

Financing of Innovation System Development and Attraction of Private Capital

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Abstract. Each country is required to have a clearly formulated and detailed national strategy in the transition period for the purpose of management, stimulation, assessment and funding of innovative technology development process. A range of various funding sources includes private venture capital investments that have gradually formed the industry of private venture capital. The authors in their analysis and assessment of venture capital development trends focus on the analysis of external factors. The latest Silicon Valley Venture Capitalist Confidence Index 2011 Q4 confirms the attitude of private risk capital investors towards the expected changes in the venture capital market, since it shows a declining tendency and has returned to 3.27 points after a slight rise in 2010. On the present conditions of Latvia, the private venture capital should be analysed in a close connection with the entire innovative ecosystem, since the private venture capital is one of the main instruments of funding innovation projects.

The authors of the paper have analysed the environment and the factors that influence private venture capital investments in this sector.

Key words: venture capital, innovation, Latvia, venture capital funds, R&D expenditure, government policy.

JEL code: G24, G28, G32, F21, M13

Introduction

The economic development of a country is determined by geographic, demographic, and technological factors. The future of demographic situation of Latvia seems unfavourable, thus, Latvia has to focus on its convenient geographic situation and the development of technologies. Experts from the field of economics hold the view that the technological development is supported by promoting innovations, launching new production units, establishing and developing start-up companies, and combining the forces of both the government and entrepreneurs.

Innovation funding sources depend on the government's innovation policy, its priorities, and government support level. One of the sources of innovation funding is private venture capital.

The aim of the paper is to analyse the innovation environment and factors that might influence private venture capital investments in this sector.

The tasks are: 1) to characterise challenges that Latvia faces in relation with the requirements of the new (sixth) technological cycle in the commercialisation of research findings; and 2) to describe the private venture capital investment development level and its influencing factors, grouping them according to the areas of influence.

Data sources and research methods. The authors based their research on the innovation development index of Latvia and other EU Member States, and the comparative analysis of other indicators. An assessment of the level of innovation performance in Latvia was based on the methodology of the Innovation Union Scoreboard 2011 (IUS 2011) that includes 25 indicators. Reports of the European Commission, the IUS 2011 data compiled by

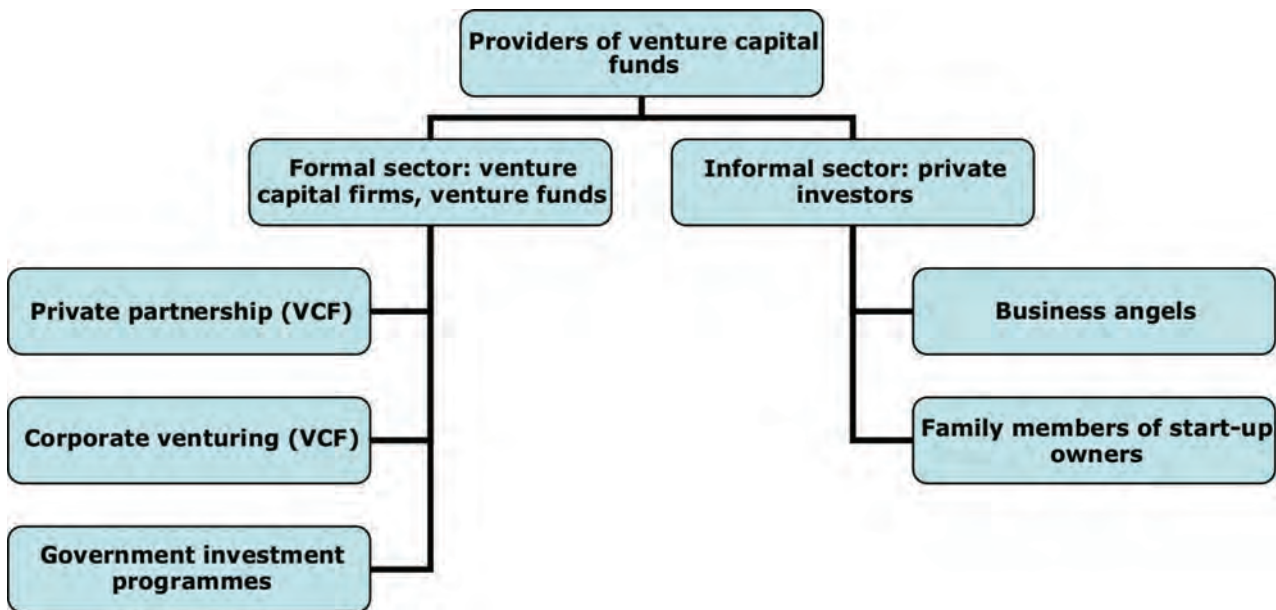
INNO METRICS, data from Latvia's CSB, the survey data obtained by Latvia's marketing public opinion research centre SKDS, expert interviews etc., and researches of scientists from the Baltic States regarding assessing and financing innovation performance were used as data sources. In addition, the opinions of the members of the Association of Latvia Private Investors, the publication of *Joseph Ghalbouni* and *Dominique Rousies* in the Harvard Business Review (2010) as well as published opinions and forecasts of several venture capital investment experts and Silicon Valley Venture Capitalist Confidence Index etc. were applied in the research.

