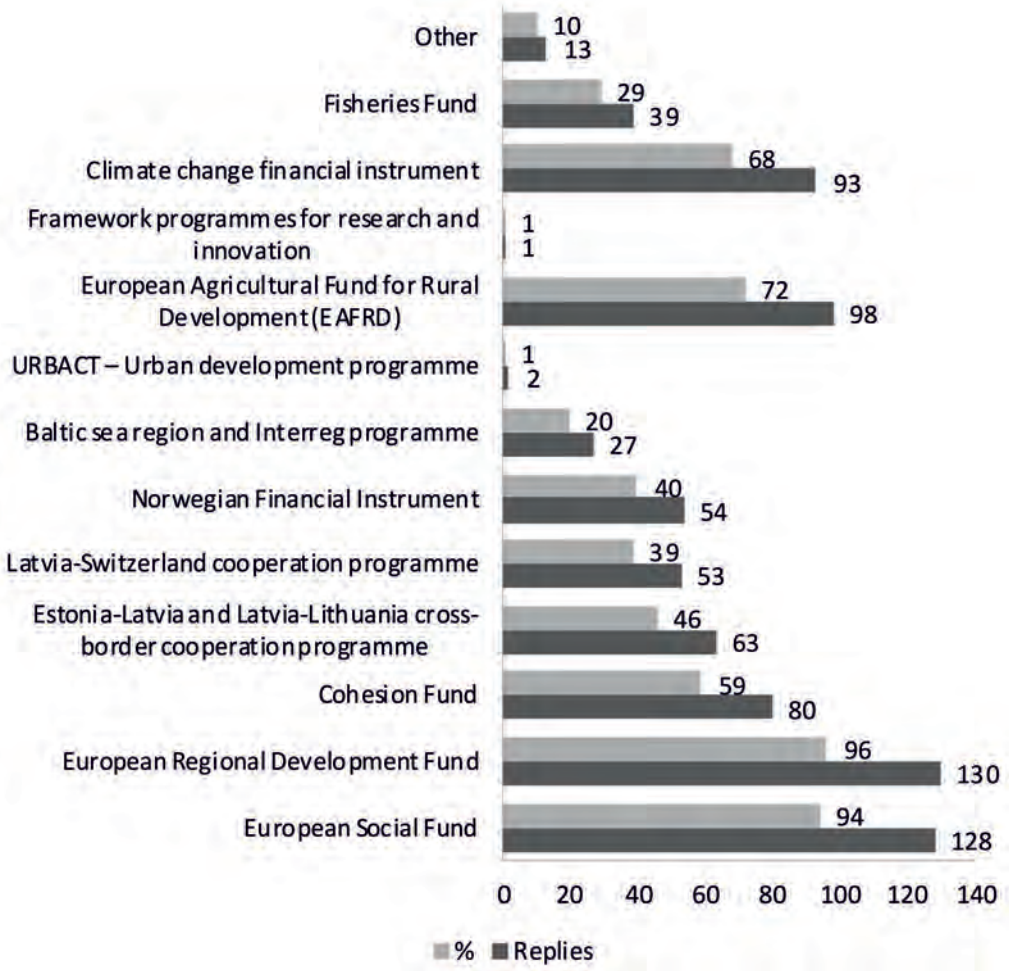
Project management is a process that exists in process and project-oriented companies. The project management process is defined on the basis of a process description and enables the determination of measurable outputs. This improves the quality of project management (Gareis R., 2008).

The project life cycle consists of four phases (Westland J., 2006). Figure 1 shows single-phase project.

2. Project management processes in the municipalities of Latvia

Project introduction processes in the municipalities of Latvia were the subject of a research carried out over the period of 8 September to 19 October 2011. A total of 136 respondents were surveyed in all regions and towns of republic-wide importance of Latvia. The structure of respondents is depicted in Figure 2.

The majority of the research selection – 76% is constituted by the project managers of municipalities and their institutions. Assistant project managers, development department managers, territorial planners, and others were indicated as other specialists.

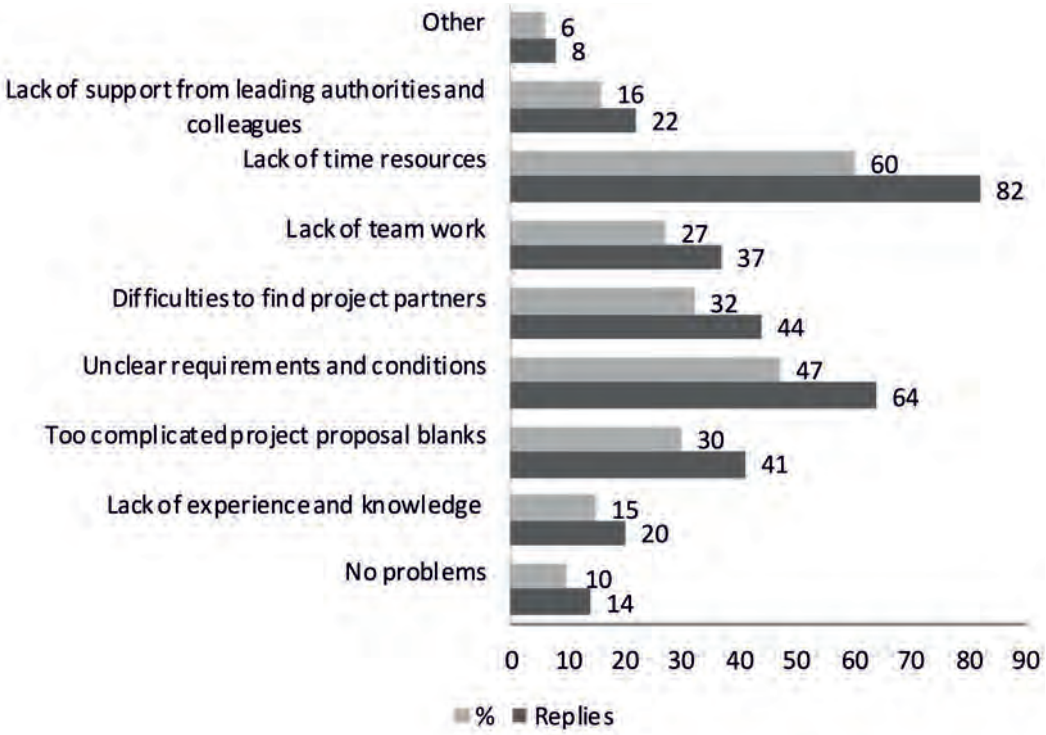


Source: authors' construction based on the survey

Fig. 3. **The main financial instruments and programmes among the implemented projects in rural regions**

Source: authors' construction based on the survey

Fig. 4. **Problems at the project initialisation phase**



Source: authors' construction based on the survey

Fig. 5. **Problems at the project proposal elaboration phase**

The research authors structured the questions according to the project management standard phase process model, ordering by initialisation, planning, introduction, and post-introduction phases. All 136 respondents indicated that they had been involved in the development and implementation of projects co-financed by various national and foreign financial instruments. The main financial instruments and programmes used as framework for the planned and implemented regional development projects are demonstrated in Figure 3.

The main financial instruments indicated were the European Union Structural Funds, such as the European Social Fund (94%), the European Regional Development Fund (96%), the European Agriculture Fund for Rural Development (72%), and the Climate Change Financial Instrument (68%), which can be explained by the fact that the available amounts of these financial instruments are great – more than EUR 4.5 billion for the planning period of 2007-2013 (Draft National Strategic ..., 2007).

The authors of this article analysed the project initialisation process problems in municipalities where the dominant issue factor was the lack of consistence between the financial instrument priorities and municipality priorities (44%); the other essential reason for failures mentioned by the respondents was the lack of qualified project managers at the municipality. At the same time, reasons like low financial capacity of municipalities in the provision of co-financing and pre-financing were mentioned, and in 24% of cases the respondents said that project initialisation in the municipality was or is too chaotic, as a result of which the project implementation failed or it was not submitted to the responsible institution. The answers given by the respondents are provided in Figure 4.

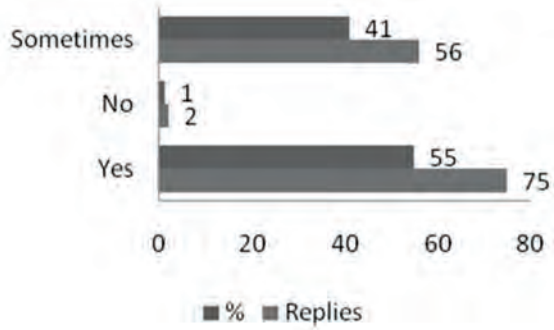
Other issues indicated by the respondents were the established limitations on projects' referable costs, which fail to provide complex problem solutions. Political decisions and political management change in municipalities as well as exceedingly disadvantageous project introduction conditions and lack of foreign language knowledge among the municipality project managers were mentioned as factors in the project initialisation process failure.

Project applications for financing from the national and foreign financial assistance programmes are developed in line with the municipality integrated development programmes and their established municipality priorities. The authors analysed respondents' answers on the project application development processes and found that the greatest difficulties in project application development process were caused by the lack of time resources (60%) and unclearly defined requirements in the regulations of the Cabinet of Ministers regarding the project implementation conditions (47%). Besides, the overly complicated project application blanks was said to be an inhibiting element. A detailed project application development process assessment can be found in Figure 5.

When analysing the project introduction processes, the respondents said that the biggest problems were still caused by the public procurement procedure organisation (40%), which can be explained by the complaints of the interested candidates and legal processes as well as low quality procurement documentation preparation – technical specifications and tender regulations not corresponding to the public procurement law regulations. The municipality project managers indicated that a condition having important effect on project implementation was the exceeding bureaucratic

Source: authors' construction based on the survey

Fig. 6. **Problems at the project implementation phase**



Source: authors' construction based on the survey

Fig.7. **Ex-post evaluation of project results**

and administrative burden (18%), since a lot of time had to be devoted to preparing and gathering various accounts, reports, and information requests. Analysis of the respondents' answers leads to conclude that the third most essential element in project implementation failure is incompletely developed risk analysis in the project planning phase (10%), the consequences of which can be seen already during the project introduction. Other inhibiting elements indicated by the respondents were low quality technical projects, frequent changes in legislation, incompetency and lack of professionalism in project management of the regulating institution employees, and low quality project applications that get approved as well as cumbersome change coordination procedures. The respondents' answers on project implementation process can be seen in Figure 6.

Having evaluated the project introduction process in municipality-implemented projects, the authors asked project specialists to provide information on project post-introduction phase and whether municipalities assess the results achieved in projects. Only 55% of the respondents assess the results achieved within project, and in 41% of the cases respectively the assessment is not regularly done (Figure 7).

Analysis of survey results proves that municipalities rarely assess project results and do not analyse the problems and failures arising during project implementation, thus, they do not learn from their mistakes in the planning and introduction of the previous projects. Without analysis of the results achieved within the project, it is impossible to tell whether the project goal has been reached or not, the actual state after the actual operation of the project is not analysed.

In response to the question what additional knowledge or skills would be necessary to acquire in the near future in order to successfully implement the activities defined in the municipal development programmes and investment plans, the employees involved in municipal project implementation wanted to acquire additional knowledge in the field of public procurement, project accountancy aspects and financial management, project risk management, cost-benefit analysis, result impact analysis etc.

Conclusions, proposals, recommendations

Latvia has substantial financial resources available for the planning period of 2007-2013, and their acquisition is largely related to project-oriented process approach. Having surveyed 136 of Latvian regional specialists involved in project development and implementation, it was concluded that, in order to promote regional development, municipalities often engaged in the development and implementation of various projects, both as project implementers and cooperation partners in the projects implemented by other municipalities.

Even though 68% of the respondents had more than 4 years of experience in regional municipality project development and implementation, the study leads to believe that municipality employees still identify lack of qualified and competent project managers in municipalities. Municipalities underestimate the role of project planning phase in the context of regional development, indicating that planning is still chaotic and untimely. At the same time, bureaucracy and differing approaches by responsible institutions to administering foreign financial tools were said to be an inhibiting factor for ensuring efficient regional development.

One of the most important functions of a project manager is to develop a strategy - to make the respective decisions. This envisages evolution of the strategy implementation process in line with the set tasks by motivating the project team members, coordinating operation of the involved institutions and other parties, and making decisions and preparing reports.

The basis for regional development strategy introduction management is the planning process. In that process, the following plans should be specified:

— Structural plan: all projects, their subjected operations and work tasks shall be defined;
— Strategy introduction process: created based on the Structural plan. Illustrates all activities, their order and dimensions, beginning with the idea down to the end product;
— Time distribution and deadlines: prepared based on the Strategy introduction process: Development takes place on a project level and separately for each activity. When setting the beginning deadline, the deadline for the entire project is set in parallel;
— Resource application plan: based on time distribution and deadline schedule, the necessary materials and human resources are defined;
— Cost calculation: developed based on the Resource Plan;
— Project finance plan: cash flow expected for each project;
— Milestone specification: demonstrates the project checkpoint dates (e.g. report submission dates).

Territorial policies should contribute to building up and maintaining growth engines, facilitate individual and organisational learning to upgrade local skills, and supporting diffusion of new technologies and innovations.

Regional success and decline seem to result from a different regional capacity to exploit the local financial, natural, physical, social, and human capital to facilitate local as well as foreign direct investments.

In summary of the study results, the authors define the planning phase as the most important project management process, since adequate regional planning process is a factor for successful project introduction. It is the use of inappropriate project management planning methods in municipalities that creates problems in the project implementation and introduction phase, the results of which follow from low-quality technical projects, procurement documents, incompletely developed risk analysis, and cost-benefit analysis.

Bibliography

1. Audinet, P.J., Haralambous, S. (2005). *Achieving the Millennium Development Goals: Rural Investment and Enabling Policy*. IFAD. p. 57.
2. Draft National Strategic Reference Framework 2007-2013 (2007), Ministry of Finance of Republic of Latvia. p. 116.
3. Gareis, R. (2005). *Happy Projects!* MANZ CROSSMEDIA. 1051 Vienna. p. 624.
4. Gareis, R., Stummer M. (2008). *Processes & Projects,* MANZ CROSSMEDIA. 1051 Vienna. p. 323.
5. A Guide to the Project Management Body of Knowledge (PMBOK guide) Fourth Edition. (2008). Project Management Institute. p. 506.
6. Hardi, P., Zdan, T. J. (1997). *Assessing Sustainable Development,* International Institute for Sustainable Development. p. 163.
7. Westland, J. (2006). *Project Management Life Cycle*, London, GBR: Kogan Page Ltd, p. 229.
8. Westland, J. (2007). *Project Management Life Cycle: A Complete Step-by-Step Methodology for Initiating, Planning, Executing and Closing a Project Successfully.* Kogan Page Ltd, p. 256.

Historical and Theoretical Aspects of the Term ”Risk’’

Sandija Rivza[1], Mg.oec.; **Irina Pilvere**, Dr.oec.
Latvia University of Agriculture

Abstract. Such concepts as risk, crisis, and danger have become commonly used and recognised in various fields of entrepreneurship, governance, agriculture, and environmental protection. Risk management and risk evaluation nowadays has not only theoretical but also practical application. Yet, various definitions of the term ”risk’” and different approaches in defining this term often lead to an incomprehension of it. This paper aims to study historical and theoretical aspects of the terms ”risk’’. The authors have examined the chronological development of the understanding of the term ”risk’’ and summarised various risk parameters included in the definitions of risk.
Key words: risk, definition of risk, risk parameters.
JEL code: D81

Introduction

Globalisation and the growth of economic activities analysed by Zygmunt Bauman (1998), Anthony Giddens (2002), and Ulrich Beck (1999) increase the significance of risk in society and entrepreneurship. Being aware of these processes, risk management is important in the sectors of investments and finance, transport and logistics, and food industry. Besides, agriculture is one of the industries that is sensitive to risk due to the weather conditions, plant diseases and pests, and fluctuations in the market prices of resources and products.

Even though, the activities of an individual have always been subject to risk, the understanding of risk and its role in the society at the turn of the 20th and the 21st century have become the issue of theoretical and practical importance and is closely connected with the ideas of two sociologists – U. Beck (1999) and A. Giddens (2002).

The topicality of risk management has expanded, thus, an increasing number of studies apply risk evaluation and risk management methods. The analysis of these studies show that various authors have different understanding on the definition and parameters of the term ”risk”. The **research aim** is to summarise historical and theoretical aspects of the term ”risk’’, to define risk parameters, and to suggest the definition of the term ”risk’’. The following **research objectives** have been set by the authors to reach this aim:

1) to study the origin of the term ”risk’’;
2) to describe chronological development of understanding of the term ”risk’’;
3) to summarise typical risk parameters;
4) to classify risk definitions and suggest the definition based on the summarised risk parameters.

To meet the tasks of the study, the authors analysed scientific publications and used appropriate research methods for various solutions in the process of the study: monographic, content analysis, inductive and deductive, analysis and synthesis, and logical and constructional methods.

Research results and discussion

1. Origin of the term ”risk’’

The term ”risk” originated in the Ancient Greece from *rhizikon, rhiza,* which meant ”tree roots, stones” and was used as metaphor in sea navigation meaning ”difficulties to be avoided in the sea”; later in Latin it meant ”rock” (Skjong R., 2005). As regards the ancient Greek word for the notion of risk as people understand it at present, the word *Kindunos* was used and it served to denote danger, threat, and opportunity (Scott J., 2000); as well as the word *Peirao* that had a similar meaning. Later, the Latin word *Perîculum* developed exactly from this word (the 14th century) turning into Latin *risicum* extending the meaning of this word beyond the nautical terminology (Preston B.C., 2004). There is an alternative version of the etymology of the term ”risk” – some authors claim that it has originated from the word *risq* in the Arab language (Kedar B.Z., 1970). The meaning of the Arab word *risq* denotes an incidental and positive result, gaining benefit, while the meaning of the Latin word *riscum* initially was associated with incidental and potentially unwelcome circumstances (mostly in sea trade and sailing) (Merna T., 2005).

Thus, it is considered that the term ”risk” has appeared in Italian (*risico, risco, rischio)*, Spanish (*riesgo),* and French (*risque)* from the Latin word *risicum (resicum, riscus)*. The English word *risk* was borrowed from the Spanish language but the German word *risiko* was borrowed from the Italian language (Skjong R., 2005).

As it was mentioned before, initially the word ”risk” had a negative meaning, but the Greek borrowing from the Arab word *risq* used in the 12th century denoted any changes in general without any specification of being either bad or good (Kedar B.Z., 1970). Concerning the French word *risqu´e*, basically it has a negative but sometimes a positive meaning, as for example in *”qui de risque rien n’a rien’’* or ”nothing ventured nothing gained’’, while the use of the word ”risk” in the English language point to negative associations, as in ”run the risk’’ or ”at risk’’, meaning exposed to danger (Merna T., 2005).

[1] *E-mail address*: Sandija.Rivza@llu.lv

Table 1

The origin, spread and control changes of risk in the intersection of three epochs

Feature	Pre-modern era	Industrial modernism	Post-modernism
Risk typology	Endemic threat	Risk Calculus	Radicalised Risk
Risk origins	External threat – natural disasters, epidemic, famine	Risk at work, accidents	Artificial disaster, risks created by oneself
Dependency on individual decisions	Is not dependent (powers beyond human influence – deities)	Is dependent (driving, flying, the work place is an individual's choice)	Is not dependent (decisions taken in groups, the lifestyle is imposed on an individual)
Size of damage	People, countries, cultures	Limited in space, time and social boundaries	Unlimited accidents/ probability of damage uncertain: calculations are impossible
Size of damage (in figures, can be evaluated in numerical terms)	Insignificant, politically unimportant, considered to be fatal (external fate)	Calculable uncertainty (probability, the size of damage is known, compensation via insurance)	The calculations are impossible, the quantity of consequences is impossible to determine, it is not possible to determine the responsibility, no insurance, no compensation
Responsibility	External fate	Agreement conditions	Yes and No. Organised irresponsibility

Source: authors' construction based on U.Beck, 1988, D.Matten, 2004, D.Jarvis, s.a.

In the 18th century, this Anglicised word denoted the insurance business deals (Flanagan R., 1993). Gradually, the use of the word transformed from the notion denoting any unforeseen and unexpected results, good or bad, the decision or activity to the notion denoting unwanted consequences and their probability (Wharton F., 1992). In the scientific literature, the word ”risk” is used to denote the probability of consequences, the size of consequences, or the combination of both parameters (Merna T., 2005).

Several other notions are connected with the notion of ”risk” and sometimes they are used as synonyms, for example, hazards, crisis; however, it is necessary to differentiate between these notions, paying attention to the specific meaning of each term.

2. Chronological understanding of the term ”risk”

Chronologically the notion of risk has developed in three stages: pre-modern era, industrial modernism, and post-modernism. Risk is classified according to different features (Table 1).

In the age of pre-modernism, the people were influenced by the so-called decision threat – it was an endemic or local threat according to U.Beck (1992) – disasters, famine, and epidemics. The society of that time considered that these disasters belonged to the external threat - fate controlled by the supernatural powers (deities, demons) and that society could influence negative events neither individually nor in the group.

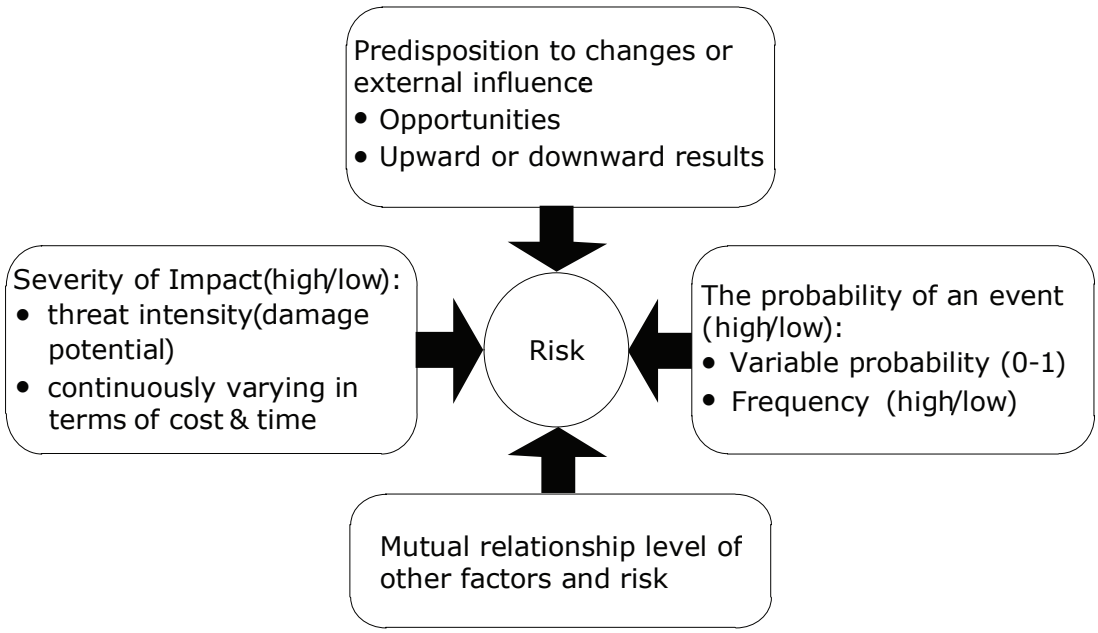
The risks of industrial modernism can be characterised as calculated risks. At this stage of social development decisions on production and distribution of wealth create risks but these risks are included in the economic calculations as risk evaluation and compensation. Risk is measured, evaluated, controlled, and managed (Jarvis D., s.a., Beck U., 1999).

As regards risks of post-modernism, they are radical risks and represent reflexive modernism when ”industrial, technical scientific projects” cause accidental risks. They are impossible to calculate, the consequences are not quantitative, no one can take responsibility, these risks cannot be insured or compensated, they are not limited within the territory etc. (Jarvis D., s.a.).

3. Modern definitions of risk

However, all concepts of risk contain the same precondition: the consequence of the human activities. In any situation, an individual, an organisation, or the society on the whole have several ways of choosing the next move (including doing nothing) and each of them causes either negative or positive consequences (Renn O., 2008). The consequences can be influenced by modifying the activity or event itself or reducing the consequences [of a negative event]. The similar opinion is suggested by Niklas Luhmann (1993) – risks could be considered as the decision taken by an individual. N.Luhmann, admitting the impact of the environment on the human conduct, links risk with choices pointing out that the choice suggests the existence of alternatives but the selection of an alternative depends on an individual. Frank Knight (1921), an American economist, highlighted the connection between the risk and the knowledge: ”the result of a negative change is not the change itself but rather our insufficient knowledge about the future events.”

The definition of risk (in a general way) comprises three elements: consequences (positive or negative), an impact on tangible or intangible wealth, and the probability of an event and the specific context, in which the risk might occur (Renn O., 2008). Other authors suggest an extended description of the three above-mentioned components: consequences, probability, and context. The aspect of context is broadened adding



Source: authors' construction based on D.Allen, 1995, T.Merna, 2005, Parbaudes, izpetes un..., s.a., O.Renn, 2008

Fig. 1. **Typical risk parameters**

several elements: uncertainty and the perception of the above-mentioned components (Parbaudes, izpetes un..., s.a.), predisposition against changes or external influence; the level of mutual relationship among other factors and risk (Merna T., 2005). The authors of this study have summarised the risk components in the diagram below (Figure 1).

There are various risk definitions including various causes of risk as well as possible consequences. The Dictionary of Economics defines risks as the probability of positive or negative outcome of an action: "audacious action with a hope for a good outcome of the activity" (Ekonomikas skaidrojosa …, 2000). After having examined the definitions given in various sources, the authors classified the definitions into 3 groups: a definition that concentrates on probability and does not mention possible consequences; a definition that states the consequences (with 3 subgroups: with either positive or negative consequences; only positive; or only negative consequences), and a definition that combines probability and consequences (Table 2).

The first group created by the authors summarises the definitions that include the category of uncertainty or probability: "We face risk every day. All types of risks are characterised by the factor of uncertainty'' (Kaktins J., 2002). Risk occurs in the situation when there is no conviction that the expected consequences will be achieved (Sahov V., 1999). Uncertainty of circumstances exist in any situation and insecurity of economic activities connected with it. "The danger is still possible that expected income will not be gained, that production costs will be bigger than planned, that the part or all of the capital invested in the development of a company might be lost'' (Vedla A., 2000). The cause of the risk might be defined as a decision and the consequences of either taking the decision or not taking the decision: "The direct translation of the word *risk* means taking the decision the outcome of which is not known, i.e. is uncertain" (Suskevica J., 2005). Risk is the category of probability and an entrepreneur himself takes the decision about the acceptable level of risk'' (Suskevica J., 2005).

The impact of risk on the achievement of the aims set by a company or organisation is sometimes mentioned: risk is an uncertain event in the future that can influence the achievement of strategic, economic, and financial goals of an organisation (Parbaudes, izpetes un..., s.a.); risk is existence of circumstances of uncertainty that can have a negative influence on the achievement of one or several goals (Hillson D., 2007).

The second group consists of 3 subgroups. First subgroup combines theories that include the consequences of risk but their positive or negative consequences are not mentioned. Risk in this group is defined as an equivalent to the distribution variables of consequences of all possible risky events (Stanka A., 2004; Rogov M.A., 2001); potential threats or potential opportunities (Heldman K., 2005); possible deviation occurring between real and planned return of investments (Praude V., 2009); or possible deviation from planned consequences (Suskevica J., 2005).

The second subgroup summarises definitions that suggest that the consequences of an occurring risk are positive – gain or profit. "It is widely accepted that risk in business is the lack of revenues and the reduction of capital due to external or internal factors. Perhaps, it would be more appropriate to define risk as an opportunity to succeed and/or earn money" (Suskevica J., 2005), to use the chance to gain the positive result (profit) (Kaktins J., 2002).

Table 2

Classification of risks according to uncertainty and risk consequences

Definition	Basic idea	Authors
1. Probability	The risk might occur in the situation when there is no conviction that expected outcome will be achieved; there is uncertainty of circumstances, and consequently insecurity of business activities	Parbaudes, izpetes un... (s.a.), F.Knight (1921), R.Tusler (1996), M. Meskon (1997), V.Sahov (1999), A.Vedla (2000), J.Kaktins, I.Arhipova (2002), J.B.Hardaker (2004), J.Suskevica (2005), I.Arhipova (2005a), A.M.Kovalova (2007), D.Hillson (2007)
2. Consequences		
2.1. Positive or negative consequences	The risk consequences are included but their positive or negative aspects are not mentioned; or risks are associated with positive outcome – gain or profit	M.A.Rogov (2001), A.Stanka (2004), I.Arhipova (2005)a, I.Arhipova (2005b), Heldman (2005), Praude (2009)
2.2. Positive consequences	Risk might occur in situations with positive outcome, resulting in profit	J.Kaktins (2002), J.Suskevica (2005)
2.3. Negative consequences	Risk might occur in situations with negative, especially economically disadvantageous, consequences	W.D.Rowe (1977), N.Rescher (1983), A.Pelss (1999), M.A.Rogov (2001), A.Vedla (2002), G.Pettere (2003), A.Stanka (2004), J.B.Hardaker (2004), I.Arhipova (2005)a, I.Arhipova (2005)b
3. Combination of probability and consequences	The combination of the probability of dangerous circumstances with significance or severity of consequences	Definitions of Risk (s.a.), A.Vedla (2000), M.Rurane (2002), A Risk Management... (2002), I.Arhipova (2005)a, I.Arhipova, (2005)b, M.Kudrinska (2005), S.Saksanova (2006), I.T.Balabanov (2006), E.F.Brigham (2009), D.Sinki (2007), A.M.Kovaleva (2007)

Source: authors' construction

However, mostly the term *”risk’’* in the scientific literature is connected with decisions or events that have negative consequences: unfavourable consequences of unwelcome circumstances; deviation from acceptable risk level (unfavourable consequences) that investors are ready to permit or tolerate (Hardaker J.B., 2004; Arhipova I., 2005a); the probability of losses (Stanka A., 2004; Rogov M.A., 2001); potential unwelcome negative consequences of an event or activity (Rowe W.D., 1977); changes with negative consequences (Rescher N., 1983); danger of losses/ damage (Vedla A., 2002); risk is unfavourable deviation of actual economic result from the planned or expected (Arhipova I., 2005b).

The last group of risk definitions includes both probability and consequences, that is, the combination of probability of a dangerous event with the significance or severity of consequences of this event (Definitions of Risk, s.a.). Although, this group could also include positive consequences, in the scientific literature, authors mainly faced definitions that incorporated negative outcome: risk is defined as the significance of occurrence probability and consequences of an unwelcome event; probability of hazard and severity level of danger (Arhipova I., 2005b).

In the context of entrepreneurship, risk is defined as a probability of having losses in the case when the planned event (the management decision) will not succeed, or if the management will make an erroneous decision (Rurane M., 2002). Regarding risk management methodology, risk is defined as the level of unfavourable impact that has appeared as a result of danger taking into account the probability of damage and the size of consequences (Arhipova I., 2002) or as a function that is the main result of the probability and size of risk (Stanka A., 2004; Rogov M.A, 2001).

The analysis of the scientific literature on the notion of risk (Hardaker J.B., 2004; Renn O., 2008; Pettere G., 2004; Arhipova I., 2002; Suskevica J., 2005; Baoding, 2011; Definitions of Risk, s.a. etc.) and the principles of definitions by a German sociologist Ortwin *Renn* (2008) in defining risks, the authors suggest the following definition of ”risk’’:

Risk is the multiplication of the probability of an event occurrence and its significance level of potentially unfavourable consequences.

The authors have defined ”risk” combining the parameters of the Subgroup 2.3 and a Group 3: a risky event is considered an event with potentially negative consequences excluding events with potentially positive consequences, besides the suggested definition comprises the combination of two risk parameters: probability and consequences that are typical of definitions of Group 3.

Conclusions

1. Even though, the activities of an individual have always been subject to risk, the understanding of risk and its role in the society at the turn of the 20th and the 21st century have become the issue of theoretical and practical importance and is closely connected with the ideas of two sociologists – Anthony Giddens and Ulrich Beck.

2. Chronologically, the notion of risk has developed in three stages: pre-modern era, industrial modernism, and post-modernism with the respective features of risk.
3. After having examined the definitions given in various sources, the authors classified the definitions into 3 groups according to uncertainty and risk consequences: the definition that concentrates on uncertainty (probability) and does not mention possible consequences; the definition that states the consequences (with 3 subgroups: with either positive or negative consequences; only positive; or only negative consequences), and the definition that combines probability and consequences (positive or negative).

Bibliography

1. Arhipova, I., Arhipovs, S. (2005a). Riska vadibas terminologijas aspekti (Aspects of Risk Management Terminology). *LLU raksti*, Nr. 15(310). Latvia University of Agriculture Jelgava: Jelgavas tipografija, pp. 3-8.
2. Arhipova, I., Arhipovs, S. (2005b). Riska vadibas metodologija (Risk Management Methodology). Monograph: ed. Peteris Rivza. *Riski lauksaimnieciba un privataja mezsaimnieciba.* Jelgava: Latvia University of Agriculture, Riga Technical University, Faculty of Computer Science and Information Technology, pp. 64-79.
3. *A risk Management Standard* (2002). Published by AIRMIC, ALARM, IRM. Retrieved: http://www.theirm.org/publications/documents/Risk_Management_Standard_030820.pdf. Access: 21 November 2011.
4. Allen, D. (1995). *Risk Management in Business.* Cambridge University Press, Cambridge.
5. Balabanov, I.T. (2006). *Risk menedzment* (Risk Management). Moskva: Finansi i Statistika. str. 320.
6. Baoding L. (2011). *Uncertainty Theory*. Department of Mathematical Sciences. Retrieved: http://www.orsc.edu.cn/~liu/ut.pdf. Access: 15 November 2011.
7. Bauman, Z. (1998) *Globalisation: The Human Consequences*. New York: Columbia University Press. p. 136.
8. Beck, U. (1988). *Gegengifte. Die Organisierte Unverantwortlichkeit*. Frankfurt/Main: Suhrkamp. p. 121.
9. Beck, U. (1999). *What is Globalisation?* Cambridge: Polity Press. p. 180.
10. Beck,U. (1992). *Risk Society: Towards a New Modernity*. New Delhi: SAGE publications, pp. 23-98.
11. Brigham, E.F., Daves, P.R. (2009). *Intermediate Financial Management:* 10th edition. South-Western College. USA: South-Western, CENGAGE Learning. p. 1041.
12. *Definitions of Risk.* Business Dictionary (s.a.) Retrieved: http://www.businessdictionary.com/definition/risk.html. Access: 21 November 2011.
13. *Ekonomikas skaidrojosa vardnica (Economics Explanatory Dictionary)* (2000). Ed. Grevina, R. Riga: Zinatne. p. 440.
14. Flanagan, R., Norman, G. (1993). *Risk Management and Construction*. Oxford: Blackwell. p. 209.
15. Giddens, A. (1999). Risk and Responsibility. *The Modern Law Review*: Vol. 62, No. 1. USA: Blackwell Publishers, pp. 1-10.
16. Giddens, A. (2002). *Runaway World*. Croydon, Surrey: Bookmarque Ltd., pp. 6-20.
17. Hardaker, J., Huirne, R.B.M., Anderson, J.R., Lien, G. (2004) Coping with Risk in Agriculture. Cambridge: CABI. p. 332.
18. Heldman, K. (2005). *Project Manager's Spotlight on Risk Management*. USA: Harbor Light Press, Sybex. p. 224.
19. Hillson, D., Murray-Webster, R. (2007). *Understanding and Managing Risk Attitude*: 2nd edition. UK: GOWER, pp. 9-15.
20. Jarvis, D. (s.a.) *Theorising Risk: Ulrich Beck, Globalisation and the Rise of the Risk Society.* Lee Kuan Yew School of Public Policy, National University of Singapore, pp. 5-21. Retrieved: http://www.risk-and-regulation.com/wp-content/uploads/2010/05/RR3-Beck.pdf. Access: 15 November 2011.
21. Kaktins, J., Arhipova, I. (2002). Riska vadisanas teoretiskie pamati (Theoretical Basis of Risk Management). *LLU Raksti* Nr. 6 (301). Latvia University of Agriculture. Jelgava: Jelgavas tipografija, pp. 52-63.
22. Kedar, B.Z. (1970). *Again: Arabic Risq, Medieval Latin Riscum.* Centro Italiano Di Studi Sull Alto Medioevo. Italy: Spoleto, p. 259.
23. Knight, F. (1921). *Risk, Uncertainty, and Profit:* Reprints of Economic Classics. New York: Augustus M. Kelley, Bookseller, 1964 reprint. p. 192.
24. Kovaleva, A.M., Lapusta, M.G., Ckamai, L.G. (2007). *Finansi firmi* (Enterprise Finances) Moskva: Infra-M, pp. 362-390.
25. Kudrinska, M. (2005). *Komercbanku riski un to atbilstiba pasu kapitalam*. Riga: Datorzinību centrs, pp. 11-19.
26. Luhmann, N. (1993). *Risk: A Sociological Theory*. Berlin; New York: Walter de Gruyter&Co. p. 236.
27. Matten, D. (2004). The Impact of the Risk Society Thesis on Environmental Politics and Management in a Globalising Economy - Principles, Proficiency, Perspectives. *Journal of Risk Research.* London: Routledge, Vol. 7, Issue 4, pp. 377-398.
28. Merna, T., Al-Thani, F. (2005). *Corporate Risk Management. An Organisational Perspective.* West Sussex, England: John Wiley & Sons Ltd. p. 440.
29. Meskon, M., Albert, M., Hedour, F. (1997). *Osnovi menedzmenta* (Basic Management). Moskkva: Izdatelstvo "Delo", str. 138-180.
30. *Parbaudes, izpetes un riska vadisanas istenosana, izmantojot novertesanu un kontroli* (Implementation of Testing, Research and Risk Management Using Assessment and Control). Retrieved: http://www.riski.lv/public/25941.html. Access: 10 July 2010.
31. Pelss, A. (1999). *Izmaksu analize lemumu pienemsanai*: macibu līdzeklis (Cost Analysis for Decision Making). Rezeknes Augstskola. Rezekne: RA izdevnieciba. p. 126.
32. Pettere, G., Voronova, I. (2003). *Riski uznemejdarbiba un to vadiba*: macibu līdzeklis (Risks in Entrepreneurship and their Management). Banku augstskola. Riga: apgads Rasa ABC, p. 76.

33. Praude, V. (2009). *Finansu instrumenti (Financial Tools)*. Riga: Burtene. p. 446.
34. Preston, B.C. (2004). *The Etymology of Risk.* pp. 5-16. Retrieved: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.112.3920&rep=rep1&type=pdf. Access: 19 July 2011.
35. Renn O. (2008). *Concept of Risk: An Interdisciplinary Review*. Proceedings of the ISA Conference, Barcelona, September 2008, pp. 3-10. Retrieved: http://www.riskanduncertainty.net/TG04/Ortwin_Renn_concepts.pdf. Access: 10 July 2011.
36. Rescher, N. (1983). *Risk: A Philosophical Introduction to the Theory of Risk Evaluation and Management.* Lanham, MD, USA: University Press of America. p. 208.
37. Rogov, M.A. (2001). *Risk menedzment* (Risk Management). Moskva: Finansi i Statistika. str. 120.
38. Rowe, W.D. (1977). *An Anatomy of Risk.* New York: John Wiley & Sons. p. 488.
39. Rurane, M. (2002). *Uznemejdaribas organizacija un planosana (Organisation and Planning of the Entrepreneurship)*. Riga: Biznesa Augstskola Turiba. p. 330.
40. Sahov, V. (1999). Vvidenije v strahovanije (Introduction to Insurance). Moskva: Finansi i Statistika, str. 33-61.
41. Saskanova, S. (2006). *Uznemuma finansu vadibas praktiskas metodes (Practical Methods of Financial Management in an Enterprise)*. Riga: SIA Merkurijs, pp. 218- 240.
42. Scott, J. (2000). Rational Choice Theory. *Understanding Contemporary Society: Theories of the Present*. London: Sage Publications, pp. 126-138. Retrieved: http://privatewww.essex.ac.uk/~scottj/socscot7.htm. Access: 24 October 2011.
43. Sinki, D. (2007). *Finansovij menedzment v komercheskom banke i v industrii finansovih uslug* (Financial Management in a Commercial Bank and in the Industry of Financial Services). Moskva: Alipina Biznes Books, Alipina Publisher, str. 320-325.
44. Skjong, R. (2005). *Etymology of Risk: Classical Greek Origin – Nautical Expression – Metaphor for "Difficulty to Avoid in the Sea"* Det Norske Veritas. Retrieved: http://research.dnv.com/skj/Papers/ETYMOLOGY-OF-RISK.pdf. Access: 10 July 2011.
45. Stanka, A. (2004). Riski, to izvertesana un vadiba (Risks: Assessment and Management). *Uznemejdarbiba lauku ilgtspejiga attistiba.* Jelgava: Jelgavas tipografija, pp. 170-192.
46. Suskevica, J. (2005). *Riska vadibas rokasgrāmata (Risk Management Handbook).* Riga: Dienas bizness, pp. 12-38.
47. Tusler, R. (1996). *An Overview of Project Risk Management.* Retrieved: http://www.netcomuk.co.uk/~rtusler/project/riskprin.html. Access: 10 July 2011.
48. Vedla, A. (2000). *Uznemejdarbibas kurss (Course in Entrepreneurship).* Riga: Petrovskis&Co, pp. 46-52.
49. Vedla, A. (2002). *Celvedis uznemejdarbiba (Guide to Entrepreneurship)*. Riga: Petrovskis&Ko. p. 490.
50. Wharton, F. (1992). Risk Management: Basic Concepts and General Principles. *Risk Analysis, Assessment and Management.* Chichester, UK: John Wiley & Sons, pp. 3-14.

Acknowledgment

The publication has been supported by the European Social Fund (ESF) in the framework of the project "Support for the Implementation of Doctoral Study Programmes at Latvia University of Agriculture'' No.: 2011/0055/1DP/1.1.2.1.2/11/IPIA/VIAA/008.

