

## EXPECTED STRUCTURAL CHANGES IN SELECTED INDUSTRIES AND SECTORS OF THE NATIONAL ECONOMY OF LATVIA IN THE CONTEXT OF THEIR LONG-TERM DEVELOPMENT

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**Abstract.** Economically, Latvia considerably lags behind advanced economies. Achieving the economic development and income level of advanced countries is difficult but not impossible. In order for it to occur, substantial changes have to take place in the national economy of Latvia, mostly in the tradable sector. The research aim is to identify the potential structural changes in the national economy of Latvia if, hypothetically, the economic development levels of advanced economies and Latvia converge. In this situation, labour productivity has to considerably increase in agriculture and other primary industries, which means that most of the workforce working in the mentioned industries have to move to other industries and, possibly, change their places of residence – from rural to urban areas. Labour productivity is expected to significantly increase in low value-added manufacturing and in part of (tradable) service industries. In order that it can occur, high value-added manufacturing and (tradable) service industries have to be developing, which consequently will raise the overall income (earnings) level and which, in its turn, will affect also the value-added tradable subsector where labour productivity is going to increase and higher wages could be paid. A significantly smaller increase in labour productivity is expected in the nontradable sector, yet labour costs (earnings) are expected to rise considerably, which will result in an increase in the costs and prices of mostly nontradable services and therefore the overall price level.

**Key words:** economic development, long-term structural change, tradable and nontradable sectors, Latvia.

**JEL code:** F43

### Introduction

Almost three decades have passed since the collapse of communism in Eastern Europe, yet the economic performance of East European countries, including Latvia, is considerably lower than that of West European countries. It particularly relates to labour productivity, which, in its turn, determines the income level and the standard of living in the entire economy. Joining the European Union fostered economic growth, exports and structural economic change in a number of East European countries, yet nominal incomes in the countries are considerably lower than those in West European countries, reaching even 10 times if comparing such countries as Luxembourg and Bulgaria. Nominal incomes in Latvia are five times lower than those in Luxembourg and four times lower than those in Germany (Eurostat). Hypothetically, incomes and the standard of living in East European countries have to reach those in West European countries in a long-term, meaning that significant changes are expected in their economies. The changes have to be a focus in the society, thereby guiding social and other processes into the right direction.

For this reason, the research aim is to identify the expected structural changes in the national economy of Latvia if, hypothetically, the economic development levels of advanced economies and Latvia converge in a long-term.

Specific research tasks: 1) to describe and explain an empirical causal association between labour productivity and the overall earnings level in an economy and the role of the high value-added tradable subsector in an economy; 2) to identify long-term structural changes in selected primary industries; 3) to identify long-term structural changes in the low value-added tradable subsector and the nontradable sector.

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The present research is based on previous research investigations by the author into the tradable sector and labour productivity disparities across European countries, employing analysis and synthesis, statistical analysis, single factor analysis of variance (ANOVA) and abstract and logical analysis.

### **Research results and discussion**

The present research is based on a finding of the author that labour productivity is considerably affected by the overall labour cost (earnings) level – at a low labour productivity level, the labour cost level is also low, and vice versa. The availability of cheap labour, which is an advantage and typical of East European countries and Latvia too, does not contribute to higher labour productivity, first of all, in the tradable sector, which, consequently, is a large disadvantage for economic growth and development (Ancans, 2018). Labour productivity in export industries or the tradable sector (theoretically divided by the present research into two subsectors: the low value-added tradable subsector and the high value-added tradable subsector), which nowadays is the basis and core of any open economy, adjusts to the overall earnings level. It is not a desirable economic phenomenon (causal association) in East European countries (with low labour productivity), as it does not contribute to increases in labour productivity in the industries where it could be relatively easier to achieve, i.e. the low value-added tradable subsector which the East European countries have for a long period and which should be relatively more developed, unlike the high value-added tradable subsector which is considerably less developed in the East European countries than in advanced economies (Ancans, 2018).

As high value-added industries (tradable subsector) develop (owing to both the production of goods and services of increasingly higher value-added and increases in the proportion of the industries in GDP, i.e. both qualitatively and quantitatively), increases in the overall earnings level could be expected – initially in the mentioned industries, but subsequently in low value-added industries as well as in the nontradable sector (in mostly nontradable services industries).