Research results and discussion

Researchers from many countries consider that the transition to the new technological cycle has started being accompanied by profound structural economic changes. The 5th technological cycle, the driving force of which included microelectronics and many-faceted development of the ICT technologies, has been drained out giving the way to the 6th technological cycle. The new technological wave is characterised by rapid development of nanotechnologies (nanoelectronics, nanomaterials, nanotechnologies, nanometrology, nanobiotechnologies, artificial intellect, and development of alternative energies). Many countries set up innovation clusters to develop the potential of these industries, dominated by R&D centres, universities, and their research centres (Glazjev S., 2012). The commercialisation of new innovative ideas is possible only in the innovative business environment. The 4 Ps approach of the Marketing Mix is one of the models to be used in the analysis of implementation of innovative economics (Tidd J., Bessant J., 2010):

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Source: authors' construction

Fig. 1. Providers of venture capital funds and their legal organisation

'Product innovation'- changes in the things (products/ services) that an organisation offers;

'Process innovation'- changes in the ways in which they are created and delivered;

'Position innovation' – changes in the context in which the products/services are introduced;

'Paradigm innovation'- changes in the underlying mental models, which frame what the organization does.

Each country is required to have a clearly formulated and detailed national strategy in the transition period for the purpose of management, stimulation, assessment, and funding of innovative technology development process. A range of various funding sources includes private venture capital investments that have gradually formed the industry of private venture capital.

Venture capital (VC) is a long-term risk capital that is invested in the rapidly growing share capital of a company with the purpose to increase the amount of the company's profit and the business value on the market, stimulating the large financial gains in the long-term period. The forms of investments are varied:

- an investor acquires the shares of the company in exchange of financial resources, and the source of income is the increase of the share value;
- medium-term investments are invested in the time period for 3-7 years;
- mixed-type investments, combining the above mentioned variants.

The expected internal rate of return (IRR) should achieve a sufficiently high level, since private venture capital investments have a high-risk level and they achieve the necessary amount (maturity) after several years (2-6 years). The "exit" from a company in the final stage is implemented by supplementing the initial shares (IPO) and selling the shares either on the national or international stock market or by selling the whole

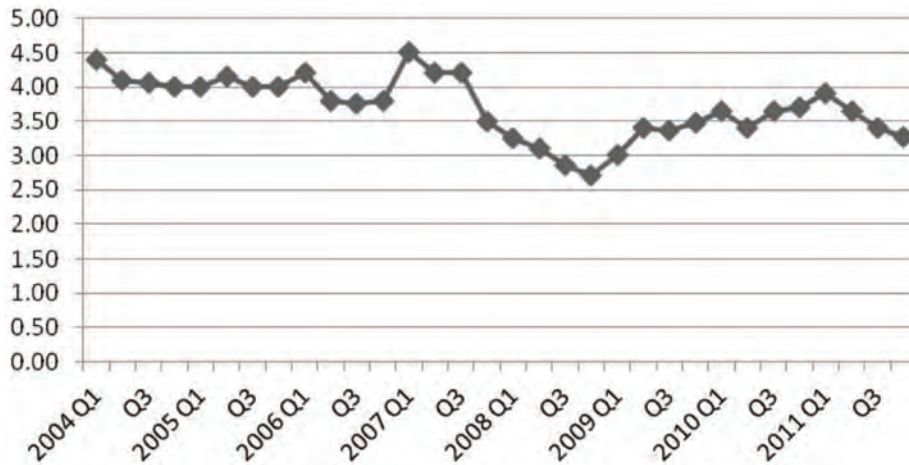
company. Venture capital could be offered in two types of sectors: formal and informal.