Agri-Food Trade Within Selected International Trade Agreements

Agnieszka Sapa[1], PhD
Department of Macroeconomics and Food Economy
Poznan University of Economics

Abstract. Contemporary international trade relationships are characterised by proliferation of creating the international trade agreements that build the international integration groupings. Within these agreements, trade takes place on a preferential basis. Formation of the international integration groupings may be accompanied by greater intensification of intra-regional trade flows (total trade, agri-food trade) than extra-regional trade flows. The main aim of this paper is to determine the directions and intensification of the total trade and the agri-food trade in 1996-2009 for three selected international integration groupings: MERCOSUR, NAFTA, and the EU. Time series of trade data are derived from the World Bank's international trade database: World Integrated Trade Solution (WITS). The indicators of regional trade interdependence were calculated: intra-regional trade share, intra-regional trade intensity index, and symmetrical introversion trade index. The interpretation limits of those indicators were described in the context of international integration groupings comparison. The analysis allows expressing that not each grouping was accompanied by faster growth of intra-regional trade intensity than extra-regional trade intensity, which means different ex-post diversion trade effect. However, in all groupings both total trade and agri-food trade were more focused on the exchange with groupings members than with the third countries. A slight increase of the intra-regional agri–food trade share was observed only in the case of the EU. For MERCOSUR, a strong decline in the intensity of intra-regional trade (total and agri-food) index was observed, yet, at the same time there was the absence of significant changes of that index for the other groups. The intensity of intra-regional agri-food trade grew faster than the extra-regional in the case of the EU and NAFTA. Such results can be partly explained by the nature of agricultural and trade policies of the selected grouping members.
Key words: international integration grouping, intra-regional trade share, intra-regional trade intensity index, introversion trade index.
JEL code: F13, F15

Introduction

Contemporary international trade relationships are characterised by proliferation of creating the international trade agreements that build the international integration groupings. Within these groupings, trade takes place on a preferential basis and is discriminating against the third countries (Sapa A., 2011). Therefore, one can assume that the creation of international integration groupings is accompanied by faster intensification of trade flows within the various groups than between groups and the rest of the world in the context of total trade and agri-food trade as well. The main aim of this paper is to determine the directions and intensification of total trade and the agri-food trade in 1996-2009 for three selected international integration groupings: MERCOSUR, NAFTA, and the EU[2]. Data are derived from the World Bank's international trade database: World Integrated Trade Solution (WITS) and are measured in US dollars in current prices. The SITC classification was used where agri-food products are defined as SITC (0+1+2-27-28+4). The indicators of regional trade interdependence were calculated. These indicators, however, do not estimate trade effects of international integration and do not indicate the reasons of distribution of trade flows. Three indicators were calculated in this study: intra-regional trade share, intra-regional trade intensity index, and symmetrical introversion trade index. The first two measures are often used in the analysis of international integration groupings, although, they have some limitations of interpretation in the context of time series analysis and groupings comparison. The indicator that is rather free of some restrictions is symmetrical introversion trade index, which can be interpreted as the ex-post trade diversion effect.

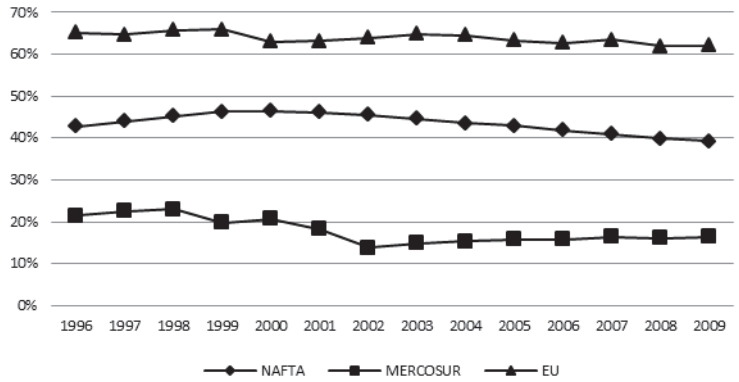
Research results and discussion

1. The role of intra-regional trade in MERCOSUR, NAFTA, and the EU

One of the most used indicator in the analysis of international trade flows within selected international integration groupings is intra-regional trade share (trade means export plus import). This indicator is defined as the ratio of trade among the countries (members of groupings) to the overall trade of these countries. It allows to specify how relatively important

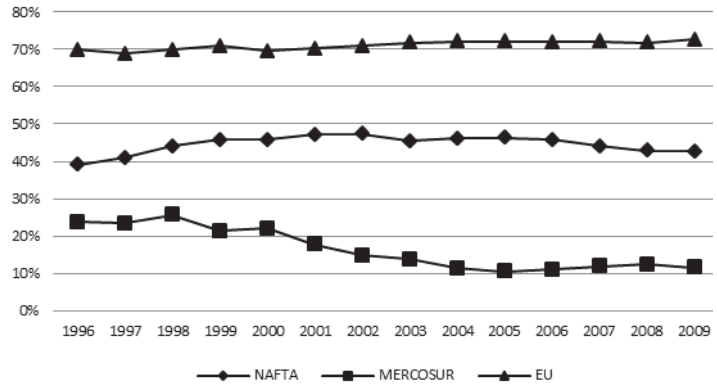
[1] *E-mail address*: agnieszka.sapa@ue.poznan.pl

[2] Throughout the analysed period of 1995-2009, the membership of each grouping is fixed in order to avoid distortion caused by accession. MERCOSUR members are Argentina, Brazil, Paraguay, and Uruguay. NAFTA includes Canada, Mexico, and the United States. The EU members are Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Estonia, Finland, France, Hungary, Ireland, Italy, Lithuania, Latvia, Luxembourg, Malta, the Netherlands, Poland, Romania, Spain, Slovak Republic, Slovenia, Sweden, and the United Kingdom.



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 1. **Intra-regional total trade share index in MERCOSUR, NAFTA, and the EU in 1996-2009, %**



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 2. **Intra-regional agri-food trade share index in MERCOSUR, NAFTA, and the EU in 1996-2009, %**

is intra-regional trade in relation to the total trade of the members of the grouping (Cheong D., 2010; Iapadre L. 2004). The mathematical formula of this index is:

$$S_i = t_{ii} / t_{i,}$$

where

t_{ii} - region i's intra-regional trade;
t_i - region i's total trade.

The intra-regional trade share index is very often used for the evaluation of regional trade concentration, although its worth for analysis if comparison of the selected international groupings is limited (dell'Aquila C., Sarker R., Meilke K. D., 1999). First, the value of the index depends on the number of members and the size of their economies. Thus, the greater is the number of group members, the bigger is the intra-regional trade share index. In addition, the group with a large number of members will show a larger share of intra-regional than a region that has the same share of the world trade but includes a smaller number of members (Cheong D., 2010). The next problem is connected with the concept called geographic neutrality. The geographic neutrality is defined as lack of preferential direction of trade flows of a country or group of countries. Geographic distribution of group trade is neutral if the weight of each trade partner of this group is equal to its weight in the world trade. Intra-regional trade share index is positively correlated with the size of the grouping measured by the value of its total trade. It means that if the trade flows of each group members are geographically neutral, the larger region (more members) will have a larger share of intraregional trade only because of its size. Yet, it is independent of the current intensity of intra-regional trade flows. Intra-regional trade share is biased by pro-cyclical distortion (Iapadre L., 2004). The increase of intra-regional trade share does not necessarily mean the strengthening of the internal orientation of flows, but may reflect the increase in the relative share in the world trade group in connection with the improvement of economic situation.

The highest share of intra-regional trade, both for total trade and agri-food trade, was characteristic for the EU countries (which in light of the above comments on the limitations of interpretation of indicator, is quite understandable). These shares were at a relatively stable level with a little decline in the share of total trade (from 65% to 62%) and a slight increase for agri-food trade (from 70% to 73%).

In the case of NAFTA, after a period of growth in the second half of the 1990s, the importance of intra-regional trade has steadily declined since 2000. In MERCOSUR, a steadily decrease of intra-regional trade share was observed both for total trade (from 21% to 16%) and agri-food trade (from 24% to 11%), although, the share of intra-regional agri-food trade has been at the similar level since 2004 (Figures 1 and 2). The relatively low level of intra-regional trade share in MERCOSUR was partly associated with the imperfect implementation of the customs union and common external tariff (Korinek J., Melatos M., 2009).

2. Intensity of intra-regional trade flows in NAFTA, MERCOSUR, and the EU

The intra-regional trade intensity index is the measure, which partly allows avoiding the abovementioned interpretation problems in the context of dynamic analysis of trade flows of international integration groupings. The simplest form of this index can be described as the ratio of the intra-regional trade share of the group to the share of trade of group in the world trade. Its mathematical formula is:

$$I_i = (t_{ii} / t_i) / (t_i / T),$$

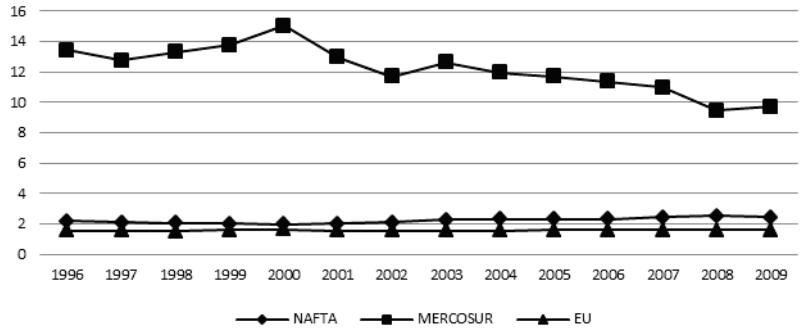
where

t_{ii} - region i's intra-regional trade;
t_i - region i's total trade;
T - world trade.

That measure is also called relative intra-regional trade intensity index because the intra-regional trade is estimated in relation to the share of group trade in the world trade (Cheong D., 2010). Therefore, that index is also considered as alternative of the revealed comparative advantages of Balassa interpretation to indicate specialisation of trade direction. If the intra-regional trade intensity index is greater than one, it means that grouping trade is specialised - trade is more oriented toward grouping members than towards the third countries. Increase in that index means that the weight of grouping for trade flows grows more (decreases less) than the weight of the world economy (Iapadre L., 2004).

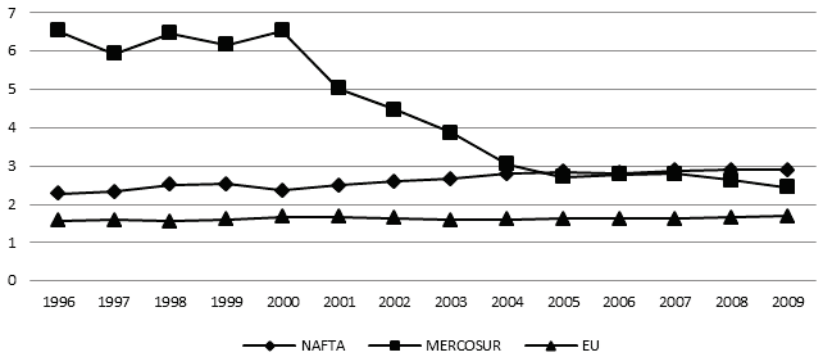
— The indicator is equal to one when the intra-regional share of grouping is equal to the share of grouping trade in the world trade. This situation means that the trade of the group members is geographically neutral. So, there is no greater bias toward either the members or the third countries.
— If the indicator has a value above one, it means that the grouping trade is more oriented towards groping members.
— If the indicator is less than one (and greater than zero), this means that trade flows are more oriented towards the third countries.

All intra-regional trade intensity indexes calculated for selected groupings (MERCOSUR, NAFTA, and the EU) were greater than one (Figures 3 and 4). It can be said that trade of these groupings is specialised, since the trade flows (total trade and agri-food trade) are more



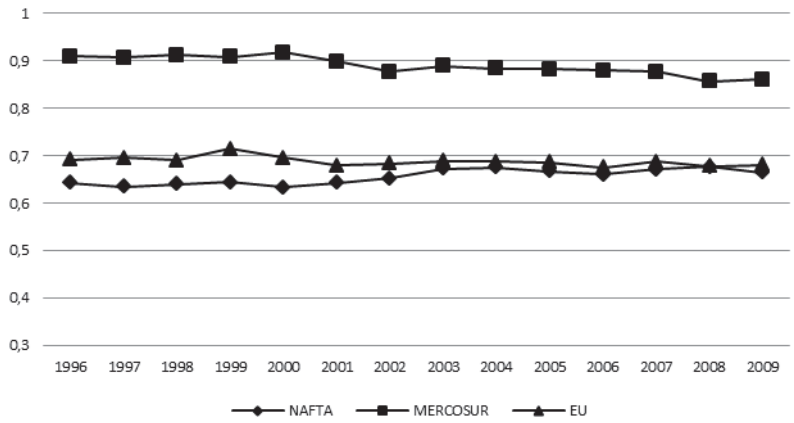
Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 3. **Intra-regional trade intensity index for total trade of MERCOSUR, NAFTA, and the EU in 1996-2009**



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 4. **Intra-regional trade intensity index for agri-food trade of MERCOSUR, NAFTA, and the EU in 1996-2009**



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 5. **Introversion index for total trade of MERCOSUR, NAFTA, and the EU in 1996-2009**

oriented towards countries – groupings members than towards the third countries. For the EU, the relative intra-regional trade share was almost on the unchanged level for both total trade and agri-food trade. In NAFTA, intra-regional agri-food trade became slightly more important. The intra-regional trade index for MERCOSUR was quite different. In 2000, importance of intra-regional total (agri-food) trade was 15 (6.5) times higher than the share of group total (agri-food) trade in the total (agri-food) world trade. Since then, the relative importance of intra-regional trade has continuously decreased what is particularly evident in the case of agri-food trade. This ratio decreased to 2.5 in 2009.

Intra-regional trade intensity index (in the traditional Balassa sense) has interpretation problems that can be referred to three areas. The first problem, the range variability of the index depends on the size of the grouping. The intensity ratio is greater the smaller is the share of the entire group in the world trade. This index ranges from zero (no intra-regional trade) - up to a maximum value (no extra-regional trade). The second problem is related to the asymmetry of the range variation. The range of variation of the index is not symmetrical around its neutrality threshold – when the index takes the value of one.[3] The third problem is connected with possible sign concordance between the changes of complementary indicators (for example, intra-regional trade indicator, and extra-regional trade indicator are complementary indicators). It can be shown that under certain assumptions, the two complementary indicators can change in the same direction that creates some interpretation problems (Iapadre L., 2004). In order to solve such problems, L. Iapadre proposed alternative measure of trade flows' intensity - symmetrical trade introversion index. This indicator measures the relative intensity of regional trading versus trading with the third countries.

3. Trade introversion index in selected international groupings

The introversion trade index synthetically shows if intra-regional trade intensity grows more or less than extra-regional trade intensity. The mathematical formula of this index is as follows:

$$SJ_i = [HI_i - HE_i] / [HI_i + HE_i],$$

where

$HI_i - (t_{ii} / t_i) / (t_{ri} / t_r)$

$HE_i - [1 - (t_{ii} / t_i)] / [1 - (t_{ri} / t_r)]$

t_{ii} - region i's intra-regional trade;

t_i - region i's total trade;

t_{ri} - region's i extra-regional trade;

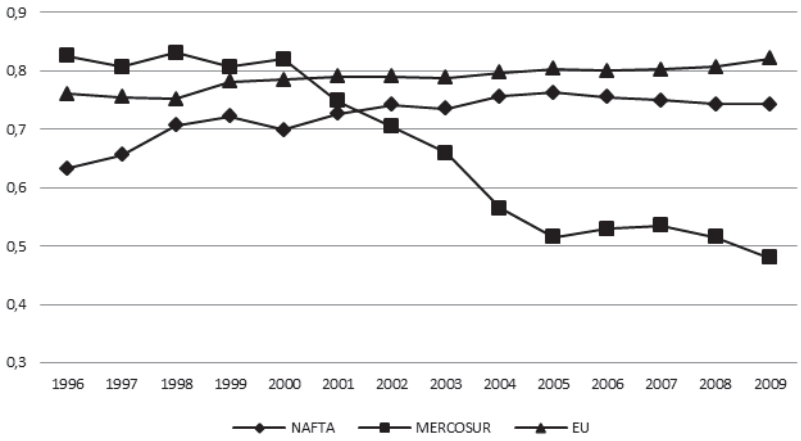
t_r - total trade of the rest of the world.

- The index is independent of the size of the region, its range is [-1, 1] and it is symmetrical around zero.
- The introversion trade indicator is equal to zero when trade of grouping is geographically neutral.
- If the indicator is greater than zero, it means that trade flows are inwards oriented.
- If the indicator is less than zero, the region's trade has an extra-regional bias.

Trade introversion index rises (falls) when the intensity of intra-regional trade of grouping is growing faster (slower) than the intensity of extra-regional trade. Indicator can also be interpreted as an ex-post measure of trade diversion effect.

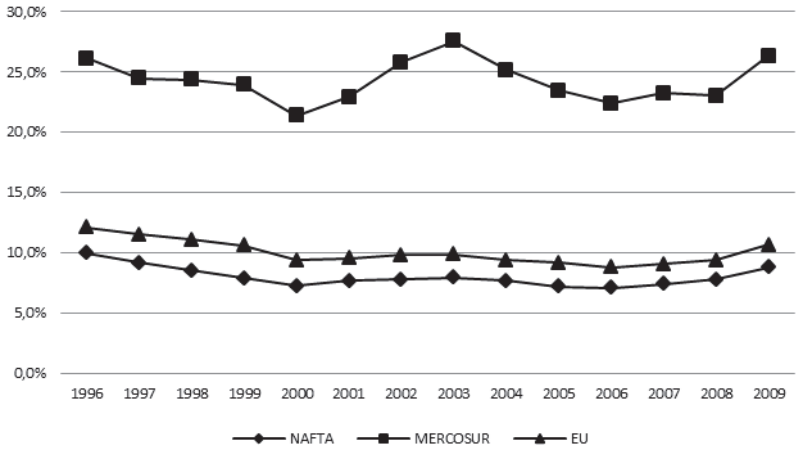
For the analysed groupings, the total trade flows as well as agri-food trade have intra-regional bias ($SJ_i > 0$, figures 5 and 6). At that time, the lowest trade introversion index was characteristic for NAFTA. The introversion measure was stable both for NAFTA and for the EU, which suggests that there was no strong trade diversion effect. In the case of MERCOSUR, the trade introversion indicator has been continuously decreasing since 2000. Such tendency is particularly evident taking into account agri-food trade (Figure 6). For the other two international integration groupings (NAFTA, the EU), the trade introversion indicators for agri-food trade were growing steadily, which means that the inter-regional intensity of agri-food trade was growing faster than the extra-regional intensity of agri-food trade.

[3] To avoid problems connected with range variability and range asymmetry some other indexes are calculated: *homogeneous index of intra-regional trade intensity and symmetrical index of intra-regional trade intensity*. See more in: Iapadre L., 2004, pp. 6-8.



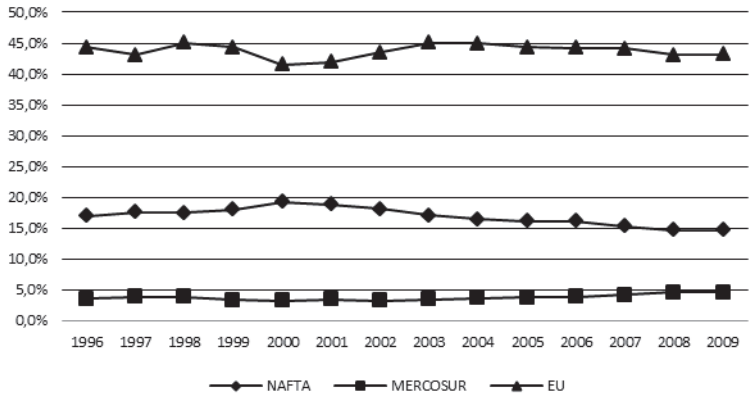
Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 6. **Introversion index for agri-food trade of MERCOSUR, NAFTA, and the EU in 1996-2009**



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 7. **Share of agri-food trade of MERCOSUR, NAFTA, and the EU in its total trade in 1996-2009**



Source: author's construction based on the data from the World Integrated Trade Solution

Fig. 8. **Share of agri-food trade of MERCOSUR, NAFTA, and the EU in the world agri-food trade in 1996-2009**

The presented indicators do not indicate the reasons for such trade flows fluctuation. However, one can speculate that quite different relative changes in the intra-regional agri-food trade intensity and extra-regional agri-food trade intensity for NAFTA, the EU, and MERCOSUR are associated with the nature of agricultural and trade policies (more or less protectionist) of these groupings. The increase in agri-food trade introversion index was observed for the groupings that encompass mainly developed countries, where agriculture has a relatively low share in GDP, and which are the main players in the global agri-food market (Figure 8). The intensity of intra-regional agri-food trade was decreasing faster than for extra-regional agri-food trade in the case of MERCOSUR - the grouping, for which the agri-food trade was responsible for about ¼ of the whole of their total trade (Figure 7). Although, its share in the world agri-food trade was low and stable levelling around 5%. In the light of these calculations, it cannot be categorically said that the establishment of international integration grouping is accompanied by a relative increase in intra-regional agri-food trade intensity to the extra-regional agri-food intensity. Thinking of the world food situation, it is interesting if and how such a downward trend in agri-food trade introversion for MERCOSUR would affect the food security of its members. However, the answers to these questions require further research that go beyond the capacity of this study.

Conclusions

1. Among the analysed groupings, the lowest share of intra-regional trade occurred in MERCOSUR. The intra-regional total trade share was almost on a stable level with a slight downward trend in all groupings. The case of MERCOSUR is quite distinctive, since the intra-regional agri-food trade share decreased by over 10 p.p. In NAFTA, this measure initially rose by 10 p.p., and then went back to the beginning level. Only in the EU countries, this share was almost unchanged.
2. For all analysed groups, it can be said that both total trade and agri-food trade are specialised, because trade flows were more oriented towards member countries than to the third countries. A clear decrease in the intensity of intra-regional trade (both total and agri-food trade) was observed for MERCOSUR. This situation was accompanied by the absence of significant changes of intensity index for the other groupings.
3. It can be concluded that intra-regional trade intensity was growing faster than extra-regional trade intensity, yet, not for all analysed groupings. The intensity of intra-regional total and agri-food trade was growing faster than the intensity of extra-regional total and agri-food trade in the EU and NAFTA – groupings that are the major players on the global food market and have a relatively low share of agriculture in GDP and agri-food trade in their total trade. On the contrary, the introversion ratio decreased for total and agri-food trade in MERCOSUR where agri-food trade represents about ¼ of total trade. These differences in changes in introversion agri-food trade indexes may be the results of the nature of agricultural and trade policies (more or less protectionist) of those groupings. Taking into account the interpretation of trade introversion index, it can be concluded that for agri-food trade the positive diversion trade ex-post effect took place in the EU and NAFTA, and negative for MERCOSUR.

Bibliography

1. Cheong, D. (2010). *Methods for Ex Ante Economic Evaluation of Free Trade Agreements.* ADB Working Paper Series on Regional Economic Integration, Asian Development Bank, No. 52, June, pp. 3-5. Retrieved: http://aric.adb.org/pdf/workingpaper/WP52_Ex_Ante_Economic_Evaluation.pdf. Access: 15 December 2010.
2. dell'Aquila, C., Sarker, R., Meilke, K. D. (1999). *Regionalism and Trade in Agrifood Products.* International Agricultural Trade Research Consortium, Working Paper 99-5, May, p. 17. Retrieved: http://ageconsearch.umn.edu/bitstream/14591/1/wp9905.pdf. Access: 10 December 2010.
3. Iapadre, L. (2004). *Regional Integration Agreements and the Geography of World Trade: Statistical Indicators and Empirical Evidence.* Dipartimento di Sistemi e Istituzioni per l'Economia, Facolta di Economia, Universita dell'Aquila and CIDEI, University of Rome "La Sapienza", Preliminary draft, 1 September, pp. 3-5, 8-9. Retrieved: http://www.etsg.org/ETSG2004/Papers/iapadre.pdf. Access: 5 August 2010.
4. Korinek, J., Melatos, M. (2009). *Trade Impact of Selected Regional Trade Agreements in Agriculture.* OECD Trade Policy Working Papers, No. 87. pp. 8-9, 47-48. Retrieved: http://www.oecd.org/dataoecd/42/37/42770785.pdf. Access: 10 August 2010.
5. Sapa, A. (2011). *Regional Agreements within Multilateral Conditions.* In: I. Bludnik, M. Ratajczak, J. Wallusch, *Economics. Yestarday, Today and Tomorrow*, Scientific Journal 190, the Poznan University Publishing, Poznan, pp. 379-398.

Medium-Term Problems and Perspectives of Latvia's Economic Sector – Machine Building and Metal Working

Inga Sina[1], Dr.oec., associate professor
University College of Economics and Culture

Abstract. The aim of the study is to identify the role of machine-building and metalworking sector in the manufacturing industry by exploring the export potential of the sector and its future prospects. A problem is the shortage of specialists despite the high unemployment rate in the country. The author concludes that the sector has not overcome the crisis yet, though it keeps growing steadily, and the sector has a high export potential. It is also proved by the fact that the sector is on the priority list of the Ministry of Economics "Manufacturing Industries with a Considerable Investment in Increase of Value Added and Export, and with a High Growth and Export Potential in the Future" that provides the government support to the branch over a medium-term period till 2015. The study confirms that several new specialties requiring highly qualified staff will emerge in the sector in the near future; though Latvia cannot provide them at the moment. The author concludes that the project being implemented by the European Social Fund "Development of Sectoral Qualifications System, and Increasing te Efficiency and Quality of Vocational Education", aimed at the development of a permanently working quality system that provides for the curriculum of vocational education meeting the demands for the sector growth, will help the sector solve education and training issues and curriculum issues. The Council of Sectoral Experts has been established within the said ESF project, having started its work already on aligning the branch needs with the labour force planning, training, education, and curriculum issues.
Key words: machine-building, metalworking, sector, export potential, long-term development, specialties.
JEL code: O14

Introduction

In October 2009, the Ministry of Economics published the Informative Report "On the Medium-Term Policy Directions of Economic Recovery", which defined the long-awaited medium-term goals and tasks for the development of Latvian national economy (by the year 2015), listed the government-supported priority segments and supported directions thereof, and described the major goals and activities aimed at raising competitiveness of the whole national economy and creating favourable business environment. There have been no crisis management strategies during the years of crisis in Latvia; consequently, the way out of the economic recession is not being led purposefully; instead, it runs in an unorganised and self-development manner. Therefore, Latvia is facing the consequences of the recession, i.e. in 2010, the unemployment rate is approaching 15% in some regions, while there are sectors with an urgent need for skilled workers.

On 1 December 2010, the National Education Development Agency in collaboration with the Confederation and Free Trade Union Federation of Latvia Employers, the National Centre of Education, and the National Office of Education Quality initiated the implementation of the European Social Fund project "Development of Sectoral Qualifications System, and Increasing the Efficiency and Quality of Vocational Education". The major goal of this project was to establish a permanently working quality system providing for such vocational education curriculum that meets the development needs of the sector.

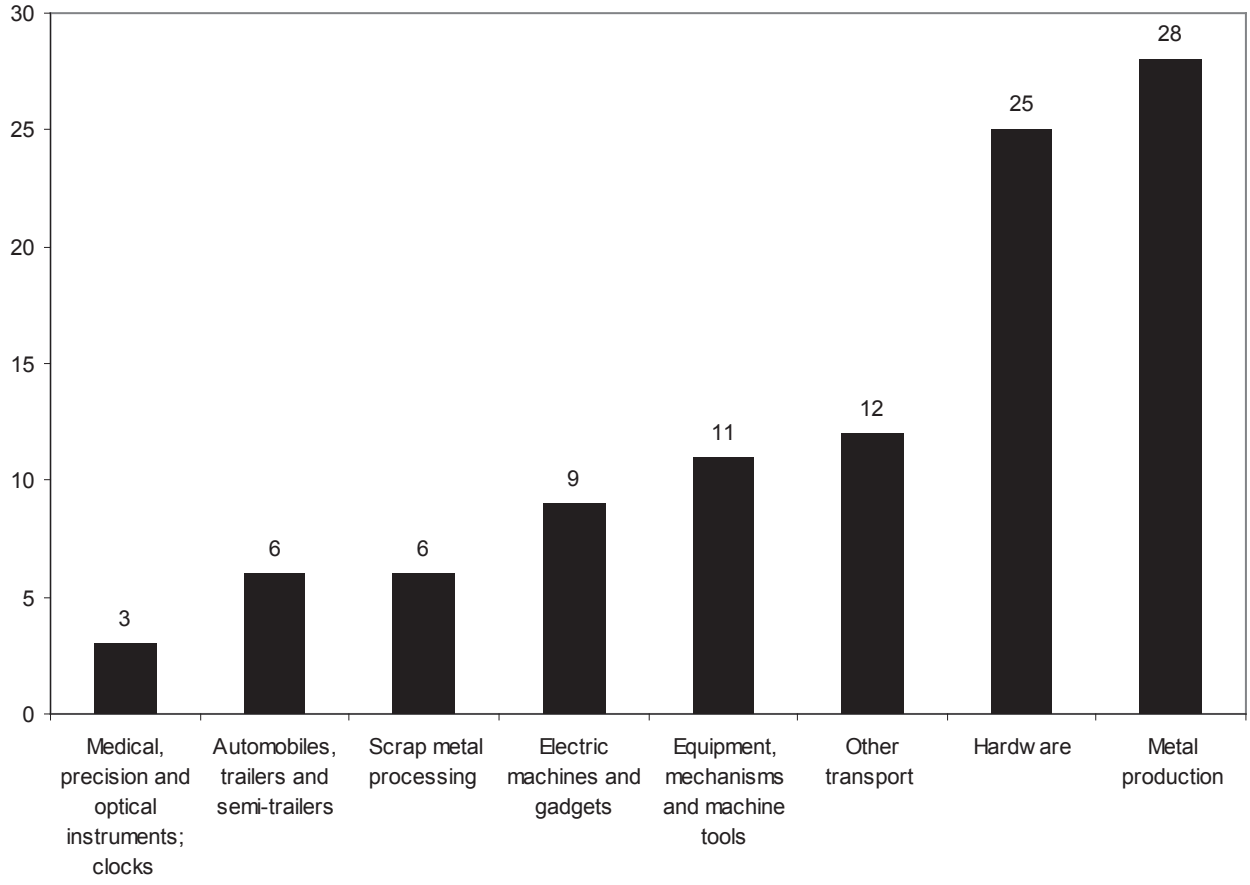
This research offers a vision of the sector as currently seen by the professionals of the sector and a national coordinator of the project representing Latvian Employers' Confederation. It defines problems of the sector and medium–term development prospects. Machine building and metalworking sector has a great export potential. The theme of the study is very topical, as the development of the sector demands new specialties requiring highly qualified workers, which are not being trained in Latvia yet.

The aim of the paper is to study the role of the machine building and metalworking sector in Latvia's manufacturing industry, and to explore the export potential of the sector and the impeding factors. To reach the aim, the following tasks have been set: to study information on the sector provided by statistical evidence and data of the nongovernmental organisations representing the sector; **to carry out a survey among experts and/or professionals of the sector on the problems, development issues, and export prospects of the sector; and to draw conclusions and make suggestions for enhancing the sector's medium-term competitiveness**. Methods applied in the research: monographic approach, document analysis, survey, and interviews.

Machine-building and metalworking sector and subsectors, and their role in Latvia's national economy

Machine-building is a strategic sector – it is a high value added branch requiring broad knowledge and experience, and it serves as a supplier to all other economy sectors providing equipment, production facilities, spare parts and related services as well as the technologies

[1] *E-mail address*: inga.shina@gmail.com



Source: author's construction based on the data of the Association of Mechanical Engineering and Metalworking Industries of Latvia information Structure of machine building and metalworking sector, 2009, 9 months

Fig. 1. **Structure of machine building and metalworking sector in 2009, 9 months**

and knowledge the mentioned sectors require. Machine-building is not homogeneous – it is a multiform sector incorporating a wide range of subsectors.

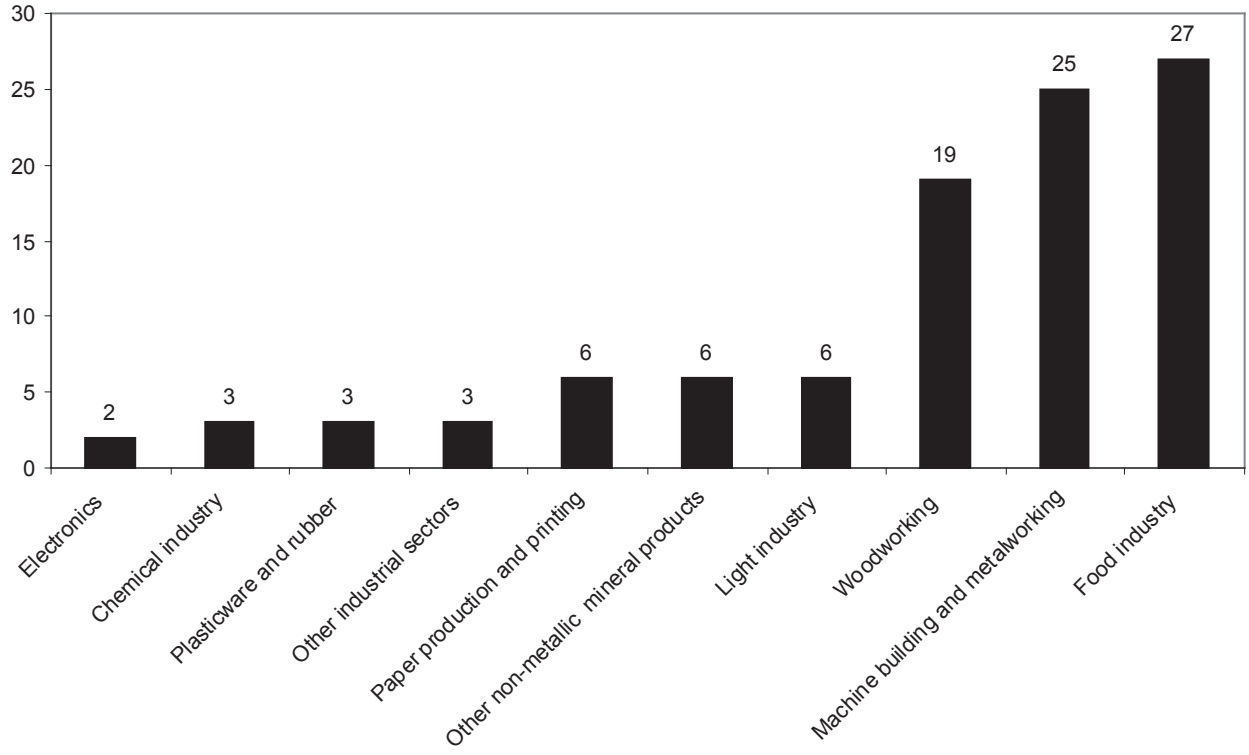
As per the general classification of economic activities, the NACE codes 22, 24, 25, 27, 28, 29, 32, and 38 apply to the activities of the sector; the NACE codes 22 and 38.3 apply to the fields of the sector's activities indirectly and are deemed the marginal activities of the sector. The NACE codes 24, 25, and 28 apply to the sector strongly.

In Latvia, machine-building and metalworking sector ranks among the major and the most export-oriented manufacturing industries producing steel, vessels, trains, agricultural, woodworking, and food-processing facilities.

The above figure shows that only food industry gives a higher contribution to Latvian manufacturing industry.

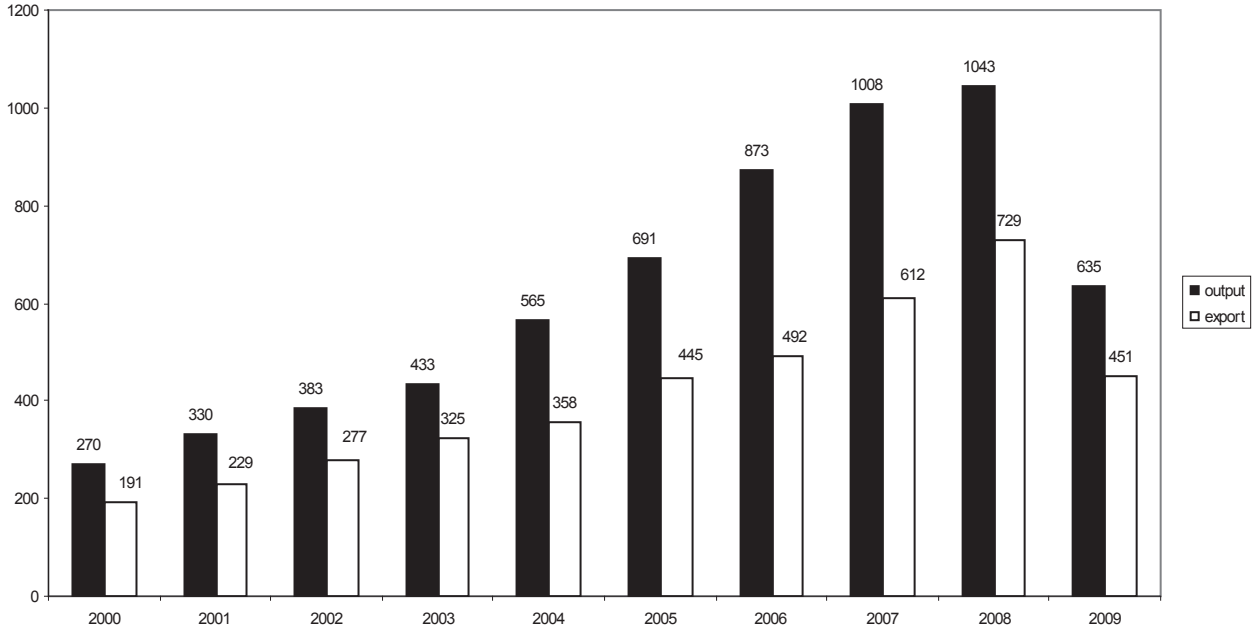
Brief history, development, and export-orientation of the sector

On the territory of Latvia, the first iron manufactories emerged in Kurzeme, and they date back to the 16th century. Between the 1640s and the 1650s of the 17th century, blast furnaces to produce cast iron were built in Baldone, Vecmuiza, Birzi, Lutrini, Turlava, and Klingi. The first copper hammer was in Ikskile (1641), an ironware manufactory – in Salaspils (1654), and a gun shop – in Skrunda, while iron, a copper was working in Jelgava, copper hammer in Valgums, and an iron manufactory in Engure. Cannons, shots, small shots, knives, swards, pikes, various gadgets, and household articles were produced in the 1690s, when iron industry was modernised according to Swedish pattern. The Northern War and plague stopped the development of the industry for a long period. The Industrial Revolution began in the 18th century in Great Britain. In Riga, Wörman & Schon iron foundry and machine building company started working in 1832. This laid the foundation of machine building in Latvia. In the late 19th century, Riga advanced to become one of the major industrial and cultural centres within the Russian Empire. The first technical university college was established in 1862 – Riga building, rubber industry. With the lapse of time, only three large enterprises are associated with the Polytechnic School. The name of Riga is associated with the genesis of Russian bicycles and automobiles. The first tanks, standard type fighter aircrafts, carriage building, machine century's history – Liepaja metalurgs (Liepaja nails and staples factory Bekeri, 1882), Riga Electrical Machine–building Plant (the fourth largest rubber producer in the world Provodnik, 1888), and Riga Carriage Building Plant (Feniks, 1895) are the most famous factories. The World War I destroyed manufacturing. A range of industrial buildings of architectural value erected in the 19th century is a part of industrial heritage today. During



Source: author's construction based on the Swedbank research "Structure of Latvian Manufacturing Industry"

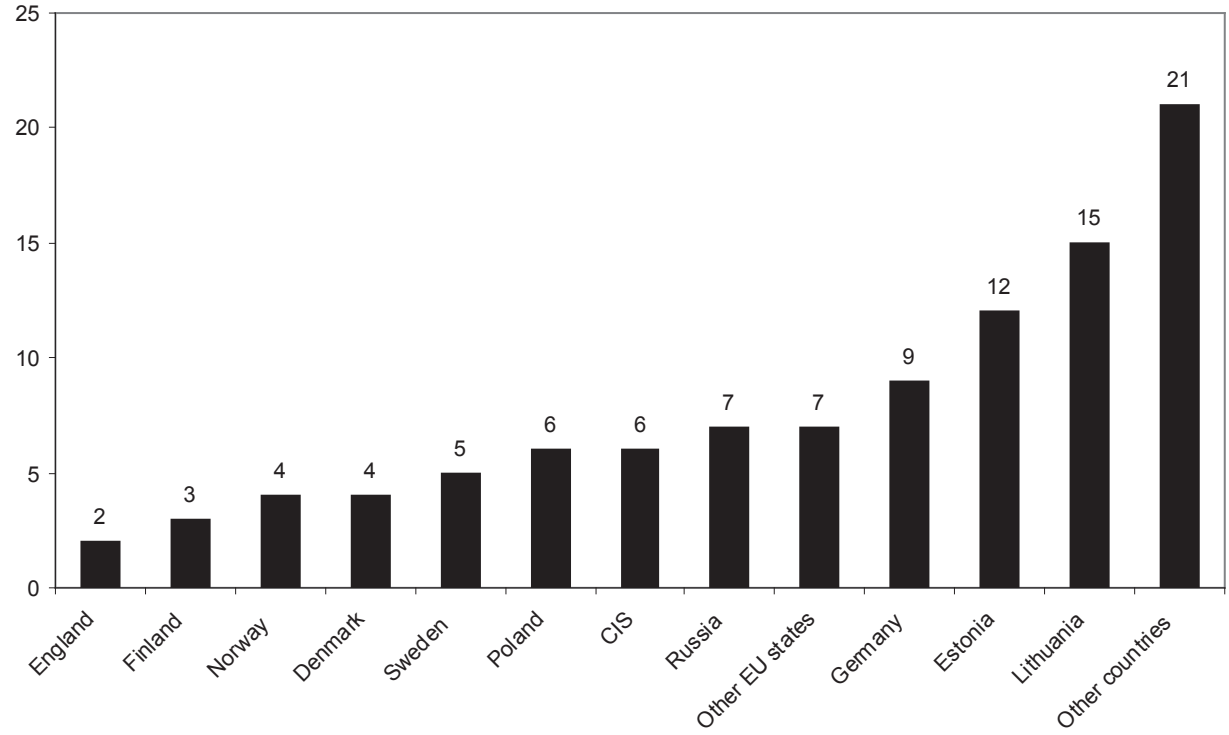
Fig. 2. **Structure of Latvian manufacturing industry, 2010**



Source: author's construction based on the data of the Association of Mechanical Engineering and Metalworking Industries of Latvia information Sectoral output, domestic market and export

Fig. 3. **Sectoral output, domestic market and export (current prices, million LVL)**

the first Republic of Latvia, carriage building and electrical industry grew (the first standard type miniature camera VEF–Minox in the world, 1938). In the post-war period, in the 1950s, manufacturing achieved record-high production outputs as a part of the Soviet Union's industry. The number of workers employed by the machine-building and apparatus-building industry amounted to 132 thousand people. After Latvia re-established its national independence, sectoral production output demonstrated a catastrophic decline in the new political



Source: author's construction based on the data of the* Association of Mechanical Engineering and Metalworking Industries of Latvia information *Export markets

Fig. 4. **Major export markets, 2010**

and economic circumstances. In 1994, a team of leading specialists and executives of the sector established the Machine-Building and Metalworking Industry Association. The Machine-Building and Metalworking Industry Association (MASOC) is a voluntary non-governmental organisation established as the sector's information and advisory centre. Currently, the Association unites over 150 machine-building and metalworking industrial enterprises as well as companies from related sectors in order to advance development of the sector, and to encourage mutual collaboration and professional growth of the sectoral specialists. Members of the Association produce 80% of the sector's gross product. Activities of the Association have contributed to the renascence of the sector, and steady growth of exported products, thus driving the sector to the status of the second largest manufacturing industry in Latvia. The Council of Machine–Building and Metalworking Sectoral Experts (NEP) was established under the project "Development of Sectoral Qualifications System, and Increasing the Efficiency and Quality of Vocational Education" being implemented by the European Social Fund in 2011. Three parties involved in the project joined for cooperation within the Council - Latvian Employers' Confederation, Free Trade Union Federation of Latvia, and the government represented by the specialists of the National Centre of Education and the National Office of Education Quality, each delegating its sectoral advisor. In compliance with the project terms and conditions, sectoral advisors have founded a secretariat that deals with the attraction of sectoral experts to the Council of Machine–Building and Metalworking Sectoral Experts. The NEP members will supervise, give recommendations, and examine the implementation of the following project targets:

— research the sector to identify demands of the sectoral labour market;
— identify the basic professions, related professions and specialisations, in order to start the development of sectoral qualifications structure in line with the 8 levels of the European Qualifications Framework as well as start the elaboration or revision of occupational standard;
— restructure vocational education and further education programmes via modular approach;
— improve contents and procedure of vocational qualification examinations;
— participate in the development of e-data base etc.