The research intends to make a more detailed explanation of the mentioned causal association between labour productivity in the tradable sector and the overall earnings level in the economy and analyse the following groups of industries: primary industries; low value-added tradable industries; high value-added tradable industries; the nontradable sector.

### **1. Causal association between labour productivity and the overall earnings level and the role of the high value-added tradable subsector in an economy**

As the author has established in his previous research investigations (Ancans, 2018), the following empirical causal association could be observed across nations – labour productivity strongly correlates with, i.e. adjusts to, the overall earnings level in the economy, which, in its turn, determines the wage level in the tradable sector as well as in the nontradable sector, i.e. in the entire economy. The overall earnings level and labour productivity represent reciprocal cause and effect – they interact and are interrelated, representing the so called vicious circle phenomenon – the availability of cheap labour in the economy determines low labour productivity, while the low labour productivity determines low earnings (cheap labour). Cheap labour and low labour productivity are both the cause and the effect. Breaking the vicious circle requires a driver – the development and expansion of high value-added economic activity, i.e. the transition from the efficiency-driven stage to the innovation-driven stage. Otherwise, it is also impossible to avoid the so-called middle-income trap. In order for labour productivity to increase in the low value-added tradable subsector, which is

an important and significant in any less developed economy, the high value-added tradable subsector has to develop and expand. If this subsector as the growth driver develops and expands, the overall earnings level gradually rises to a higher level, thereby making labour productivity increase also in the low value-added tradable subsector and, at a smaller extent, in the nontradable sector as well.

With the high value-added tradable subsector as the driver of income growth developing, the overall earnings level in the economy gradually shifts to a higher level, which causes labour productivity to increase in the tradable sector – both, first of all, in the high value-added tradable subsector and in the low value-added tradable subsector. The higher labour productivity in the tradable sector allows paying higher wages in the tradable sector itself and, subsequently, higher wages and salaries in the nontradable sector where higher labour productivity is more difficult or impossible to achieve but where raising nontradable service prices and paying higher wages and salaries are going to be a logical outcome.

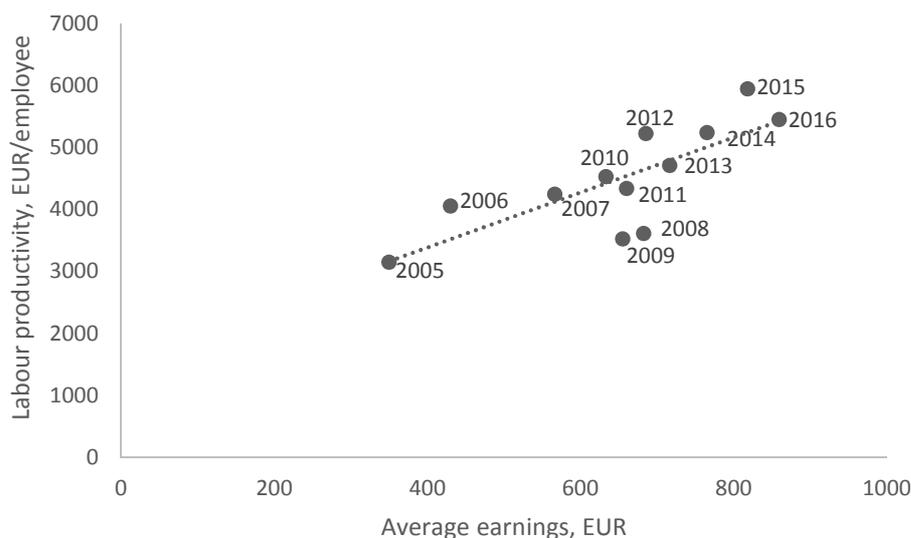
In less developed economies, entrepreneurs and businesspersons can afford to hire relatively more employees for doing a certain amount of work because the labour is cheaper there. Conversely, in advanced economies where labour is relatively more expensive, they cannot afford to hire a large number of employees and have to seek solutions how to get the same amount of work done by fewer employees, i.e. how to make the production process more efficient – by replacing the labour by machinery and equipment or by finding other technological solutions, which allows raising labour productivity and paying higher wages. Higher wages and salaries encourage, stimulate and force businesspersons and entrepreneurs to increase labour productivity at their enterprises. This is an important causal association to be known and taken into consideration by entrepreneurs, policy makers as well as the general public.