The 4 Ps (Product, Price, Place, Promotion) of the Marketing Mix influence greatly the development of venture capital industry. However, unfavourable business environment might hamper the development of innovative products.

The authors focused on the analysis of external factors of venture capital development trends. On a global scale, venture capital industry is having a decline. *Joseph Ghalbouni and Dominique Rousies* (Ghalbouni J., Rousies D., 2010) in their publication *Harvard Business Review* in October of 2010 analysed the reasons for rapid shrinking of venture capital investment industry, the internal structural changes of the industry, and development opportunities in the period of the past 10-18 years. They pointed to the significant changes in development trends that were reflected in the dynamics of such important indicators as Thomson Reuters, Dow Jones venturesource, and Cambridge associates LLC US venture capital index. The indicators characterising the industry dynamics included the number and volume of investment transactions, quarterly profitability, investment cycle, and sales (the exit of venture capital from the project). Several researchers (Josh Learner and William Kerra from Harvard Business School) have analysed activities and efficiency of venture capital. *Joseph Ghalbouni and Dominique Rousies* drew a conclusion that venture capital industry was in a deep crisis and its future was endangered.

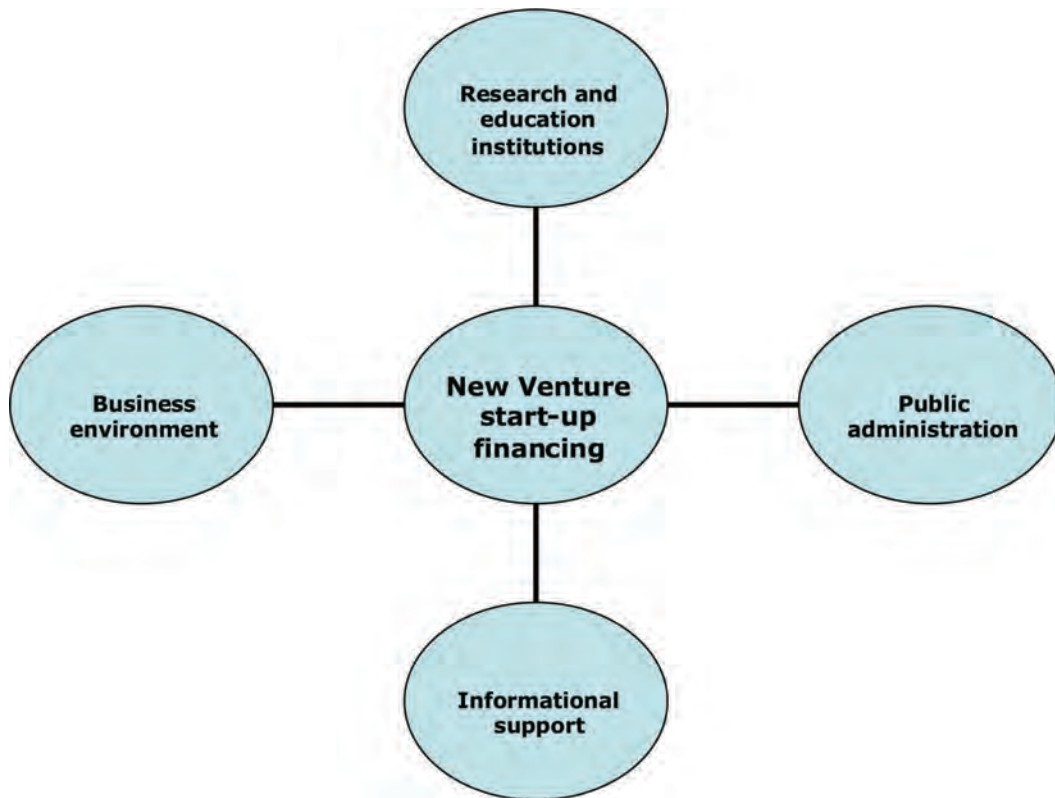
Likewise, the latest Silicon Valley Venture Capitalist Confidence Index 2011 Q4 confirms the attitude of private venture capital investors towards expected changes in the venture capital market (Figure 2). After a slight rise in 2010, it shows a declining tendency and has returned to 3.27 points (according to 5 points scale).