The major types of the sectoral products are armature, casts of iron, pig-iron, and non-ferrous metals; stainless steel bars, shipbuilding and repair; production and repair of trains and trams, trailers and semi-trailers; agricultural machinery; machines and accessories thereof; food processing facilities and equipment; household appliances; port facilities; electric tools and equipment; embossing plates and punches; metal constructions; complementary parts etc.

The above data indicate that the annual growth of the sectoral export has been fixed at 34% since 2004. Sectoral production growth has been fixed at 27% per annum since 2004. Given that the CSB data are available for 2009, which was the highest peak of economic crisis, the author interviewed several sectoral experts. All the experts held the opinion that the growth was even more significant by 2011. Totally, 85% of the output production is exported to 116 countries all over the world.

The figure demonstrates that the products are exported, predominantly, to the neighbouring Baltic countries – Lithuania and Estonia, the former USSR

countries – Russia and CIS countries, and Germany as well.

The Informative Report "On the Medium-Term Policy Directions of Economic Recovery" by the Ministry of Economics states that just like before, "… among subsectors of manufacturing industry, the most significant growth of value added will be shown by woodworking industry and food industry between 2011-2015". Thereafter, it is emphasised that "...similarly, a remarkable specific weight within the growth rates is expected ... by the machine-building and metalworking industry (metals and production of hardware, machinery and equipment production as well as transport machine building)". Hence, the sector may anticipate the government support for future growth and long-term development of the sector.

Number of employees and diversity of professions in the sector

There is a wide range of professions in the sector: starting with the work of a programmable workbench adjuster, mechatronic engineer, equipment engineer, turner, miller, welder, locksmith, and ending with construction and production of new facilities and ware. These specialists are demanded also in other sectors of the national economy. The sector employs over 17 thousand workers. As to MASOC data, the number of sectoral workers has been increasing by 0.8% a year since 2004; whereas, production output per worker has grown by 27% annually. Recession of the recent crisis has resulted in a high unemployment rate in Latvia (11% in October, 2011), though the sector experiences a high demand for qualified and eager-to-work specialists. According to the conclusion of MASOC experts, a burning shortage of specialists is felt in such specialties as constructor, technologist, programmable workbench adjuster/ operator, turner, miller, welder, locksmith, mechatronic engineer, and mechanic.

Future technology processes and future specialties of the sector

Work in the sector is associated with the latest technologies and software; it is creative and promises growth. Since the sector is working for export mainly, the development of the sector will evidently generate new technological processes and new specialties. Today, most of the companies have already made considerable investments into their production processes to employ computer numeric control technologies by having integrated future technology processes into their production, for example:

— CNC plasma and laser cutting;
— CNC waterjet cutting;
— CNC turning, milling;
— CNC wire-cutting;
— CNC sheet cutting;
— CNC sheet folding and rolling;
— CAD/CAM technologies;
— automated powder coating facilities;
— robotic welding, etc.

All the said technology processes do and will require highly qualified specialists and workers. The big problem in the sector is the fact that such specialists are not trained in Latvia at present. The ESF project "Development of Sectoral Qualifications System, and Increasing the Efficiency and Quality of Vocational Education", the objective of which is to build a permanently working quality system providing for such vocational education curriculum that meets the development needs of the sector, will help the sector solve education, training and curriculum related issues by involving NEP sectoral experts to tackle the problems.

The author would mention a mechatronic engineer as an example of future specialties. Mechatronics is acknowledged as one of the ten new technologies that will change the world. It has vast prospects, and it invades our lives to an increasingly greater extent. Mechatronic engineer is a universal engineer providing maintenance of mechanical manufacturing, assembly, packing, and other automated facilities used in technology processes. These specialists install and adjust the facilities and arrange operation thereof. In fact, it is a consolidation of many systems combining bits of mechanics, electronics, and computer engineering and information technologies.

Global economic and social development and introduction of new technologies have brought significant changes to the labour market. With ever new and more sophisticated technologies emerging, the role of mechatronics grows, and hence the profession of mechatronic engineer becomes more demanded. With growing use of mechatronic facilities in Latvian enterprises, the labour market demand for mechatronic specialists increases rapidly, and the shortage of qualified specialists is already felt in mechatronics branch. It is proved by the field practice agreements signed among education institutions and enterprises. According to MASOC data, the forecast growth of employment rates for mechatronic specialists fluctuates between 9% and 31% between 2007 and 2012.

Conclusions

1. Machine–building and metalworking industry has a high export potential with a growing trend. The sector exported 85% of production in 2010.
2. The Ministry of Economics has ranked the sector among the priority segments "Manufacturing Industries with a Considerable Investment in Increase of Value Added and Export, and with a High Growth and Export Potential in the Future", thus, providing the government support to the branch over a medium-term period until 2015.
3. Machine – building and metalworking industry has not reached the pre-crisis development rates, yet it continues its successful growth.
4. The sector occupies a stable place in the holistic perspective of the manufacturing industry of Latvia. The sector covers 25% of the manufacturing industry's structure.
5. The major export markets of the sector are the Baltic States, Russia and the CIS countries, and Germany.
6. A problem to the sector as a whole is caused by the fact that there is a considerable shortage of sectoral specialists in Latvia.
7. Future technological processes of the sector generate new specialties and require highly qualified specialists, which are not currently trained in Latvia.

8. The Council of Sectoral Experts is established in the sector. The Council has started its work, including aligning the sectoral needs with the labour force planning, training, education and curriculum issues.

Bibliography

1. Andrews, J. (1996). *New Edge of the Anvil: A Resource Book for the Blacksmith.* Library of Congress Cataloguing in Publication Data, p. 230.
2. Beatler, A. (2009). *The Art of Blacksmithing*. Castle books, p. 272.
3. Lampton, Ch. (2010). *Nanotechnology Playhouse: Building Machines from Atoms.* White Group Press, p. 231.
4. Schwartz, M. (2003). *Exploring Machines, Buildings, & Weaponry of Biblical Times,* World Publishing, p. 231.
5. Sims, L. (2006). *The Backyard Blacksmith: Traditional Techniques for the Modern Smith,* Library of Congress Cataloguing in Publication Data, p. 176.
6. Association of Mechanical Engineering and Metalworking Industries of Latvia, Export Markets (2010). Retrieved: http://www.masoc.lv/masoc/index.php?option=com_content&view=article&id=152&Itemid=21&lang=1. Access: 10 November 2011.
7. Association of Mechanical Engineering and Metalworking Industries of Latvia, Structure of Machine Building and Metalworking Sector (2009). Retrieved: http://www.nva.gov.lv/docs/11_4b167d08931c45.14768271.pdf. Access: 10 November 2011.
8. Central Statistical Bureau of Latvia (2011). Retrieved: http://www.csb.gov.lv/notikumi/par-rupniecibas-produkcijas-izlaidi-2011gada-novembri-33205.html. Access: 10 November 2011.
9. Report on the Medium-Term Policy Directions of Economic Recovery (2009). Retrieved: http://www.latforin.info/fileadmin/portals/image/faili/Informativs_zinjojums.pdf Access: 10 November 2011.
10. Swedbank Research "Recent Trends in Manufacturing - whether it is Cause for Concern? (2011). Retrieved: http://www.swedbank.lv/lib/lv/Swedbank%20Petijums%202011-05-18.pdf. Access: 10 November 2011.

Transformation of Deindustrialised Objects into Residential Areas in Riga

Guntis Solks[1], Mg.geogr.
Faculty of Geography and Earth Sciences, University of Latvia

Abstract. The aim of this research is to characterise the regeneration processes of deindustrialised objects in Riga, focusing on new residential areas provided. Research methods include review of literature, field studies, interviews with experts, survey of residents, and GIS methods.
Riga has experienced several transformation processes that had various impacts on its development. Very important precondition for further urban development of Riga as the centre of the Baltic region was rapid industrialisation process in the late 19th century and it still affects the urban structure of Riga. Deindustrialisation processes that emerged after the collapse of the Soviet Union in the early 1990s had negative impact on both social environment and spatial structure of Riga. The most visible results of these processes were transformation of several industrial areas into abandoned urban brownfield sites with its negative impact on visual quality of the city.
Part of abandoned industrial areas is located in the city centre or close to it, thus, making them attractive to investors during the rapid economic growth of Latvia in the early 2000s. Further regeneration and redevelopment activities in the abandoned industrial sites marked their transformation from neglected areas into desirable places, thus, contributing to the improvement of urban environment in particular neighbourhoods of Riga.
This kind of urban transformation also contributed to the gentrification processes that can be observed mostly in the areas where regeneration activities were performed. Gentrification in the case of regenerated areas in Riga has various expressions, and in general, it can be understood as social and economic betterment of particular area.
Keywords: deindustrialisation, gentrification, Riga, urban brownfields, urban regeneration.
JEL code: R14

Introduction

Urban regeneration processes are often regarded as an important tool for successful urban development that meets the criteria of sustainability. Regeneration of deindustrialised objects, thus, can be understood as significant component of urban regeneration practice as it deals with redevelopment of more complicated objects.

Industrialisation and deindustrialisation have left their marks in the urban space of Riga and, as a result of these both processes, urban brownfield issue has become topical in recent years. Derelict industrial areas constitute a significant part of urban brownfields in Riga and redevelopment of these areas would provide enough space for various business activities.

Several large scale urban regeneration projects have been implemented in deindustrialised objects located in the suburbs of Riga since the early 2000s with the emergence of economic growth. These activities provided large commercial areas and this process can be characterised as a clear case of commercialisation of particular areas. However, deindustrialised objects located in the central part of Riga experienced different kind of redevelopment as these structures were converted into residential buildings.

The aim of this research is to characterise the regeneration processes of deindustrialised objects in Riga, focusing on new residential areas provided. The research object is deindustrialised objects that are transformed into residential areas.

The tasks of the research:
- review of theoretical issues regarding deindustrialisation and urban regeneration processes;
- characterisation of urban development trends in Riga;
- exploration of transformation of deindustrialised objects in Riga.

The research is based on the results of the field studies, while additional necessary data characterising the economic activities and land use patterns in Riga were acquired from the databases of the Central Statistical Bureau of Latvia and Riga Development Plan 2006-2018 accordingly.

The research methods:
- review of literature. Comprehensive review of several scientific papers was done to characterise the deindustrialisation and it effects as well as essence of urban regeneration process and gentrification process;
- field studies. In order to explore and to evaluate the results of regeneration in deindustrialised objects in Riga, field studies were performed to document the current situation in various objects;
- interviews with experts. This method includes interviews with local planning specialists and developers in order to clarify specific facts about particular redevelopment projects and activities;
- survey of residents. The survey of residents was conducted to provide the general information on the

[1] *E-mail address*: guntis.solks@inbox.lv

social structure of the researched areas. Questions concerning their evaluation of the regenerated deindustrialised objects were also included to characterise their opinion towards various economic and social issues concerning these areas;

— GIS methods. The geographic information system was used to model the appropriate map of Riga to depicture location of industrial territories, deindustrialised objects and location of regenerated deindustrialised objects that are used as residential areas.

1. Deindustrialisation and urban change

The process of deindustrialisation is understood as the decline of traditional industries (Koistinen D., 2006) that determines the shift from a manufacturing to a service-based economy (Brady D., Wallace M., 2001). Tourism, banking, finance, and the service sector more generally start to dominate the city's economy with occurring of the process of deindustrialisation (Erkip F., 2000; Bezmez D., 2008).

Deindustrialisation involves the widespread, systematic disinvestment in the manufacturing industries and this process has both short- and long-term consequences mainly related to the increase in urban poverty (Brady D., Wallace M., 2001) and urban land use patterns that becomes apparent as the emergence of various brownfield sites throughout the city (Grimski D., Ferber U., 2001).

Presently, the definition of brownfields in international planning practice means previously developed and abandoned land, however, previously this concept was mostly referred to the territories that were classified as contaminated (Ganser R., Williams K., 2007; Lorimer J., 2008). Brownfield land in cities is largely located in areas that have experienced deindustrialisation or suburbanisation. Such sites may be found in the heart of the inner city, or out along various industrial belts or dockland regions (Lorimer J., 2008). The presence of derelict land has adverse effects not only on the environment but also on the economic and social health of the city (Grimski D., Ferber U., 2001).

Brownfield redevelopment is widely acknowledged as one of the major tools to achieve sustainable urban development (Adams D., 2004) by revitalisation and reuse of abandoned or deprived areas (Power A., 2008). Further urban development has to happen on derelict land (Grimski D., Ferber U., 2001) by means of urban regeneration. In particular, urban land reuse is seen as contributing to reducing pressure on greenfield sites, thus, minimising urban sprawl, and making a positive contribution to urban regeneration by upgrading run-down areas and providing a location for housing, services, and amenities (Williams K., 2004; Colantonio A. et al., 2009). Urban brownfield redevelopment coincides with the concept of urban regeneration, which means coordinated actions leading to the improvement of the material state of structures combined with the improvement of economic, social, and environmental spheres, thus, creating the desirable urban spaces (Guzey Ö., 2009). The process of urban regeneration includes various processes such as enhancement of specific sections of the city through a wide cycle of economic revitalisation, upgrading of the housing stock, improvement of the quality of life of the local population, and the attraction of new residents (van der Borg J., Russo A. P., 2008).

The industrial areas affected by deindustrialisation process have been another recurrent focus of regeneration efforts where diversification and an increased compactness of the urban supply are pursued (van der Borg J., Russo A. P., 2008).

The starting point of urban regeneration processes is generally the spatial concentration of new economic activities to substitute declining functions and land uses (van der Borg J., Russo A.P., 2008) and, as a result of physical transformation of the urban space in particular neighbourhoods, the number of enterprises operating in the area is increasing (Ward K., 2003).

There are two main actors in urban regeneration processes – private and public sectors. Investments in regeneration activities by private developers are based on economic aspects and considerations as they expect to receive returns on their investments (Raco M. et al., 2008), so in this case, regeneration activities are limited only to certain areas as redevelopment is implemented mainly in advantageously located urban brownfields. Participation of public sector in urban regeneration activities stimulates further sustainable urban development (Blakeley G., Evans B., 2009) as these activities are implemented in other areas requiring regeneration. Moreover, public sector is more likely to involve local residents in urban regeneration activities, thus, contributing to the development of socially mixed communities (Colantonio A. et al., 2009).

Public-private partnership is recognised as successful approach for regeneration of the deindustrialised objects and other brownfield sites (Lichtenberger E., 1994). The development of public-private partnership in urban regeneration is one facet of the drive towards sustainability, and it theoretically secures private sector input into urban regeneration and infrastructure development (Webber C., Marshall A., 2007). Such cooperation involves more actors, thus, providing more funding for urban regeneration activities that may ensure implementation of large-scale projects. Such kind of activity in derelict deindustrialised urban spaces brings with it prospects of material gain, not only for some segments of the private sector but also for numerous public sector actors, such as local municipal authorities that are dependent on local taxes for their own revenues (Bezmez D., 2008).

While urban regeneration processes in general are associated with the transformation of the spatial structure of particular areas, gentrification is understood as a change of the social structure (Robson B. et al., 2008; Guzey Ö., 2009). Concept of gentrification in a broad sense means the creation of space for more affluent users (McIntyre Z., McKee K., 2008), and, as a result of development of the particular area significant changes in social composition of the residents are inevitable (Raco M. et al., 2008).

The process of gentrification itself has been both criticised and approved by various authors depending on its effects. These processes are often considered to be the negative aspects of urban regeneration process as it is considered that gentrification may bring alienation of

low-income resident groups (Guzey Ö., 2009) or it may lead to their displacement (Barber A., 2007). The positive aspects of gentrification are increasing job opportunities, a larger tax base, better public services and improved retail environment (Vigdor J., 2002). Gentrification, in general, is perceived as a potential sign of cultural and economic improvement of particular urban area that might make them better places to live (Vigdor J., 2002; Freeman L., 2005).

2. Deindustrialisation in Riga

Deindustrialisation processes that determined the development of the present urban structure of Riga occurred in the early 1990s after the collapse of the Soviet Union, which meant the loss of the traditional markets and raw material supplies. Significant part of privatised manufacturing enterprises were not able to adapt to the new economic situation and went bankrupt, thus leaving a negative impact on the social sphere, as unemployment level increased, and abandoned industrial areas emerged on the urban environment (Solks G., 2011d). These processes marked the transformation of Riga from industrial to service centre as the share of the main economic sectors in Riga has changed significantly in 2008 compared with 1996. The share of the industrial sector has decreased for almost three times, while the share of the service sector has increased for almost four times during the period of twelve years (1996-2008). Increase in construction sector for more than two times is also notable, and it is related to the increasing urban regeneration activities as well (CSBL, 2011).

Total area of abandoned industrial sites in Riga increased considerably and the major concentration of these areas is characteristic to the fringe of the historical city core with old industrial sites dating back to the end of the 19th century, and areas adjacent to the railway infrastructure where the Soviet occupation period industrial sites prevail over old industrial sites. Location of brownfields in Riga corresponds to the main phases of evolution of the city and reflects the change of its economic development models (Trusins J. et al., 2005).

3. Regeneration of deindustrialised objects in Riga

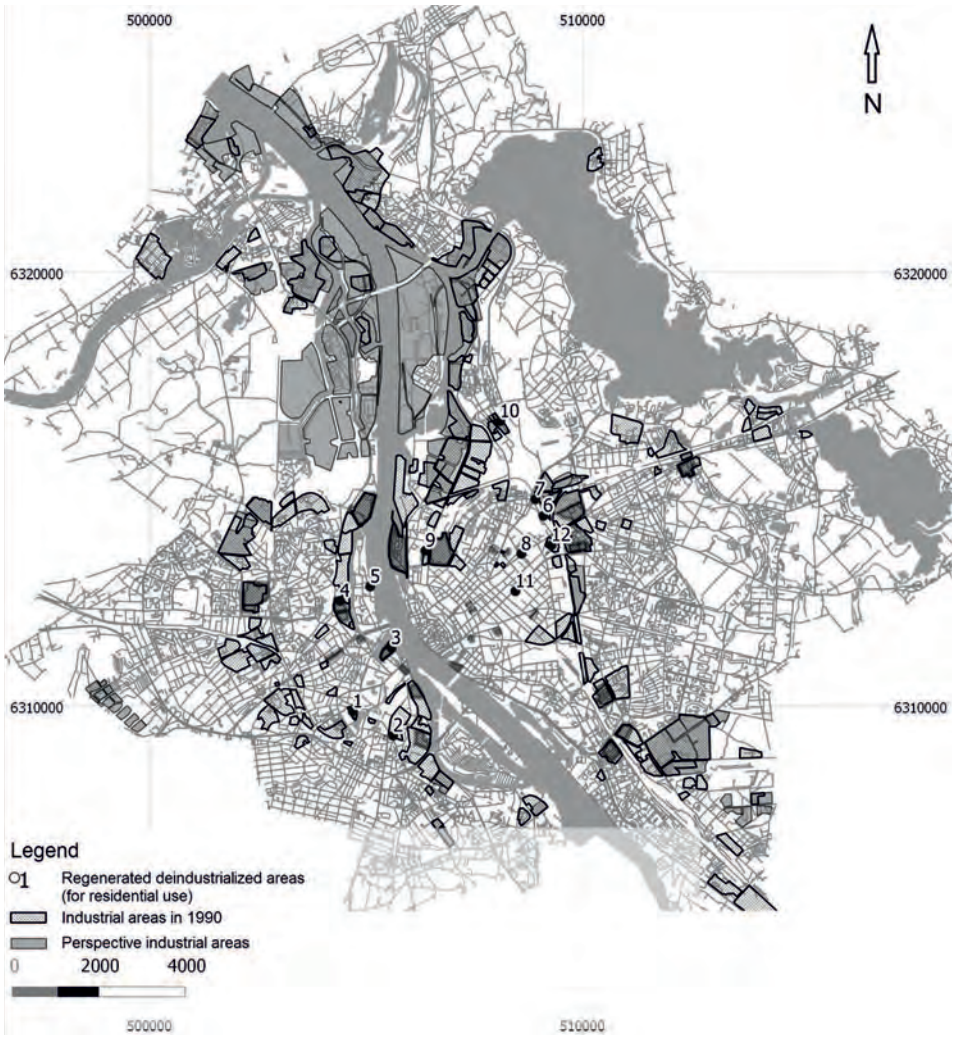
During the rapid economic growth of Latvia (2000-2007), when real GDP annually increased between 6.9%-11.9% (CSBL, 2011), demand for new housing and commercial premises increased sharply (Solks G., 2010b). Various areas of Riga experienced the boom in construction that included brownfield redevelopment as well. These activities were mainly implemented by private sector, so economic aspects and prospective profit played the most important role. Accordingly, the most popular brownfield sites chosen for redevelopment by private investors were abandoned residential buildings and former industrial sites in the city centre because of their central location and adequate infrastructure. If looked at from the point of view of private investors, the advantage of former industrial sites is that old manufacturing complexes, despite their high cultural value, are not officially recognised as sites of cultural heritage, which should be preserved (Solks G., 2010a); so there were fewer limitations for development activities. However, abandoned industrial areas had several disadvantages mainly connected with inappropriate infrastructure and neglected surrounding areas (Solks G., 2011c).

Regeneration of urban brownfield sites in the city centre initially was focused on idea to provide premises mainly for residential use (Solks G., 2010b), because the central part of Riga was losing its position as the commercial district to various suburbs due to limited possibilities regarding the use of the private transport. The share or regenerated deindustrialised objects in the city centre was quite low as mainly brownfield sites like run-down residential buildings were chosen for regeneration in order to provide dwellings. However, if supply of premises is analysed in regenerated deindustrialised objects within the city limits of Riga, the share of commercial premises increases and becomes dominant. Such situation is because of the fact that redevelopment of former industrial objects for residential use is more difficult if compared with residential buildings due to completely different design and layout of industrial structures (Solks G., 2010a). Thus, a significant part of deindustrialised objects were turned into commercial areas during the process of redevelopment, while only some deindustrialised objects were converted into residential areas.

Presently, there are twelve regenerated deindustrialised objects (Figure 1) used for residential purpose that are implemented and where residents have moved in. There were other such kinds of redevelopment projects, although, they were suspended as economic recession began in 2008, and, moreover, some of completed objects were impacted as well because proposed further regeneration of the area was terminated. Nine objects were implemented during the economic growth and three (numbers in the map (Figure 1) 6; 7; 10) were implemented during the economic recession (2009-2010). However, presently, there are also few proposed redevelopment projects and few ongoing projects, and one of them is close to completion that will diversify the supply of dwellings.

Redevelopment of deindustrialised objects for residential use was implemented by private investors and this was an important reason why most of such estates are located in the central part of Riga, which is marketed as more prestigious area (Solks G., 2011c). Although, public-private partnership is understood as successful model for redevelopment activities (Solks G., 2011b), this approach was not used in the regeneration of deindustrialised objects in Riga. Nine of these objects were implemented as redevelopment of existing structures and two were implemented as a new-build (numbers in the map (Figure 1) 2; 11) after demolition of previous structures, since there were no real limitations regarding preservation of the industrial heritage.

Dwellings in the regenerated properties were offered for the market price similar with other properties on the market. The gentrification occurred as soon as the new residents moved in, because persons who could afford to live in regenerated or newly built properties were representing higher-income group. Prices on dwellings in these properties were comparatively high even after the economic recession in 2008 and, as overall occupancy of these properties is not very high, it can be understood that these spaces are planned for affluent users.



Source: author's construction based on field studies and urban planning documents (RDP, 2011)

Fig. 1. **Industrial territories, deindustrialised objects and regenerated deindustrialised areas for residential use**

Ground floors of these properties are used as commercial premises, because potential buyers or tenants are often avoiding the ground floors, while these premises are suitable for various economic activities and this provides some diversification of business risks for property owners. Thus, the number of various enterprises operating in regenerated areas is increasing mainly because of urban regeneration activities.

Regeneration projects implemented during the economic recession have to be mentioned as a different case, because dwellings were offered for significantly lower price if compared with other similar projects whose implementation costs were much higher. Significantly lower price for dwellings was determined by lower implementation costs, less desirable location (more distant from city centre, location near railway infrastructure with intensive cargo traffic), more complicated and less comfortable layout of the dwellings, and limited mortgage lending activities. Despite these aspects, occupancy of these properties is higher than in more centrally located regenerated deindustrialised objects, since these properties were offered for reasonable price, which buyers were able to pay. Dwellings in these properties are occupied mostly by young people, while other properties in central part of the city have more diverse mix of age groups.

The results of the survey show that residents who reside in regenerated deindustrialised objects pay less attention to the fact that these are former manufacturing areas. The most important factors why they chose these properties were location, services, and parking possibilities for respondents who reside in the central area of Riga, and price and parking possibilities for them who reside near railway infrastructure. Such factors as neighbours, public transport connections, and various aspects of sustainability were declared as less important or had no importance at all.

As there are not many regenerated deindustrialised objects in Riga, gentrification processes are not widespread, moreover, they are limited to the regenerated properties only. Gentrification in Riga can be characterised as scattered occurrence, and there are

no higher concentrations of this process in the case of regenerated deindustrialised objects.

Gentrification in this case is not the replacement of local residents, because former industrial buildings had no residential functions before. Gentrification is more contributing to the development of the socially mixed neighbourhoods because there is no exclusion of local residents as new residents move into the area that also contributes to the social sustainability of the neighbourhoods. There was no clear evidence that local residents would feel alienated because of arrival of higher income groups, however, residents of regenerated properties sometimes mentioned their possible alienation because of local residents residing in the neighbourhood before their arrival (Sholks G. et al., 2011a).

Property prices in the area usually are also increasing as any kind of development activities occur; however, this can only be attributed to the properties that are offered for sale. This situation does not affect residents who are renting their housing, because rental prices are not increasing and remain more or less stable as there is oversupply on the rental market in Riga.

Discussion

Deindustrialisation processes have determined significant transformations of social and urban structures in Riga since the early 1990s, which resulted in increasing unemployment rates and poverty (Brady D., Wallace M., 2001) as well as emergence of various urban brownfield sites (Grimski D., Ferber U., 2001).

Riga experienced transformation from industrial to service centre (Erkip F., 2000; Brady D., Wallace M., 2001; Bezmez D., 2008). Further economic growth determined increase in demand for commercial and residential premises, which can be stated as the starting point of regeneration of the deindustrialised objects in Riga.

Redeveloped deindustrialised objects for residential use are concentrated in the central part of Riga as it is gradually transforming from mixed-use area to mainly residential area. However, urban regeneration stimulates economic activities in particular areas in Riga as new businesses operating in the service sector are entering the area (Ward K., 2003; van der Borg J., Russo A. P., 2008), which, accordingly, contributes to the price rise for real estate in surrounding areas. Redevelopment of deindustrialised objects is also contributing to the sustainable urban development as it provides the reuse of derelict or abandoned territories and structures, thus, also contributing to the development of compact urban structure of Riga and minimising an urban sprawl (van der Borg J., Russo A. P., 2008).

Gentrification in the case of regenerated deindustrialised objects in Riga is a transformation of the social structure (Raco M. et al., 2008; Robson B. et al., 2008; Guzey Ö., 2009); however, it is contributing to the development of socially mixed neighbourhoods as there are no signs of displacement of residents who have been living in these areas before redevelopment activities were started. In fact, this is the case when gentrification processes have mainly positive effects on social, economic, and urban environment, because retail sector and public services are improved as well as larger tax base and new job opportunities are provided in particular areas (Vigdor J., 2002; Freeman L., 2005). These factors also contribute to one of the main approaches of the urban regeneration to create desirable urban spaces for living and working (Vigdor J., 2002; Freeman L., 2005; Guzey Ö., 2009).

Conclusions

1. The process of deindustrialisation in the early 1990s determined significant changes in land use patterns in Riga, thus, resulting in emergence of brownfield sites, which require regeneration activities.
2. Urban regeneration processes in Riga include redevelopment of deindustrialised objects for residential use, thus, contributing to the sustainable urban development. However, this kind of activity is not widely observable as deindustrialised objects are mostly redeveloped into commercial areas.
3. Regenerated deindustrialised objects for residential use are concentrated in the central part of Riga, which is perceived as prestigious neighbourhood.
4. Deindustrialised objects have fewer limitations concerning development activities, which are an advantage of these sites, however, disadvantages such as inappropriate infrastructure and neglected surrounding areas are usually common.
5. Urban regeneration stimulates economic activities in particular areas in Riga as new businesses operating in the service sector are entering the area that, accordingly, contributes to the price rise for real estate in surrounding areas.
6. Gentrification contributes to the development of the socially mixed neighbourhoods as there is no exclusion of local residents, and it is often limited to the regenerated properties and it can be characterised as a scattered occurrence in Riga.

Bibliography

1. Adams, D. (2004). The Changing Regulatory Environment for Speculative House Building and the Construction of Core Competencies for Brownfield Development. *Environment and Planning A*, Volume 36, Issue 4, pp. 601–624.
2. Barber, A. (2007). Planning for Sustainable Re-urbanisation: Policy Challenges and City Centre Housing in Birmingham. *Town Planning Review*, Volume 78, Issue 2, pp. 179-202.
3. Bezmez, D. (2008). The Politics of Urban Waterfront Regeneration: The Case of Halic (the Golden Horn), Istanbul. *International Journal of Urban and Regional Research*, Volume 32, Issue 4, pp. 815-840.
4. Blakeley, G., Evans, B. (2009). Who Participates, How and Why in Urban Regeneration Projects? The Case of the New 'City' of East Manchester. *Social Policy & Administration*, Volume 43, Issue 1, pp. 15–32.
5. Brady, D., Wallace, M. (2001). Deindustrialisation and Poverty: Manufacturing Decline and AFDC Recipiency in Lake County, Indiana 1964–93. *Sociological Forum*, Volume 16, Issue 2, pp. 321-358.
6. Colantonio, A., Dixon, T., Ganser, R., Carpenter, J., Ngombe, A. (2009). *Measuring Socially Sustainable Urban Regeneration in Europe*. Oxford: Oxford Brookes University, Institute for Sustainable Development (OISD). p. 129.

7. CSBL (2011). Central Statistical Bureau of Latvia. Economy and Finance. Retrieved: http://www.csb.gov.lv/en/dati/statistics-database-30501.html-0. Access: 15 December 2011.
8. Erkip, F. (2000). Global Transformations Versus Local Dynamics in Istanbul: Planning in a Fragmented Metropolis. *Cities*, Volume 17, Issue 5, pp. 371–377.
9. Freeman, L. (2005). Displacement or Succession? Residential Mobility in Gentrifying Neighbourhoods. *Urban Affairs Review*, Volume 40, Issue 4, pp. 463–491.
10. Grimski, D., Ferber, U. (2001). Urban Brownfields in Europe. *Land Contamination and Reclamation*, Volume 9, Issue 1, pp. 143–148.
11. Ganser, R., Williams, K. (2007). Brownfield Development: Are We Using the Right Targets? Evidence from England and Germany. *European Planning Studies*, Volume 15, Issue 5, pp. 603-622.
12. Guzey, Ö. (2009). Urban Regeneration and Increased Competitive Power: Ankara in an Era of Globalisation. *Cities*, Volume 26, Issue 1, pp. 27–37.
13. Koistinen, D. (2006). Public Policies for Countering Deindustrialisation in Post War Massachusetts. *The Journal of Policy History*, Volume 18, Issue 3, pp. 326-361.
14. Lichtenberger, E. (1994). Vienna and Prague: Political Systems and Urban Development in the Post War Period. In Barlow, M., Dostal, P. & Hampl, M. (eds) *Development and Administration of Prague*. Amsterdam: Universität Amsterdam, pp. 91–115.
15. Lorimer, J. (2008). Living Roofs and Brownfield Wildlife: Towards a Fluid Biogeography of UK Nature Konservation. *Environment and Planning A*, Volume 40, Issue 9, pp. 2042-2060.
16. McIntyre, Z., McKee, K. (2008). Governance and Sustainability in Glasgow: Connecting Symbolic Capital and Housing Consumption to Regeneration. *Area*, Volume 40, Issue 4, pp. 481 – 490.
17. Power, A. (2008). Does Demolition or Refurbishment of Old and Inefficient Homes Help Increase Our Environmental, Social and Economic Viability? *Energy Policy*, Volume 36, Issue 12, pp. 4487–4501.
18. Raco, M., Henderson, S., Bowlby, S. (2008). Changing Times, Changing Places: Urban Development and the Politics of Space – Time. *Environment and Planning A*, Volume 40, Issue 11, pp. 2652-2673.
19. RDP (2011). Riga Development Plan 2006-2018. Retrieved: http://www.rdpad.lv/rpap/. Access: 10 December 2011.
20. Robson, B., Lymperopoulou, K., Rae, A. (2008). People on the Move: Exploring the Functional Roles of Deprived Neighbourhoods. *Environment and Planning A*, Volume 40, Issue 11, pp. 2693-2714.
21. Sholks, G., Dejus, G., Chistjaka, J. (2011a). Riga: obnovlenie kak dzhentrifikatsiya (Riga: Regeneration as Gentrification). *Neprikosnovennyi zapas*, Volume 6, Issue 80, pp. 159-171.
22. Solks, G. (2011b). Development Perspectives of the Former Working-Class Neighbourhoods in Riga. *Human Resources - the Main Factor of Regional Development*, Volume 5, pp. 264-271.
23. Solks, G. (2011c). Reurbanizacija un pilsetvides atjaunotne ka Grizinkalna apkaimes attistibas perspektiva (Reurbanisation and Urban Regeneration as a Perspective for Development of Grizinkalns Neighbourhood). *Latvijas Universitates raksti, Zemes un vides zinatnes*, Volume 762, pp. 196-205.
24. Solks, G. (2010a). Reurbanizacijas procesi Riga (Processes of Reurbanisation in Riga). *Latvijas Universitates raksti, Zemes un vides zinatnes*, Volume 752, pp. 156-163.
25. Solks, G. (2011d). The Changes of Urban Structures in the Former Working Class Neighbourhoods in Riga. *European Integration and Baltic Sea Region: Diversity and Perspectives, Conference Proceedings*, pp. 514-522.
26. Solks, G. (2010b). The Implications of the Credit Boom and Bust on Development and Urban Regeneration in Riga. *Housing Finance International*, Volume 25, Issue 2, pp. 12-18.
27. Trusins, J., Treija, S., Cace, L., Balgalis, N. (2005). Riga City Development on the Way to Sustainability.
28. Retrieved: http://aesop2005.scix.net/data/papers/att/316.fullTextPrint.pdf. Access: 10 December 2011.
29. van der Borg, J., Russo, A. P. (2008). Area Regeneration and Tourism Development. Evidence from Three European Cities. Working Papers, 2008_21.
30. Retrieved: http://ideas.repec.org/p/ven/wpaper/2008_21.html. Access: 10 December 2011.
31. Vigdor, J. (2002). Does Gentrification Harm the Poor? *Brookings-Wharton Papers on Urban Affairs*, pp. 133-182.
32. Ward, K. (2003). The Limits to Contemporary Urban Redevelopment: "Doing" Entrepreneurial Urbanism in Birmingham, Leeds and Manchester. *City*, Volume 7, Issue 2, pp. 199–211.
33. Webber, C., Marshall, A. (2007). Bridging the Gap: Delivering Infrastructure Investment in Britain's Cities. *Journal of Urban Regeneration and Renewal*, Volume 1, Issue 1, pp. 7-21.
34. Williams, K. (2004). Reducing Sprawl and Delivering an Urban Renaissance in England: Are these Aims Possible Given Current Attitudes to Urban Living? In Bae C.-H. C., & Richardson H. W. (eds.) *Urban Sprawl in Western Europe and North America*. London: Ashgate Publishers, pp. 37-54.

Acknowledgements

This work has been supported by the European Social Fund within the project "Support for Doctoral Studies at the University of Latvia".

Protection of Consumer's Rights in Cross-Border Shopping by Distance

Evelina Spakovica, Dr.oec., assistant professor; **Genadijs Moskvins**, Dr.habil.sc.ing., professor
Latvia University of Agriculture

Abstract. The advent of e-commerce revolution, which has still not reached the critical mass, has transformed the potential for integration of retail markets in the EU to give a major stimulus to competitiveness and expand the opportunities for the EU citizens. While the technological means are increasingly in place, business and consumer behaviour lags far behind, restrained respectively by internal market obstacles and a lack of confidence in cross-border shopping (Commission of the…, 2007). The aim of the paper is to analyse the problems of consumer's rights protection when a number of cross-border sales by distance increases including shopping via the Internet. The study is based on the review of legislation, the European Commission documents, and literature. Descriptive method and secondary data analysis were applied in the study. The Commission's vision in frames of consumer policy is to be able to demonstrate to all EU citizens by 2013 that they are equally effectively protected. In the light of consumers' opinion about delivery and fraud, informing consumers and retailers on the consumers' rights are effective mechanisms to deal with cross-border fraud and effective ways to seek assistance if problems arise. Unfortunately, consumers' awareness about sources of information in cross-border shopping and consumers' rights is still low. Distinctions in the legislation also cause the problems when making cross-border purchases by distance. Besides, the European Consumer Centre (ECC) has no power for making a decision on the fulfilment of lawful demands of consumers.
Key words: cross-border shopping, e-commerce, protection of consumer's rights.
JEL code: K12

Introduction

In the period of 2007-2013, the consumer policy is uniquely well placed to help the EU rise to the twin challenges of growth and jobs, and re-connecting with its citizens (Commission of the…, 2007). The Commission will have three main objectives over this period:

— to empower the EU consumers. Empowered consumers need real choices, accurate information, market transparency, and the confidence that comes from effective protection and solid rights;
— to enhance the EU consumers' welfare in terms of price, choice, quality, diversity, affordability, and safety;
— to protect consumers effectively from the serious risks and threats that they can tackle as individuals. A high level of protection against these threats is essential to consumer confidence.

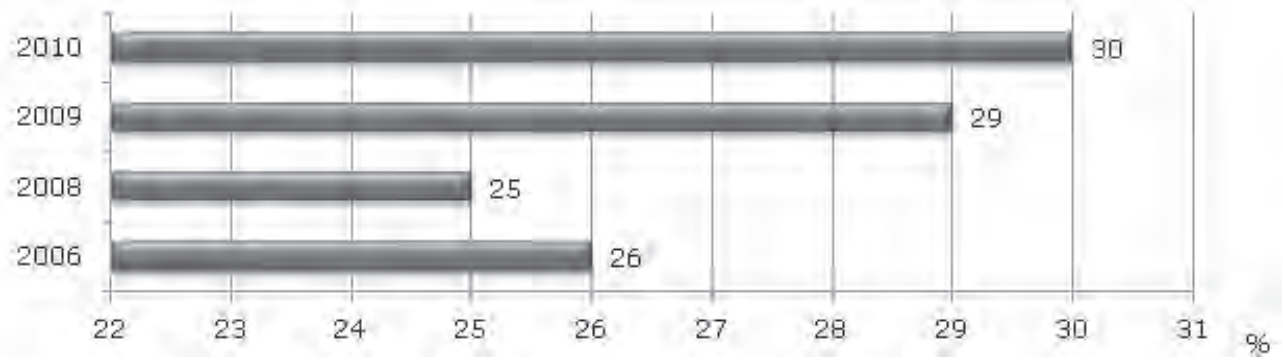
The Commission's aim is to achieve, in this way by 2013, a more integrated and more effective internal market, in particular the retail dimension. Consumers will have an equally high level of confidence in products, traders, technologies, and selling methods in retail markets throughout the EU based on an equally high level of protection. Consumer markets will be competitive, open, transparent, and fair.