## **2. Long-term structural changes in primary industries**

**Agriculture** is the most ancient industry whose role in the national economy or gross domestic product is insignificant nowadays. The proportion of agriculture in GDP is only 1.4-2.2 % (Nipers et al., 2018), yet it is very important from other perspectives – territorial management, ecological, social etc. For this reason, agriculture is the most government-supported industry that receives EU and national financial assistance. In Latvia, labour productivity in agriculture, which is measured as agricultural factor income per annual work unit, rose from more than EUR 3 thou. in 2005 to approximately EUR 5.5 thou. in 2016. The research identified an association between labour productivity in the agricultural industry and the overall earnings level in the national economy of Latvia in the period 2005-2016 (Figure 1).

The correlation coefficient was 0.77, and a single-factor analysis of variance showed that the data were reliable (p-value was less than the significance level of 0.01).

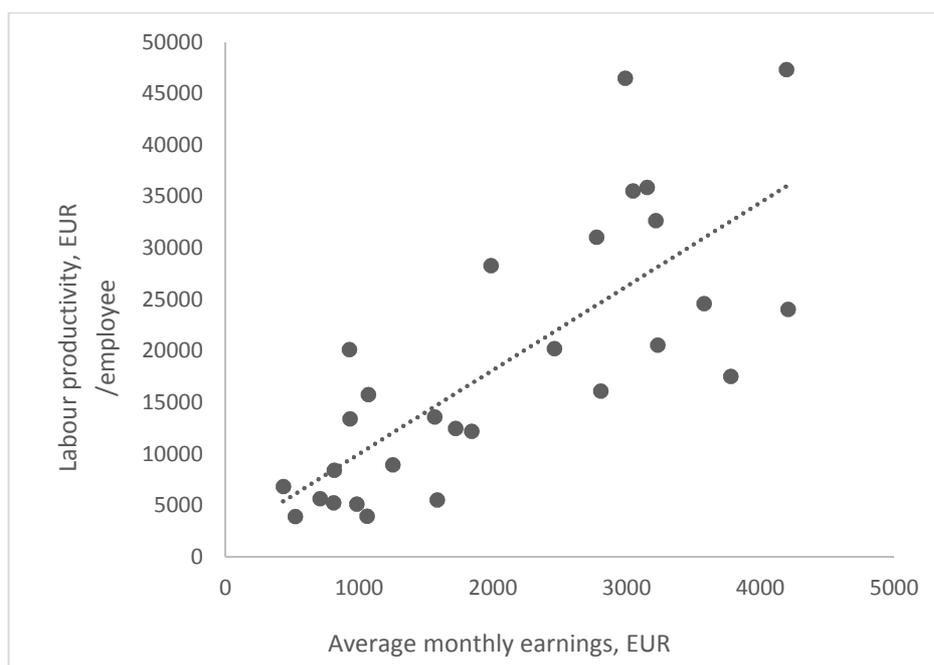
As shown in Figure 1, an increase in the overall earnings level in the national economy led to an increase in labour productivity in agriculture. The largest deviation from a steady increase in both earnings and productivity was observed in the year 2008, which was due to a high earnings increase and a decrease in global food prices and, consequently, in labour productivity (value added) in agriculture.



Source: author's construction based on Eurostat and the Central Statistical Bureau (CSB) of Latvia

Fig. 1. Causal association between labour productivity in the agricultural industry and the overall monthly earnings level in the national economy of Latvia in the period 2005-2016

In Latvia, labour productivity in agriculture still considerably lagged behind that in advanced EU Member States, which ranged from about EUR 9 thou. in Portugal to EUR 47 thou. Denmark, averaging around EUR 25 thou. (author's calculations based on Eurostat) (Figure 2).