The Cabinet of Ministers of the Republic of Latvia has highlighted the "the economic breakthrough" in the



Source: authors' construction based on Cannice Mark V., 2011; Boslet M., 2012

Fig. 2. Quarterly trends of Silicon Valley Venture Capitalist Confidence Index



Source: authors' construction

Fig. 3. Factors influencing the development of a new venture company and venture capital financing

National Development Plan-2020 in order to provide a stable long-term development of the country (Nacionala attistibas plana., 2012). On the present conditions of Latvia, the private venture capital should be analysed in close connection with the whole innovative ecosystem, since the private venture capital is one of the main instruments of funding innovation projects.

The authors of the paper have analysed the environment and factors influencing innovations that affect private venture capital investments in this sector.

The factors influencing Latvia's venture capital industry development can be joined and structured in certain groups. Initially, forty factors were included in the analysis. Even though, some of them could be referred to

several groups, they were included purposefully only in one of the groups.

The factors were classified into four groups (Figure 3):

Group 1 – factors of public administration (all levels are covered from the EU to local government);

Group 2 – factors of business environment;

Group 3 – institutions of research and education;

Group 4 - informational support.

Public administration factors

The first one refers to the economic stimulation programme of investors. It includes “venture money” allocation for the project monitoring, auditing, the state participation with fixed interest rate and relevant tax policy, and the policy of allocating grants and subsidies that in many cases de-stimulates the attraction of private venture capital to various research and education branches.

There are neither governmental or private-state venture capital funds and financial companies, nor venture capital investment funds and investment banks of the national scale in Latvia. According to the data of Latvia Association of Venture Capital (AVC), applications to the venture capital funds are quite frequent. However, only approximately 5% of applications are granted. In 2011, venture capital funds invested in 10 projects, which is the largest investment amount in the recent years. J. Grisins, a chairman of Latvia AVC, considers that the most active are the following three venture capital funds: *Imprimatur Capital*, *Baltcap Management*, and *AB.LV Private Equity Management* as well as several associations of private investors: “*Zalas gaismas investicijas*” and several companies that do not offer investments but manage the existing investments (Grisins J., 2012). Besides, there is no state governance and coordinating institution that would concentrate on the issues of venture projects and attraction of investors.

The government does not reward and morally support the attainments of venture project achievements. The state has not set the policy, strategy, and short-term plans for the development of innovative start-up companies.

Up to now, there is no sufficient use of instruments in Latvia (in cooperation with other organisations and persons concerned) that would be oriented towards the creation of favourable environment for start-ups (technological parks for innovative projects and business incubators, advisory centres in these technological parks, loans on favourable terms for the development of high risk projects etc.) fostering the attraction of venture capital to the start-up development. Venture Capital foundation *Imprematur Capital* focuses on the new companies, thus, it offers seed capital to small businesses or sometimes only projects up to EUR 100,000; as regards *Baltcap Management*, it is looking for the companies with the planned funding of EUR 1–10 million (Grisins J., 2012). Yet, the government lacks one unified concept for the attraction of venture capital.

Business environment

The quantitative and qualitative indicators characterising private venture capital development refer to this group, e.g. the number of private venture capital (PVC) funds, the number of PVC investment companies and

business angels, which have a clear strategy on Latvia’s market; active participation of funding intermediaries and the support of the state, the availability of information on their activities and specialisation, opportunities of attracting projects in Latvia; the accessibility of start-up managers and specialists in the area of PVC investments; developed business culture and the application of examples of “best practice” in business that could serve as the basis for trust and willingness of potential investors to invest in the companies without gaining control over the company; the lack of information and practice on the opportunities to attract managers and lawyers (initially in exchange of shares), successful structuring of projects and attraction of investors; the dominating investment climate in the country, Europe and all over the world; economic openness and internationalisation of innovation that would attract start-ups from other countries; insufficient activity of associations including participants of PVC market; a small number of projects suitable for PVC investments; and insufficient knowledge of specialists in growing companies on PVC principles and funding process.