President of the European Commission Barroso, in his political guidelines, highlighted the role of consumers in the integration of the single market: "Europeans should not be held back from shopping across borders by concerns that their rights will not be protected properly: we need an active consumer policy to give people confidence to participate fully in the single market" (European Commission, 2011[A]). According to the Consumer Policy Strategy for 2007-2013 (Commission of the…, 2007), it is very important to demonstrate to all EU citizens that they can shop from anywhere in the EU, from corner-shop to website, confident they are equally effectively protected, whether from dangerous products or rogue traders.

The EU Citizenship Report (European Commission, 2010[B]) identified the fragmentation of consumer protection rules, the lack of awareness about redress and insufficient means of redress as obstacles for citizens. Cross-border transactions, especially through e-commerce, therefore, provide a key measure of the integration of the single market from a consumer point of view. Globalisation of production will continue. Traders will increasingly sell to the EU consumers via e-commerce from anywhere in the world. As cross-border shopping develops as a credible alternative to national markets, consumers both have greater choice and national markets are subject to greater competition.

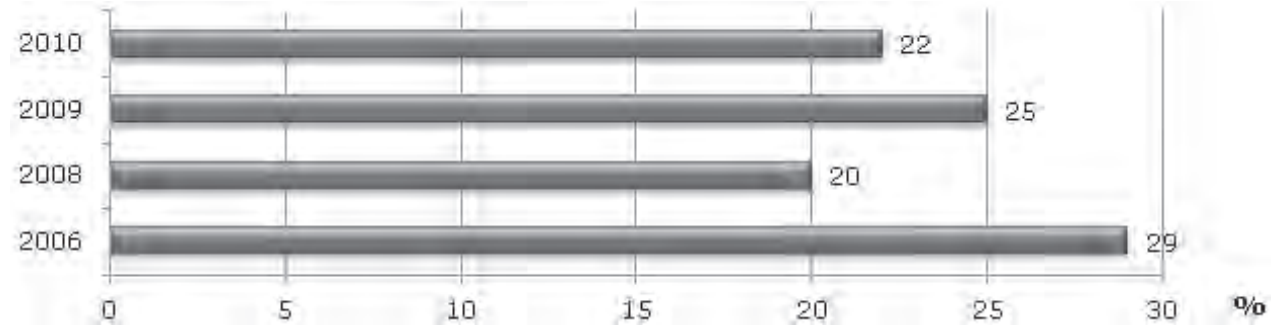
In this connection, the aim of the paper is to analyse the problems of consumer's rights protection when a number of cross-border sales by distance increases including shopping via the Internet. In the framework of the research, the following tasks were undertaken: 1) to examine the cross-border transactions development; 2) to analyse the aspects of consumer protection in cross-border shopping.

The study is based on the review of legislation, the European Commission documents and literature as well as the statistical data available from the European Commission's Analytical reports, the EU Consumer Conditions Scoreboard and Consumer Markets Scoreboard conducted in 2008, 2009, and 2010. Descriptive method and secondary data analysis were applied in the study.



Source: authors' construction based on the European Commission, 2011[A]

Fig.1. **Percentage of consumers, at least one cross-border purchase**



Source: authors' construction based on the European Commission, 2011[A]

Fig.2. **Percentage of retailers, sales to at least one other EU country**

Table 1

Individuals who ordered goods or services over the internet for private use, in the EU-27 (as % of all individuals)

Year	Total	From national sellers	From other EU sellers	From non-EU sellers
2008	32	28	6	4
2009	37	34	8	4
2010	40	36	9	5

Source: authors' construction based on the European Commission, 2011[A]

Research results and discussion

The technological revolution brought about by the Internet and digitalisation will grow even faster. The key driver is the rollout of broadband technology, which is likely to give a significant boost to e-commerce. E-commerce has great potential to improve consumer welfare, by making a greater range of products available, boosting price competition, and developing new markets. It also brings significant new challenges for consumers, business and consumer protection (Commission of the…, 2007). SMEs will have more direct access to consumers; goods and services will be increasingly tailored to the individual. However, traditional consumer rights will be less and less adapted to the digital age. Globalisation of production will also continue, leading to ever more goods consumed in the EU being imported. Traders will increasingly sell to the EU consumers via e-commerce from anywhere in the world. This increases the challenge but also the need to ensure effective market surveillance. The growth in e-commerce means that rogue traders are free to operate internationally.

1. Cross-border shopping by distance

There are some signs that the cross-border retail market is growing in the EU. In 2010, totally 30% of consumers made at least one cross-border purchase. In comparison, in 2006, 2008 and 2009, in total 26%, 25% and 29% of consumers, respectively, bought something from another EU country (Figure 1).

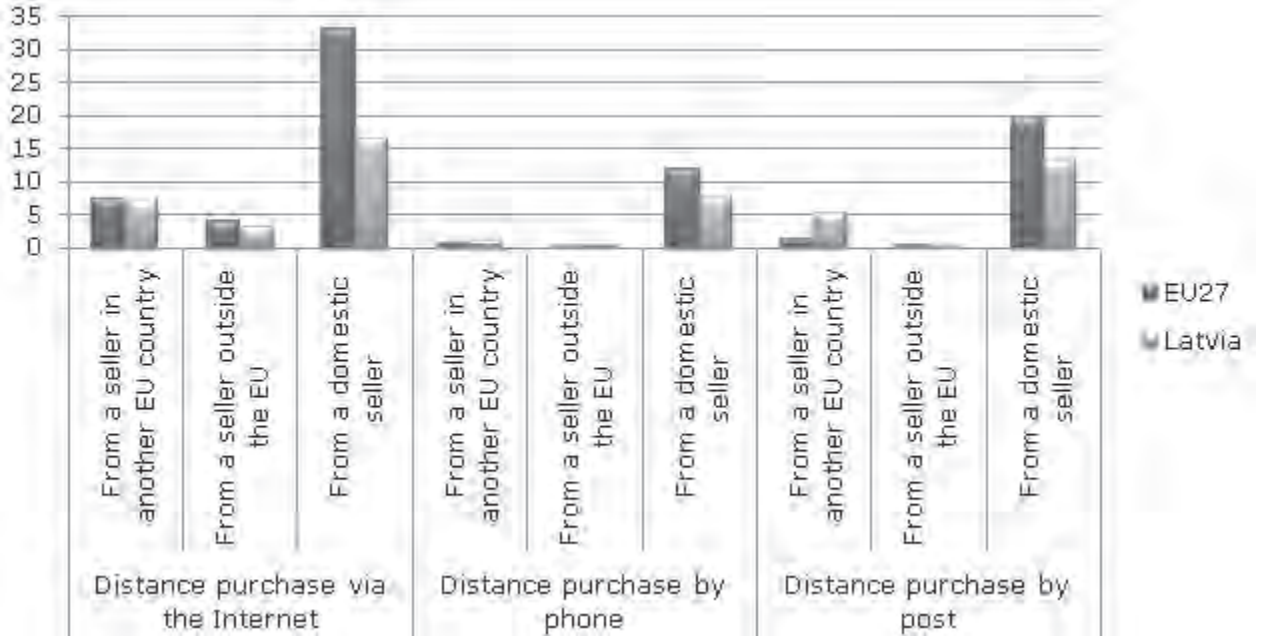
However, there are also some other problems. The proportion of retailers selling cross-border has decreased to 22% in 2010 from 25% in 2009 (Figure 2).

The communication on the Annual Growth Survey (European Commission, 2010[A]) noted that barriers to market entry and obstacles to entrepreneurship remain acute in the single market. Half of the retailers selling or

interested in cross-border sales were not at all informed about the contract law consumer protection regulations of the countries where they were selling products or services to final consumers. The top obstacle for 40% of retailers trading or wishing to trade cross-border was related to differences in the contract law, followed by the problems related to tax regulations (for 39%) and the need to adapt to different consumer protection laws across the EU (for 38%)(European Commission, 2011[A]).

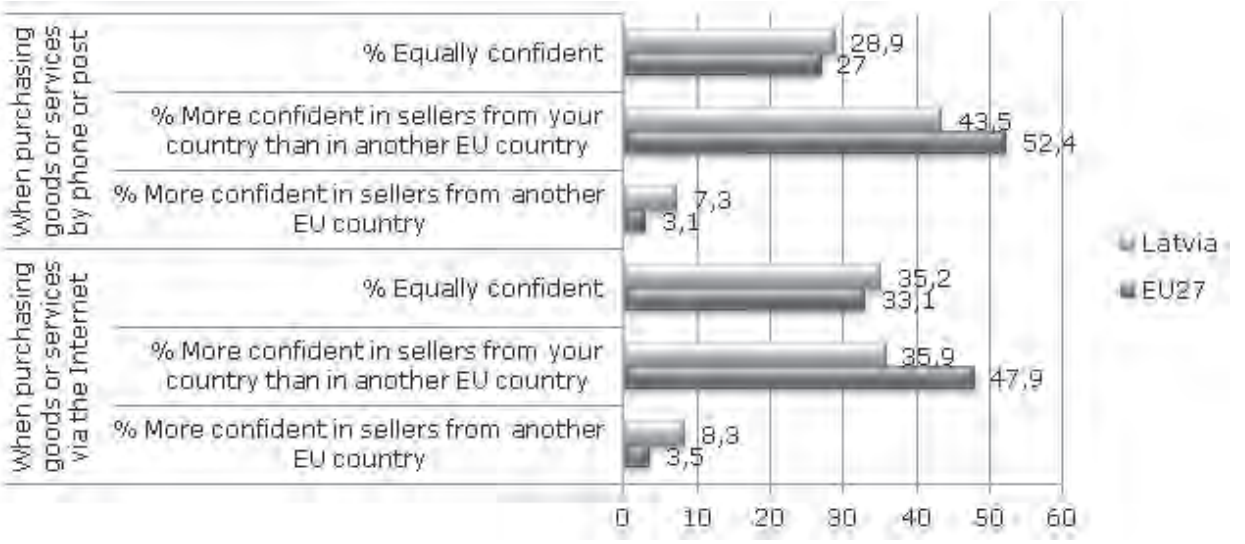
A cross-border purchase can be made when travelling abroad or through distance sales channels. The EU consumers were more likely to have made cross-border purchases face-to-face, i.e. when they were on holiday, shopping or on business trips, rather than through distance sales channels (European Commission, 2011[C]). Nevertheless, e-commerce is becoming a more popular sales channel as a whole and choosing also between other distance sales channels (Table 1, Figure 3).

The gap between the take-up of domestic and cross-border e-commerce continued to widen in 2010. While the level of domestic online shopping has steadily increased since 2008 in line with the increasing take-up of internet and broadband, cross border e-commerce continues to grow at a much slower pace.



Source: authors' construction based on the European Commission, 2011[C]

Fig.3. **Type of distance purchases chosen by consumers in the EU-27 and Latvia in 2010, %**



Source: authors' construction based on the European Commission, 2011[C]

Fig.4. **Level of confidence when purchasing goods or services by phone or post or via the Internet (2010)**

In 2010, totally 37% of all EU consumers made a distance purchase on the Internet, 21% - used the post (catalogues, mail order etc.) and 13% - made a distance purchase by phone. In Latvia, generally 24% of consumers made a distance purchase online, 19% - used the post, and 9% - made a distance purchase by phone (Figure 3).

Consumers were ready to make purchases via the Internet and through other distance sales channels but did it less across borders. In 2006, totally 27% of all consumers made a purchase via the Internet but only 6% - did so across borders (European Commission, 2011[A]). According to Figure 3 in 2010, 16.5% of consumers in Latvia made a purchase online but only 7% - did so in another EU country, and 3% - made purchases from seller outside the EU. On the EU level, the gap between the amount of consumers who made domestic purchases and cross-border purchases is larger. Only 7% of the EU consumers bought goods or services via the Internet from a seller/provider located in another EU Member State compared with 33% of respondents who bought goods or services from sellers or providers in their own country.

The Consumer Conditions Scoreboard (European Commission, 2011[A]) shows that the figures for financial services are even more striking, i.e. 26% of consumers have bought a financial service at a distance from a seller or provider based in their home country but only 1% has done so cross-border. These figures show the need for action to increase consumer confidence in the retail side of the internal market.

The challenge remains two-fold: to convince the growing number of consumers who shop online domestically to try cross-border online shopping, and to convince retailers to sell cross-border. The evidence suggests that this latter issue remains a significant obstacle. Only 7% of consumers buy on-line because of the numerous restrictions, which prevent the development of cross-border on-line sales. Also the study on e-commerce in the EU shows (European Commission, 2011[B]) that a great potential for savings and increased choice is not exploited, as retailers refuse 6 out of 10 cross-border online orders.

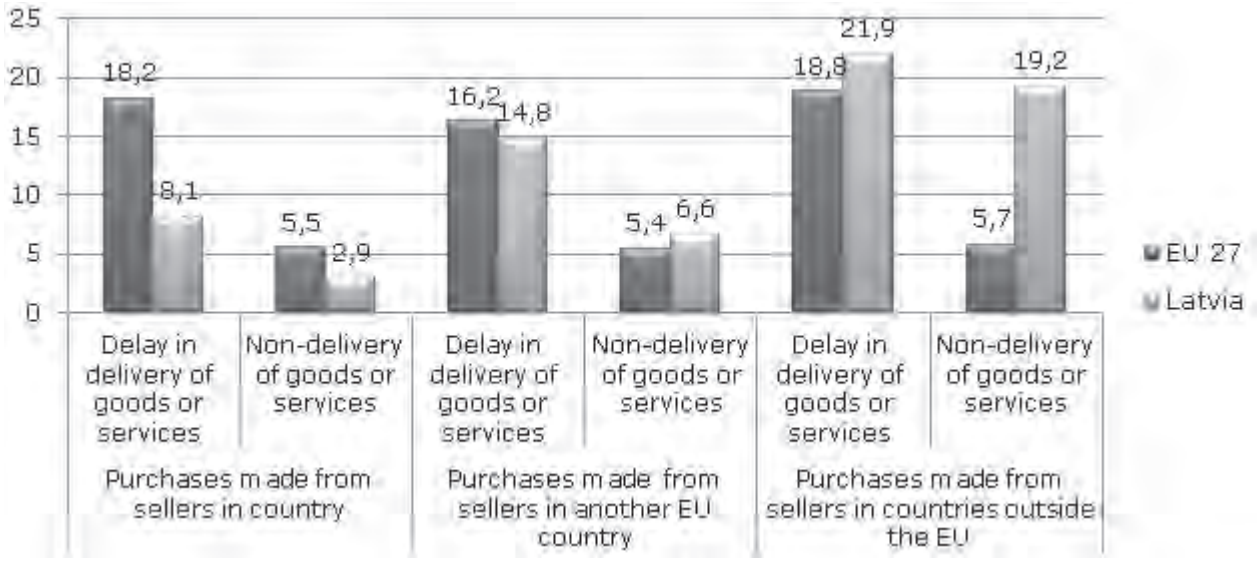
2. Analysis of aspects of consumer protection in cross-border shopping

The significant fragmentation of online markets in Europe prevents consumers from getting the benefits of the single market. The digital agenda sets ambitious goals for addressing these problems. By 2015, totally 50% of all consumers should be buying online and 20% - cross-border online (European Commission, 2011[A]).

Yet, the influence of some reasons can stop the progress of cross-border shopping via the Internet and by distance as a whole. As it was mentioned above, the figures reveal the lack of consumers confidence making cross-border purchases by distance (Figure 4). When asked whether they were confident in purchasing online cross-border, generally 48% of consumers in the EU said they were more confident purchasing online domestically and only 33% - were equally confident in domestic and cross-border websites. In Latvia, only 36% of consumers said they were more confident purchasing online in domestically and 35% of consumers were equally confident in domestic and cross-border online shopping in 2010.

Only 8% of consumers in Latvia and 4% of the EU consumers are more confident in sellers from another EU country when buying goods or services via the Internet. Low level of confidence in Latvia purchasing cross-border could be partly explained by data on Figure 5.

Eight per cent of consumers in Latvia experienced a delay in delivery of goods or services comparing with 15% of consumers who made distance purchases from sellers in another EU country and 22% who bought from sellers or providers in countries outside the EU. The problem of non-delivery of goods or services depends also on buying domestically or from sellers in another country. In case of making purchases by distance in countries outside the EU, the percentage of non-delivery for consumers in



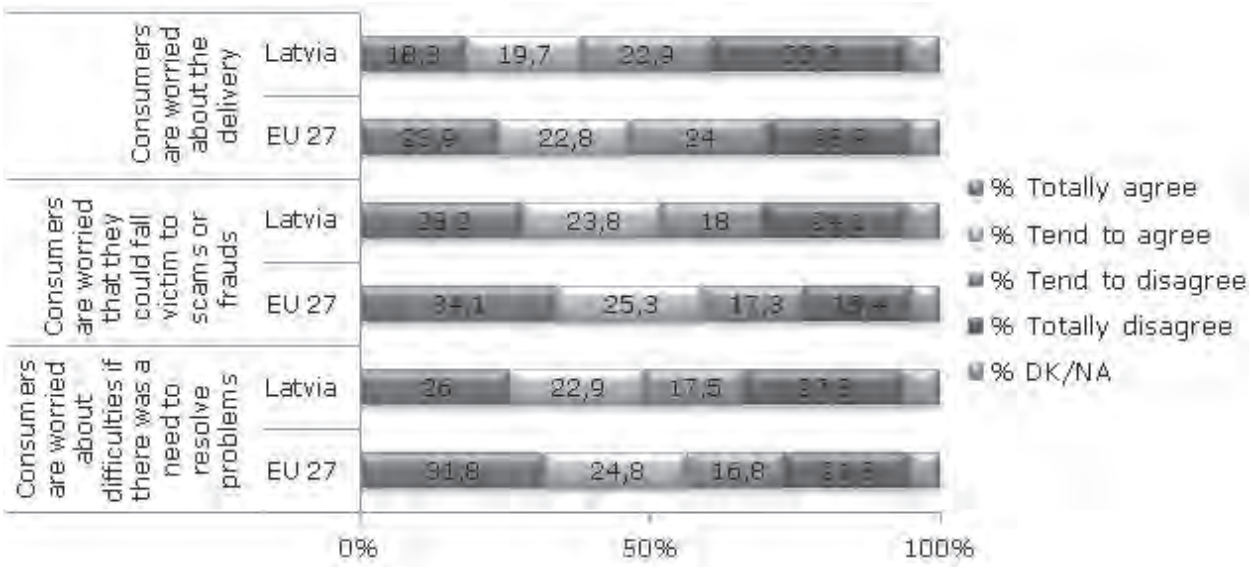
Source: authors' construction based on the European Commission, 2011[C]

Fig.5. **Delay in delivery and non-delivery of goods or services purchased by distance**

Latvia is very high (19%). The difference in percentage of consumers in the EU who experienced a delay in the delivery of their order or non-delivery is not so significant comparing purchases made from sellers in country and purchases made from sellers in another EU country or in countries outside the EU (Figure 5). Cross-border e-commerce in the EU appears to be at least or even more reliable than domestic e-commerce in practice: only 16% of cross-border purchases were delayed compared with 18% for domestic purchases. The product did not arrive in 5% of cross-border cases compared with 6% for domestic purchases. It means that other factors also influence the low level of consumers' confidence buying goods and services cross-border.

Roughly 6 out of 10 (59%) of the EU consumers and 52% of consumers in Latvia agreed that they were not interested in cross-border shopping because they were worried about falling victim to scams or frauds when purchasing products or services in another country (34% "totally agreed" in the EU) (Figure 6).

Generally, 47% of consumers in the EU and only 38% of consumers in Latvia comparing with consumers in the EU were worried about delivery, though, for consumers in Latvia this problem is more significant as it



Source: authors' construction based on the European Commission, 2011[c]

Fig.6. **The reasons why consumers are not interested in making a cross-border transaction in 2010**

Table 2

The cooling off period and return costs in different Member States

Country	Cooling-off period	Who covers return costs according to the national law within the cooling-off period
Austria	7 workdays	Consumer – if previously agreed on with the Trader
Belgium	14 calendar days	Consumer
Bulgaria	7 workdays	Consumer
Cyprus	14 workdays	Consumer
Estonia	14 calendar days	Consumer
Finland	14 calendar days	Trader
France	7 workdays	Trader
Germany	14 calendar days	Trader
Greece	10 workdays	Trader
Malta	15 calendar day	Consumer
Italy	10 workdays	Consumer
Latvia	14 calendar days	Consumer
Lithuania	7 workdays	Trader
Hungary	8 workdays	Consumer

Source: authors' construction based on The European Consumer..., 2010

Source: authors' construction based on the European Commission, 2011[A]

Fig.7. **Retailers' awareness of consumer legislation in Latvia and the EU-27, %**

was proved above according to data on Figure 5. However, in the EU and in Latvia, the proportion of respondents who agreed with the statement about deliveries was lower than the proportion of respondents who agreed with the statements about problems linked to scams or frauds, or difficulties that could arise in the resolution of complaints (Figure 6).

Taking into account the reasons why consumers are not interested in making a cross-border transaction mentioned above, the lack of consumers confidence and real situation is very important for consumers to be able to get information on consumer rights and support from consumer organisations making cross-border purchases by distance. Effective consumer information and enforcement networks are in place to address the concerns of consumers about cross-border fraud or seeking assistance if problems occur, although, more work is needed to make redress work cross-border.

Most of the existing EU consumer rules are based on the principle of 'minimum harmonisation'. The legislation explicitly recognises the right of Member States to add stricter rules to the EU rules, which set a floor. This approach was entirely valid at a time when consumer rights were very different between the Member States and e-commerce was nonexistent (Commission of the European Communities, 2007). Distinctions in the legislation can cause problems making cross-border purchases by distance. For example, in different EU countries the cooling-off period during which consumer can withdraw from the contract is different. The table below indicates the cooling-off period and return costs in some Member States (Table 2).

A start has been made to tackle the most important documents – the Unfair Commercial Practices (UCP) directive, the Regulation on Consumer Protection Cooperation (European Parliament, 2010), and the European Consumer Centre (ECC) Network. The European Consumer Centres Network aims to promote consumer confidence by advising citizens on their rights as consumers and providing easy access to redress in cross-border cases. The aim of the European Consumer Centre is to guarantee consumer confidence when buying cross-border similar to when buying in their country (The European Consumer…, 2009). Unfortunately, although the proportion of the EU consumers who said they knew where to get information and advice about cross-border shopping in the EU has increased by 11 percentage points in 2010 compared with 2008 and by 8 points compared with 2006; this proportion remains low (32%) (European Commission, 2011[A]). Consumers can also turn to the European Consumer Centre for assistance and advice but the ECC cannot make a decision about the fulfilment of lawful demands of consumers as it does the Consumer Rights Protection Centre (Consumer Rights Protection…, 1999).

Some problems exist also when sellers and providers are not informed about their obligations according to the consumer legislation. This fact proves a level of overconfidence among the EU retailers and retailers in Latvia on their knowledge of consumer legislation, which is not confirmed by their answers to specific questions. Although, on the EU level, totally 82% of retailers considered themselves to be well informed about consumer legislation, while only 28% of distance retailers were able to correctly indicate the length of cooling-off periods for distance sales and only 26% of retailers knew the legal requirements for returning defective products. The similar situation is observed also in Latvia (Figure 7).

Effective trader education on their obligations remains an essential part of the enforcement of consumer laws.

However, significant obstacles remain, notably in the area of consumer contracts and redress.

Conclusions, proposals, recommendations

1. The Commission's vision in frames of consumer policy is to be able to demonstrate to all EU citizens by 2013 that they can shop from anywhere in the EU, from corner-shop to website, confident they are equally effectively protected; and to be able to demonstrate to all retailers that they can sell anywhere on the basis of a single and simple set of rules.
2. While e-commerce continued to grow in domestic markets in 2010, there was very little progress in cross-border e-commerce.
3. In the light of consumers opinion on delivery and fraud, informing and reassuring consumers are

effective mechanisms to deal with cross-border fraud and effective ways to seek assistance and redress if problems arise.
4. Distinctions in the legislation can cause the problems making cross-border purchases by distance.
5. The European Consumer Centres Network aims to promote consumer confidence by advising citizens on their rights as consumers and providing easy access to redress in cross-border cases. Yet, consumers' awareness on the sources of information in cross-border shopping and consumers rights is still low. The ECC cannot either make a decision on the fulfilment of lawful demands of consumers as it does the Consumer Rights Protection Centre.
6. Effective trader education is the first step to prevent infringements of consumer rights.

Bibliography

1. Commission of the European Communities (2007). EU Consumer Policy Strategy 2007-2013. Brussels, p. 13.
2. Consumer Rights Protection Law (1999). Retrieved: http://www.ptac.gov.lv/page/271. Access: 3 January 2012.
3. European Commission (2010[A]). Annual Growth Survey: Advancing the EU's Comprehensive Response to the Crisis. Brussels, p. 10.
4. European Commission (2010[B]). Dismantling the Obstacles to EU Citizens' Rights. The EU Citizenship Report. Brussels, p. 26.
5. European Commission (2011[A]). Consumer Conditions Scoreboard. Consumers at Home in the Single Market. 5th edition – March 2011, Brussels, p. 106.
6. European Commission (2011[B]). The Consumer Markets Scoreboard Making Markets Work for Consumers. Sixth edition — October 2011, Brussels, p. 53.
7. European Commission (2011[C]). Consumer Attitudes towards Cross-border Trade and Consumer Protection. Analytical Report, March 2011, p. 186.
8. European Parliament (2010). European Parliament Resolution of 9 March 2010 on Consumer Protection. Strasbourg, p. 11.
9. The European Consumer Centres' Network (2009). Cross-border Dispute Resolution Mechanisms in Europe - Practical Reflections on the Need and Availability. December 2009, p. 74.
10. The European Consumer Centres' Network (2010). The European Online Marketplace: Consumer Complaints 2008 – 2009. A Summary and Analysis of Consumer Complaints Reported to the European Consumer Centres' Network, p. 48.

Environmental Management as a Tool for Sustainable Enterprise

Tatjana Tambovceva[1], Dr.oec.
Riga Technical University
Luydmila Mochalova, Dr.oec.
Ural State Mining University, Russia

Abstract. In recent years, an increasing number of private as well as public organisations have been engaged in the implementation and use of environmental management systems (EMSs). This raises questions as to the reasons for implementing an EMS and, not least, about the roles and contributions of an EMS in an organisation. Based, in particular, on research and experiences of environmental management in different countries, this paper argues that an EMS may be understood not only as a technical tool for analytical management, as it is traditionally done but also as a most important tool to achieve sustainability. The modern enterprises consider the sustainable development as the one of basic concepts of one's activity. It is the authors' opinion that the main points of sustainable development of an enterprise are resource conservation, ensuring of an acceptable risk level, satisfaction of needs of all stakeholders and, finally, it has an influence on market capitalisation of an enterprise. The aim of the article is to develop methodologies and mechanisms for ensuring sustainability of an enterprise. The concepts of sustainable development, total quality management, environmental management, risk management, value-oriented management, and controlling are used in the research.
Key words: environmental management, sustainable development, environmental risk management, environmental value management, environmental controlling.
JEL code: Q01, Q56, R1, O44

Introduction

According to "Agenda 21", which was held in Rio de Janeiro in 1992 and later documents that provide an appropriate quality of life, nowadays and in the future it is possible to carry out the changeover of civilised world to the model of sustainable development. As stated by the Brundtland Report (WCED, 1987), "How can we meet the needs of the present generation without compromising the ability of future generations to meet their needs"? In a direct response to this question, Welford (1995) pointed out that strategies were needed to translate this conceptual idea into practical reality. Integrating sustainable development into the planning and measurement systems of business enterprises is not an easy task, since companies committed to incorporating sustainability concerns into product decisions are confronted with handling thousands of goods and materials. In this case, it concerns the environmental management (EM), which is an important instrument for the achievement of sustainable development and is oriented on making and implementation of efficient management decisions related to the provision of an appropriate quality of an environment.

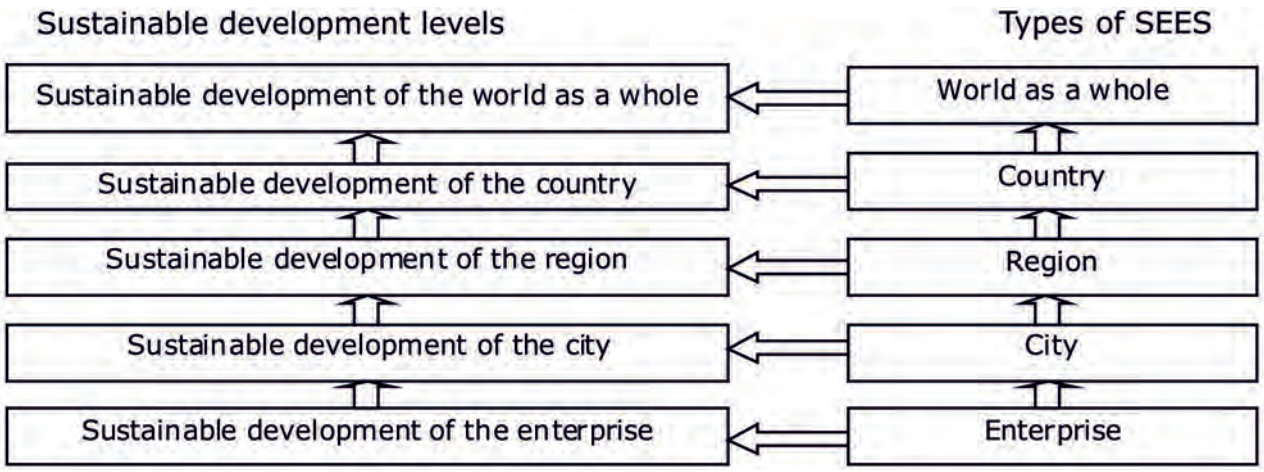
More and more enterprises inculcate and advance a high level of ecological security of the EM due to the rise of an interest of society. First, enterprises face this problem because their production and commercial operations have significant impact on the environment. The EM promotes the formation of a good image of enterprises, the improvement of relations with public authorities, the consolidation of positions in internal market, the achievement of consumers' acceptance, and so on. However, it is necessary to improve management of an environmental activity of enterprises permanently for saving and accrual of these advantages on conditions of moving marketing area and providing effectiveness and stability of enterprises.

There is no an integral methodology and a system of tools, which allow solving a problem of ecological stabilisation of an enterprise, although, the EM on the enterprise is the subject of a considerable literature. It provides overall design of the authors' research. The theoretical importance of research represents the set of theoretical and methodological provisions and guidelines proposed by the authors that develop scientific basis for management in terms of solving the problem of managing an environmentally sustainable development of the enterprise. The practical significance of research lies in the fact that the results are arming the owners and managers of industrial enterprise management tools to implement successfully the basic elements of environmental management and environmental risk management, to develop ecological risk management and to create value-oriented environmental management.

1. Literature review

Literature review was carried out in order to establish the theoretical background and practical examples from the international specialty literature, documents and reports of different research projects, own research papers inclusively, and other information. It is commonly assumed that the implementation of ISO 14001 or EMAS leads to both improved EM and economic competitiveness of the organisation. However, the relationship between EM and economic and environmental performance is complex (Schaltegger & Synnestvedt, 2002).

[1] *E-mail address*: tatjana.tambovceva@rtu.lv



Source: authors' construction

Fig. 1. **Types of SEES and sustainable development levels**

Many researchers evaluate how the implementation of EMS influences the environmental performance and costs of companies as well as the barriers of implementation. Grybaite and Tvaronaviciene (2008) have investigated approaches to the measurement of sustainable development adopted by international organisations or institutions. A further complicating phenomenon is the fact that making optimal sustainability decisions requires evaluating sustainability in terms of environmental, social, and economic aspects (Newman, 2007; Midgley and Reynolds, 2004). This complexity can be derived from the following definition of sustainability: "For the business enterprise, sustainable development means adopting business strategies and activities that meet the needs of the enterprise and stakeholders today, while protecting, sustaining, and enhancing the human and natural resources that will be needed in the future" (Business and Sustainable Development: a Global Guide, 1992).

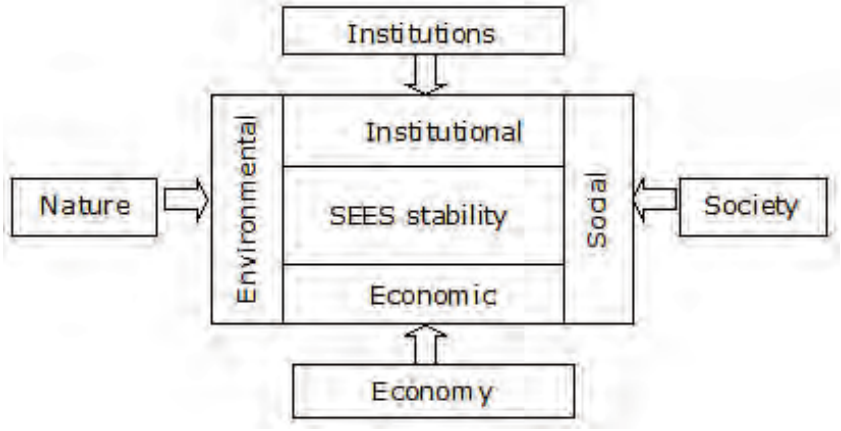
The persistent call for corporations to be socially and environmentally responsible originates from sustained pressure exerted by a range of stakeholders including customers, communities, employees, governments, and shareholders (Sethi, 2003; Epstein, 2008; Hess &and Warren, 2008; Sarkar, 2008). This is based on the widespread acknowledgement that business can play a significant role in reducing deteriorating environmental quality, poverty, and social inequality and in advancing society towards sustainable development (Harris and Crane, 2002). Weingaertner and Moberg (2011) identify commonalities and differences in the understanding of the conceptualisation of social sustainability and help identify the core aspects that cross-disciplinary boundaries. Bansal and Hunter (2003) as well as Darnall (2006) have evaluated the reasons why organisations adopt an EMS and the potential these environmental strategies have for improving the environment. In addition to that, Steger (2000) took a review of smaller, mostly German but also other European, empirical investigations of EMS in order to assess the impact that the EMSs have had on organisations. He could see no differences in environmental performance between EMAS, ISO 14001 or organisational specific systems.

Evidence suggests that many organisations have taken an attenuated view of sustainability, being concerned with environmentally orientated topics such as eco-efficiency (Dyllick and Hockerts, 2002). While environmental issues are the key aspects of sustainability, it is acknowledged that the economic and social dimensions need equal attention, yet, they are lacking in many corporate agendas (Sharma and Ruud, 2003; Yongvanich and Gutherie, 2006). An integrated view of sustainability is particularly important as the three elements are interrelated. For example, the effect of economic growth (economic) may increase an organisation's carbon footprint (environmental), yet, lead to the development of long-term employment opportunities for local communities (social) (Kirchgeorg and Winn, 2006).

2. Research results and discussion

The experience of the 20th century has visibly demonstrated that solving of ecological problems, which are caused by separate subjects of economy – economic development of companies, is possible only by applying systematic approach. It is necessary to search new ways of more effective ecological problem solving on company and state level. The attempts to solve the existing ecological problems by applying administrative and state regulatory methods have not led to the anticipated results. Obvious is the need to find fundamental, new approaches for ecological problem solving that would allow merging economic and ecological stability of companies. The experience of foreign and local companies indicates that such a combination can be ensured by environmental management. The priorities of the 21st century were outlined in 1992 in Rio de Janeiro (Brazil) by declaring that "environmental management is to be considered the dominant of sustainable development and at same time the highest priority of production process and entrepreneurship". Environmental management is part of the concept of strategic management and involves safe management of economic activities that helps attain optimal correlation with efficient environmental protection.

Tambovceva (2008) offers her own definition of the term: "Environmental management is the planning,



Source: authors' construction

Fig. 2. **Types of SEES stability**

implementation and control of strategic, tactical, and operational measures for prevention, reduction and elimination of damage caused to the environment as well as purposeful usage of market advantages gained thereof".

The goal of EM is to lessen the negative impact of economic activity on the environment and to ensure ecological safety of production processes as well as production of environmentally and to human health friendly production. Implementation of the mentioned tasks has to go hand in hand with attainment of other priority goals of the company, including preservation of its current and long-term competitiveness. The EM increases the liability of the company not only regarding production of safe and harmless products but also with regard to reasonable use of natural resources and selection of environmentally friendly technologies.

The object of the study of sustainable development proposed by the authors is the socio-ecological-economic system (SEES), which means a combination of social, environmental, and economic systems, together operating in particular institutional environment. The universality of the term "socio-ecological-economic system" is that it applies to the world as a whole, country, region, city, and enterprise sustainable development of which is the subject of ongoing research. The existence of different scale SEES allows to the authors to talk about the different levels of sustainable development (Figure 1) and about the need of adhesion of their hierarchy and coordination, taking into account the fact that sustainable development is a certain level of SEES providing a framework for sustainable development of its higher levels.

In determining the types of stability SEES, which allow analysing various components of sustainable development of particular system, the following internal and external spheres of influence are nature, determining "natural" limits of human activity and requiring equilibration nature management; economy, setting up the level of the economy consistent with the growing human needs; society, taking care of ensuring the rights and dignity of the human condition; and institutions intending the establishment of formal and informal constraints on social behaviour. Then, the consideration of environmental, economic, social, and institutional sustainability of any SEES seems quite logical (Figure 2).

In general, the theoretical and methodological foundations of the sustainable development study require the mandatory registration of dynamics of this process and consideration of any SEES (enterprise, city, state, country, world as a whole) as the research object, and the evaluation of all types of its sustainability (economic, environmental, social, and institutional) in their relationship that allows raising the degree of controllability of the system.

The authors propose to consider the concept of quality management as one of the most important concepts that promotes sustainable development of SEES (especially enterprises). At the same time, a special kind of the SEES control should be understood under the management of quality. This control is implemented in dynamically developing market relations in order to create its characteristics that comply with the requirements of stakeholders to meet their needs and distinguish this system from the same SEES.

The current stage of development of this concept is related with Total Quality Management (TQM) aimed at meeting the demands and needs of the society, the owners (shareholders), customers, and employees. Principles, values, and ideas of TQM were absorbed by the concept of environmental management that emerged in the early 1990s and expanded the existing notions about quality. Now, they represent new philosophy of economics, production and society management on the objectives, criteria and priorities of environmental processes development. This concept demonstrates the possibility of achieving positive results in environmental performance, and in the authors' opinion, it should act as a basic concept in the field of environmental sustainability of the SEES. It is not denied that the EM has also an indirect impact on economic, social, and institutional sustainability of the SEES.

The authors focus on the concept of EM on the implementation of the idea of environmentally sustainable development. The object of EM from this point of view is the SEES, and the goal – ensuring of its sustainability. The methodology of the EM is based on the system of principles of EM and it gives a scientific synthesis of methods used to achieve environmental objectives and

Table 1

Functions of environmental management

Groups of functions	Functions
Natural resources stock control (productive-economic functions)	Consumption of resources management Reproduction of resources management Environment protection management
Clean production management (productive-technology functions)	Waste management Ecological cleanness of production management Environmental work safety management Technological innovations in the ecosphere management
Socio-native processes management (social functions)	Ecological training and education, increasing of the standard of ecological culture Ecological safety of human area management Urbanisation management
Management of financial and economic aspects of environmental activity (financial and economic functions)	Ecological costs management Evaluation of environmental activity results Payment of environmental exploitation and environmental pollution management Economic stimulation of carrying-out of environmental requirements Financial provision of environmental activity

Source: authors' construction

targets and is the basis for the methodology of providing the SEES environmental sustainability. The mechanism of EM is a set of effects on the ecological component of the SEES. The strategy of EM determines the implementation of environmental activities within the SEES for the long term to ensure its sustainability. The list of environmental management functions is generalised by the authors in Table 1.

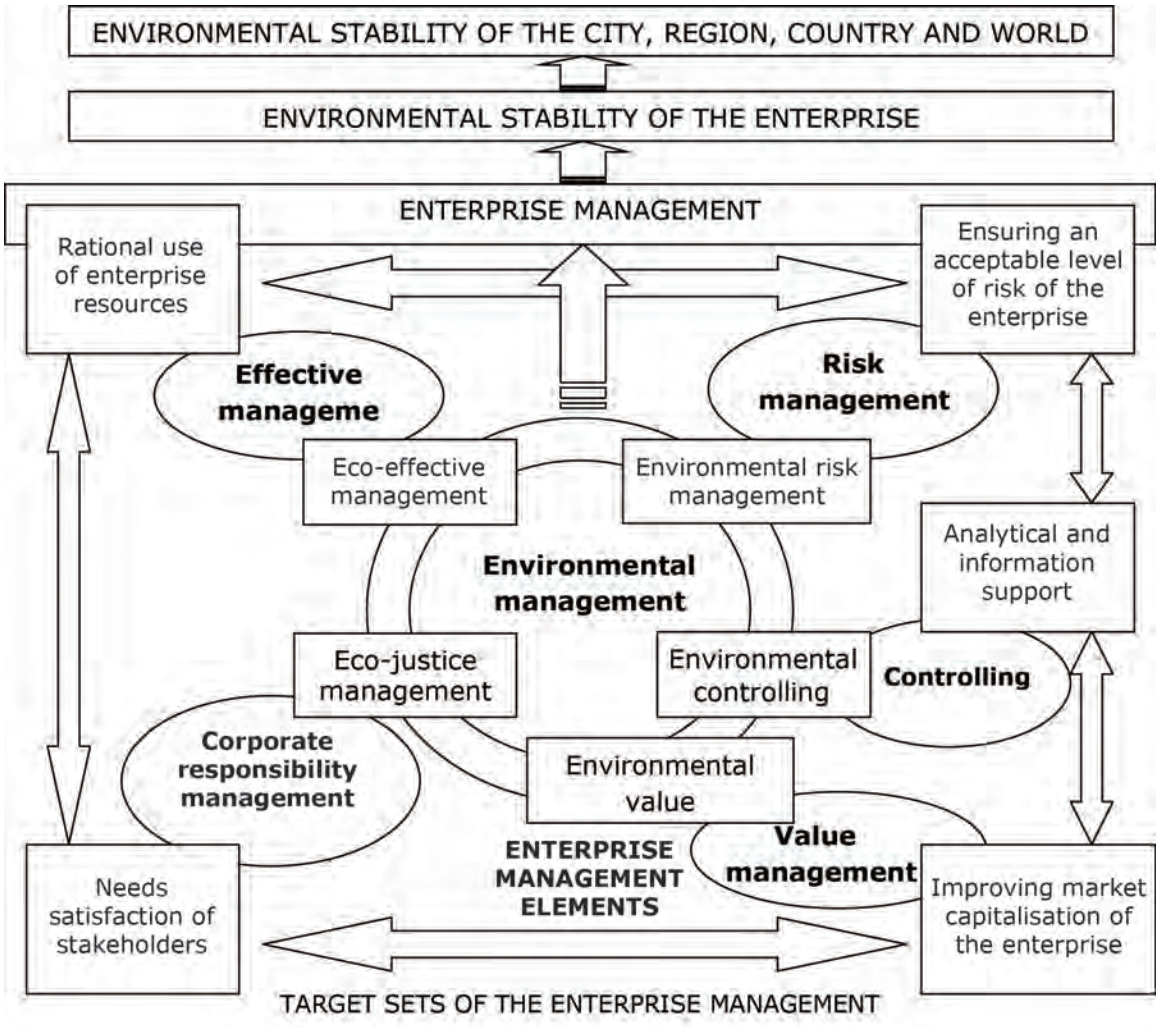
Because of the diversity of the various types of SEES, which are closely related to each other, it is legitimate to speak about the need to form a multi-level EM (corporate – community – regional – national - international). Being an element of quality management, it is a tool for ensuring environmental and overall sustainability of the whole SEES. As the main goal of ensuring the SEES sustainability, the authors consider competitiveness, which is an integral indicator of the extent to which its characteristics considered the SEEA viable and better than other SEES. On the one hand, it demonstrates the multi-level of the management, on the other hand, it indicates that the basis for solving environmental problems are ecologically oriented enterprises that may prevent the action of many factors, which violate the environmental sustainability of any SEES. Therefore, the practical implementation of the concept of environmental management should immediately begin with enterprises.