Source: author's construction based on Eurostat

Fig. 2. Causal association between labour productivity in the agricultural industry and the overall monthly earnings level across EU Member States

Even though agriculture receives considerable and also different support or operational subsidies in EU Member States (from less than 200 EUR/ha in Romania to more than 1000 EUR/ha in Malta) (European Commission, 2018), which distorts the market, an analysis showed that there was a strong positive correlation between labour productivity in agriculture and the average earnings level (NACE Rev.2, B-S, excluding O) across the EU Member States – the correlation coefficient  $r=0.77$ . However, a single-factor analysis of variance proved that the data were reliable, i.e. labour productivity in the

agricultural industry (which produces tradable agricultural goods) adjusts to the overall earnings level in the economy.

Hypothetically, if reaching the economic development level of advanced economies, labour productivity in agriculture in Latvia has to increase approximately fivefold, according to the current data, in a long-term. Since the land area is limited and crop and livestock productivity cannot be significantly increased, the main solution in agriculture with regard to increasing labour productivity is a decrease in the number of the employed in this industry. In 2018 in Latvia, agriculture employed approximately 7 % of total employment, while in advanced economies this relative figure was considerably lower, e.g. in Germany, France and the United Kingdom it was 1.3, 2.4 and 1.1 %, respectively, i.e. 3-6 times lower (OECD). In 2016 in Latvia, according to the CSB, the number of the regular labour force in agriculture totalled 162.7 thou., while the agricultural employment expressed in annual work units was equal to 75.7 thou., i.e. more than twofold lower, which indicates a too high number of agricultural employees in this industry at the current labour productivity level that is approximately four-fold lower than that in advanced economies. This means that the majority of those employed in agriculture in Latvia (approximately 50 thou.), in a long-term, will have to seek employment in other industries (in urban areas) and, possibly, move to the urban areas because, at present, living in rural areas and working in the urban areas is not possible due to the low income level if distance from the place of residence to the workplace is too long. In view of the fact that the proportion of young agricultural employees is low, whereas that of old ones is high in Latvia (European Commission, 2017), this problem will be partly solved owing to generation change. Achieving the income level of advanced economies and improving the quality of roads, which require not a single decade, the population could afford to live in rural areas and work in urban areas.

**Forestry** is the second most important industry in Latvia, and the situation in it is similar to that in agriculture. The proportion of forestry and logging in GDP was 1.7 % in 2015, even though in the period 2010-2011 it was approximately 2 % (CSB, 2018). Labour productivity in this industry was low, which was shown by such key apparent labour productivity indicators as roundwood production per employee, thou. m<sup>3</sup>, and gross value added, EUR per employee. In 2015, 0.7 (0.9 in 2005) thou. m<sup>3</sup> of roundwood per employee were produced in Latvia. For comparison, the figures in other forest-rich EU Member States were as follows: Sweden – 3.4 (3.9 in 2005), Finland – 2.8 (2.3) and Estonia – 1.0 (0.8) (Eurostat, 2018b). In 2015, larger disparities in labour productivity were observed in terms of money: EUR 21.1 thou. in Latvia, EUR 32.4 thou. in Estonia, EUR 172.7 thou. in Sweden and EUR 161.7 thou. in Finland (Eurostat, 2018b). In 2015 in Latvia, the number of the employed in forestry was approximately 2 % or 19 thou. For comparison, it was 22 thou. in Sweden and 21 thou. in Finland (Eurostat, 2018b), i.e. almost as many as in Latvia, even though roundwood production in both Scandinavian countries was 4-5 times higher. It indicates that in a long-term, labour productivity in forestry, just like in agriculture, in Latvia has to increase multi-fold.

The factor of production – land – that is exploited in agriculture and forestry is constrained and constant in terms of area. Forest yields (increments in growing stock) could not be considerably increased. Any increase in the agricultural area could be done at the expense of the forest area, and vice versa. However, since labour productivity in agriculture and forestry is considerably lower in Latvia, the number of employees in both industries has to decrease multi-fold if reaching the labour productivity and income levels of advanced economies. Based on the current situation, employment in agriculture in Latvia has to decline by approximately 50 thou., while that in forestry by about 15 thou., giving a total of 65 thou. (author's calculations based on OECD and Eurostat). This is in

contradiction with what the Latvian Bioeconomy Strategy 2030 states that employment in the bioeconomy sector has to be retained at the current level.