Research and education institutions

This group includes the following factors: insufficient understanding of researchers and inventors of the significance, aims, and objectives of attracting PVC funding to new startups; the research activities (the Academy of Science, its institutes, research institutes of universities etc.) are not aimed at the commercialisation of the research findings, this aspect is neglected assessing the research results; the education process of students of technical specialities does not motivate students to participate in innovative projects, and these universities have not established a close link (in the form of research centres) for the purpose of commercialising these innovative ideas; universities do not train high level professionals, managers for innovation commercialisation, and venture companies; for the period of 10 years, there are very few publications and only some defended PhD theses regarding the issues of PVC, besides, only few funding aspects are touched upon in connection with the government support; the redistribution of the budget within the existing resources, allocating finances for research activities, focusing on those areas in which results of business research might be commercialised in short term, the increase of funding for the research; the close link between research areas and higher education process, close cooperation with research institutions that could serve as premises for the commercialisation and implementation of research results as well as active establishment of research centres at universities promoting and commercialising innovative ideas, students of engineering and business specialities are involved in the development and processes of private venture capital industry.

Informational support

The most significant factors in the group of informational support contain the database of start-ups; centralised and available information on PVC funds, business angel clubs, and networks that would be potential investors in Latvia’s innovative projects; coordination and information on the promotion of contacts

Table 1

Investment elements included in Innovation Union Scoreboard 2011

ENABLERS	EU27	EE	LV	LT	FI	SE
Finance and Support						
R&D expenditure in the public sector	0.76	0.79	0.38	0.56	1.10	1.07
Venture capital	0.095	N/A	N/A	N/A	0.145	0.212
FIRM INVESTMENTS						
R&D expenditure in the business sector	1.23	0.81	0.22	0.23	2.35	2.35
Non-R&D innovation expenditure	0.71	1.77	1.20	0.76	0.57	0.74

Source: authors' construction based on Innovation Union Scoreboard 2011 (IUS 2011)

among investors and start-ups, conferences, business forums, and other innovation forums (*Kommercialization reaktors, SEED forums* etc.), the activities arranged by Latvia Innovation Development Agency *Connekt Latvija*, and conferences for professionals in PVC industry development issues. In addition to the above mentioned factors, some factors could be included from the group of business environment: award system and promotion of venture capital achievements by the government, and the availability of information of intermediaries and specialisation areas with the purpose of active attraction of PVC to projects in Latvia.

Latvia has not yet provided the information regarding venture capital investments (Table 1) for the EU innovation index Innovation Union Scoreboard 2011 (IUS, 2011). The statistic information of the section "Finance and Support" of the index includes 1.3.2 – Venture capital (early stage, expansion, and replacement) as share of GDP (Eurostat). The index lacks data from Lithuania and Estonia, either. A regular collection of the statistical data would be useful for the comparison on the international level and the assessment of the dynamics in this country. In 2011, venture capital investments in Finland were 1.5 times higher than in the EU-27 on average, while in Sweden – 2.2 times higher.

The priorities of the National Development Plan of Latvia state that the focus for the period of 2014-2020 will be laid on "the economic breakthrough" (Nacionala attistibas plana., 2012). One of the most significant preconditions for its implementation is the national strategy of innovative economics including management, stimulation, and analysis of the development processes of innovative technologies in addition to the selection of a relevant funding model.

Conclusions, proposals, recommendations

- Several approaches can be applied to the selection of venture capital development influencing factors. The present research classified 40 randomly chosen factors into 4 groups that, in the authors' opinion, significantly influence the development of Latvia's venture capital industry and innovation development.
- One of the most significant factor influencing venture capital ecosystem is the availability of high level specialists that understand venture capital long-term development trends in the world, and are able to assess the level of venture capital development

in Latvia (strengths, resources, traditions, opportunities, specifics of technology transfer, technology commercialisation), so that knowledge would serve as the basis for creating innovative development plan of Latvia, its management, and funding.

- It is necessary to start the education of high-level specialists in the area of technology transfer and venture capital funding (initially attracting those from countries with more experience). Meanwhile, cooperation should be activated and coordinated between science and education, governmental, and research and other organisations involved in the innovation promotion.
- The analysis of the groups of most significant factors shows that the majority does not demand money investments, thus, a conclusion can be made that it is possible to strengthen and activate venture capital development in Latvia with relatively small financial resources.
- Venture capital industry is insufficiently positioned in the National Development plan of Latvia, the concepts of the development of economy and other documents creating difficulties for the development of promotion, marketing, and other instruments in this sector.

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