In formation of environmental methodology, the methodology of EM, which is represented in the international ISO 14000 standards, containing a combination of implementation and development methods on the level of individual institutions of EMS, is considered as a base for application. It is a natural product of open systems evolution based on the principles of systematic, integration, situational, and process approaches. As part of the overall corporate management system, EMS includes the planning, implementation, monitoring, evaluation, and analysis of environmental performance and it means their permanent improvement. In the formation and development of the EMS, enterprises recline against the recommendations of ISO 14000 standards, and unfortunately, they are limited on these, making the formal requirements and disregard for other opportunities for improvement. Among the targeted facilities, management for sustainable development, designed to be universal for all the company's management (including environmental), the authors identify the rational use of resources, ensuring an acceptable level of risk, needs for satisfaction of all stakeholders (investors, consumers, local communities), and increasing magnitude of market capitalisation of enterprise.

In the authors' studies, "the needs of stakeholders" and "enterprise resource management" are originally laid in the foundation of EM based on the principle of eco-justice, which means the conscious manifestation of corporate responsibility with regard to environmental activities, coordination of public and private interests, and the principle of eco-efficiency, which implies the implementation of environmental activities in the most rational way, saving costs and increasing the benefits. The EM is aimed at ensuring social justice and economic efficiency.

The achieving of goal of "ensuring an acceptable level of risk in the company" needs supplementing the methodology of EM by elements of the concept of risk management. It is needed because the environmental quality management should be based on risk assessment in rapidly developing market relations. It means the development of environmental risk management designed to identify, evaluate, and minimise all possible environmental risks of the enterprise.

The authors describe the environmental risk of enterprises as the possibility of environmental sustainability because of the adverse effects of external and internal factors of the ecological environment, including elements of nature, economy, society, and institutions. The authors imply that the influence of



Source: authors' construction

Fig. 3. **The methodology of environmental sustainability ensured in the enterprise on the base of environmental management**

internal factors is a part of the enterprise as a result of certain management decisions of its managers, concerning condition of the environment and the influence of external factors, regardless of management of the enterprise.

Methodology of environmental risk management of the enterprise, in the authors' opinion, is based on generally accepted methodology of risk management, the distinguishing feature of which is the functional differentiation of stages of the analysis, risk management and awareness of it, and is consistent with the methodology of environmental management, which implies the operation of EMS. It includes a set of techniques and methods for the creation and development of system of environmental risk management, which is a part of a corporate risk management system (if it exists) and add the EMS going beyond ISO 14000 standards.

In turn, the expansion of the methodology of EM tools at the expense of risk management, taking into account the financial and economic implications of corporate environmental performance, should help "increase the market capitalisation of the enterprise". This is important from the standpoint that the situation in a developed market economy in accordance with the concept of value-oriented management rule to maximise the wealth of the owners of enterprises should be decisive for its managers in making the management decisions.

The authors are supposed to calculate the environmental value of the enterprise, which is a part of the overall enterprise value (the value of its equity), formed as a result of environmental activity of the enterprise and demonstrating the level of its environmental sustainability. The consideration of the magnitude of environmental value of the enterprise as the main criterion for the effectiveness of its environmental management system will enable managers to focus on increasing the environmental viability of enterprises and the sustainability of their operation. This will eliminate the situation of multiple criteria for evaluating the effectiveness of environmental management, which causes the sputtering power of managers and leads to loss of the principal guide for their activities.

So, as the next stage of development of environmental management in the enterprise (assuming the existence of EMS and the system of the environmental risk management), in the authors' opinion, it is useful to consider the formation of value-oriented environmental management, target setting of which is the increase of the environmental value of the enterprise, which resulted in a rise in a corporate value whole. At the same time, the methodology of value-oriented EMSs, designed to complement and refine the methodology of EM should be based on the management environmental value system specially implemented on the enterprise.

Integration of methodological and instrumental framework for coordination of key functions, elements, and problems of EM and the concept of controlling should be promoted, implying the formation of a set of organizational, mathematical, and information models and tools to provide optimal control of the SEES, which serves an enterprise. The main purpose of formed environmental controlling is the creation of common information system, taking into account the multifaceted interdependence between the functions of EMSs that create the conditions for situation assessment and decision making in the environmental area of the business. Thus, in accordance with the authors' recommendations, the methodology of environmental sustainability of the enterprise is based on the methodology of EMS defined by ISO 14000 standards, which should be an expanded toolkit of concepts of risk management, value-oriented management, and controlling (Figure 3). To do this, environmental risk management, environmental value management and environmental controlling costs, which in case of eco-efficient and eco-justice may ensure environmental and common sustainability in the enterprise and have a positive effect on the stability of the higher level SEES, should be developed on the enterprise. From the standpoint of the authors' vision, environmental controlling is a kind of self-regulatory mechanism of the environmental activity of the enterprise engaged in the feedback loop of environmental management.

Being a complex system involving management of environmentally oriented production, environmental activity of personnel, environmental finance and other elements of the ecosphere, it is considered as one of the tools ensuring the environmental sustainability of the enterprise.

In value-oriented environmental management, the environmental controlling system is based on environmental accounting system, which operates under the operational and tactical environmental controlling. At the same time, an important tool for environmental controlling is a scorecard evaluation of environmental sustainability of the enterprise, which allows to plan, monitor and adjust operations to maximise its ecological value. The basis for its creation is widely used and covered in literature, Balanced Scorecard, BSC.

Conclusions, proposals, recommendations

1. Environmental management system on enterprise level is part of the entire management structure of the enterprise, including organisational structure, setting of responsibilities and implementation of environmental policy. The functioning of the environmental management system, according to the authors, has to be based on function hierarchy by considering the level of urgency of the solutions. Urgent and immediate management measures are defined by preventive and operational environmental management, whereas measures that can be postponed – by tactical and strategic management. Thus, environmental management is an art of making efficient management decisions to increase efficient usage of natural resources and environmental protection within the conditions of the relevant market.
2. Currently, the organisational mechanism of environmental management in Latvia and Russia is based on ecological norms and standards, including environmental quality norms, natural resource utilisation quotas, norms regulating maximum possible hazardous impact on the environment, ecological standards, sanitary and protected area norms, ecological limitations, licensing, standardisation, certification, and nature usage contracts.
3. Quality assurance and management system is the basis for the management process of any enterprise, and, therefore, it is the foundation of the entire enterprise. The basic goal of the quality management system, irrespective its structure or form, is uninterrupted management of quality processes, which points to enterprise's ability to assess and allocate resources directed towards a continuous improvement of enterprise's work efficiency, satisfaction of the needs of its customers and other stakeholders. Therefore, environmental management as part of the collective management system possesses the same characteristics and is one of the basic factors for ensuring competitiveness of the enterprise.
4. Offered theoretical and methodological foundations of sustainable development of socio-ecological-economic systems allow identifying levels of sustainable development and the types of resistance and, thereby, to increase the degree of controllability of the systems by the most complete and complex organisation and regulation of their balanced development.
5. Conceptual approach to ensuring of environmental sustainability of social-ecological-economic systems based on the concepts of sustainable development and environmental management, promoting their active interpenetration and enrichment, refinement of targets and objectives and, ultimately, ensuring successfulness of implementation of the idea of environmentally sustainable development is grounded.
6. The methodology of ensuring environmental sustainability of the enterprise on the basis of environmental management, characterised by breadth of coverage of environmental areas of business, the complexity of goals, objectives and indicators, full account management innovations, designed to systematically provide more efficient operation of the business in a tightening of

environmental requirements on the part of society, government, consumers and shareholders is developed in the research.

Bibliography

1. *Agenda 21*. (1992). Report of United Nations Conference on Environment and Development (UNCED). Brazil.
2. Bansal, P., Hunter, T. (2003). Strategic Explanations for the Early Adoption of ISO 14001. *Journal of Business Ethics,* Volume 46, pp. 289–299.
3. Birkin, F., Polesie, T., Lewis, L. (2009). A New Business Model for Sustainable Development: an Exploratory Study Using the Theory of Constraints in Nordic Organizations. *Business Strategy and the Environment,* Volume 18, Issue 5, pp. 277–290.
4. Bruntland, G. (1987). Our Common Future: the World Commission on Environment and Development. Oxford University Press: Oxford.
5. Darnall, N. (2006). Why Firms Mandate ISO 14001 Certification. *Business and Society*, Volume 45, pp. 354–381.
6. Darnall, N., Jolley, J.G., Handfield, R. (2008). Environmental Management Systems and Green Supply Chain Management: Complements for Sustainability? *Business Strategy and the Environment*, Volume 18, pp. 30–45.
7. Dyllick, T., Hockerts, K. (2002). Beyond the Business Case for Corporate Sustainability. *Business Strategy and the Environment*, Volume 11, Issue 2, pp. 130–141.
8. Epstein, M.J. (2008). Making Sustainability Work: Best Practices in Managing, and Measuring Corporate Social, Environmental, and Economic Impacts. Greenleaf Publishing: Sheffield, UK.
9. Grybaite, V., Tvaronaviciene, M. (2008). Estimation of Sustainable Development: Germination on Institutional Level. *Journal of Business Economics and Management*, Volume 9, Issue 4, pp. 327 – 334.
10. Hess, D., Warren, D.E. (2008). The Meaning and Meaningfulness of Corporate Social Initiatives. *Business and Society Review,* Volume 113, Issue 2, pp. 163–197.
11. Kirchgeorg, M., Winn, M.I. (2006). Sustainability Marketing for the Poorest of the Poor. *Business Strategy and the Environment,* Volume 15, Issue 3, pp. 171–184.
12. Midgley, G., Reynolds, M. (2004). Systems/ Operational Research and Sustainable Development: Towards a New Agenda. *Sustainable Development,* Volume 12, pp. 56–64.
13. Newman, L. (2007). The Virtuous Cycle: Incremental Changes and a Process-Based Sustainable Development. *Sustainable Development,* Volume 15, pp. 267–274.
14. Sarkar, R. (2008). Public Policy and Corporate Environmental Behaviour: a Broader View. *Corporate Social Responsibility and Environmental Management,* Volume 15, pp. 281–297.
15. Sharma, S., Ruud, A. (2003). On the Path to Sustainability; Integrating Social Dimensions Into the Research and Practice of Environmental Management. *Business Strategy and the Environment,* Volume 12, Issue 4, pp. 205–214.
16. Sethi, S.P. (2003). Globalisation and the Good Corporation: a Need for Proactive Co-existence. *Journal of Business Ethics,* Volume 43, Issue ½, pp. 21–31.
17. Schaltegger, S., Synnestvedt, T. (2002). The Link Between Green and Economic Success: Environmental Management as the Crucial Trigger Between Environmental and Economic Performance. *Journal of Environmental Management,* Volume 65, pp. 339-346.
18. Steger, U. (2000). Environmental Management Systems: Empirical Evidence and Further Perspectives. *European Management Journal*, Volume 1, pp. 23-37.
19. Sustainability at Work. (2010). Strategic Approach. Retrieved: http://www.sustainabilityatwork.org.uk/strategy. Access: 19 January 2011.
20. Tambovceva, T. (2008). Assessment Models and Development of Ecologically Oriented Enterpreneurship Management in Latvia. Doctoral Thesis. Riga Technical University.
21. Tokarenko, G.S. (2006). Risk Management System of the Company. *Financial management*, Volume 2, pp. 132-144.
22. Tregidga, H., Milne, M.J. (2006). From Sustainable Management to Sustainable Development: a Longitudinal Analysis of a Leading New Zealand Environmental Reporter. *Business Strategy and the Environment*, Volume 15, Issue 4, pp. 219–241.
23. Yongvanich, K., Gutherie, J. (2006). An Extended Performance Reporting Framework for Social and Environmental Accounting. *Business Strategy and the Environment*, Volume 15, Issue 5, pp. 309–321.
24. Welford, R. (1995). Environmental Strategy and Sustainable Development: The Corporate Challenge for the 21st Century. Routledge: London.
25. Weingaertner, C., Moberg, Å. (2011). Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sustainable Development*. doi: 10.1002/sd.536

Non-Agricultural Activities in Rural Areas of Latvia

Vineta Tetere[1], Msc.oec.
Faculty of Economics, Latvia University of Agriculture

Abstract. Historically, Latvia has been developed as a country of agricultural production. With the accession to the European Union, the market of agricultural products became one of the most affected markets by the international competitors. Rural inhabitants have to look for new alternatives to have income and, at the same time, to manage own small sized farms that are more like subsistence households. There are different state and the EU programmes worked out to promote living in the countryside and to provide information for inhabitants to diversify their business.
Key words: non-agricultural activities, diversification of rural area, state and the EU support.
JEL code: R11

Introduction

Low economic activity of rural inhabitants, lack of qualified labour force in rural areas of Latvia, regional differences for typical entrepreneurship activities, and employment and distinction between towns and rural areas are observed in the countryside. The income level of rural households is lower by almost a third than that of town households and the outflow of labour force is observed as well. The low density in rural areas forms high costs per capita for establishing and maintaining infrastructure. Poorly developed service is characteristic to such areas as well as low quality of roads – their surface is deteriorated, lack of services for telecommunications and the Internet. Most of cultural heritage is in poor or insufficient condition.

A.Auzina and R.Zvirgzdina (2008) in their research admit that positive trends can be observed for the development of entrepreneurship in Latvia, in general, as well the major problem emphasised is imbalanced development in regions and different territorial units – towns and rural areas – and disproportions in all spheres related to entrepreneurship. The successful development of entrepreneurship in rural areas can be provided by considering and activating socio economic peculiarities and interests and management traditions as well as modelling entrepreneurship according to specific resources in each territorial unit. T.Tambovceva and J.Grizans (2011) admit that rural areas are the socio-economic and spatial planning framework of the human life. The main task of this framework is creation of the necessary circumstances and settings for the life and growth and, accordingly, for human welfare. A.Liscova (2011) writes that the real possibilities for diversifying the types of occupation depend on both local conditions and the readiness of individuals to change or diversify their occupations. Any individual can make such a decision in a favourable environment, and the existence or nonexistence of this environment depends on both the national government's policy and the local government's policy in any particular situation.

Non-agricultural entrepreneurship should be developed in Latvia. The more persons create new work places, the smaller burden is for agricultural subsidies as well as for the state budget in general.

Research object: rural areas.

Research aim: to analyse opportunities to develop non-agricultural entrepreneurship in rural areas of Latvia.

Research tasks: to survey support programmes to develop non-agricultural activities; to analyse activity of inhabitants to obtain the support.

Research methods: theoretical discussion, statistical data analyses.

Research results and discussion

Diversification of rural areas for rural development

Since the middle of the past century, the aim of the European Community was to reduce the regional differences in the European Union. A financial tool, in order to reach the goal, is the Structural Funds, which serve to strengthen economic and social alignment in the EU Member States. It has a significant impact on the competitiveness of the regions and on the living conditions of their inhabitants, mainly by co-financing multi-annual development programmes (Tetere, 2010).

To provide availability of the European Union instruments to promote the development of agriculture and rural areas in Latvia, there are planning documents worked out in Latvia: SAPARD - Development Programme for Agriculture and Rural Areas in Latvia; Single Programming Document (SPD) and Rural Development Plan for 2004-2006; and National Strategic Reference Framework (NSRF) and Rural Development Plan (RDP) for 2007 - 2013. Besides these documents, the Ministry of Agriculture has developed the Programme for Non-agricultural Entrepreneurship Development (PNED) for local investments.

Latvia, as the EU pre-accession country since the year 2000, had access to structural financial support for agriculture and rural development. The SAPARD (*Special Action Programme for Agriculture and Rural Development*) financing was available from 2000 to 2006. The document related to SAPARD was developed by the Ministry of Agriculture. The government of Latvia has defined a strategy and priorities for

[1] *E-mail address*: Vineta.Tetere@llu.lv

cohesion of socio-economic conditions by use of the EU structural finances in the Single Programming Document or the so-called Latvia's Development Plan 2004- 2006.

According to the priorities included in the SPD for rural areas, agriculture and forestry development receive support from the guidance section of the European Agricultural Guidance and Guaranty Fund (EAGGF).

The aim of the Rural Development Plan (RDP) 2004 – 2006 was to increase the income level of rural economies, to develop and increase the effectiveness of production in rural economies by following environmental requirements and differentiating rural economic activities and income, and to maintain rural population. It was financed from the guaranty section of the EAGGF to reach defined activities and sub-activities of the aim (Lauku attistibas programma…, 2010).

For the period of 2007 – 2013, a related document for rural diversity is the Rural Development Programme 2007 – 2013 that defines the procedure for allocation of the European Agricultural Fund for Rural Development (EAFRD).

1. The EU pre-accession period: 2000-2004

There were two programmes available for the period of 2000-2004: the Programme for Non-agricultural Entrepreneurship Development and SAPARD as support for diversification and development of rural areas in Latvia.

Programme for Non-agricultural Entrepreneurship Development (PNED)

The Programme for Non-agricultural Entrepreneurship Development was approved on 14 October 2002. It was worked out by the Ministry of Agriculture. It was developed to solve immediately problems related to maintaining rural economic population and environmental development by creating labour opportunities for production and income resources not related to agriculture, and to increase welfare of rural inhabitants.

The general aim of the PNED - promotion of economic life in rural areas by supporting common farming as well as sectors not related to agriculture, and improving the infrastructure by accomplishing rural landscape according to the needs of entrepreneurship and with consideration of requirements of environmental protection (Klismeta, 2003).

The sub-aims of the programme:

1. to create opportunity to receive financial support to start and develop non-agricultural entrepreneurship in rural areas, thus, facilitating to solve employment problems and income increase of rural inhabitants;
2. to promote forming and activating of rural inhabitant initiatives to facilitate integration of economically inactive inhabitants in entrepreneurship in rural areas (MK rikojums Nr. 575..., 2002).

The aim and sub-aims of the programme are exactly the issues that are needed in rural areas the most – to give the financial support for starting and developing non-agricultural entrepreneurship by facilitating solutions of rural inhabitants employment problem and increase of income, promoting rural population initiative and involving them in entrepreneurship because it is possible to live in a countryside, moreover – to live good, not only growing potatoes and sugar beets on few hectares or keeping few cows and pigs but to find an extra or alternative management way at the same time.

The PNED was planned for such sectors of action:

— industry (not for processing agricultural production that is directly related, for example, with processing of meat or milk);
— social life, tourism, recreation, and other services (except, financial intermediation, operations with real estate, state administration and protection, and trade);
— construction;
— craft;
— entrepreneurship related to the programme warranty and computer supply;
— aquaculture;
— hunting.

With the help of the programme, the supported activities were related with non-agricultural production and development of infrastructure – there were improved access roads to the companies, provided communication accessibility for use of information technologies, water supply and installation, and improved energy supply as well as improved landscape – dismantling or reconstruction of ruinous household buildings, use of disused or abandoned agricultural land, except afforesting, improvement of surroundings and so forth, of course, if it is a specific support for entrepreneurial needs (Klismeta, 2003).

The programme offered three types of support:

— bank loan;
— guarantee for loan;
— support payment.

Planned results of the programme in case of successful implementation were as follows:

— the rate of unemployment would decrease by 9%;
— the level of income would increase by 2% on average per one household member;
— 0.3% of subsistence household's activities would change to commercial activities (MK rikojums Nr. 575..., 2002).

Within the programme, there was an opportunity for rural inhabitants to receive loans. The average weighted interest rate for loans, according to the PNED, were:

— loans in lats - 8.24%;
— loans in euros – 5.88%.

During the implementation of programme, there were 213 loans granted (192 in lats and 21 in euros) for the total amount of LVL 2 649 674 and EUR 1 036 068.

In total, 47% of available support was disbursed for the loans of the PNED. The highest activity of obtaining the loan was in Vidzeme region, while the lowest - in Riga region, because it is an urban area with less rural activities.

The Latvian Development Fund (LDF) was a responsible/administrative institution of the programme implementation. The institution was guaranteeing 101 loans for LVL 456 505. To receive the loan, the necessary guarantee to entrepreneurship projects was from 50% to 70%. The LDF issued guarantees for a 3-10 years period.

Guarantees for the loans were given for such sectors as rural tourism, wood processing, metal processing,

Table 1

Amount of loans granted by regions

Region	Loans in lats	Loans in euros		Total loans LVL	%
		EUR	LVL		
Riga	403 350	187 500	131 625	534 975	14.2
Zemgale	522 169	122 000	85 644	607 813	16.1
Kurzeme	396 800	170 000	119 340	516 140	13.7
Vidzeme	1 126 363	286 038	200 798	1 327 162	35.1
Latgale	603 589	270 530	189 912	793 501	21.0
Total	***2 649 674***	***1 036 068***	***727 319***	***3 376 993***	***100***

Source: author's calculations based on the PNED final report

Table 2

Support payment for projects by the Programme (LVL)

Region	Allocation of payment	Granted payment		Granted payment/allocation of payment (%)
		LVL	%	
Riga	202 137	162 137	12.7	80.20
Zemgale	402 963	285 683	22.3	70.90
Kurzeme	317 959	262 375	20.5	82.50
Vidzeme	569 628	401 762	31.4	70.50
Latgale	253 770	168 096	13.1	66.20
Total	***1 796 980***	***1 280 053***	***100***	***71.20***

Source: author's calculations based on the NUAP final report

road reconstructions, timber cutting, transport services, constructions, car services etc.

There were support payments available for the entrepreneurs. One payment could not exceed LVL 10 000. The support payment was granted after finishing the project. Each project could have guarantees for loans as support payment at the end of project.

The highest activity rate of the granted payment out of planned allocation was in Riga region and Kurzeme. The correlation between the payment and the loan can be observed in case of total obtained payments. The highest share of total payment is obtained in Vidzeme region.

Totally 244 support payments were granted during the implementation of the programme, though, in fact, only 179 payments were made. One grant was LVL 7 151 on average. Generally, 28 project payments were rejected because of non-compliance with the requirements of the PNED.

Since 1 May 2004 new applications have not been admitted because the amount of required payments for projects exceeded the real amount of finances available and, according to the rules of the PNED, it was a time to stop approval of new projects, as Latvia became a Member State of the European Union.

To receive the support, implementation of the project had to provide at least one of the following enefits:

— creation or maintenance of work places;
— receiving/increasing income;
— economic development of the enterprise;
— development of entrepreneurship in the area.

According to the requirements of the PNED, during the period of implementation, LVL 6 758 385 were granted to the projects that should provide 656 new work places in rural areas. So, from the previous analysis, one may see that the investment for one work place is LVL 10 302 on average. Out of 244 approved projects, 29 projects had an aim to establish a new enterprise.

Main projects have been approved in the sectors such as:

— wood-processing, production of wood products and wood exploitation;
— construction, gravel and sand pit quarrying;
— hotels, other short term settlement places and restaurants.

The most common aims of the projects were:

— purchase of equipment and facilities;
— reconstruction and construction of buildings;
— purchase of computers and programmes (NUAP, 2004).

Special Accession Programme for Agriculture and Rural Development (SAPARD)

The European Council made a clear distinction between pre-accession expenditure and enlargement. Expenditure reserved for pre-accession could only be used during the pre-accession period. Once a country joins the European Union, it benefits from special enlargement assistance.

There were three instruments assisting the applicant countries until they joined the EU:

1) PHARE: consolidation of institutions, participation in the Community programmes, regional and

Table 3

Expected results of Activity 1

Nr.	Name of sub-activity	Supported enterprises	Created or maintained work places
1.	Support for creation and development of micro enterprises	2 300	5 000
2.	Diversification of non-agricultural activities in agricultural enterprises	720	3 700
3.	Production of energy from biomass of non-agricultural and non-forestry origin	55	120
	Total	**3 075**	**8 820**

Source: author's calculations based on Lauku attistibas programma…, 2010

social development, industrial restructuring and development of the small-business sector;
2) ISPA (Instrument for Structural Policies for Pre-Accession): development of transport and environmental infrastructure;
3) SAPARD (Special Accession Programme for Agriculture and Rural Development): modernisation of agriculture and rural development (Tetere, 2010).

Relation between rural policy and agricultural policy in Latvia, during the implementation of the SAPARD programme, was confirmed with the EU trends – directed to rural development. The Rural Development Programme was defined to create preconditions for integrated, multi-shaped, and sustainable rural development. This document along with the Agricultural Development Concept determined the state long-term planning and development aims for rural sector.

The main aspects in the Programme were:
— development of agriculture, forestry and fishery;
— promotion of entrepreneurship in rural areas;
— diversification of rural areas;
— environmental protection and rural cultural heritage preservation;
— improvement of infrastructure;
— development of education system and cultural aspects.

A total amount available from the SAPARD programme for Latvia was EUR 203 333 169. At the end of the programme, totally 97.7% of financing was uptaken, thus, indicating on relatively high planned amount of finances.

There were four main sub-programmes under the SAPARD. The third subprogramme was set for *Diversification of Rural Economy by Promoting Alternative Incomes*. Within the subprogramme, there was a couple of important activities implemented to increase and diversify employment in rural areas, to increase employment opportunities outside the traditional agriculture, and to promote use of renewable energy resources, thus, decreasing unemployment, increasing income of rural inhabitants, diversifying types of income sources and employment possibilities. The main sectors for the project implementation were technical services, rural development, craft, production of alternative heating, and non-traditional agriculture. The highest share (60%) of finances was uptaken for rural tourism development.

Under this subprogramme, 391 projects were implemented for the total amount of EUR 35 883 971.80. The average size of the project was EUR 127 819.

This was the first programme in Latvia that started to support non-agricultural activities in regions by the EU support (Latvijas Lauksaimniecibas un…, 2007).

2. Planning period: 2004-2006

The Single Programming Document (SPD) priorities were set by the Latvian Government for 2004 – 2006 to promote economic and social cohesion, using the EU Structural Funds. There were four priorities to be followed:
1) promotion of balanced development (financed by the ERDF);
2) promotion of entrepreneurship and innovations (financed by the ERDF);
3) development of human resources and promotion of employment (financed by the ESF);
4) promotion of rural and fishery development (financed by the EAGGF and the FIFG) (MK noteikumi Nr. 783, 2006).

Under Priority 4 of the SPD, there was an activity - *Reformation of Rural Areas and Promotion of Development*. *Promotion of Rural Tourism and Craft* was one of the sub-activities to diversify rural areas. The activity of project applicants was very low – only 60%. At the end of period, 98 projects were implemented with an average sum of EUR 50 581 per project. The activity was available only in the year 2004 (Lauku attistibas programma…, 2010).

3. Planning period: 2007-2013

The aim of the Rural Development Plan 2007 – 2013 is set to support agricultural and rural development. For that reason, four axes are formed:
1) improvement of agricultural and forestry competitiveness (40% of the EAFRD);
2) improvement of environment and rural landscape (42% of the EAFRD);
3) promotion of rural life quality and its diversification(18% of the EAFRD);
4) implementation of Leader approach (reserved 2.5% of the EAFRD).

The aim of the third axis is to diversify and develop entrepreneurship in rural areas, to support development of current infrastructure, and to stop economic and social recession. The support will be provided for creation of

Table 4

Implemented projects and allocated EAFRD resources up to 1 January 2012, EUR

Nr.	Activity	Planned EAFRD finances, EUR	%	Allocated funds, EUR	Allocated fund/ planned finances, %	Implemented projects
1.	Support for establishment and development of enterprises	139 392 614	85.28	101 550 548	72.85	675
2.	Promotion of tourism activities	2 189 056	13.40	9 501 945	43.40	207
4.	Preservation and renovation of rural heritage	2 165 676	1.32	1 083 462	50.02	8
Total		***163 456 346***	***100.00***	***112 135 957***	***68.60***	***890***

Source: author's calculations based on the EAFRD project summary, 2012

alternative income in rural areas, especially to create and develop micro enterprises. It will provide satisfaction of non-agricultural and non-forestry economies and welfare in rural areas by use of the EAFRD. The main activities under this axis are as follows:

1) support for establishment and development of enterprises (including diversification of activities not related to agriculture);
2) promotion of tourism activities;
3) basic services for economy and inhabitants;
4) preservation and renovation of rural heritage.

The financial support from the EAFRD related to diversification of rural areas is for Activities: 1, 2, and 4.

Activity 1 *Support for Foundation and Development of Enterprises (including diversification of activities not related to agriculture)* supports foundation and development of non-agricultural entrepreneurship in micro enterprises, especially in economies where agricultural production is changed for another type of production, prior supporting non-agricultural entrepreneurship in rural areas. The following sub-activities are supported:

1) support for creation and development of micro enterprises;
2) diversification of non-agricultural activities in agricultural enterprises;
3) production of energy from biomass of non-agricultural and non-forestry origin.

Activity 2 *Promotion of Tourism Activities* supports non-agricultural activities in rural areas by developing and improving rural tourism and services, and infrastructure related to tourism. Supported sub-activities are:

1) reconstruction of the existing tourism housing up to 20 beds;
2) construction and reconstruction of catering unit to purchase the necessary equipment;
3) construction and reconstruction of common kitchen, dining room, toilets and bathrooms in camps and hostels (construction of sauna is not included);
4) diversification of tourism services;
5) investment in environmental protection in rural tourism houses.

Expected results of the activity are: 366 supported tourism activities for EUR 25 874 380; extra 19 900 visitors and created 150 work places.

Activity 4 *Preservation and Renovation of Rural Heritage* promotes cultural heritage preservation, renovation, and improvement related to agricultural, forestry, reproduction and manufacturing sectors, providing accessibility and engaging to inhabitants and tourists. This activity includes support for the development of museum activities and the development of professional education institutions. There will be 10 cultural heritage preservation activities supported. Totally 5 500 inhabitants will profit from services improved (such as Internet access etc.)

The largest investments in the planning period of 2007-2013 are planned to support establishment and development of enterprises not related to agricultural activities.

The Rural Support Service has aggregated information on the obtained and disbursed EAFRD resources.

From the latest information, Table 4 shows that acquiring of the fund is active. Most activities are run under the *Support for Establishment and Development of Enterprises* and the largest amount of obtained finances is for the same activity. There are more projects in process of implementation, as there are two years of implementation ahead.

Conclusions, proposals, recommendations

1. Latvia has received a significant financial support from the European Union to support non-agricultural activities in rural areas for many years (three planning periods).
2. Sufficient activity of project applicants was observed for the first period: 2000-2004.
3. The lowest activity was observed in the second period: 2004-2006, while mostly it may be explained due to financial shortage for this activity from the EAGGF.
4. Five years have passed since the beginning of the last planning period. The highest activity is observed for the year 2011. Already 68.6% of available EAFRD resources are obtained for non-agricultural activities in the rural areas.

5. Since the decision to join the EU and up to the year 2011, there were investments in non-agricultural activities have been made for LVL 86 856 258 or 0.11% of GDP.

Bibliography

1. Auzina, A., Zvirgzdina, R., (2008). Factors Impeding the Start of Entrepreneurship in Rural Areas. *Economic Science for Rural Development,* Volume 15, pp. 289-295.
2. Klismeta, G., (2003). Miljoni (vai septini?) Latvijas laukiem. Retrieved: www.logincee.org/file/4396/library. Access: 31 August 2010.
3. Kopsavilkums par iesniegtajiem un apstiprinatajiem ELFLA projektiem (Summary on Received and Approved Projects from the EARDF) (1 January 2012). Retrieved: http://www.lad.gov.lv/lv/statistika/2218/. Access: 8 January 2012.
4. Latvijas Lauksaimniecibas un Lauku attistibas SAPARD programmas paveikta *(Ex-post)* novertejums (Ex-post Evaluation of SAPARD Activities), (2007., 11.) gala zinojums, 168 lpp.
5. Latvijas Lauku attistibas programma, 2007.- 2013. gadam (Latvia's Rural Development Programme) (2010). Zemkopibas ministrija, 461.lpp., 7. redakcija
6. Liscova, A. (2011). Possibilities of Business Diversification on the Farms in Subregions Zemgale-1 and Zemgale-2 of Zemgale Planning Region. *Economic Science for Rural Development*, Volume 26, pp. 83-90.
7. Ministru kabineta 2006.gada 19.septembra noteikumi Nr.783 Noteikumi par atklata projektu iesniegumu konkursa "Lauku teritoriju parveidosanas un attistibas veicinasana" aktivitates "Lauku turisms un amatniecibas veicinasana" apaksaktivitates "Amatniecibas attistiba" vadlinijam. Retrieved: http://www.likumi.lv/doc.php?id=144284&from=off. Access: 25 September 2011.
8. MK rikojums Nr.575 Riga 2002.gada 14.oktobri (prot. Nr.39 29.§) Par Nelauksaimnieciskas uznemejdarbibas attistibas programmu. Retrieved: http://www.likumi.lv/doc.php/doc.php?id=75886. Access: 25 September 2011.
9. Nelauksaimnieciskas uznemejdarbibas attistibas programmas (NUAP) galejais informativais zinojums, 2003.gada 1.janvaris – 2004.gada 30.junijs. (PNED Final Informative Report) (11 August 2004). Retrieved: www.lad.gov.lv. Access: 31 August 2010.
10. Tambovceva, T., Grizans, J., (2011). Aspects for Assessment of Sustainable Rural Development in Latvia. *Economic Science for Rural Development*, Volume 26, pp. 221-229.
11. Tetere, V. (2010). EU Structural and Cohesion Funds in the Economy of Latvia. *Economic Science for Rural Development*, Volume 21, Jelgava: LLU, pp. 202–207.

Comparison of Efficiency of Administration Costs of the Estonian Social Insurance Board

Ivar Unt,
Valga County Government
Peedu Zeiger[1], *Dr.oec.*
Institute of Political Science and Governance, Tallinn University, Estonia

Abstract. Estonia has a three-pillar pension system in use. The first pillar is being financed and administered by the state. The second pillar is being financed by both the people and the state, and administered by the private sector. The third pillar is optional and it is financed by a person itself, and administered by the private sector. The expenses in the public sector have risen in the years 2005–2008. The main target of this research is the analysis of administration costs of social field and finding out the best ways for saving administration costs. Cost–saving in a particular context means that benefits shall be administered as cheaply as possible. In this particular thesis, the authors have focused on giving an overall assessment to the administration costs, not to the quality of service. As a result of this research it appeared that the first hypothesis did not find evidence, since the private sector does not administer pensions at lower costs. It was confirmed by the comparison of the administration cost indicators of the Estonian Social Insurance Board (SIB), the other institutions, and private pension funds. Even today, people have to pay relatively more to maintain the private pension fund than it takes to administer the SIB. The scale effect in the Estonian Social Insurance Board does exist. The grown amount of benefits has not increased the administration costs at the same speed and volume as the amount of benefits.
Key words: administration of social benefits, efficiency, cost–saving, social benefits, pension system.
JEL code: H59

Introduction

Many systems based on state and private capital are created to secure socially the population. Mixed systems are also being used. A large part of the budget is spent on appointing, disbursing, and delivering various benefits to the people who need it. This requires an administrative instrument, which also has its costs. Pensions and other social benefits are one of the biggest expense items in the state budget. Mostly, the states themselves deal with administering pensions, but quite efficient private pension systems have also been created. Private pension systems are gaining popularity in the aging societies, while the switchover from the state pension systems to the private pension systems is a very expensive and long-term process. The most complicated task for the majority of the countries is financing pension plans, it means that not enough social security tax comes in and the systems are being subsidised by other taxes. The instrument created for administration of pensions should be effective and cost–efficient in order to keep benefit resources as high as possible. The main expenditure in the social field in Estonia and in other countries is the national pension system, which is being administered by the SIB. The majority of developed countries is using mixed systems and so does Estonia.

Implementing the principles of securing incomes in many countries at the end of the 19th century and at the beginning of the 20th century had a great impact on people's safety. The importance of social-political supporting systems depends on the values and financial opportunities of the society. Rapid development in social security programmes involved more and more countries and categories of people. Protection against various inevitable situations such as old age, disability, poverty, and survivorship is guaranteed to the majority of the population by insurance and benefit systems.

Estonia has a three-pillar pension system in use. The first pillar is being financed and administered by the state. The second pillar is being financed by both the people and the state, and administered by the private sector. The third pillar is optional, and is financed by a person himself and administered by the private sector. In the years 2005–2008, the expenses in the public sector have risen. Therefore, state institutions have often made irrational choices when performing their tasks. Now, under the circumstances of economic recession, new saving possibilities are being looked for and the maintenance costs of the institutions need to be examined. New opportunities for providing services on optimal level with minimum costs need to be found thereof.

The main target of this research is the analysis of administration costs of social field and finding out the best ways of saving administration costs. Cost–saving in a particular context means that benefits shall be administered as cheaply as possible. In this particular thesis, the authors have focused on giving an overall assessment to the administration costs, not to the quality of service. It should be added that the analysis was not carried out on micro–level and according to that, two hypotheses were set up:

1) maintaining a public sector institution is expensive – the private sector is able to offer this service at lower costs;

[1] *E-mail address*: peedu.zeiger@tlu.ee

2) administration costs increase respectively with the amount of benefits.

The following assignments were designed to prove the hypotheses:

1) to make sure how cost–saving is the Estonian Social Insurance Board when administering benefits;
2) to model the administration costs of the Estonian Social Insurance Board and to find out what kind of an effect the chosen inputs have on the administration costs.

To get an overview of the economic use of administration costs of the SIB, they will be compared with the indicators of the social security administration institution in the USA–OASDI (Old Age, Survivors, and Disability Insurance Programme). However, the international level does not give the complete overview and the costs need to be compared with a domestic institution. The authors have chosen Valga Social Assistance Board as it is located in one of the poorest areas in Estonia; it is small-scaled, and thus, it should have low administration costs. One could get better results in comparison with Estonian Unemployment Insurance Fund, but the results would not be comparable due to an extensive reform, recently carried through. The second part of the same hypothesis examines whether the private sector is more effective than the public sector. The indicators chosen are being compared with the administration costs of private pension funds. The main assignment of private pension funds is to increase the assets, while the SIB has to deliver these resources to people. On both occasions, people need to pay money for the administration of their pensions and that gives a good reason to carry out a comparison. A model is being compiled to prove the second hypothesis. Based on that model, it is possible to assess on which rate the chosen inputs influence the administration costs. In the context of social security, the analysts have used a general cost model, which binds the administration costs of the system with income level or productivity level, with the price of production coefficient and with programme criteria and technology. The authors of this research have mainly used theoretical discourses from Mitchell and Stiglitz as resources and in the empiric part of the thesis, the budgets of the SIB and the VSAB have been used as well as the statistic indicators of the OASDI.

To assess the administration costs of the pension programmes, an American scientist Mitchell has brought out three parameters: the proportion of the administration costs from the budget, the administration costs per taxpayer, and the administration costs per benefit receiver (Mitchell, 1996). In the context of social security, the analysts have used a general cost model (Cobb-Douglas), which binds the administration costs of the system with income level or productivity level, with price of productivity coefficient and with programme criteria and technology (Mitchell, 1996). In their empirical research, the authors from the USA – Mitchell, Sunden, Hsin and Reid (1994) – have used administration costs of social insurance as a dependent variable, which is shown as a percentage rate of GDP and opposed it to the costs of social insurance benefits. In their analysis, the previously mentioned authors used the data from 43 countries including the OECD countries, the Latin-American region, and the Carribean region. The evidence of strong scale-savings has been found. They also discovered that the 1%-increase in productivity measured by the benefit costs could be connected with 0.5% increase in administration costs of the system (Mitchell, 1994).

To find out how cost-saving is the administration of benefits of the SIB, the comparison analysis between the SIB, the OASDI, the VSAB, and the progressive pension fund of the SEB has been carried out using the research from Mitchell and three parameters from Mitchell's method: the proportion of the administration costs from the budget, the administration costs per taxpayer, and the administration costs per benefit receiver as a research methods and materials of the current paper.

Research results and discussion

It is common that the private sector can offer different services at a lower price than the public sector (Stiglitz, 1995). The main reason is that there is no competition in the public sector, and thus, the private sector is forced to offer services more efficiently (Niskanen, 2007). Efficiency can consist of the quality of service or cost-saving. In case of services, one can speak about two options: the best service is offered with optimal tools or an optimal service is offered with minimal tools. The first option would be perfect, yet, in reality, the second option shall be faced, as the resources are limited. When assessing the efficiency, it is recommended to observe the three parameters at the same time: quality, quantity and promptitude (Tõnnisson, 1998). Right now, the authors are interested in the quantity and they assume that the quality of the service is optimal and works promptly. In the empiric research of this research paper, the comparison of the quantitative indicators, characterising the administration costs in the period of 2005-2010 is being used to examine the first hypothesis and to achieve the target. In consideration of the previous, the indicators compared are the following:

1) proportion of institution's administration costs in the budget;
2) administration costs per taxpayer;
3) administration costs per benefit receiver

The proportion of institution's administration costs in the budget. Comparable organisations are the SIB (Budget, Table 1), the OASDI (Main Indicators, Table 2), the VSAB (Budget, Table 3), and the SEB progressive fund (Fund Amount, Table 4).