In other primary (low value-added) industries in Latvia, e.g. quarrying and fisheries, the situation is similar, which could be concluded based on the strong causal association between labour productivity and the overall earnings level. However, the proportions of the mentioned industries in GDP are insignificant (fishing and aquaculture – 0.1 %; mining and quarrying – 0.5 %) (CSB, 2018) and, consequently, their roles in the economy of Latvia are inconsiderable, that is why the author does not analyse the industries in detail.

### 3. Long-term structural changes in the low value-added tradable subsector and the nontradable sector

Unlike the primary (low value-added, mainly tradable) industries, in which increases in labour productivity result in decreases in employment in a long-term, the development of low value-added tradable industries (mainly the secondary sector – manufacturing industries) is expected to be different. Increases in labour productivity in this tradable subsector are expected to mainly lead to increases in output because, unlike the primary sector where the output is determined by the constrained supply of land (underground natural resources as well as waters) as a factor of production, the secondary sector does not have such a constraint. Accordingly, this process does not have to cause a decrease in employment, and it is the most preferable direction of economic development for this sector. Larger volumes of output due to an increase in labour productivity will make it possible to pay higher wages for the same number of employees. The growing output of the secondary sector, of course, is mainly exported. Unlike employees of the primary industries, those of the secondary sector will not have to move to other industries and probably not to change their places of residence.

Significant changes in the nontradable sector (mainly the tertiary or services sector) are not expected, as this sector is labour intensive – providing services requires relatively more labour than producing goods, and the cost of labour is often the main cost factor in this sector.

Overall, one can conclude that if achieving the labour productivity and therefore nominal income levels of advanced economies, structural changes in the economy of Latvia are going to be different – the largest changes are expected to occur in primary industries, as well as in the secondary sector –, whereas the changes in the tertiary sector (mainly the nontradable sector) are expected to be the smallest – mostly labour costs are going to rise.

The key findings regarding the structural changes in the economy mentioned in all the sections of the paper could be summarised in a table.

Table 1

#### Expected long-term structural changes in the national economy of Latvia

Industry/sector	Employment	Labour productivity
Primary industries (primary sector)	Considerable decrease (~4-fold)	Considerable increase (~4-fold)
Low value-added tradable subsector (secondary sector)	Mainly No change	Considerable increase (~4-fold)
High value-added tradable subsector (secondary sector)	Considerable increase	Considerable increase (~4-fold)
Nontradable sector (tertiary sector)	Mainly No change	Relatively inconsiderable increase

Source: author's construction

The key factor that allows achieving the nominal income level of advanced economies is the growth and development of the high value-added tradable subsector – the number of the employed

and labour productivity in the subsector have to increase. This is going to cause the movement of labour among the sectors. The effect of this process is a significant increase in labour productivity in the low value-added tradable subsector with No considerable change in the number of the employed in it, yet its employment is likely to slightly decrease at the expense of growth in the high value-added tradable subsector. The number of the employed in primary industries is expected to significantly decrease – the labour is going to move to mainly the low value-added tradable subsector and, to the extent possible, to the high value-added tradable subsector, while part of them might move to the nontradable sector as well. In the nontradable sector, however, No significant increase in labour productivity is expected, and employment is expected to be the same.

### **Conclusions, proposals, recommendations**

- 1) The overall earnings level and labour productivity are reciprocal cause and effect – they interact and are interrelated, representing the so-called vicious circle phenomenon – the availability of cheap labour in the economy determines low labour productivity, while the low labour productivity determines low earnings (and cheap labour).
- 2) To reach the income level of advanced countries, Latvia has to develop the high value-added tradable subsector, which is the key factor and driver for a considerable increase in income.
- 3) With the high value-added tradable subsector developing in Latvia in a long-term, structural changes are going to occur in the entire economy – in all the sectors (primary, secondary and tertiary).
- 4) The most essential structural changes are going to primary sector industries – a multi-fold increase in labour productivity and a multi-fold decrease in employment (approximately four-fold). The number of the employed in agriculture will decline owing to generation change.
- 5) Significant increases in the volumes of output (labour productivity) have to occur in the value-added tradable subsector, with the number of the employed in the subsector changing insignificantly.
- 6) The smallest structural changes are expected to occur in tertiary (services) sector industries (mainly the nontradable sector) – the cost of labour is going to significantly increase, which, in its turn, leads to higher prices of the services and an increase in overall inflation (overall price level), with labour productivity rising insignificantly.

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