The social security administration institution in the USA - the OASDI - has been chosen, since the primary research (Mitchell, 1996) was drawn up based on this institution and that gives an opportunity to carry out a comparison with the results from the primary research.

Valga Social Assistance Board has been chosen because it is one of the poorest self-governments in Estonia, which makes them to fulfil their assignments very economically. This, in turn, gives a chance to assess the positions on a domestic level. The authors could get even better results in comparison with the Estonian Unemployment Insurance Fund, but the results would not be comparable due to an extensive reform, recently carried through. Therefore, Valga Social Assistance Board has been chosen for the research purpose.

The reason of choosing the SEB pension fund is the necessity to confirm or not to confirm the hypothesis that private sector administers more cheaply than the public

Table 1

The budget of the Estonian Social Insurance Board in 2005–2011 (mln EEK)

Type of costs	2005	2006	2007	2008	2009	2010	2011*
Administration costs	0.142	0.145	0.153	0.181	0.139	0.134	0.134
Pensions	10.404	12.398	14.709	18.070	19.327	19.684	20.120
Benefits	3.066	3.487	4.011	5.018	5.629	5.740	6.143
Special pensions	0.126	0.157	0.202	0.279	0.285	0.281	0.330
Welfare	…	…	…	0.220	0.237	0.237	0.237
Other costs	0.018	0.032	0.034	0.054	0.045	0.046	0.054
Total	13.756	16.219	19.109	23.822	25.662	26.122	27.018

Source: authors' calculations based on the National Social Insurance Board budgets 2002–2011

Table 2

The main indicators of the OASDI in 2005–2010

	2005	2006	2007	2008	2009	2010
Budget of the OASDI programme (mln USD)	435.408	454.599	581.535	615.403	671.230	702.433
Administration costs of the OASDI programme (mln USD)	5.389	5.657	5.659	6.079	6.415	6 .612
Proportion of the administration costs from the budget of the OASDI programme (%)	1.24	1.24	0.97	0.99	0.96	0.94
Administration costs per taxpayer in the OASDI programme (USD)	35	37	37	40	42	44
Administration costs per benefit receiver in the OASDI programme (USD)	102	107	107	115	121	125

Source: authors' calculations based on the USA Social Security Administration Performance and Accountability Report 2011. The data of the OASDI has been converted from USD into EEK with the date of 4 March 2011 based on the EUR/USD exchange rate, whereby the EUR/EEK exchange rate is 15.6466.

Table 3

The budget of Valga Social Assistance Board in 2005–2010 (mln EEK)

Type of costs	2005	2006	2007	2008	2009	2010
Administration costs	1.3	1.7	1.9	2.1	2.1	2
Benefits	10	10	8.9	8.9	11.5	11.8
Welfare	0.6	1	1.5	1.6	1.4	1.5
Other costs	0.5	1.6	2.1	2	1.1	1.5
Total	12.4	14.3	14.4	14.6	16.1	16.8

Source: authors' calculations based on Valga City budgets 2005–2010

Table 4

SEB progressive pension fund amount and unit owners

	2005	2006	2007	2008	2009
Number of unit owners	95.346	121.700	143.120	159.670	164.610
Average fund amount (mln EEK)	739.8	1309.5	2216.5	2838.7	3084.9

Source: authors' calculations based on SEB pension fund statistics 2005-2009

sector. The main assignment of private pension funds is to increase the assets but the SIB has to deliver these resources to people. On both occasions, people need to pay for the administration of their pensions, which offers a good reason to compare. Due to confidentiality, the authors were not able to get the number of unit owners and fund amount of the SEB progressive pension fund for the year 2010 (Table 4). Therefore, the SEB indicator for the year 2010 in Table 6 is missing.

Table 5

The proportion of institution's administration costs in the budget (%)

Year	SIB	VSAB	OASDI	SEB
2005	1.03	10.5	1.24	1.5
2006	0.89	11.9	1.24	1.5
2007	0.8	13.2	0.97	1.5
2008	0.76	14.4	0.99	1.5
2009	0.54	13.0	0.96	1.5
2010	0.51	11.9	0.94	1.4

Source: authors' calculations

Table 6

The amount of the institution's administration costs per taxpayer (in EEK)

Year	SIB	VSAB	OASDI	SEB
2005	233	257	392	116
2006	224	297	414	161
2007	233	337	414	232
2008	275	374	448	267
2009	234	416	470	281
2010	239	417	492	…

Source: authors' calculations

The comparable period is 2005-2010. When analysing the proportion of the administration costs from the institution's budgets (Table 5), the GDP indicator in 2005-2010 has fallen from 1.03% to 0.51%, which shows the improvement in saving of the GDP in the above-mentioned years.

The VSAB provides a contrast with its administration cost proportion in the budget – it is substantially higher than in the other institutions and it is the only institution where no change of the indicator has been noticed. The indicator rose until 2008, but some recession can be seen further on. A fundamental difference between the SEB pension fund and other institutions is that the indicator is shown as a percentage of all assets per year but in case of the budgetary institutions that indicator is based on the budget of the current year. The second difference is that Estonian private pension funds have a fixed proportion of administration costs. Each private fund has a different budget, which decreases according to the formula if the fund amount grows.

Administration costs per taxpayer. In 2005-2010, the administration costs per taxpayer have not changed much in the budget of the SIB except for the year 2008 (Table 6). Administration costs per taxpayer in other institutions have risen during the period in question. To find out the administration costs per unit owner in the SEB, the average annual fund amount has been multiplied by the percentage indicator of the administration cost proportion and the result has been divided by the number of unit holders in the same year.

The VSAB differs clearly from other institutions. The costs per taxpayer in the particular period have increased 1.6 times and the costs in the SEB conservative fund have increased 2.4 times per unit owner. The reason for this kind of difference is that the business period for private pension funds is relatively short and the payments are still being made. As the fund amount is growing, the contribution from unit owners is increasing as well. In 2005, the administration costs per taxpayer in private pension system were lower than in the SIB, while in 2009, people had to pay more to maintain the private pension system.

Administration costs per benefit receiver in the SIB have not changed much and in 2005 – 2010, they have basically remained on the same level (Table 7). The costs in the other institutions have increased. The private pension fund is missing from that table as the Estonian private pension funds have not made disbursements yet or they do it on a very small scale. Therefore, there are no benefit/pension receivers to calculate the indicator.

When paying attention to administration costs per benefit receiver, it can be seen from the table that the OASDI differs clearly from the other institutions – the cost per benefit receiver compared with the SIB is 6-8 times higher. The indicator of the VSAB is smaller than the indicator of the SIB, yet, the constant rise should make one cautious. The indicator of the VSAB has increased almost two times during this period, while the indicator of the SIB has remained more or less stable. When comparing the three previous indicators, it appeared that the SIB is working quite economically and effectively compared with the OASDI, the VSAB, and the Estonian private pension funds.

More benefits make the administration costs increase. Administration costs as an input are influenced by the production rate, which, in case of the SIB, is approachable by the sum of the benefits, and the resource prices such as GDP per capita. The data from

Table 7

The amount of the institution's administration costs per benefit receiver (in EEK)

Year	SIB	VSAB	OASDI
2005	182	64	1.142
2006	186	85	1.198
2007	194	110	1.198
2008	221	131	1.288
2009	178	120	1.355
2010	172	117	1.400

Source: authors' calculations

Table 8

The initial data of the regression model

Year	Benefits from the SIB	GDP per capita in current prices	Budget of the administration costs
1998	6.545.485.100	56.803	133.907.400
1999	7.713.535.200	60.947	137.579.200
2000	8.039.887.400	70.376	138.806.200
2001	8.565.453.900	79.958	143.939.200
2002	9.596.582.800	89.555	136.687.300
2003	10.575.035.200	100.787	137.509.200
2004	12.182.554.340	112.312	140.460.783
2005	13.256.994.812	129.973	141.711.885
2006	16.073.145.860	155.945	145.066.207
2007	18.955.521.560	187.402	152.664.726
2008	23.420.427.488	190.281	180.813.839

Source: authors' calculations based on the National Social Insurance Board budgets, Key economic indicators, Eesti Pank

Table 9

The initial data of the logarithmed regression model

Year	Benefits from the SIB	GDP per capita in current prices	Budget of operating costs
1998	22.60204	10.94735	18.71266
1999	22.76624	11.01776	18.73971
2000	22.80768	11.16160	18.74859
2001	22.87100	11.28925	18.78490
2002	22.98467	11.40260	18.73321
2003	23.08176	11.52077	18.73920
2004	23.22327	11.62904	18.76044
2005	23.30779	11.77508	18.76931
2006	23.50042	11.95726	18.79270
2007	23.66536	12.14101	18.84375
2008	23.87687	12.15626	19.01298

Source: authors' calculations based on the National Social Insurance Board budgets, Key economic indicators, Eesti Pank

the Statistics Estonia and the SIB have been used to create the model. The period of 2005-2010 has been used when comparing the institutions, while modelling the costs, it would be better to use a longer period. In this particular case, the period of 1998-2008 (Table 8) has been chosen; although, it is still a bit short for creating a good model. At least a 15-year-period is needed, but the authors are still able to model the administration costs per institution and give an assessment to the hypothesis set up for the SIB.

It was not possible to use a longer period as the earlier data of the administration costs of the SIB are not publicised, thus, the overview on the earlier period is missing. Secondly, the data from 2009 and 2010 cannot be used because of the significant reduction of the operating costs of the SIB. In this case, it is an anomaly, which falsifies the period, and thus, these years have not been counted. The data have been logarithmed before entering into the model (Table 9).

The function of Cobb-Douglas can be presented as a linear function:

$$log_e(Y) = a_0 + \sum_i a_i log_e(I_i) \quad (1)$$

where:

Y - output;
I_i - input;
a_i - coefficient of the model.

The coefficient of the model shows how largely the output is influenced by the input. If the coefficient is 1 and one increases the input by 1%, then the output also increases by 1%. If the coefficient is bigger than 1, the output increases faster than the input, and if the coefficient is smaller than 1, the input increases faster than the output. The regression function of Windows Excel has been used and the initial data have been logarithmed. The result is the following:

$$ln(Y)=0.697*ln(x_1 -0.504*ln(x_2) + 8.464 , \quad (2)$$

where:

Y – administration costs, EEK;
x_1 – amount of benefits, EEK;
x_2 – GDP per capita, EEK.

The data describing the reliability of this model are good. The coefficient of determination r^2 is 0.86, so the regression model describes the measured sizes perfectly: 86% of the dependent variable's total variation has been described by the regression equation. The F-statistic is 25.79, so the coefficient of determination is incidental. In this case, the results are not incidental, which means that the model can be wrong only on one occasion from thousand. The statistical importance of the variables used as inputs can be assessed by the indicator of P-value. If this is smaller than 0.05, the variable is statistically important on that level. In the certain model, the P-value for x_1 is 0.002 and for x_2 it is 0.009, so they are statistically important. The parameters describing the model are positive, so the present model can be counted as reliable; although, there can be a possibility that due to the shortness of the time period the model can give inaccurate data as an output.

Conclusions, proposals, recommendations

As a result of this research, it appears that the first hypothesis did not find evidence, since the private sector does not administer pensions at lower costs. It was confirmed by the comparison of the administration cost indicators of the SIB, the other institutions, and private pension funds. Even today, people have to pay relatively more to maintain the private pension fund than it takes to administer the SIB. In the future, people will have to pay even more.

The second hypothesis did find evidence - it appeared by modelling the administration costs of the SIB that the 1%-increase in the amount of benefits increases the administration costs by 0.70% (characterised by the coefficient 0.697 in front of the amount of benefits, it is smaller than 1). So, it is proven that administration costs increase with the increase of the amount of benefits given by the SIB. If Mitchell in her research found out that the 1%-increase in the amount of benefits increased the administration costs by 0.50% then on the example of the SIB the model showed that the 1%-increase in the amount of benefits increased the operation costs by 0.70%. The coefficient of the productivity indicator is -0.504, which shows the administration costs decrease with the increase of productivity. The scale effect in the Estonian Social Insurance Board does exist. The grown amount of benefits has not increased the administration costs at the same speed and volume as the amount of benefits.

The authors concluded that administration of the state pension is done at lower costs. Instead, there should be more research done on the costs of the administration in the private pension funds. The paper proved that higher subsidy rate did not accordingly increase the cost of the administration of SIB. Therefore, the current mechanism of the private pension fund administration is not optimal and the competition as such is not working. For the future purposes, the authors are proposing Estonian Government to consider opening the pension funds market and let in other European Union Member States funds. Until the market is not open in this field, the Ministry of Finance and Financial Supervision Authority of Estonia should analyse the profit of the current funds and justify the expenses of the private pension funds in Estonia.

Bibliography

1. Estonian National Social Insurance Board budgets 2002–2011. Retrieved: http://www.ensib.ee/eelarve-3/. Access: 18 March 2011.
2. Key Economic Indicators. Eesti Pank. Retrieved: http://statistika.eestipank.ee/?lng=et#listMenu/1017/treeMenu/MAJANDUSKOOND. Access: 23 July 2010.
3. Mitchell, Olivia S. (1996). Administrative Costs in Public and Private Retirement Systems. National Bureau of Economic Research, p. 71.
4. Mitchell, Olivia S., Hsin, Ping–Lung. (1994). Public Pension Governance and Performance. National Bureau of Economic Research, p. 46.

5. Mitchell, Olivia S., Sunden, Annik, Hsin, Ping–Lung. (1994). Social Security Costs in Latin America, the Caribbean, and OECD Nations. Journal of International Compensation and Benejts 2, (4), p. 15.
6. Niskanen, William. (2007). Bureaucracy and Representative Government, Aldine, p. 241.
7. SEB Pension Fund Statistics 2005-2009. SEB Eesti AS. Retrieved: http://www.seb.ee. Access: 5 August 2010.
8. Social Security Administration Performance and Accountability Report for Fiscal Year 2010. p. 218. Retrieved: http://www.socialsecurity.gov/finance/. Access: 4 March 2011.
9. Stiglitz, J. E. (1995). Public Sector Economics. Tallinn: Külim, p. 692.
10. Tõnnisson, K. (1998). Management of Public Organisations. Eesti Haldusjuhtimise Instituut, p. 23.
11. Valga City budgets 2005–2010. Retrieved: http://webdk.valgalv.ee/?page=pub_list_dynobj&desktop=13490&tid=13911. Access: 14 January 2011.

Urban Re Meets Rural: Evaluating Potential of Short-Time Solutions in Specific Suburban Development Areas

Maija Usca[1], PhD student in Human Geography;
Margarita Miklasa, PhD student in Regional and Environmental Geography
Faculty of Geography and Earth Sciences, University of Latvia

Abstract. The history of suburbanisation and occurrence of housing and other infrastructural development in predominantly agricultural areas in Latvia is poorly studied, limiting one's understanding on the contemporary character of the city outskirts and knowledge on the rural-urban fringe process. This article argues the necessity to discuss issues/cases of suburban land, which by historical background is rural, by present/legitimate land use zoning is meant for building, while in reality, appears as awaiting open space - extensively used or abandoned in high contrast with the potential possibilities of varied use for local communities and stakeholders. Therefore, the authors study two villages in the suburbs of Riga in the municipality of Kekava – a territory characterised by the abovementioned processes, in more detail. In the research, which is based on in-depth interviews with selected experts, inhabitants, and land owners/developers; various socio-economic benefits, their absence; and political drawbacks of 'quick' solutions for more effective land use, the authors identify integrated planning, partnership formation, and public engagement. The results of the research ensure bases for judgment making and future predictions of the potential use of previously agricultural areas, now characterised by transitional land use.
Key words: rural-urban relationship, suburban areas, transitional land use.
JEL code: R140, R520

Introduction

Nowadays more and more research is done on development tendencies of the post-Soviet cities. Suburbs of the post-Soviet cities are a specific research field, as with the collapse of the Soviet Union, rapid development has taken place especially in suburbs of the cities. It can be explained by the fact that the new economic opportunities (loss of industrial jobs in urban areas and agricultural jobs in rural areas (Brown and Schafft, 2002, as cited in Kontuly, Tammaru, 2006), the increase of jobs in the urban service sector favoured migration to major metropolitan areas of those, where labour was in demand (Kok and Kovacs, 1999, Tammaru and Sjöberg, 1999, as cited in Kontuly, Tammaru, 2006). Research of the post-Soviet suburban space characterise territorial planning problems in Latvia, like in many other post-Soviet countries by the lack of state urban development programmes and policies (Stanilov, 2007), private interests drive the housing development (Kährik, Tammaru, 2008), because municipalities of suburban areas try to attract as many potential developers as possible. Thereby, the development of suburban areas is not mutually agreed (among municipalities) (Truksans, 2010). It means that development processes form rural to urban land use have not always been planned and based on a common development vision. Therefore, a situation has occurred when development processes in suburbs are chaotic (e.g. dead ends and non-functional street networks), fragmented (e.g. unfinished buildings in residential areas), and even unsuitable for everyday life (e.g. lack of access to a centralised water and sewer systems). In this case, specific short-term solutions can represent the possibility of solving suburban development and planning problems by satisfying residents' needs in the meantime. Hence, the aim of this research is to identify potential spheres (social, economic etc.) that would benefit from 'quick' solutions for more effective land use, integrated planning, partnership formation, and satisfaction of local community needs in post-Soviet suburbs. In order to reach the aim, the main tasks are set as follows: to analyse the concepts of land use and temporal land use; to understand historical background of formation of post-Soviet suburban space as a space where rural and urban meets; to analyse a case of two villages in suburban Riga – existing temporal use projects and potential ones; and to draw conclusions about local inhabitants'/community needs and existing space for short term solutions.

The perspectives of land use

Whenever one turns to discourse of formal and informal use of space, it would be necessary to determine general issues in the beginning, without going into specific details, i.e. there certainly are economic and socially rooted determinants of land-use. For instance, Chapin (1965) argues that an economist views the land use in terms of economic theory where urban land as a commodity traded on 'land market' subjects to the forces of supply and demand and may be considered to have value because of its potential to produce income in the future. At the same time, influences with social origin affect location and arrangements of land uses and may be reduced to cycle of behaviour. This cycle is made of four phases: 1) defining the needs and wishes; 2) defining goals; 3) planning alternative courses of action; and 4) deciding and acting (Chapin, 1965). Nevertheless, it is extremely difficult to equate constantly interacting and complexly interrelated both kinds of influences. Moreover,

[1] *E-mail address*: maijausca@gmail.com

it is important to remember the values as latent and/or articulated logical constructs of the individual or the group with desired social and/or economic ends. So, at some point, land use is the end of particular interests and/or values, which is acceptable, though extremes are possible when great territories are assigned for single-purpose, and/or intended action is delaying and other desired actions may take place. For example, Turner (1998) notes that single-purpose results in roads planned only for motor vehicles, forests for timber production, farms for food, rivers for flood water and bus stops for standing in queues, parks for recreation, stations for getting off trains and buildings for sleeping or working (Turner, 1998). Of course, land use zoning is not inherently bad but should be liberal with regard to use (Jacobs, 1961). In other words, intensification of activities is needed despite the intensification of built structures (Lehtovuori, 2010).

Ignasi de Sola-Morales has coined the term 'terrain vague' to describe unused, abandoned areas, obsolete and unproductive spaces and buildings, often undefined and without specific limits or in general blurred spaces, indeterminate and uncertain and ripe with evocative potential. But Lévesque points to the binary opposition of 'terrain vague'. For some, 'terrain vague' is a symbol of economic stagnation and association with careless investors, permissive municipal authorities or even urban decay, simply because it does not correspond to the ideal of a functional city. For others, 'terrain vague' is a symbol of creative and open-minded public good, i.e. offer for the room, potentially open to alternative ways of experiencing the city and/or for spontaneous, creative appropriation and informal uses that would otherwise have trouble finding a place in public spaces. To overcome such misunderstandings, he suggests that 'vague-areas' are laboratories for intensified experiences that offer new opportunities for urbanity (Lévesque, 2002).

Temporary use as a tool in planning

Temporary use usually occurs where the original use of a building or an area has been given up and a definite follow-up use is wished for or planned. Therefore, the duration of temporary use is limited by the implementation of the planned follow-up use. "Temporary uses are becoming important in places where the supply of available land or buildings is greater than the demand for a permanent use of such sites. Typically, with temporary use sites, there is not a change of ownership, there are hardly any competing uses and the planning permission does not change. As a result of the temporal restrictions temporary use projects require little investment" (The Impact of…).

Temporarily, both unused land and buildings can be used. The temporal function can be official and unofficial – agreed or non-agreed with the owner of specific property and/or institution responsible for original use. As authors from Amsterdam working with platform for temporary use, admit – the understanding of temporary use is "based on a cliché of them being too marginal or too experimental players, hardly able to give any positive input to a sustainable urban development" (Proposal for Platform.., 2003). Consequently, the unofficial or non-agreed temporary use could result in, for example, squatting (living in an abandoned or unused building). Alternative culture places, artists' workshops etc. are of temporary use. However, in fact, temporary use is not marginal. For example, heterogeneous mix of temporary projects was determined in the research of temporary use in Germany. "The projects found in Germany range from seasonal events to agglomerations established over several years, from illegal annexations to scene locations, from neighbourhood gardens to architecturally designed major projects. Most projects are covered by the following classifications: (a) gardens and allotments; (b) public parks; (c) sports grounds; (d) arts and culture; (e) bars, clubs and restaurants; (f) offices and shops; (g) social institutions; and (h) temporary housing" (The Impact of…).

Temporary use may be seen as an applicable tool in planning. According to Raal and Haase (2010), Leipzig was the first of German cities to reorient its planning policy to confront shrinkage (which in its essence created many vacant plots all around the city) by setting new district development plans, criteria for intervention priorities, innovative presentation forms and marketing, and new planning tools like temporary use, or how authors suggest - interim use. Even though, all sites of the city included in the interim use strategy belong to private owners and 'authorisation agreement' was developed as an informal planning tool to regulate limited term public-use of private property, while still maintaining the owner's building rights. Benefits for the city include the possibilities for new green space and public use, and improvement of local qualities and pleasances within the neighbourhoods. Owners ensure site maintenance but benefit from subsidised land clearance and development, property tax exemption for the duration of the contract, and a reduction of some running costs such as sewage or cleanup from vandalism (Raal, Haase, 2010). Berlin, thus, represents itself as the pioneering laboratory for the business of the temporary use, i.e. a training ground and experimental zone for the future. Un-build, unplanned, or disused places become laboratories of transformation and personal 'windows of opportunity' in the city and not only as deviant, non-profit but desirable development that can lead to innovative and trend-setting developments, because experience to date with temporary use projects shows that many of them would become a professional business, and hence, part of the urban economy. So, policies that expressly seek to offer space to community (non-profit) projects give both municipal and private property owners the chance to stabilise arising districts/neighbourhood. Promotion of temporary use ought to become an important component of the remit of strategic urban development planning on all levels of public administration (Junge-Reyer, 2007).

Research results and discussion

Research methods

The ideas and contemplations depicted in this research come from walks around and surveys of two villages (Ramava and Katlakalns) in Riga neighbouring municipality (Kekava county) as well as mapping of present land/property use.

Source: authors' schemes based on the area surveys and orthophotos provided by the municipality

Fig. 1. **a - Development tendencies in Katlakalns and Ramava villages; b – Present land use of Katlakalns and Ramava villages**

Free conversations and semi structured in-depth interviews with inhabitants and representatives of the municipality of Kekava were made in the first two decades of 2011. In total, 23 interviews were made, i.e. the interviews were recorded, transcribed, and analysed thereafter. In addition, the most striking quotations have been fully used in this particular paper. Respondents were selected in respect to their living address, position at work or other specific characteristic (for example, authorities) from the studied area and there were no other specific requirements of potential respondents' characteristic. Specific attention was paid to the existing and potential short-time solutions in the research area during the research

Research area

The administrative area of Ramava covers 2.2 km² (with 640 declared residents), while the area of Katlakalns – 6.3 km² (with 2800 declared residents). These villages were chosen for the case study as they fully reflect the tendencies of modern suburbs of Riga.

In the villages of Ramava and Katlakalns, the fastest development took place after World War II; notwithstanding that Soviet Riga suburbs were formed compact and typified. In the Soviet era, both the core areas (centres) of the villages developed also due to the idea of gardening - allotment garden cooperative 'Ziedonis' was formed in the territory of Ramava village. In the first decade of Latvian independence, the settlement growth was localised as logical extensions of already established settlements (Figure 1A), while over the last decade, due to the above-mentioned suburbanisation reasons/motives, previously agricultural land was planned, developed, and built-up rapidly with scattered, low-density, and leapfrog development units (Miklasa, Usca, 2011).

Valid territorial (land use) plan provides that 73% of the total area of Katlakalns and Ramava villages may be developed for residential purpose and 7% - for mixed residential/business purpose (Kekavas pagasta teritorijas…, 2009). In a survey of research areas, done in the second quarter of 2011, the authors investigated real land use. Figure 1b outlines the present land use, showing that large areas are still un-built, part of them are used for rural purposes (meadows, gardens etc.) and the structure of built residential territories is fragmented (correlating mostly with individual property owners' financial capacity). Fragmented structure is characterised by different stages of building process (from un-built parcels between residential buildings to visually finished, but uninhabited residential buildings). Both abovementioned situations could potentially have temporal use function, as there are dissatisfied necessities of local residents/community that need space and/or short-term solutions.

Source: stills from the programme "'Panorama" on Latvian TV (LTV zinas..., 2010)

Fig. 2. **Outdoor performance of horse riding club for local kids in Katlakalns**

Source: Bing Maps, 2011

Fig. 3. **Bee-garden in the meadow prescribed to low-density housing**

Case studies

Case studies from the research area reflecting the present and potential temporal land/building use will be discussed in the following sections.

Present temporal use cases

Case 1 - the hippotheraphy. Case situation, which exhibits the relevance to temporary use and, of course, raises the various questions, is grounded in the story of horse riding club "Kentaurs". The actual territory of stables and horse riding ground is already parcelled and each parcel is owned by a particular holder, yet, the development of private houses is lagging due to multiple reasons. By some oral agreement among owners and also authorities, one of the owners is renting the land and running his enterprise. This particular horse riding club first and foremost is horse ride therapies for children, and only then holding horses and providing recreational rides. The existence of stables, with all arising issues, is largely stressed by closest neighbours; however, the prescience of horses in the scenery of urban-rural interface is mainly appreciated by broader scope of local inhabitants (Figure 2).

However, the abovementioned horse-riding club is only one of the few examples of rural functions brought into an area planned for residential use. Another case to mention is the bee-garden in a meadow prescribed to low-density housing (Figure 3). These cases brightly depict the real situation of urban-rural functional fringe in suburbs.

Case 2 - office/*café* (Latvian birojnica, as co-working space for freelancers, creative entrepreneurs, talented people, generally for everyone). Back in 1895, a house of Katlakalns rural parish was built in the current area of Katlakalns village and since 1907, the building has been the place for the library, while since 1922 - also a cultural centre. All these institutions still operate today; a public square, a playground next to the cultural centre, with addition of small groceries store, post office and even with the old water tower as a landmark, it is spatially and functionally a local centre. The rent contract of groceries store is running out in July 2012, and the authorities and local enthusiasts have the vision to use free space as a 'public living room' of the village, i.e. neutral, accessible, welcoming, and comfortable gathering place for inhabitants and guests.

Case 3 – the school. With the elementary school of Katlakalns established in 1869, due to the rapid growth of population, the municipality is in urgent need of bigger school premises. Even though, the technical project for an auxiliary building is developed, due to the estimated costs and time, the authorities have chosen an alternative solution - to situate specially equipped shipping containers as additional classrooms. It is quite amusing to notice that children give preference to new classrooms as something unusual, nevertheless cosy.

Case 4 – neighbouring coherence. If one turns to recently built units, it appears that everyday life situations such as road maintenance or need to overcome outbreak of thefts or in other words trivial need of solutions have

Source: stills from video (Movie marcis katlakalns..., 2010)

Fig. 4. **Snowboarding on the streets of Katlakalns**

Source: Bing Maps, 2011

Fig. 5. **Neighbourhood with common recreational areas: one by the creek and other with football gates (upper right corner) on some empty plot**

united the residents and created some kind of local traditions. For instance, the children being outdoors are looked after upon agreement and a private informal kindergarten has been organised, where a small group of children is looked after by one of the mothers. There is a local hairdresser, notary, lawyer, and 'coal guy' who supplies all neighbours with *charcoal for the barbecues.*

Case 5 – commons. The streets of the research territory cannot be automatically perceived as public space mainly due to the quality. Without doubt, streets are used daily for their primary functions, i.e. public transport stops, shops, schools etc. but also for recreation. Residents are not only walking, skateboarding, and running along the streets, but they also install basketball equipment and even use the street for alternative activities such as snowboarding on snow bounded roads (Figure 4). There are also other informal activities to be observed in the neighbourhoods and ambience. For example, one resident ironically notes that '*except for children christening and joint birthday celebrations*', they agreed to take care of common small recreation area by Olekte creek and one un-built plot as football field (Figure 5). Another grouping of the neighbours speak about local setting of relationships and customs of using surroundings, developed through socialisation regarding different issues, so a respondent commented that '*we come together often, right there in the meadow, to talk, to have some vine maybe. We have a joint New Year celebration and for the first time this year we celebrated 18 November* (Proclamation Day of the Republic of Latvia) *all together - 25 people gathered in the meadow to share the mood and to see fireworks*'. For many other insiders and outsiders, free un-build meadows are perceived as a great value of open space for walks and broad views.

Occasional and potential uses/users

It is evident that some vacant territories and creative initiatives might take place even in modern suburban areas. Furthermore, the rural heritage of the place might inspire for some specific ideas for the temporary land use. One of the ways to promote temporal use in order to solve local communities' needs is to give tax credits to property owners who are using their land for community needs, like recreation. In order to achieve this, different spaces in suburban Riga could be used - areas of unused land (meadows), unused parcels between residential buildings on the one hand. The space used for specific needs depends on the needs as well. In the research of temporal use projects in Germany, it is admitted that the locations vary not only in terms of conditions but also in their suitability for the different kinds of temporary use (The Impact of…) as well. It means that in future specific solutions should be suggested case by case and it is too complex to elaborate temporal use concepts that would

work universally. It is crucial that municipality supports initiatives as in many cases they are beneficial for all the involved parties. Temporary use may be considered as a healthy sublimation of urge to build and a proof that not every idea needs to be set in stone.

Conclusions

1. Present temporal use cases show a very close interaction between community/individual residents' needs and land/building uses not reflected in territorial plan (that depicts regular use). It means that temporal use works on demand – supply bases: demand by local community, and supply by local territories/buildings. Residents and municipality of the research area do not use the concept of "temporal use" in their communication, while the fact that it is actually used in real life and is depicted in different cases, mentioned in the research, means that it works and could work more in specific situations.
2. Temporal use cases in suburban Riga reflect initiatives from both the municipality and local community/ residents. Municipality meets wider scale needs (of specific social groups), while local community needs are met in local community area and usually are not depicted outside the community.
3. There are many needs and ideas in local community or in individuals' minds that could be solved by temporal use projects. The lack of public space is a crucial problem that cannot be solved on regular use basis (due to financial/property owner restrictions), but could be solved case by case depending on the specific situation (the amount of un-built parcels, the attitude of land-owner (can be changed with municipalities' tax policy), the ability of local community to take part in common joint works to arrange specific areas etc.). Therefore, the idea of temporal use could be used more often to solve territorial planning problems characteristic to the post-Soviet cities. The factors that are most important for the development of temporal use projects are the ones characterising Riga suburbs – areas of unused land (meadows), unused parcels between residential buildings on the one hand, and the needs of local community on the other hand.

Bibliography

1. Chapin, F.S. Jr, (1965). Land Use Perspectives. In: Priemus, H., Button, K., Nijkamp, P. (eds) (2007) *Land Use Planning*. Edward Elgar, pp. 130-163.
2. Jacobs, J. (1961). *The Death and Life of Great American Cities*, Vintage, pp. 7-16.
3. Kährik, A., Tammaru, T. (2008). Population Composition in New Suburban Settlements of the Tallinn Metropolitan Area. *Urban Studies,* Volume 45, pp. 1055-1078.
4. Kontuly, T., Tammaru, T. (2006). Population Subgroups Responsible for New Urbanisation and Suburbanisation in Estonia. *European Urban and Regional Studies*, Volume 13, Issue 4, pp. 319–336.
5. Kok H. and Kovacs, Z. (1999). The Process of Suburbanisation in the Metropolitan Area of Budapest. *Netherlands Journal of Housing and Built Environment* Volume 14, pp. 119–141.
6. Kekavas pagasta teritorijas planojums 2009. – 2021. gadam (Kekava Municipality Development Plan 2009-2021) (2009). Kekavas pagasta pasvaldiba. Retrieved: http://www.kekava.lv/pub/index.php?id=478. Access: 10 September 2011.
7. Lehtovuori, P. (2010). Experience and Conflict: the Production of Urban Space, Ashgate, pp. 100-150.
8. LTV zinas: Ar zirgiem izrada "Rukisi un mezavecis" (LTV News: to Show "Dwarfs and the Old Man" the Horses are Used) (2010). Retrieved: http://ltvzinas.lv/?n=video&id=698. Access: 10 January 2012.
9. Miklasa, M., Usca, M. (2011). Local Communication Patterns of the Community: the Case of Post-Soviet Suburban Neighbourhoods near Riga. In: Muravska T., Petrov R., Sloka B., Vaivads J. (eds.) *European Integration and Baltic Sea Region: Diversity and Perspectives*. The University of Latvia Press, Riga, pp. 501-514.
10. Movie marcis katlakalns ziema (2010). Retrieved: http://www.youtube.com/watch?v=iEmPsEvz-3w&feature=youtu.be. Access: 20 November 2011.
11. Overmeyer, K. (ed.) (2007). *Urban Pioneers: Temporary Use and Urban Development in Berlin*. Jovis, pp. 17-30.
12. Proposal for Platform for Temporary Use on the Northern Banks of the IJ, Concept Version, 2003. Retrieved: http://www.stealth.ultd.net/stealth/projects/03_amsterdamnoord.tmp/download/book_2.pdf. Access: 30 December 2011.
13. Rall, E.L., Haase, D. (2011). Creative Intervention in a Dynamic City: A Sustainability Assessment of an Interim Use Strategy for Brownfields in Leipzig, Germany*. Landscape and Urban Planning,* Volume 100 Issue 3, pp. 189-201.
14. Stanilov, K. (2007). Urban Development Policies in Central and Eastern Europe during the Transition Period and their Impact on Urban Form. In: Stanilov (ed.) *The Post-Socialist City. Urban Form and Space Transformations in Central and Eastern Europe after Socialism*. Springer, pp. 347-359.
15. Tammaru, T., Sjöberg, Ö. (1999). On the Move: Explaining Migration Patterns in Estonia During the Transition Period. *The International Journal of Population Geography* Volume 5, pp. 1–20.
16. Truksans, M. (2010). Telpiskas attistibas planosanas ietekme uz nekustamo ipasumu tirgu: problemas un risinajumi. Magistra darbs, Latvijas Universitate (Implication of Spatial Planning on the Real Estate Market: Problems and Solutions. Master Thesis, University of Latvia).
17. *The Impact of Temporary Use of Land and Buildings on Sustainable Urban Development*. The Federal Institute for Research on Building, Urban Affairs and Spatial Development, Retrieved: http://www.bbsr.bund.de/cln_032/nn_25904/BBSR/EN/RP/ExWoSt/Studies/TemporaryUse/01__Start.html. Access: 28 December 2011.
18. Turner, T. (1998). *Landscape Planning and Environmental Impact Design*. Routledge, pp. 100-148.

Social Sustainability: Overcome Duality Proposition

Janis Vanags, Dr.oec., professor; **Georgs Mote**[1], Dipl.-eng., MBA, assistant professor;
Ineta Geipele, Dr.oec., professor; **Ilona Butane**, Mg.oec.
Riga Technical University, Latvia
Helma Jirgena, Dr.oec., assistant professor
Institute of Economics Latvian Academy of Sciences, Latvia

Abstract. Being aware of the conditions of sustainable development of the origin concept, its content and meaning, it can be concluded that the sustainable development concept of socio-economic content should be focused on satisfaction of a human's basic needs – ensuring necessary conditions for existence and survival in the current situation and future. To more clearly understand the socio-economic, ecological, and institutional context of sustainable development, it is important to look at the world "from above" in spatial and time dimensions. This provides an opportunity to recognise and understand that poverty and social exclusion, as major challenges of sustainable development, is a phenomenon widespread in the world, which has its roots in interactions of various events of civilisation development within both countries and intergovernmental relations. Analytical, comparison and deduction methods are used for the evaluation of the concept of social sustainability. Development of social sustainability concept and consequence drawing was elaborated by the use of logical approach, synthesis, and induction methods.
Aspects of sustainable social development and their integration into a single framework are objects of the study performed. The explanation of the term "social" proposed by the authors of this study provides more solid philological and epistemological basis for further identification and inclusion of social aspects in the sustainable development concept.
Key words: basic needs, concept, natural resources, social, sustainable development.
JEL code: Q560, O130, L590.

Introduction

It is important to realise that social sustainability is horizontally and vertically integrated concept, in which individuals of the society participate in developing quantitative and qualitative aspects, social groups made by these individuals, and positive and negative, tangible and intangible side effects created by mutual interaction not only within a particular country but also on the international and global level.

In this process, targeted and effective participation of national governments and international organisations is critically needed to reduce the different levels of development of the world and prevailing social problems. Within the developed framework of sustainable development, the implementation and monitoring of the ability of environmental biological capacity to regenerate by putting major emphasis on qualitative rather than quantitative aspects of economic growth are defined as the most important development criteria.

The aim of this research is to discover the duality and unconformity of the concept "social sustainability" with the guidelines of sustainable development. In order to achieve this aim, the following tasks are defined – to analyse and to evaluate conformity of concept of "social sustainability" with the guidelines of sustainable development; to identify the gaps in the respective concepts; and to develop sophisticated social sustainability concept including a need for declining demand in the developed countries. The appropriate methodology is used for the accomplishment of the aim and tasks. Analytical, comparison and deduction methods are used for the evaluation of the concept of social sustainability. Development of social sustainability concept and consequence drawing was elaborated by the use of logical approach, synthesis, and induction methods.

Research results and discussion

History of society development offers plenty of the events, which directly or indirectly are linked with the efforts of individuals of the society and even with the efforts of the countries to increase the wealth that is at their disposal. Wealth attributes have been limited in the world in all times. The creation and increase of wealth attributes, in comparison with the wealth redistribution, which usually began with an innocent cross-border trade, is much more complicated, laborious, and time-consuming process (Landes D., 1999). In this respect, history is full of paradoxes that reveal the duplicity of society.

If any of society individuals had decided to "re-distribute" the wealth belonging to the rich people in his favour, then he was imprisoned or sent to forced labour. Yet, the invasion in other countries organised by kings and other politicians is widely explained in the history, names of many generals and war heroes are recorded in popular commemorative books, without specifying exact causes of the damage and the devastating they caused to the occupied countries. In this case, the seizure of wealth belonging to people of other countries is accepted, although, from the standpoint of humanity wars, if compared with individual robbery cases, cause much greater socio-economic and ecological damage (Porter B., 1996; Renda M., 2000).

[1] *E-mail address*: georgs.mote@gmail.com

The redistribution process of the world's wealth is still going on, deepening social problems in the developing countries. Military aggression campaigns are replaced with more sophisticated methods, starting with the campaigns of "democracy export" (Bevin A., 2005) and ending with the "innocent" foreign trade transactions in which the natural resources of the countries with lower level of socio-economic development are purchased for the inadequate price, which do not even include resource recovery costs (Daly H., 1999).

Often the myth of subjective nature of poverty, crime, and other adverse public social expressions are cultivated in society at the same time trying to conceal the origin of these social problems. The inherent nature of them has roots in public institutional environment, social culture, social capital formation, and access to the processes that determine the public ability to reproduce the social problems in the new quantitative and qualitative terms, without paying sufficient attention to reduction of social injustice (Rid T., Keaney T., 2010; James F., Short Jr., 1997; Davies et al., 2007).

1. Term "Social" Taxonomy and Definition

The importance of social development aspects in the set of sustainable development dimensions is determined by the term "social", awareness of its contents, and respect. Widespread use and conventional concepts of the term "social" accepted by the society simultaneously facilitates and complicates the classification of the concept as a scientific category in the studies related to the society development. Taking into consideration the importance of social aspects of the concept of sustainable development, the most appropriate definition of the term "social" is tried to develop within the framework of the study.

The dictionaries issued in Latvian explain the aforementioned term as follows:

— social - relating to society, people's lives and relationships in society they characterise; also by being public (LU MII AILab, 2011);
— social – something that is related to public facilities, to interpersonal relationship in society; public (Melkis K., 2011).

These definitions explain the term by primitive characteristic approach, which does not provide the knowledge on the use of this term and/or understanding of a concept in a particular situation. The first explanation does not reveal the essence of the concept, there is no explanation of what does the "social" mean and what distinguishes it from other social concepts such as "culture", "environmental pollution", "crime" etc. A similar gap can be found in the second definition of "social" that is defined as "something that ...".

In English, the concept of "social" is explained as follows:

"Social" as a noun:

— social – a party of people assembled to promote sociability and communal activity (the Free Dictionary by Farlex, 2011);
— social – an informal gathering, esp. of an organised group, to promote companionship, communal activity etc. (HarperCollins Publishers Limited, 2011).

"Social" as an adjective:

— social – relating to human society and its members; "social institutions"; "societal evolution"; "societal forces"; "social legislation" (the Free Dictionary by Farlex, 2011);
— social – living or preferring to live in a community rather than alone (HarperCollins Publishers Limited, 2011);
— social – concerning or belonging to the way of life and welfare of people in a community (K Dictionaries Ltd, 2011).

In Latvian, the term "social" is usually used as an adjective, not a noun. The definitions of the term "social" explained above have a limited use within the framework of sustainable development concept due to the lack of specificity of its contents, uncertainty, and other shortcomings. Within the framework of this study, the following definition of the term "social" is offered:

— social - scientific category, which is used for description society's individuals and/or groups knowledge, their beliefs, behaviour, and attitude towards interaction process as well as for the description of tangible and intangible effects generated by the interaction.

The following major aspects are included in this definition:

— the concept combines the form and content of the social processes and objects;
— the term "social" provides the description of the interaction forms both of the individuals of the society and the society groups;
— social and interpersonal interaction forms, results of this interaction, and positive and negative social effects are included in the concept of "social".

2. Sustainable social development concept

Most attention to social sustainability issues in scientific research was drawn at the beginning of this century only (Ciegis et al., 2009). Largely, it relates to the mechanical approach to sustainable development issues. Politicians and political organisations of the developed countries believed that the sustainable development scenario defined in the UN report could be ensured by separately addressing environmental problems not reducing the consumption and the steady increase of limited resources usage in order to provide consumer empowerment.

In general, nothing has changed so far: consumption continues to grow, thus, increasingly reducing reproductive capacity of biological resources. In addition, the scientific literature pays most attention to environmental and ecological problems, national economic growth, its impact on the global world, simultaneously neglecting the social dimension of sustainable development.

Some of the authors try to reduce the concept of sustainable social development to the term of "social sustainability", explaining it as follows (Colontanio A., 2008):

— social sustainability concerns how individuals, communities, and societies live with each other and sets out to achieve the objectives of development models, which they have chosen for themselves equally taking also into account the physical boundaries of their places and planet earth as a whole.

Following the essence of the contents expressed in this definition, public individuals, social groups,

community, and national development are compatible with the existing development model. In addition, the concept "social sustainability" does not comply with the content of the explanation: the situation is replaced by the process.

German scientists, Littig and Griesler (Littig B., Griessler E., 2005) have defined social sustainability in a rather liberal way:

— social sustainability is a quality of life. It signifies the nature-society relationships, mediated by work as well as relationships within the society. Social sustainability is given, if work within a society and the related institutional arrangements, satisfies an extended set of human needs; it is shaped in a way that nature and its reproductive capabilities are preserved over a long period of time and the normative claims of social justice, human dignity, and participation are fulfilled.

The weakest point of this definition is the "quality of life", which is regarded to be a certain standard for the society and the country in general; ignoring the subjective content of the term "quality" and leaving to the public the perception of the quality of life of the individual and the individual requirements of the quality for life improvement on the second place. In addition, the definition implicitly emphasises the local or a regional approach, in which the quality of life of the society of particular country is included, and is often achieved by worsening the quality of life of other social groups and/or other countries. This very aspect discovers the main problems of sustainable development. Reflecting social sustainability, the quality of life of particular country where the individuals in different developed countries achieving the complacency with respect to sustainable development and respective country's economy, continues to grow without paying sufficient attention to the recovery of nature resources, declining capacity of biological recovery, and global consequences of increasing pollution of environment.

Polese and Stren (Polese M., Stren R., 2000) in the interpretation of the concept of social sustainability put the main emphasis on the urbanisation of the environmental aspect, defining social sustainability as the development in the following way:

— development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conductive to the compatible cohabitation of culturally and socially diverse groups, while at the same time encouraging social integration with improvements in the quality of life for all segments of the population.

In this definition, the authors seek to address social sustainability issues within the framework of closed and isolated social system, which would be within the boundaries of one country. In addition, efforts to raise the quality of life for all segments of the population do not comply with the challenges of the globalisation of the economics and opportunities of free movement of natural resources.

Such a definition can be applied to a situation, which was characteristic in the world until the beginning of 1980s. Nowadays, the society has to reckon with an absolute inflexibility of the supply of biological resources; at the same time, it should take into account destructive impact of the society to the regeneration capacity of the renewable natural resources.

The study shows that some authors avoid the interpretation of sustainable social development just pointing to certain aspects that need to be included in this concept (Bramely et al., 2006; Baines J., Morgan B., 2004; Sinner et al., 2004). The following issues are listed as the most important ones:

— facilitation of personal responsibility including social responsibility on maintaining the possibility for future generations to meet their needs;
— provision of equal opportunities for individuals of the society from different social groups and persons with disabilities;
— ensuring that each individual of the society has an opportunity to meet his/her social and economic fundamental needs;
— contribution to the quantitative and qualitative growth of social capital, expanding its availability for each society individual;
— increase of the public tolerance against individuals and social groups of different cultures;
— ensuring of social justice in the society and a fair distribution of resources being at the disposal of the society.

Taking into consideration the results of the research conducted as well as the above-listed and evaluated definitions, failures and useful elements identified in them, the concept of "sustainable social development" is offered as follows:

— sustainable social development - continuous process of interaction between particular individuals and social groups in which the resources spent on meeting basic social needs of the society individuals do not reduce the recovery capacity of the natural biological resources.

3. Sustainable social development and concept of basic needs

In the proposed definition, the authors of this study provide an attempt to reduce the failures occurred in the interpretation of the concept of sustainable development in academic and public environment with regard to unlimited needs of different social groups in time and space replacing them with "basic" or "fundamental needs". The following needs that are important for each individual are included in the concept of the basic needs of the society individuals (Max-Neef et al., 1989):

— existence: the need for food, employment and housing;
— protection: the need for security, adaptability, availability of health protection and social insurance system, the need to cooperate in order to achieve the required level of safety;
— devotion: the need for family, respect and the need to show respect and love, friendship;
— understanding and self-awareness: the need for education, contact with wildlife, the need to research, meditate and otherwise mentally develop oneself;
— participation: the need to take responsibility, to perform duties, and to engage in work and public events;

— recreation: the need to relax physically and mentally, the need to participate in different games, cultural events; the need for peace and quiet, etc.;
— individuality: the need to understand oneself as a unique, permanent personality, which belongs to a specific country, language, culture and family traditions;
— freedom: the need for personal autonomy, the desire to express one's emotions and affection, to participate in discussion of different issues and express individual view, to take risks and develop the skills of understanding, etc.

The other important aspect: the recognition of the public need to ensure absolute restrictions for the use of resources is included in the definition. This means that the resource availability on a global scale is not demanded by the price as it has been so far but it is limited by the need to preserve the Earth's biological capacity, thereby, preserving the ability of wildlife resources to regenerate.

By ignoring this aspect, the society returns to the framework of the scenario degrading the environment with strong dominance of economically more advanced countries in the economic and political environment, contributing to continuation of destructive attitude in the use of biological resources.

The third factor stressed by the definition: consolidation of basic needs. This means that for meeting some basic needs of particular communities and society individuals, a certain amount of resources and quality, which is limited in space and time, is required. Particularly, the global recognition of the limitations of natural resources, on the one hand, and the compliance of the benefits (goods and services) required for meet these needs with the amount of resources (renewable and non-renewable) that are at the disposal of the society, on the other hand, opens up new opportunities to preserve the Earth as a healthy living space for future generations.

It is important to recognise that in the explanation of sustainable development concept, it is not necessary to include opportunities of future generations to meet their needs. This requirement becomes entirely redundant and unnecessary, if the adequacy of resources consumed during the definite time limit is maintained to the extent and quality the renewable natural resources are able to regenerate within the relevant time period.

Conclusions

1. Often the myth of subjective nature of poverty, crime, and other adverse public social expressions are cultivated in the society, at the same time trying to conceal the origin of these social problems. In fact, causes of these problems lie in public institutional environment and access to the processes that determine the public ability to reproduce the social problems in the new quantitative and qualitative terms without paying sufficient attention to reduction of social injustice.
2. Certain improvements regarding the reduction of social problems are not considered to have sufficient positive effect on a global scale: destructive attitude of human economic activity to biological resources continues to develop with increasing intensity, reducing the regeneration capacity of these resources in global perspective.
3. The main attention in the research is paid to the concept "social" as background of social dimension for investigation the problems related to sustainable development that are closely connected with the social aspects of limiting satisfaction of individual needs of the members of society. Lightening of the most substantial social aspects are important to expand possibilities of meeting basic needs for everyone, and to facilitate more equal access to resources and equitable distribution of public goods.
4. Worsening of socio-ecological problems is largely related with the institutional environment facilitating wasteful treatment of limited natural resources. The assistance provided to the countries of lower development levels cannot stop the deterioration of living conditions due to the increasing consumption of natural resources in the developed countries.
5. The definition of the concept "social" developed by the authors of this paper provides systemic approach discovering the main elements of this concept – individuals and social groups, their knowledge, skills and beliefs, behaviour and attitude towards interaction processes as well as tangible and intangible effects generated by the interaction.
6. Variety of authors of social sustainability tends to focus on individual or a group of countries, which do not conform to the essence and substance of sustainable development conception. Therefore, a society is misled by illusion of the existing social sustainability in a particular country when ignoring destructive impact of the excessive demand on the environment and global aspects of decreasing capacity of recovery of biological resources.
7. Social responsibility concept developed by the authors ensures conformity of social sustainability with the essence of sustainable development concept and global scale. The concept focuses on limiting of the excessive demand within the market economy system as one of the opportunities to facilitate the satisfaction of consumer needs and preservation of the capacity of recovery of biological resources for the next generations.
8. In finding solutions for escalating social problems it is important to realise that social sustainability is a horizontally and vertically integrated concept, developing of quantitative and qualitative aspects of which society members and social groups are participating in, individuals and social groups interact to create positive and negative, tangible and intangible side effects within a certain country on interstate and global levels.
9. The developed social sustainability concept is widely utilisable for the evaluation of criteria of sustainable development and definition of the government's socially economic and ecological goals and tasks as well as pursuing the measures for achieving the global sustainable development.

Bibliography

1. Baines, J., Morgan, B. (2004). Sustainability Appraisal: A Social Perspective. Chapter 5. Retrieved: http://pubs.iied.org/pdfs/G02194.pdf. Access: 21 January 2011.

2. Bevin, A. (2005). How America Got It Right: The US March to Military and Political Supremacy. New York: Crown Forum. p. 320.
3. Bramley, G., Dempsey, N., Power, S. and Brown, C. (2006). What is 'Social Sustainability' and how do our Existing Urban Forms Perform in Nurturing it? Retrieved: http://www.city-form.org/uk/pdfs/Pubs_Bramleyetal06.pdf. Access: 21 January 2011.
4. Ciegis, R., Ramanauskiene, J. and Martinkus, B. (2009). The Concept of Sustainable Development and its Use for Sustainability Scenarios. Retrieved: http://www.ktu.edu/lt/mokslas/zurnalai/zeko/62/1392-2758-2009-2-62-28.pdf. Access: 21 January 2011.
5. Colantonio, A. (2008). Traditional and Emerging Prospects in Social Sustainability. Retrieved: http://oisd.brookes.ac.uk/sustainable_communities/resources/ocialSustainabilityProspectspaper.pdf. Access: 21 January 2011.
6. Daly, H.E. (1999). Globalisation versus Internationalisation – Some Implications. Ecological Economics, Volume 31, pp. 31-37.
7. Davies, P., Francis, P., Greer, C. (2007).Victims, Crime and Society. London: Sage Publications Ltd, p. 304.
8. HarperCollins Publishers Limited (2011). Collins Thesaurus of the English Language. Retrieved: http://www.collinsdictionary.com/dictionary/english/social. Access: 21 January 2011.
9. James, F., Short, Jr. (1997). Poverty, Ethnicity and Violent Crime. Boulder: Westview Press. p. 256.
10. K Dictionaries Ltd (2011). Kernerman English Multilingual Dictionary. Retrieved: http://www.kdictionaries-online.com/#&&DictionaryEntry=social&SearchMode=Entry. Access: 21 January 2011.
11. Littig, B., Griessler, E. (2005). Social Sustainability: a Catchword Between Political Pragmatism and Social Theory. Retrieved: http://www.ihs.ac.at/pdf/soz/test2.pdf. Access: 21 January 2011.
12. LU MII AILab (2011). Skaidrojosa vardnica. Retrieved: http://www.tezaurs.lv/sv/. Access: 21 January 2011.
13. Max-Neef, M., Elizalde, A., Hopenhayn, M. (1989). Human Scale Development. Retrieved: http://www.max-neef.cl/download/Max-neef_Human_Scale_development.pdf. Access: 21 January 2011.
14. Melkis K. (2011). Latviesu valodas skaidrojosa vardnica. Retrieved: http://www.latvianforyou.com/cgi-bin/l.pl. Access: 21 January 2011.
15. Polese, M., Stren, R. (2000). The Social Sustainability of Cities: Diversity and the Management of Change. Toronto: University of Toronto Press. p. 334.
16. Porter, B. (1996). The Lion's Share: A Short History of British Imperialism 1850-1995. London: Longman. p. 432.
17. Renda, M. A. (2000). Taking Haiti: Military Occupation and the Culture of US Imperialism, 1915-1940. Chapel Hill: University of North Carolina Press. p. 440.
18. Rid, T., Keaney, T. (2010). Understanding Counterinsurgency. Doctrine, Operations and Challenges. London: Routledge. p. 266.
19. Sinner, J., Baines, J., Crengle, H., Salmon, G., Fenemor, A., Tipa, G. (2004). Sustainable Development: A Summary of Key Concepts. Retrieved: http://www.ecologic.org.nz/components/get_file.php?mid=54&fn=RR2_SD_concepts_paper_final_July2004.pdf/RR2_SD_concepts_paper_final_July2004.pdf. Access: 21 January 2011.
20. The Free Dictionary by Farlex (2011). Based on WordNet 3.0, Farlex clipart collection. Retrieved: http://www.thefreedictionary.com/social. Access: 21 January 2011.

Comparative Assessment of Global and Local Ranking of Higher Education Institutions

Dace Viksne[1], Dr.oec.; **Gunita Mazure**, Dr.oec.
Faculty of Economics, Latvia University of Agriculture

Abstract. National and international rankings are gaining attention and popularity, and not necessarily for academic reasons. Media, academic groups and the governments have indulged in various ranking efforts for various reasons. Media rankings are guided by 'what sells in the market' rather than the rigorous quality assurance practices of academic bodies (Stella A., Woodhouse D., 2006). The leading European economists emphasise that the education system, which ensures an effective and equal result, is a significant contribution to the economic growth and social cohesion. From the economists' point of view on the education quality, such notions as effectiveness and availability are the features describing quality. Opportunities of equal quality education become more significant in the education policy of Europe and most of the other developed countries. It has also to be admitted that the equality of achievements is a more complicated notion than the availability of education. Education quality and equally high achievements in the entire country are most likely to impact positively on the overall economic growth. Therefore, the research aim is to assess global and local university rankings and to draw parallels with the national ranking of Latvia. The authors conclude that rankings are aimed at the improvement of the HEI performance, study process, study quality and other aspects. However, no ranking is perfect and practically there are no at least two rankings that are comparable due to different methodologies and indicators applied when developing ranking.
Key words: rating, ranking, publications, higher education, universities.
JEL code: I20, I23, I28

Introduction

Ellen Hazelkorn (2009) emphasises that less than a decade ago, few people outside of the USA had heard of university rankings but today all has changed utterly. National rankings exist in over 40 countries. Global rankings are recent but they are also more influential; the SJT *ARWU* began in 2003, followed by *Webometrics* and Times QS *World University Ranking* in 2004, the Taiwan *Performance Ranking of Scientific Papers for Research Universities* in 2007, and *US News & World Report*'s (*USNWR) World's Best Colleges and Universities* in 2008.

Measuring institutional quality is gaining prominence in higher education due to the interplay between many factors. Some of the factors that trigger this interest among stakeholders are shrinking resource allocation for higher education from public funds, increasing competition among higher education institutions and growing awareness about value for money among the public. National and international rankings are gaining attention and popularity, and not necessarily for academic reasons. Media, academic groups and the governments have indulged in various ranking efforts for various reasons. Media rankings are guided by 'what sells in the market' rather than the rigorous quality assurance practices of academic bodies (Stella A., Woodhouse D., 2006). Similarly, there have been instances when governments have taken efforts close to ranking for specific purposes and the scope of those efforts has been very limited. However, in recent times there is a growing tendency in the academic discussions to misinterpret 'public popularity' as 'academic credibility' and 'limited scope' as 'need of the hour' that misguides many to believe that ranking efforts have to be considered seriously (Stella A., Woodhouse D., 2006).

Two notions widely used in the research, *rating and ranking*, should be clarified to avoid language-biased misunderstandings. ***Rating*** normally involves Likert-type scales on which respondents rate their level of agreement or the level of importance of a series of statements on a predefined number of scale points. Although, theoretically any number of scale points could be used, in practice most studies use either 5-point or 7-point Likert scales. ***Ranking*** can take a variety of forms. In studies of cross-cultural values, ranking has been used quite extensively (Harzing A. et al., 2009). Another explanation goes that a ***ranking*** is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second. In mathematics, this is known as a weak order or total preorder of objects. It is not necessarily a total order of objects because two different objects can have the same ranking. The rankings themselves are totally ordered. For example, materials are totally preordered by hardness, while degrees of hardness are totally ordered (Rauhvargers A., 2011). ***Rating*** is a position on a scale, an evaluation of status, especially of financial status, or a number, letter, or other mark that refers to the ability of something. Basically, the term **ranking** is used speaking on higher education and universities.

Worldwide researchers (Baty P., 2010; Doneckaja S., 2009; Hazelkorn E., 2001; Kruzhalinin V., Artjushina I., 2008; Rauhvargers A., 2009, 2011; Saisana M., D'Hobres B., 2008; Stolz I., Hendel D., Horn A., 2010; van Vught F., 2008, 2009 etc.) more frequently carry out authoritative and comprehensive research, which in the

[1] *E-mail address*: Dace.Viksne@llu.lv

form of indices and ratings characterises higher education and research institutions.

Ranking of HEIs in Latvia was started only in 2008, thus, it could be interesting to compare the methodology applied in the world ranking and Latvia. **The research hypothesis:** profound comparison of university rankings is impossible due to different methodological approaches weighting education and research indicators. **The research aim** is to assess global and local university rankings and to draw parallels with the national ranking of Latvia. The following **research tasks** are advanced to achieve the set aim:

1) to describe the most common global university rankings;
2) to analyse the national ranking of higher education institutions;
3) to draw recommendations for the improvement of university rankings.

The research data of local and foreign authors, different working papers, scientific publications, and other materials have been used for the purpose of the study. The research is mainly based on the monographic descriptive method, and the methods of analysis and synthesis.

Research results and discussion

1. Necessity for and emergence of global university rankings

Across worldwide higher education, there are many different combinations of mission, structure and organisational culture, each set associated with distinctive traditions and models nested in national contexts, historical identities, and conditions. In the 'Westminster' countries (the UK, Australia, New Zealand) systems combine university autonomy and public/ private investment with explicit national steering. The Scandinavian university combines high and socially equitable participation, research culture and university autonomy with state investment (Valimaa, 2004; 2005 in Marginson S., 2007). The German-style university opts for elite participation, research culture, and state administration. The classical Latin American public university as at the University of Buenos Aires combines high participation, scholarly culture and a central social and political role in building the nation-state. The emerging science universities of East and Southeast Asia including China, Taiwan, Korea, and Singapore are fostered by state investment, and in Singapore are explicitly designed to secure global competitiveness. India has developed a unique model of technological and business-focused institutions combining high quality with commercialism. Beyond the research university are strong vocational sectors in Finland, Germany, France; other vocational and community-based programmes; and a wide range of for-profit providers, online institutions, and institutions with single-specialisms (Marginson S., 2007).

The offer of higher education in Europe and in the world has become more available and competitive; demand for information on the quality of higher education institutions and their effectiveness increases as well. Following the example of the USA, many European universities compete for their place in the global higher education environment. Considering the experience of other countries in developing both national and international ratings of higher education institutions, it is evident that none of the ratings is absolutely complete (Viksne D., Mazure G., 2011). Therefore, every user of the rating should critically assess it and receive only the most important information and indicators from the rating. The first ratings of higher education institutions in the USA appeared already in the 1870s. However, a unified, universal rating methodology has not been designed until present, and the approach to evaluating higher education institutions differs in different countries. Part of the countries with a wide higher education system develops their own national ratings, yet, international university ratings have gained bigger popularity in the world.

Assessing the current university ratings, in 2008 the European Commission indicated that the developers of SJTU and THES indices paid more attention to the research aspects, not the study process as well as to institutions as such, not to their programmes. Therefore, the European Union started a two-year project to develop and implement a new university assessment system. The new European League Rating is to balance research and education quality assessment in higher education institutions as well as to accept the variety of higher education institutions. In 2010, the European League Rating had to be tested with 150 higher education institutions in the world, initially concentrating on engineering sciences and business schools (Karklina, 2010).

Higher education supply in the European Union and in the world has become more open and competitive, thus, increasing the demand for information on the quality of HEIs and their efficiency. Many European universities following the example of the USA compete for the rank in global environment of higher education institutions. Certainly, it is worth mentioning that based on the experience of other countries in making both international and national university rankings, none of the rankings is perfect. Nevertheless, the first ranking appeared in the 19th century, there is still no single universal methodology for developing university rankings, and assessment approach differs by countries. Several countries develop their own national rankings, while the majority of countries apply international university rankings. Worldwide rankings are developed by journals, newspapers, HEIs, Ministries of Education of particular countries, accreditation agencies, professional associations, or other independent institutions.

2. Methodologies of the most popular global rankings

Quality of higher education institution may not be completely measured through certain figures and numbers, thus, any ranking is disputable, and each of them is arguable, especially in such a sensitive sphere as education. Therefore, annually several international and national rankings are developed to show the situation in higher education sphere (Pirmais visu Latvijas augstskolu reitings, 2008). There are several popular rankings in the world. The most popular global league tables (ARWU, THE-QS and THE-Thomson Reuters, US News and World report Ranking (USNWR), HEEACT,

Table 1

Types of rankings and institutions responsible for the provision of ranking

Types of rankings	Name of ranking	Institution responsible for the ranking
Academic rankings with the main purpose of producing university league tables	Academic Ranking of World Universities (ARWU)	Shanghai Ranking Consultancy
	THE World University Ranking	Times Higher Education
	World's Best Universities Ranking	US News & World Report in cooperation with Quacquarelli Symonds
	Global Universities Ranking	Reitor
Rankings concentrating on research performance only (with or without league tables)	Leiden Ranking	Leiden University
	Performance Rankings of Scientific Papers for World Universities	Taiwan Higher Education Accreditation and Evaluation Council
	Assessment of University-Based Research	European Commission
Multirankings – university rankings and classifications using a number of indicators without the intention of producing league tables	CHE University Ranking	Centre for Higher Education Development/*die Zeit*
	U-Map classification	CHEPS
	3 European Multidimensional University Ranking System (U-Multirank)	EU funded project
Web rankings	Webometrics Ranking of World Universities	-
Benchmarking based on learning outcomes	Assessment of Higher Education Learning Outcomes Project (AHELO)	OECD

Source: authors' construction based on Rauhvargers A., 2011

Reitor and others) concern the world's top universities only. The league tables include roughly 1% to 3% of universities (200-500) universities out of approximately 17,000 universities in the world (Rauhvargers A., 2011). Rankings can be grouped according to their purpose, parameters measured, presentation of the results, or intended impact (Table 1).

Table 1 includes five types of rankings, however, the present paper deals only with pure academic rankings due to the limited research scope. The academic ranking aimed at producing league tables includes four individual sets of rankings.

The Academic Ranking of World Universities (ARWU) was first published in June 2003 by the Centre for World-Class Universities and the Institute of Higher Education of Shanghai Jiao Tong University, China, and then updated on an annual basis. The majority of the world's higher education institutions is covered by Shanghai "Jiao Tong" University research, which compares 500 best universities from different countries and regions. The sources of information mainly are data available on the Internet. The ARWU and its content have been widely cited and employed as a starting point for identifying national strengths and weaknesses as well as facilitating reform and setting new initiatives. Starting from 2009, the ARWU has been published by Shanghai Ranking Consultancy, a fully independent organisation (ARWU, 2012).

The Times Higher Education World University Rankings was first published in 2004. In a way, it was an 'answer' to the Shanghai ARWU ranking. On 30 October 2009, Times Higher Education announced that it had signed an agreement with Thomson Reuters to provide the data for its annual World University Rankings (Baty P., 2010). This was followed by substantial changes in the set of indicators used and the overall methodology for the 2010 rankings.

Early in 2010, the US News and World Report (USNRW) began cooperation with QS and, on 25 February 2010, posted its new 2009 *World's Best Universities Ranking* on the web. This was done with a report based on the same QS results as were posted on the 2009 THE-QS World Universities Ranking website and on the QS website itself. The difference between these three is that the USNRW-QS ranking publishes a list of the Top 400 universities while the THE publishes a Top 200 list and QS publishes a Top 500+ list (USNRW, 2012).

The Reitor *Global Universities Ranking* is carried out by a ranking agency located in Moscow. However, the 'ideology' of the ranking originates from both Reitor and Lomonosov Moscow State University (STRF, 2008; Doneckaja, 2009). The first and so far only Reitor Global University Ranking was compiled during 2008, and the results were posted in February 2009. Although, it has been stated that there is an intention to turn it into a periodic ranking, no further information has been

Table 2

Dimensions of indicators weighting the rank of a university

Ranking system	Indicator dimension	Weighting
SJT *Academic Ranking of World Universities*	• Quality of Education	10%
	• Quality of Faculty	
	• Number of Nobel Prize/Field Medal	20%
	• Number of HiCi Researchers	20%
	• Research Output	
	• Number of Articles in Nature/Science	20%
	• Number of Articles in Citation Index	20%
	• Size of Institution	10%
Times QS *World University Ranking*	• Peer Appraisal	40%
	• Graduate Employability	10%
	• Teaching Quality/SSR	20%
	• International Students	5%
	• International Faculty	5%
	• Research Quality/Citations per Faculty	20%
Performance Ranking of Scientific Papers for Research Universities	• Research Productivity	
	• Number of Articles in last 11 years	10%
	• Number of Articles in current year	10%
	• Research Impact	
	• Number of Citations in last 11 years	10%
	• Number of Citations in last 2 years	10%
	• Average number of Citations in last 11 years	10%
	• Research Excellence	
	• HiCi index of last 2 years	20%
	• Number of HiCi Papers, last 10 years	10%
	• Number of Articles High-Impact Journals in Current Year	10%
	• Number of Subject Fields where University demonstrates Excellence	10%

Source: Hazelkorn E., 2009

supplied on this matter. The stated purpose of the ranking is to cater for the Russian academic world, which has a growing interest in the international assessment of Russian universities as a means of situating them within the global system of higher education.

Rankings compare HEIs using a range of different indicators, which are weighed differently according to each ranking system (Table 2). Information is generally drawn from three different sources: 1) independent third party sources, e.g. government databases; 2) HEI sources, or 3) survey data of students, employers, or other stakeholders. Considering the absence of reliable publicly available cross-national comparative data, global rankings (are forced to) measure research in broad-brush strokes, rather than the full range of higher education activity (Hazelkorn E., 2009).

Every ranking applies its own assessment methodology, and each of them has its own advantages and disadvantages. Like, the Shanghai method has been criticised for using the criteria that describe research activities of a university, irrespective of the fact that research is only one of the university activities (Pirmais visu Latvijas augstskolu reitings, 2008).

The British publication "*The Times Higher Education*" publishes the World university ranking, naming those 200 universities, which are the best in their opinion. London research differs not only because they publish only 200 universities but also because it includes regional assessment and the relation of assessment with the specialisation. From the methodological point of view, the biggest difference between Shanghai and London research is that they separate the USA and European universities from almost 1 466 Latin American and Caribbean universities. University ranking helps the potential students make the choice when evaluating the education opportunities.

The ARWU uses six objective indicators to rank world universities including the number of graduates and staff winning Nobel Prizes and Fields Medals, number of highly cited researchers selected by Thomson Scientific, number of articles published in journals of *Nature* and *Science*, number of articles indexed in Science Citation Index - Expanded and Social Sciences Citation Index, and per capita performance with respect to the size of an institution.

Times QS World University Ranking and Performance Ranking of Scientific Papers for Research Universities apply the measure of ***citations,*** which evaluated in some fashion to take into account the size of institution, are the best understood and most widely accepted measure of research strength. Often calculated on a "per paper" basis, the QS World University Rankings™ has adopted a "per faculty member" approach since its inception in 2004. The Citations per Faculty score contributes 20% to the overall rankings score. There are three major sources of publication and citation data worldwide, these are the Web of Science from Thomson Reuters; Scopus from Elsevier, and Google Scholar. Results from the

Table 3

Indicators and criteria for ranking higher education institutions in Latvia

No.	Measuring aspect	Indicator	Weighting
1	Students	Proportion of students and the academic staff	1
2		Proportion of graduates	0.5
3	Academic staff	Proportion of the academic staff having a doctor's degree and having the HEI as the principal place of employment (vs. all HEIs)	1.5
4		Proportion of the academic staff having a doctor's degree and having the HEI as the principal place of employment (vs. particular HEI)	1
5		Proportion of the academic staff having the HEI as the principal place of employment	0.5
6		Age structure of the academic staff (proportion of the academic staff between 30 and 50 years)	1
7	International cooperation	Proportion of international students	0.5
8	Research	Number of publications per one academic staff member	2
9	Public opinion	Quality of education	2
10		Popularity/recognisability of HEI	1

Source: Latvijas augstskolu..., 2010

Essential Science Indicators (ESI), a subset of the Web of Science were used in the first three years of the QS World University Rankings™. In 2007, the switch was made to Scopus for a number of reasons but principally due to broader journal coverage leading to results for a larger number of institutions.

The *Employer Reputation* component is unique amongst current international evaluations in taking into consideration the important component of employability. The majority of undergraduate students leave university in search of employment after their first degree, making the reputation of their university amongst employers a crucial consideration. A common approach to the evaluation of employability in domestic rankings is graduate employment rate, there are two reasons why this indicator does not work on an international level – the first is that this evaluation looks at the top universities in the world – all of whom have very high employment rates – so it does not provide very much discernment. The second is that, since Times QS is looking at different countries, the results would react to local economic conditions and not necessarily just the quality of the institution (Times QS World University Ranking, 2012).

Since aims of higher education policy and hence the role of higher education institutions differ by countries, it is impossible to advance a single quality definition. There is no correlation among various world rankings, as each of them outlines different aspects as the most significant ones. It means that the same universities take different ranks in different rankings and ratings. Nevertheless, comparing "The Times Higher Education" research results with other similar world university rankings show an essential difference – universities of the UK and the USA govern among the leading world universities. Yet, an interesting coincidence may be found if comparing universities, which have been ranked in the first 20 positions, it is possible to find 14 similar universities, i.e. 70% of coincidence. For example, Harvard University is the most qualified university in the world, while Cambridge University – in Europe.

Rankings reflect prestige and power; and rankings confirm, entrench and reproduce prestige and power. The particular systems in use further particular interests. Ranking determines the reputation of a university; they attract the interest of the society and change behaviour of universities and policy makers (Marginson S., 2007). Technically, it is problematic to acquire internationally comparable data; problems are caused by the name of institutions, establishment, merging and division of institutions, searching of publications and identification of authors (Liu N.C., Cheng Y., 2005). According to international research conducted in 2006 and 2008, (Hazelkorn, 2007; Locke et al., 2008), higher education leaders around the world believe high-achieving students use rankings to 'shortlist' university choice, especially on the postgraduate level, and stakeholders use rankings to influence their own decisions about funding, sponsorship, and graduate recruitment.

3. Ranking of higher education institutions in Latvia

Latvia lacked a common university and HEI ranking prior to 2008, thus, there were several rankings by different authors available. Over the past years, the most recognisable ranking of universities and HEIs in Latvia is the one developed by a daily newspaper "Latvijas Avize" in collaboration with the University of Latvia and experts from various industries. The ranking is developed based on internationally known and approbated methodology that includes 10 indicators (Table 3). In addition, the ranking is also based on data from a survey of Latvian inhabitants regarding popularity of universities, quality of education etc. For the past 4 years – ever since the ranking was established – the top 3 universities have not changed; they include University of Latvia, Riga Technical University, and Riga

Stradins University. However, according to the Ranking Web of World Universities in 2012, the three best universities from Latvia are the University of Latvia (882nd position), Riga Technical University (9150th position), and Latvia University of Agriculture (3119th position) (Webometrics, 2012).

Indicators that are used for the assessment of university quality may be divided into several groups, for example, resources of a HEI, indicators characterising the study environment (students, number of academic staff, available teaching and learning resources), indicators characterising the study process (students' satisfaction) and indicators characterising results (satisfaction of employers, research achievements, number of publications). In Latvia, the proportion of employees versus students is a classical indicator characterising the study process, the index of citing scientific publications is an indicator characterising the research process, while index of citing scientific publications per one employee is a quantitative value characterising the research process. This index shows the intellectual potential and strength of a university in relation to its number of employees. The citation of scientific publications is considered the most reliable indicator of research significance. Frequently, abstract and citation databases, like Sciverse Scopus or Thomson Reuters are used as the research significance basis. The share of foreign lecturers and students, in turn, shows the degree of internationalisation of a certain higher education institution.

Higher education policy makers and administrators require a quantitative, stable and based on facts frame of reference to quantify activities of higher education that are difficult to evaluate – studies, research, administration, functioning, and financing. Therefore, different indicators are use; besides indicators are variables, which refer to specific empirically obtainable characteristics of higher education institutions and their study programmes. Indicators identify the direction of performance; they allow comparing actual performance with the set targets. Indicators play a significant role for the improvement of a HEI operation. However, indicators serve as a starting point for discussion on institutional targets and create a much broader approach to planning, budget drafting, and human resource management in higher education institutions.

The majority of youngsters (83%) choose studies basing on the quality of higher education institutions and their study programmes as well as reputation and prestige (Karklina D., 2010). Besides, they emphasise that independent university ranking reports on the quality of studies, which are prepared with the participation of students, could help choosing a HEI. Internationalisation and ranking of HEIs have also intensified the competition among HEIs, while demographic and economic crisis have forced HEIs to assess their operation principles. Rankings of universities and other HEIs influence not only the future of a HEI and its staff but also the education sector in general. Rankings are influential as they both attract the attention of society and change future action of HEIs and policy makers.

In 2011, the fourth ranking of higher education institutions of Latvia was published by the newspaper "Latvijas Avize". Representatives of many HEIs criticise the ranking, even those that are placed in Top 5. Mainly, criticism is directed towards the proportion of international students at state founded HEIs. It is considered to be unfair to compare the number of international students at private and state founded HEIs, since the legislation of the Republic of Latvia regarding studies in other languages than the official language in state founded HEIs was changed only from August 2011. Thus, private HEIs were in more favourable situation, as they could provide studies in Russian and English as well. Another aspect relates to the publications cited in Scopus database, as it does not completely reflect scientific publications, for example, in arts and humanities. Nevertheless, according to Marcis Auzins, Rector of the University of Latvia "'university rankings exist irrespective of the fact whether individual higher education institutions like them or not. They are meant to provide information for experts and the society for discussions aimed at the improvement of HEIs activities" (Jau ceturto gadu..., 2011).

Conclusions, proposals, recommendations

1. Many and various rankings of higher education institutions are known worldwide. The first university rankings were developed 3-5 centuries ago; while the first ranking of HEIs in Latvia was developed only in 2008.
2. Rankings are aimed at the improvement of the HEI performance, study process, study quality, and other aspects. However, no ranking is perfect and practically there are no at least two rankings that are comparable due to different methodologies and indicators applied when developing ranking. This verifies the set hypothesis.
3. The offer of higher education in Europe and in the world has become more available and competitive; demand for information on the quality of higher education institutions and their effectiveness increases as well. Hence, university ranking is one of the aspects determining the choice for further place of studies.
4. University rankings exist irrespective of the fact whether individual higher education institutions like them or not. They are meant to provide information for experts and the society for discussions aimed at the improvement of HEIs activities.

Bibliography

1. Baty, P. (2010). The World University Rankings 27 May 2010. Retrieved: http://www.timeshighereducation.co.uk/story.asp?storyCode=411739&sectioncode=26. Access: 10 February 2012.
2. Doneckaja, S. (2009). Rossiskij podhod k ranzhirovaniju vedushchih universitetov mira (Russian Approach to Ranking of the Leading World Universities). EKO. No. 8, str. 137-150. Retrieved: http://www.sibupk.su/stat/publicat_nir/smk_4.pdf. Access: 10 February 2012.
3. Jau ceturto gadu publicejam augstskolu reitingu (Already for the Fourth Year We Publish the Ranking of Higher Education Institutions) (2011). Latvijas Avize, 2011. gada 11. maijs.
4. Harzing, A. et al. (2009). Rating versus Ranking: What is the Best Way to Reduce Response and

Language Bias in Cross-national Research? International Business Review, Volume: 18, Issue: 4, Publisher: Elsevier, pp. 417-432.
5. Hazelkorn, E. 2007. The Impact of League Tables and Ranking Systems on Higher Education Decision-Making. In: *Higher Education Management and Policy*, 19(2), OECD, Paris, pp. 87-110.
6. Hazelkorn, E. (2009). Impact of Global Rankings on Higher Education Research and the Production of Knowledge. Occasional Paper No. 15, UNESCO Forum on Higher Education, Research and Knowledge. Retrieved: http://unesdoc.unesco.org/images/0018/001816/181653e.pdf. Access: 10 February 2012.
7. Hazelkorn, E. (2011). Rankings and the Reshaping of Higher Education. The Battle for World-Class Excellence. Palgrave.
8. Karklina, D. (2010). Eiropas studenti grib tuvak darba tirgum (European Students Willing to Approach the Labour Market). *Diena*, Nr.98, 28.apr., 3.lpp. Iel.: Karjeras Diena.
9. Kruzhalinin, V., Artjushina, I. (2008). Rankings and Quality of Education. Retrieved: http://reitor.ru/ru/observatory/global/index.php?id19=474. Access: 10 February 2012.
10. Latvijas augstskolu reitings – jau treso reizi (Ranking of Latvian HEIs – already for the Third Time) (2010). Latvijas Avize, 2010. gada 19. maijs.
11. Liu, N.C., Cheng, Y. (2005) Academic Ranking of World Universities – Methodologies and Problems. *Higher Education in Europe,* Vol. 30, No. 2, p. 14.
12. Locke, W.D., Verbik, L., Richardson, J.T.E., King, R. (2008). Counting what is Measured or Measuring what Counts? League Tables and the Impact on Higher Education Institutions in England. In: *Appendix A. Research Methodologies Circular 2008/14*, Bristol, Higher Education Funding Council for England.
13. Marginson, S. (2007). Global University Rankings: where to from Here? Papers of the Conference Singapore, 7-9 March, p. 21. Retrieved: http://www.cshe.unimelb.edu.au/people/staff_pages/Marginson/APAIE_090307_Marginson.pdf. Access: 10 February 2012.
14. Pirmais visu Latvijas augstskolu reitings (The First Ranking of Latvian HEIs) (2008). Latvijas Avize, 2008. gada 19. maijs.
15. Rauhvargers, A. (2011). Global University Rankings and their Impact. EUA Report on Rankings 2011. European University Association, p. 85.
16. Rauhvargers, et al. (2009). Bologna Stocktaking Report 2009. Retrieved http://www.ond.vlaanderen.be/hogeronderwijs/bologna/conference/documents/Stocktaking_report_2009_FINAL.pdf. Access: 10 February 2012.
17. Saisana, M., D'Hombres, B. (2008). Higher Education Rankings: Robustness Issues and Critical Assessment. How much confidence can we have in Higher Education Rankings? Luxembourg, Office for Official Publications of the European Communities. Retrieved: http://globalhighered.files.wordpress.com/2008/11/eur23487.pdf. Access: 10 February 2012.
18. Stella, A., Woodhouse, D. (2006). Australian Universities Quality Agency Ranking of Higher Education Institutions. AUQA Occasional Publications Number 6. Retrieved: http://www.auqa.edu.au/files/publications/ranking_of_higher_education_institutions_final.pdf. Access: 16 February 2012.
19. Stolz, I., Hendel, D., Horn, A. (2010). Ranking of Rankings: Benchmarking Twenty-five Higher Education Ranking Systems in Europe. Higher Education, Online, Springer, Netherlands. p. 22.
20. Valimaa, J. (2004). Nationalisation, Localisation and Globalisation in Finnish Higher Education. *Higher Education*, 48, pp. 27-54.
21. Valimaa, J. (2005). Globalisation in the Concept of Nordic Higher Education. In A. Arimoto, F. Huang, K. Yokoyama (Eds.). *Globalisation and Higher Education*. International Publications Series 9, Research Institute for Higher Education, Hiroshima University. Retrieved: http://en.rihe.hiroshima-u.ac.jp/pl_default_2.php?bid=63653. Access: 17 February 2012.
22. van Vught, F., Ed. (2009). Mapping the Higher Education Landscape: Towards a European Classification of Higher Education. Dordrecht etc., Springer, p. 170.
23. van Vught, F., Kaiser, F., Bohmert, D., File, J., van der Wende, M. (2008). Mapping Diversity; Developing a European Classification of Higher Education Institutions. Enschede.
24. Viksne D., Mazure G. (2011). Quality Assurance Aspects of Higher Education in Latvia. In: *The 2011 Barcelona European Academic Conference:* Proceedings of International Academic Conference, Barcelona, Spain, pp. 923-933. ISSN: 1539-8757 (print), 2157-9660 (online).
25. Webometrics, (2012). Ranking Web of World Universities. Retrieved: http://www.webometrics.info/rank_by_country.asp?country=lv. Access: 14 January 2012.

Convergence of Labour Productivity in Agriculture in the European Union

Ludwik Wicki[1], Dr.hab.
Warsaw University of Life Sciences–SGGW, Poland

Abstract. The aim of the paper is to assess changes in labour efficiency in the EU Member States. It was assumed that convergence is taking place in labour efficiency in agriculture between the "old" and the "new" EU Member States. The analysis covers the years 1998-2011. It has been found that there are large differences in labour productivity in agriculture among various countries. However, two groups of countries with different labour efficiency may be distinguished. The first group includes the old EU Member States, the second – the new ones. Countries with lower initial labour efficiency showed a higher average growth rate but absolute growths were lower there. No β-convergence or σ-convergence has been found with respect to labour efficiency in agriculture and the division into two groups has persisted. The most important factors limiting the occurrence of convergence are connected with farm structure and the number of agricultural workers.
Key words: labour productivity in agriculture, agriculture employment, convergence.
JEL codes: J43, O40, Q10

Introduction

The issue of labour efficiency in agriculture has been discussed in many studies. Agriculture in many European countries, including Poland, is characterised by a relatively low level of labour efficiency and consequently low income from agriculture per one working person. Taking as example Poland, it should be pointed out that a sufficient level of labour efficiency is a necessary condition for the work in agricultural holdings to provide the major source of income for the farmers. Wasilewski (2006) observed that labour productivity in Polish agricultural holdings was very varied and depended on indebtedness level. An important aspect of the assessment of labour efficiency is the average size of agricultural holdings. In Poland, the average farm is as small as 8 ha. The owners are not fully occupied on small farms. On large farms, employing hired workforce, research shows also significant differences in the number of workers and labour efficiency, these being sometimes even three times as great as elsewhere (Wasilewska A, Wasilewski M., 2007). Grontkowska (2008) found that labour efficiency on large farms in Poland depended in a crucial way on their legal form and varied even by 50%. A significant variation in labour efficiency also occurs within particular countries. Sobczynski (2009) stated that the average labour efficiency in agriculture among regions in Germany was over twice as great in some regions than in others. Similar findings for Poland were presented by J. Mikolajczyk (2011). Regardless of the production type, the greater the average size of the farm, the higher labour efficiency has been observed. From the point of view of work profitability, differences have been even greater because the system of subsidies for agriculture is based on output size rather than employment, and the largest farms are favoured despite modulation. Sobczynski (2009), discussing agriculture in Germany, has not observed any farms becoming similar to one another in labour efficiency (convergence). In Poland, labour efficiency in agriculture was as low as 30% of the average for EU Member States. This resulted from a very large share of farms of economic size up to 8 ESU in Poland. In the groups of farms of the economic size over 8 ESU, it was 45-58% (Sobczynski T., 2010). In other studies, it has been found that economic efficiency of labour in farms in one period after another has not increased (Czekaj M., Zmija J., 2011; Koloszko-Chomentowska Z., 2011). One of the main reasons for such situation is the absence of changes in relations between labour resources and land resources. In Poland, in the years 2004-2009, the number of persons employed in agriculture did not decrease significantly with relation to land resources (Zieminska A., 2011).

The differences observed among the EU Member States with regard to labour productivity in agriculture and a relatively low growth rate of productivity was the reasons for undertaking this research.

The aim of the research is to assess changes in labour efficiency in agriculture of the EU Member States, including Poland. The following research tasks have been set: 1) to determine the level and rate of changes in labour productivity in agriculture in the EU Member States including Poland; and 2) to determine whether convergence processes occur in labour efficiency in agriculture among the EU Member States. It has been assumed that 1) convergence exists among the EU Member States with respect to labour efficiency in agriculture; and 2) the EU membership countries with a lower productivity level are characterised by higher productivity increases than the countries with an initial productivity level.

Data for research were taken from the EUROSTAT statistics. The following variables were used: total agricultural labour force input (aact_ali01), value of agricultural production and services at producer prices, and constant prices from 2005 (aact_eaa03). Data for the years 1998-2011 were used in the research.

[1] *E-mail address*: ludwik_wicki@sggw.pl

Table 1

Productivity of labour in the EU countries and its change between 1998 and 2011

Country	Productivity of labour in agriculture			Average annual growth	Relative growth between 1998 and 2011
	1998	2011	change		
	in '000 euro/AWU				
Belgium	65.84	115.08	49.24	4.3%	75%
Bulgaria	3.85	7.87	4.02	5.5%	105%
Czech Republic	17.31	32.11	14.79	4.8%	85%
Denmark	86.78	154.40	67.62	4.4%	78%
Germany	49.25	73.87	24.62	3.1%	50%
Estonia	6.25	20.49	14.24	9.1%	228%
Ireland	25.88	33.36	7.47	2.0%	29%
Greece	16.88	16.09	-0.78	-0.4%	-5%
Spain	29.63	43.29	13.66	2.9%	46%
France	51.37	64.23	12.86	1.7%	25%
Italy	27.42	34.31	6.89	1.7%	25%
Latvia	3.25	8.48	5.22	7.4%	161%
Lithuania	4.67	10.69	6.01	6.4%	129%
Luxembourg	67.99	78.47	10.48	1.1%	15%
Hungary	7.39	11.92	4.53	3.7%	61%
Netherlands	85.06	124.84	39.77	3.0%	47%
Austria	28.90	39.85	10.95	2.5%	38%
Poland	4.84	7.37	2.53	3.2%	52%
Portugal	9.18	14.47	5.29	3.5%	58%
Romania	3.15	6.61	3.46	5.7%	110%
Slovenia	8.03	11.81	3.79	3.0%	47%
Slovakia	9.19	16.46	7.27	4.5%	79%
Finland	19.76	35.08	15.32	4.4%	78%
Sweden	43.04	69.03	25.98	3.6%	60%
United Kingdom	54.44	70.55	16.11	2.0%	30%

Calculations based on constant prices of 2005

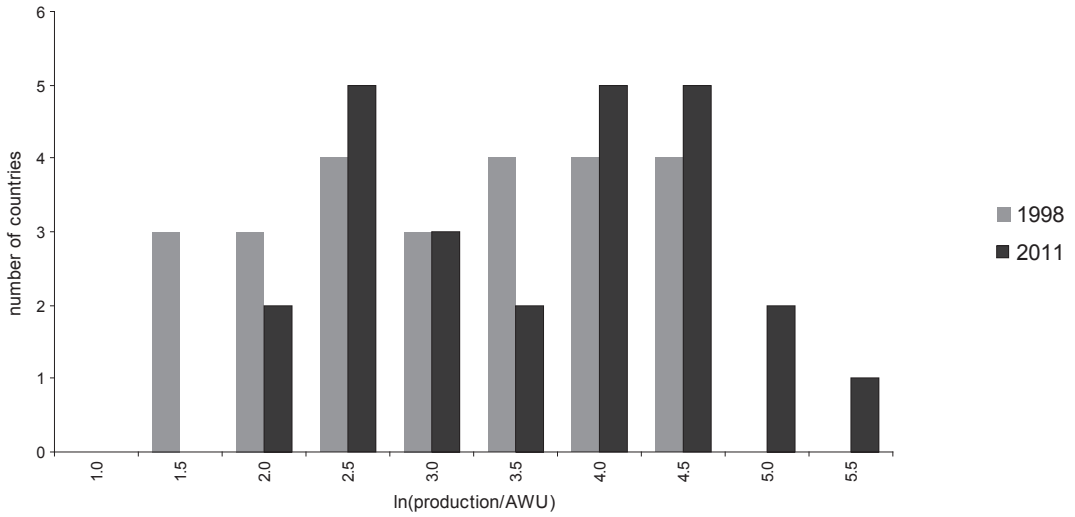
Source: author's calculations based on the EUROSTAT data

Labour productivity in agriculture has been determined using the indicator of work performed by one person occupied on a full-time basis (annual work unit, AWU). The rate of change has been defined as the average annual work productivity increase calculated according to the formula $(\ln(Y_n/Y_0))/n$, where 0 refers to 1998, and n = 13 for 2011.

The coefficient of variation was used (v = std.dev./ avg.) to test sigma-convergence and the analysis of regression of the average work productivity growth rate depending on the initial level of labour productivity (in 1998) was used to test beta-convergence.

The term 'convergence' ('catch-up effect') most often refers to a relatively faster development of poorer countries (regions) as compared with richer ones, resulting in a smaller and smaller distance between the former and the latter. Two major concepts of convergence are found in the literature on the subject: sigma-convergence (σ-convergence) and beta-convergence (β-convergence). These terms were proposed by X. Sala-i-Martin (1990) in his doctoral dissertation. The first occurs when dispersion (variation) of a phenomenon decreases in time across regions or countries, whereas beta-convergence refers to the relation between the average growth rate of a phenomenon and its initial level. Convergence is discussed in the literature in two variants — absolute and conditional. Absolute convergence assumes that countries (regions) become similar to one another regardless of their initial conditions, which means that less-developed countries (regions) develop faster than the developed ones and that the lower the initial level of the particular phenomenon, the faster the changes. Conditional convergence means that only countries with similar structural parameters begin to resemble one another. Conditional convergence has not been studied in the present work.

One can distinguish between two types of convergence in growth empirics: σ-convergence and β-convergence. When the dispersion of real value of some economic indicator (for example, income or



Source: author's calculations based on the EUROSTAT data

Fig. 1. **The density distribution of countries according to the levels of labour productivity in 1998 and 2011**

productivity) across a group of economies falls over time, there is σ-convergence. When the partial correlation between growth in income over time and its initial level is negative, there is β-convergence.

Beta-convergence is not a sufficient condition for σ-convergence. Quah (1993) and Friedman (1992) both suggest that σ-convergence should be of interest since it speaks directly as to whether the distribution of income across economies is becoming more equitable. Still, β-convergence remains a primary focus of economies convergence empirics, perhaps because, intuitively, it seems to be necessary for σ-convergence. Wide description how and why β-convergence is necessary for occurrence of σ-convergence can be found in Young, Higgins, and Levy (2004). They also conclude that β-convergence is necessary but not sufficient condition for the occurrence of σ-convergence.

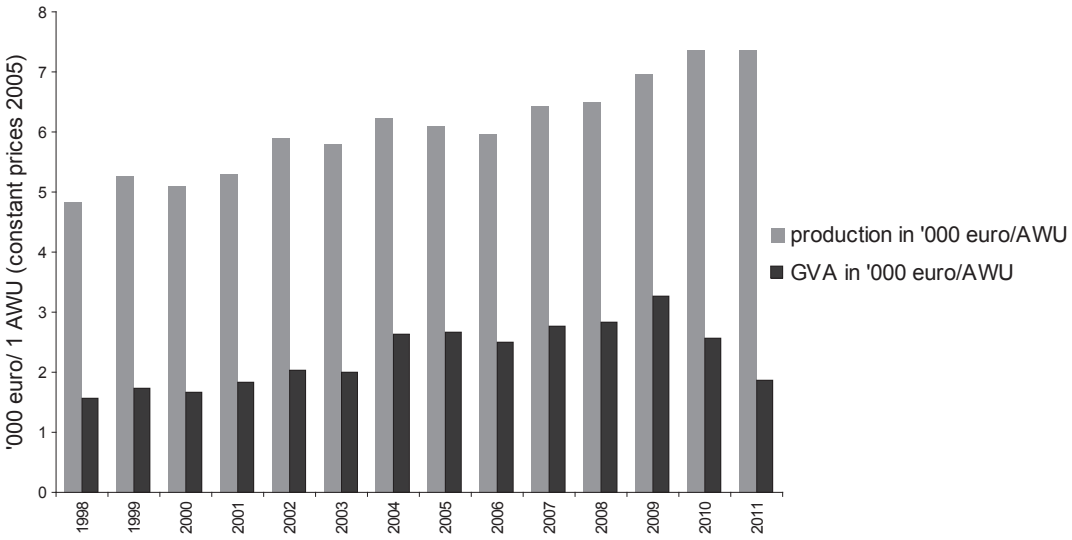
Research results and discussion

The average labour productivity level in the EU agriculture has grown from EUR 29 thousand/AWU to EUR 44 thousand/AWU in the years 1998-2011. This means that the annual average productivity has increased by 3.2%, and by 51% in the entire period under the analysis. The highest level of labour efficiency was observed in Denmark, Belgium, and the Netherlands, exceeding EUR 100 thousand/AWU (Table 1). The lowest level of labour efficiency was observed in the new Member States, such as Bulgaria, Latvia, Poland, and Rumania. Countries where the initial labour efficiency was high often showed further considerable increases of that efficiency. In absolute terms, the highest growth was observed in the countries where the labour efficiency was at the highest level (Denmark, the Netherlands, Belgium). In terms of the average growth rate, the fastest growth of labour efficiency occurred in Estonia, Latvia, Lithuania, and Bulgaria. In these countries, the growth rate was considerably higher than, for example, in Poland; in 2011, Latvia showed a higher level of labour efficiency in agriculture than Poland, even though the reverse situation was observed in 1998. In countries with the highest annual average growth rate, the efficiency increased the most as compared with 1998.

Countries with low initial labour efficiency in agriculture developed relatively faster than those where high productivity was noted. The efficiency levels, however, were not observed to converge in the analysed period because the absolute growths were higher in the developed countries. This rather shows divergence, not convergence, with regard to the labour productivity level.

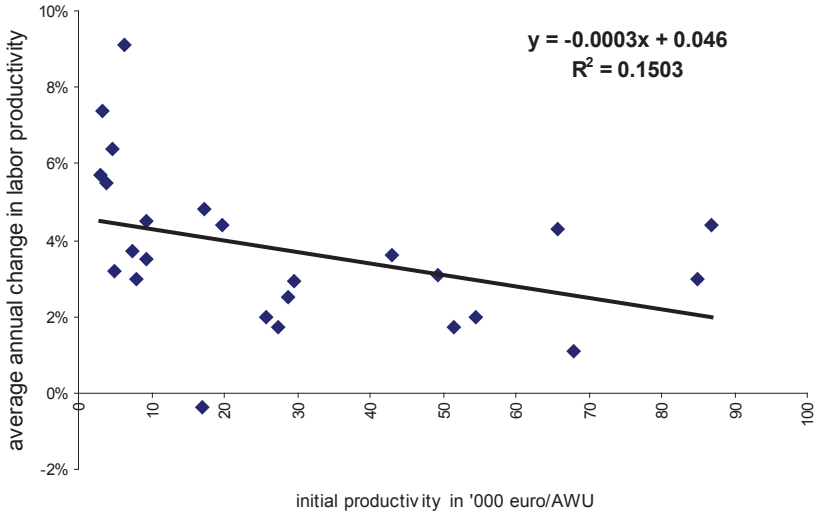
Figure 1 shows distribution of the number of countries by the level of labour productivity in agriculture in 1998 and 2011. On the vertical axis, a logarithmic scale was used as the indicator varied greatly. Bimodal distribution is used thereof. The distribution did not change in the years 1998-2011 but there was a shift toward higher values. In the first group in 2011, there are countries where the production per AWU was below EUR 20 thousand. This group includes all the new Member States, except for the Czech Republic, and two of the "old" Member States: Greece and Portugal. The second group includes the remaining EU countries, with labour productivity of EUR 60-90 thousand/AWU. In this group, three countries with the highest efficiency form a separate subgroup: Belgium, Denmark, and the Netherlands. Considering such distribution, at the next stages of the analysis, countries have been divided into two groups: "old" and "new" EU Member States. The most important factor that differentiates the labour productivity in agriculture in different countries seems to be the average size of farms and the related high level of employment. In Poland, the number of employees per 100 ha in 2010 was 14 AWU/100 ha, and, for example, in Germany or in France it was less than 4 AWU/100 ha. Further analysis of factors affecting labour productivity in agriculture has not been done in this study.

Changes in the labour productivity in agriculture in Poland have been presented separately for the years



Source: author's calculations based on the EUROSTAT data

Fig. 2. **Changes in the labour productivity in Poland in 1998-2011**



regression coefficient is not significant : p-value = 0.6239 $t_{0.05}$ = 2.0687, $t_{0.10}$ = 1.7139 $t_{emp.}$ =-0.4969

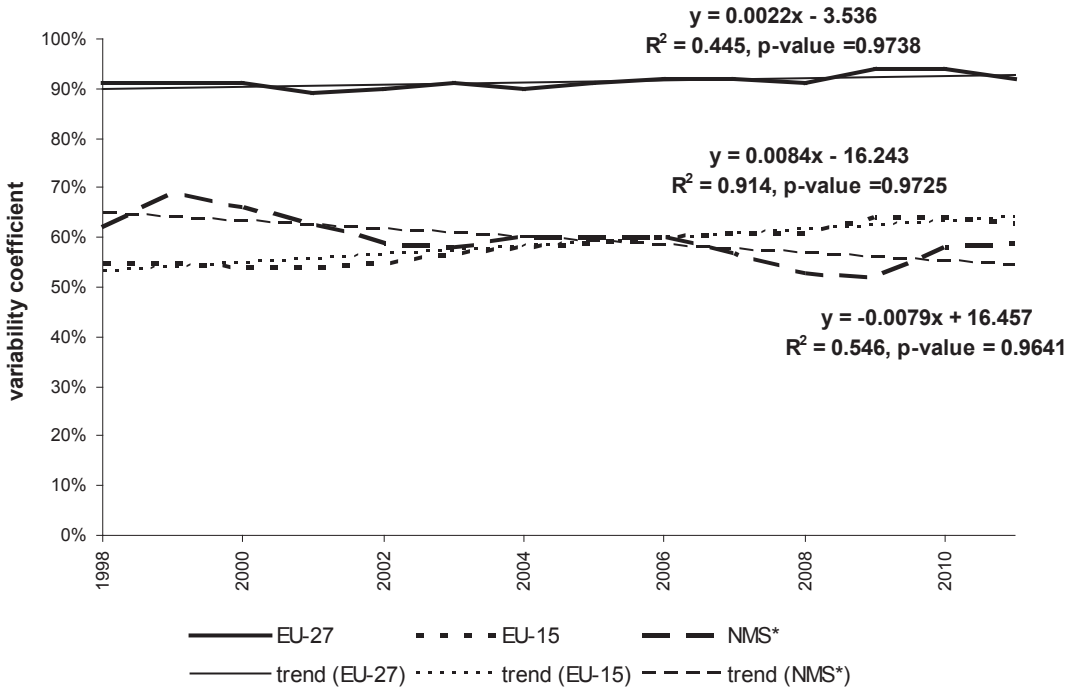
Source: author's calculations

Fig. 3. **Beta-convergence analysis – dependence of the average change of labour productivity on the initial level of productivity**

1998-2011. In that period, the productivity in agriculture grew by 54%, although labour efficiency measured by the GVA/AWU indicator increased by 19% only. This means that the efficiency increased slightly. If one wanted to find causes for such a situation, this would require a more detailed discussion. It may be only noticed that in the analysed period the number of persons employed in agriculture almost did not change, the average size of agricultural holdings did not change either. The most important factors that may contribute to increasing the labour efficiency in Poland seem to be greater production scale and mechanisation of production.

A detailed analysis of the factors influencing the rate of changes in labour productivity would be beyond the scope of the present study.

At the next stage of the analysis, it was determined whether there was a convergence in terms of labour productivity. Absolute convergence may be measured using regression. If countries with a lower initial level of labour productivity show actually a higher growth rate in respect of that productivity, then convergence takes place. Figure 2 shows the relation between the initial productivity level and the productivity growth rate. Countries with lower initial productivity level did have



*NMS – New Member States

Source: author's calculations

Fig. 4. **Analysis of σ-convergence based on the coefficient of variation of labour productivity in agriculture for the EU-27 Member States and EU-15, and NMS**

higher growth rates; the connection, however, is tenuous and not statistically significant. This means that beta-convergence does not occur. In the countries with higher labour productivity level, this level increases faster than in the remaining countries. The causes of this phenomenon should be probably sought in structural factors in the agricultural systems of each country.

Figure 4 presents changes to coefficients of variation of labour productivity level in agriculture. This parameter was shown jointly for the 27 EU Member States as well as for groups of the countries. If the coefficient of variation goes down over time, this means that σ-convergence takes place.

Based on the presented results, it may be concluded that there is no sigma-convergence among the EU Member States with respect to labour productivity in agriculture. Regression slopes for the coefficient of variation are not statistically significant, which indicates a high level of p-value. The fact that the functions are well adjusted is proved as measured by R^2 results from the absence of variation in time.

It is clear that clubs of countries are formed within which labour efficiency is similar. For new Member States, the coefficient of variation slightly decreased but remained on the level of 0.6. In the EU-15 group of the "old" Member States, the coefficient remained on a similar level – about 0.6; although, it was slightly on the increase. The total coefficient of variation for all the Member States was quite higher, amounting to 0.9.

The observed high level of the coefficient of variation for all the countries and lower for their groups means that the source of variation are differences in labour productivity between the "old" and the "new" EU countries. Variation is lower inside each group.

The obtained results mean that there was no convergence in labour productivity in agriculture. There were large differences in this respect between the old and new Member States. Changes in the new Member States, even though higher growth rates are often observed, are lower in absolute terms than those in the old EU countries. One may only speak about a weak σ-convergence for the group of the new Member States.

Such a phenomenon may be caused by the lower average area of agricultural holdings. On smaller farms, labour resources are commonly not utilised completely. In the countries where agricultural holdings are relatively large, as in, for example, the Czech Republic, the observed labour productivity is close to the level found in Finland, Ireland, Spain, or Italy.

Conclusions

Increased productivity of expenditures, including labour amount, is one of the most important factors of efficiency growth in agriculture in general. The paper compares the labour productivity level in agriculture in the EU Member States. It was found that there were very large differences, sometimes the level being ten times higher compared with another country, in labour productivity among the countries. The main dividing line is drawn between the old and the new Member States, which form two separate clusters differing with respect to the analysed variable. Only single countries from the new members, e.g. the Czech Republic, attain

labour productivity in agriculture on a level close to that observed in the old Member States, which have the lowest productivity indicator values.

Labour productivity increased in the majority of the analysed countries (except for Greece). Taking Poland as an example, one may conclude that this is a stable process which, however, does not have to lead to an increase in income per person due to an increase in costs of engaging other production factors than labour.

The conducted analysis of convergence in relation to the labour productivity level in agriculture in the EU Member States makes it possible to state that there is no convergence, in either absolute or relative terms. It is impossible to conclude that beta- or sigma-convergence exists. Nevertheless, examples of labour productivity growth rate being significantly higher than the average in such countries as Estonia, Latvia, Lithuania, or the Czech Republic, make it possible to state that wherever appropriate agricultural structures are found, a considerably higher growth rate may be achieved.

Based on the conducted analyses, one may conclude that labour productivity in agriculture is not converging in the EU Member States. This is a long-term process, because it requires restructuring the agricultural systems so that farms may increase their areas and it is connected with demographic processes of movement of labour from agriculture to other sectors of the economy. It is probable that convergence processes may be seen after considering data from longer periods.

Increasing labour productivity in agriculture will have to involve reduction in the number of agricultural workers, and consequently creating jobs outside agriculture as well as supporting non-agricultural activity in agricultural regions. As it happens quite often, problems of agriculture shall be solved outside agriculture.

Further researches should be directed towards identifying the main factors influencing the observed level of productivity, both positively and negatively.

Bibliography

1. Czekaj, M., Zmija, J., (2011). Zasoby i wyniki produkcyjno-ekonomiczne w wybranych gospodarstwach z chowem bydla mlecznego w Malopolsce w 2007 i 2009. (Resources and Production-Economic Results in the Selected Farms with Dairy Cattle Breeding in Malopolska Province in the Years 2007 and 2009). *Roczniki Naukowe SERiA*, T. XIII, z. 1, pp. 67-71.
2. EUROSTAT data. Retrieved: http://epp.eurostat.ec.europa.eu. Access: 29 Dec 2011.
3. Friedman, M. (1992). Do Old Fallacies Ever Die? *Journal of Economics Literature,* No. 30, pp. 2129-2132.
4. Grontkowska, A. (2008). Forma organizacyjno-prawna a efektywnosc gospodarstw wielkoobszarowych (Legal and Organisation Form vs Effectiveness of Large Agricultural Enterprises). *Rocz. Nauk Rol., Seria G,* t. 95, z. 1, pp. 111-117.
5. Koloszko-Chomentowska, Z. (2011). Efektywnosc wykorzystania czynnikow wytworczych w gospodarstwach mlodych rolnikow (Efficiency of Production Factors in Young Farmers' Farm). *Roczniki Naukowe SERiA,* T. XIII, z 2, pp. 216-219.
6. Quah, D. T. (1993). Galton's Fallacy and the Convergence Hypothesis. *Scandinavian Journal of Economics*, No 95, pp. 427-443.
7. Sala-i-Martin, X. (1990). *On Growth and States*, PhD thesis, Harvard University, Cambridge, M.A.
8. Sobczynski T. (2010). Wydajnosc pracy a poziom wsparcia gospodarstw rolniczych w Polsce na tle UE (Labour Productivity Versus Level of Subsidies for Polish Farms Compared to EU). *Rocz. Nauk Rol., Seria G*, t. 97, z. 3, pp. 244-257.
9. Sobczynski, T. (2009). Wybrane czynniki zrownowazenia ekonomiczno-spolecznego najwiekszych przedsiebiorstw rolniczych UE (Chosen Factors of Economic and Social Sustainability in Largest Agricultural Enterprises of the EU). *Rocz. Nauk Rol., Seria G,* t. 96, z. 3, pp. 152-162.
10. Wasilewska A., Wasilewski M. (2007). Koszty i efektywnosc pracy w przedsiebiorstwach rolniczych (Costs and Labour Productivity in Agricultural Enterprises). *Rocz. Nauk Rol., Seria G*, t. 94, z. 1, pp. 86-94.
11. Wasilewski M. (2006). Kapital wlasny a wyniki ekonomiczne przedsiebiorstw rolniczych (Equity Versus Economic Results of Agricultural Enterprises). *Rocz. Nauk Rol., Seria G*, t. 92, z. 2, pp. 52-61.
12. Young, A., Higgins, M., Levy, D. (2008). Sigma-Convergence Versus Beta-Convergence: Evidence from U.S. County-Level Data. *Journal of Money, Credit and Banking*, Vol. 40, No. 5 (August 2008), pp. 1083-1093. Retrieved: http://www.biu.ac.il/soc/ec/d_levy/wp/jmcb5.pdf. Access: 15 January 2012.
13. Zieminska, A. (2011). Zmiany relacji czynnikow produkcji w polskim rolnictwie (Transformation of Relations of Production Factors in Polish Agriculture). *Roczniki Naukowe SERiA*, T. XIII, z. 3, pp. 216-219.
14. Zietara, W. (2000). Ekonomiczna i spoleczna wydajnosc pracy w roznych typach gospodarstw rolniczych (Economic and Social Effectiveness of Labour Input in Different Types of Agricultural Arms), *Zeszyty Naukowe SGGW EiOGZ*., nr 41, s. 19-34.

Competitiveness of Valuable Natural Areas

Dagmara K. Zuzek, PhD[1]
Faculty of Economics, Agricultural University in Cracow

Abstract. Modern nature conservation is increasingly seen as a tool for protected areas to protect biodiversity by the so-called ecosystem approach. More common is the belief that such areas are important not only for specialists - naturalists but also for the wider social groups. This translates directly to the need for public involvement in decision making concerning the management of protected areas. It is also extremely important from the standpoint of the competitiveness of these areas.
Key words: protected areas, competitiveness, sustainable development.
JEL code: Q18

Introduction

Valuable natural areas are characterised primarily by biodiversity and landscape, since they significantly affect the economic activity in these areas as well as the competitiveness of these areas. Economic-social competitiveness of these areas may indicate a significant, and yet, not fully exploited potential for other Polish regions. Job creation and development of organic forms of economy are just a few elements of a gain of competitiveness from an economic point of view. The competitiveness of these areas may also manifest itself in social factors such as combating unemployment, the development of scientific research and environmental awareness in a meaningful way, which improves the quality of life for residents of these areas.

This article aims to diagnose potential factors both social and economic, which have a significant impact on the competitiveness of protected areas.

Results and discussion

1. Valuable natural areas - theoretical aspects

Deadline valuable natural area appears quite frequently in the literature on the problems of nature conservation and the environment. However, it does not define clearly and unambiguously the meaning. Attempts to define are rare and they are far from precise. Semantic notion of partition of valuable natural areas indicates that in the most general sense it refers to areas with high value conditions for the existence of various resources, elements, or qualities of nature. Radecki (2010) has defined valuable natural areas as those that represent the values given by nature for any human activity. Definitions of this type seem to be too broad. The reason is the concept of nature and the difficulty in precise defining the criteria for valuables.

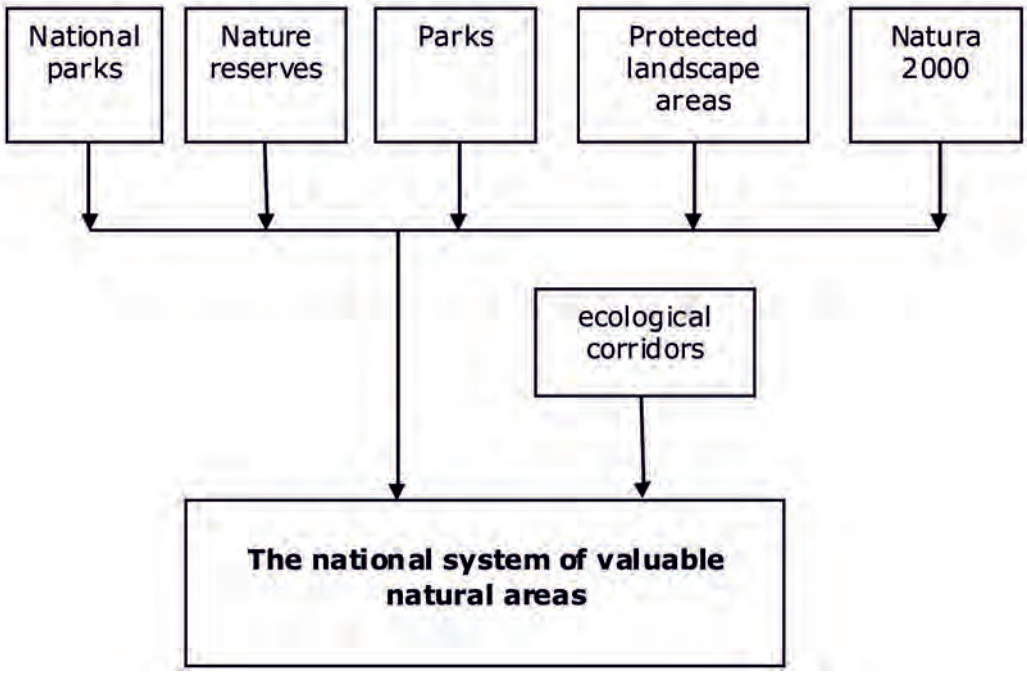
Keeping the concept of relationship for environmentally valuable areas of biodiversity, an attempt to clarify further the definition can be taken as the starting point of economic value. Adopting such a criterion seems to be justified, because on the one hand natural hazard is associated mainly with the economic activity, while on the other hand, a chance to preserve areas of high diversity in the same state today is not believed to be in total protection, but the proper use of these areas in economic processes.

In light of the economic criteria, one can propose the following definition: valuable natural areas are areas where biodiversity is or may be (in the selection of appropriate guidelines and methods) parent, where an important factor of business significantly impairs the form of management inconsistent with the primary purpose of existence for valuable natural areas - conservation of biological diversity. The latter part of definition is justified by the fact that the value measure of valuable areas, due to their diversity, may be lost profits in connection with the possible (to protect) restriction of freedom of economy.

An important element in mitigating the dilemma of protection - should be enabling of the development of protected areas (generally - with a high richness of nature) in a broader context of socio-economic development. One way around this is to create such development strategies that take into account socio-economic characteristics of the protected area and its surroundings. First, it concerns the promotion of SME sector as the basic direction of development of economic activities in these areas. It should be noted that the economic activity is characterised by variability in time. There are periods when the economy is growing rapidly, rising employment and incomes, thereby, increasing internal and external consumption and investment.

Enterprises increase revenue and grow their profits. There is also a growing interest in business development by increasing production capacity. Companies invest in human capital, tangible and financial assets by taking over other businesses (mergers and acquisitions). Then, there comes a period of economic slowdown, when all these trends are reversed or significantly weakened. In order to improve the situation of Polish companies outlined, it is desirable to shape innovation and competitiveness with the use of systemic instruments that allow for engaging decision-makers responsible for regional development. This also applies to small and medium sized companies located in the South-eastern Poland. SMEs in Poland, in spite of their small impact on the environment and small-scale operations and their huge number and contribution to GDP, will undoubtedly

[1] *E-mail address*: d.zuzek@ur.krakow.pl



Source: ***author's construction***

Fig. 1. **The national system of valuable natural areas**

be called the driving force shaping the entire Polish economy. Moreover, their structure affects the entire economy.

The natural environment plays a number of different functions, which are also referred to as a utility because of the economic states: source for raw materials and energy used in production and consumption processes. It provides a geographic space - the field of business, residence or place of relaxation as well as it stimulates, neutralises, and absorbs the side effects and products of human economic activity, of course, to a certain level, beyond which the ecosystem results in an inability to renew. These features of the environment are competing against each other, which becomes most apparent between the biological and economic functions. Excessive environmental pollution during the exploitation of mineral resources as well as in the processes of processing can significantly reduce the performance of biological functions.

Every ecosystem has its own assimilative capacity and when it is exceeded, it can lead to degradation of the ecosystem, or even to its destruction. The pollution of the environment, as economic growth barrier becomes visible when:

1) emissions of certain pollutants in the scale of study areas (country, region, area of environmental hazards etc.) reaches a level that dangerously affects human health, climate, living wildlife, soil and water;
2) caused by emissions of different pollutants, pollution of individual components of the environment prevents or significantly impedes, by a general decrease in effectiveness of management, the further development of the economy.
1) Ecological barriers impede the normal processes of production and consumption in extreme cases even prevent them. They may take the following forms:
2) absolute (in the sense of Malthus) or relative (in the sense of Ricardo), the depletion of stocks of basic raw materials or energy carriers;
3) absolute or relative depletion of resources, basic components of the natural environment;
4) individual components of environmental pollution to a degree that prevents or significantly limits the further functioning of the economy, or causes the loss in the level of prosperity in the scale that the increase of wealth due to an increase in consumption or production of material is smaller than the decline in welfare due to the deteriorating environmental quality (Zielinska, 2003).

Currently, ecological barriers have lost their only theoretical sense in nature and have become a real problem for many communities and regions. The impact of these pollutants cause numerous damages in several sectors of the economy, for example, the industry incurs losses associated with the accelerated corrosion of machinery, transport - accelerated wear on the infrastructure and means of transport, agriculture - reduced crop yields and the necessity of making additional agrotechnical solutions, and forest management - reduced productivity of forest stands and forest land. Pollution of water, soil, or space also cause changes in the environment that adversely affect the production possibilities and consumer businesses. An ecological barrier for the economic growth, which relates to pollution (degradation) of the basic environmental

Table 1

The basic limitations of the economic activity

The form of protected area	Legal basis	Sample forms of restrictions
National park and nature reserve	Article 15	1) prohibition of the construction and building extensions; 2) ban on harvesting of plants and fungi; 3) ban on changes in water, regulation of rivers and streams; 4) prohibition of the destruction or change of use of soil and land use; 5) prohibition of pedestrian, bicycle and ski, non-climbing, caves or operation of water reservoirs; 6) ban on the use of motor vehicles; 7) ban on the organisation of recreational and sports events.
Park	Article 17	1) non-implementation of projects that may significantly affect the environment; 2) ban on the earthwork sculpture permanently disfiguring the land; 3) prohibition on making changes in water; 4) prohibition on maintaining open drainage ditches and sludge storage; 5) prohibition of motor racing and automotive; 6) prohibition on the use of motor vehicles on the open water.
Protected Landscape Area	Article 24	1) non-implementation of the projects likely to have significant effects on the environment; 2) prohibition on making changes in water; 3) prohibition of killing wild animals; 4) prohibition of locating buildings in the belt width of 100 m from the rivers, lakes and other reservoirs, with the exception of agriculture, forestry and fishing.
The Natura 2000	Article 33	1) prohibition of taking action that could significantly worsen the condition of natural habitats and habitats of species of plants and animals as well as leave a significant negative impact on species for which protection has been designated by the Natura 2000; 2) plan and design projects with a potential direct or indirect impact on the state of the Natura 2000 site is subject to an assessment carried out under the Act.

Source: author's construction based on Dz. U. Nr 92, poz. 80

components - air, water, or space, is relative. Relativity consists in the fact that due to the degradation level reached the already very limited assimilation capacity of the environment and the distribution of introduced impurities will be within a low, environmental assimilative capacity. The small and medium size enterprises are the least harmful to the environment.

Polish economic development as well as any other country, causes major changes in the natural environment. These changes are most evident in areas with high concentration of industry and population, where the most noticeable increases relate to water pollution, air, and soil. Followed by devastation of forest areas and agricultural crops, there are problems associated with the development of municipal and industrial waste. These changes have also affected the protected areas and environmentally valuable. Economic growth, increasing the wealth of society, and finally, Poland's accession to the European Union and a greater influx of foreign tourists, on the one hand, pushed the environmental threats and the emergence of barriers to development, while on the other hand, forced the municipal authorities to seek the development of such factors, which are in accordance with protection of the natural environment. The special situation occurs in legally protected areas.

2. The economic competitiveness of protected areas

Economic development in the areas of high natural value cannot be understood in the traditional way. Such an understanding should be based on the principles of sustainability, which in turn can cause potential limitations of these areas (Baranowska-Janota, 1997).

For the economic aspects of competitiveness, the protected areas include:

1) creation of new jobs;
2) development of tourism and tourism in particular;
3) development of healthcare;
4) creating local products;
5) support farming and the production of healthy food.

Natural areas contribute to the economic development and improve living conditions for residents, and thus, improve the overall quality of life of local communities. A vision of green economy with the participation of local community residents including employment and income in selected areas of economic activity, is one of the main elements of competing protected areas (Owsiak, 2001).

The existence of protected areas provides opportunities for tourism development. These areas promote the region, as it can be seen in the establishment of national parks, nature reserves, or the Natura 2000 sites.

The development of tourism may be one of the sources to improve socio-economic situation of the country. In Poland, also the past year has brought a substantial increase in the position of tourism in developing the national economy, regions, or even communities.

Tourism is one of the most dynamic areas of the world economy, which results from such factors as:
— development of means of transport;
— facilitation of the international movement of people;
— increase in the amount of time off from work;
— increase of awareness of the wealth and population;
— ongoing process of urbanisation.

Tourism significantly affects the economic development of the country or a region, it is important to indicate the following:
— tourism economy is a complex interdisciplinary extensive international, interprofessional, regional and local economic and social ties;
— it contributes to the transfer of demand for items and services from countries and regions with high income to the regions with low income;
— most of the financial turnover of economic development through tourism record is not related with accommodation and travel agencies, but areas of the economy of tourism co-operative, such as transport (e.g. carriers, vendors of fuel, services, automobiles), trade, catering, local product labels, telecommunications, sports equipment factories, tourism, and others;
— it is assumed that the tourism economy consists of anything that can be sold to the person visiting (Zuzek, 2009).

The competitiveness of protected areas can also be seen through the production of organic food. Measurable economic benefit of this type of food production is its high price and increasing demand. One has noted a close link between environmental quality and food quality: the higher is the quality of the natural environment, including food produced characterised by a higher quality and value on the market, the greater are opportunities for sales and distribution. Farms conducting ecological systems are an important component of the competitiveness of protected areas.

Another economic benefit of the areas examined include the EU financial instruments in the form of agri-environment schemes, which provide opportunities to raise additional funds by farmers living in these areas.

3. The competitiveness of natural areas - the social aspect

The existence of natural areas can be treated as both an opportunity and threat to the society. Restrictions are imposed by law on the management of traditional use of natural resources and environmental elements.

Valuable natural areas are of interest not only from the standpoint of the richness of the natural environment but also the cultural richness such as folk culture, which is practiced by people living in these areas. The competitiveness of protected areas translates into social elements not only in economic but also non-economic terms. These factors can certainly include:
— employment opportunities for people in the system of protection of these areas;
— more flexible employment policies and the creation of innovative jobs;
— raising awareness of environmental protection;
— development of research in the field of nature conservation;
— improved quality of life of local communities;
— spread of environmentally friendly consumption patterns;
— promoting active recreation and promotion of healthy lifestyles.

The competitiveness of agriculture is improved in terms of social development of organic farming in protected areas; thus, adapting good agricultural practices, which serve to protect the environment in rural areas by:
— care for the natural, cultural and aesthetic;
— improving the quality of life in rural areas;
— restricting the use of chemical fertilisers and pesticides;
— supporting innovation.

However, the social benefit resulting from the activities of eco-agritourism farms are:
1) improvement of rural infrastructure;
2) care for the natural environment;
3) impact on the land use;
4) development of micro-farms;
5) leaders in the local community by providing the work on sustainable development strategies for municipalities.

Conclusions

For protected areas, one of the most important factor is the natural environment but it shall interact with the economy and human capital. According to the idea of sustainable development, the society draws both non-economic and economic benefits. The first ones include a clean environment and beautiful landscape of life, while the second group includes new places of work and the development of green business.

Change in the awareness of green businesses can contribute to the potential direction of their development as well as the greening of the economy of protected areas. Companies wishing to obtain a competitive advantage shall be convinced that the existence of these areas is an opportunity of development, growth, innovation processes, and thus, the economic welfare.

Bibliography

1. Baranowska - Janota, M. (1997). Basic Assumptions and Principles Provide the Natural Protected Areas for Tourism. In: the Role of Landscape Parks in Environmental Education Materials from the Conference 22-23.05.1997, Piwniczna.
2. Owsiak, J., Sewerniak, J., Andrzejewska, G. (2001). Tourism in Protected Areas as a Factor in the Economic Development of Local Communities. Institute of Tourism, Department of Scientific Research in Torun, Torun.
3. Radecki, W. (2010). Theoretical Basis of an Integrated Legal Protection of the Environment. Institute of Legal Sciences, Scientific Association of Environmental Law, ed. Environmental Law, Wroclaw.
4. Act of 16 April 2004 on the Protection of Nature, Dz. U. No. 92 Item. 80
5. Zielinska, A. (2003). Management Options for Protected Areas According to the Principles of Sustainable Development. In: the Natural Qualities as a Factor in the Development of Eastern Polish Regions (ed. R. Horodenski, C. Sadowska-Snarska), EEZ Bialystok.
6. Zuzek, D. (2009). Strategic Management of Business Tourism. Scientific Papers MWSE in Tarnow, No. 3, pp. 121-124.

ECONOMIC SCIENCE FOR RURAL DEVELOPMENT Nr. 27
Editor – in-chief Andra Zvirbule-Berzina
Printed and bound in Drukatava Ltd.
Liliju street 95/1, Marupe,
Latvia