QUANTITATIVE AND QUALITATIVE ANALYSIS OF THE INFORMAL VENTURE CAPITAL IN LATVIA

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The paper examines the issues of state and development of the informal venture capital (IVC) of Latvia. The results of a questionnaire survey of managers of business angels networks (BAN) are presented in the paper. The research analyses both quantitative and qualitative indicators of the IVC. The data on the IVC of Latvia were compared with the indicators and organisation of IVC in a number of the North European countries: size and number of formal and informal venture capital (VC) investments and advantages of investments by BAs and venture capital funds (VCF). The paper examines correlations between the IVC development level and the following indicators: the Summary Innovation Index, R&D expenditure, Doing Business, and the Global Venture Capital and Private Equity Country Attractiveness Index. The paper provides an estimate of the IVC potential of Latvia. The present research resulted in creating data on the performance of IVC investments in Latvia and it determined that Latvia has low qualitative and quantitative IVC indicators. The lack of any financial or organisational instruments of government support for the IVC industry is one of the reasons for low indicators in Latvia. The article provides recommendations for developing the IVC of Latvia.

Keywords: business angels, informal venture capital, informal investors, venture capital, venture capitalists, investment roles, market size, regional development.

JEL classification: G24, G28, G29, G31, F21

Introduction

Informal venture capital (hereinafter IVC) has become a significant source of finances for new (young), especially technological and innovative companies since the 1990s and especially in the past decade (Mason, Harrison, 2013; Schertler, Tykvova, 2009; Mason, 2008; Gullander, Napier, 2003; Freear, Sohl, Wetzel, 2002). The IVC is usually understood as the financing of business angels (hereinafter BAs). BAs are part of the “community” of informal investors and they differ from other informal investors involved in the activities of the company (Lahti, 2008; Avdeitchikova, Landstrom, Mansson, 2008). IVC constantly continues its development and improves its forms of organisation and functioning. The role of IVC as a source of finances and a factor affecting quality and entrepreneurial activity increases. Despite this, only a few studies have focused on IVC in Latvia up to now. Therefore, in a brief review, D.Zmicherevska sees the need to create a BAN in Latvia and suggests possible sources of financing for creating it; however, no quantitative and qualitative characteristics of IVC have been considered in Latvia (Zmicherevska, 2010). Some regional aspects of IVC in Latvia and Estonia are reviewed in a study by the Institute of Baltic Studies (Institute of Baltic Studies, 2011). An extensive and interesting study on VC and IVC was conducted by G.Lauza, yet, it either did not contain quantitative information about IVC in Latvia and it mainly focused on the issues of improving the regulatory framework (Lauza, 2012). All of these authors have referred to the lack of data on IVC in Latvia. The lack of information on the investments made by BAs in Latvia was also reported in the study JOSEFIN Regional Market Study Region: LATVIA, which was done upon the request of the Investment and Development Agency of Latvia (Laboratory of Analytical and Strategic Studies Ltd, 2010). It should be noted that foreign researchers have also noted the poor quality and lack of quantitative data on IVC (Avdeitchikova, 2012; Kraemer-Eis et al., 2012; European Commission, 2010; Mason and R. T. Harrison, 2013). The paper attempts to “create” data on IVC and make a quantitative and qualitative analysis of the state of IVC in Latvia since no other studies on IVC were conducted in Latvia prior 2014, and no statistical and other summarised data on IVC are available in other sources of information.

Aim, tasks, and novelty of the research

The overall aim of the paper is to determine the qualitative and quantitative characteristics of the IVC development level in Latvia.

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The tasks of the research are as follows:

1) to identify IVC associations in Latvia and to conduct a questionnaire survey of their managers;
2) to perform a quantitative and qualitative assessment of IVC and to generate data on the performance of IVC investments in Latvia;
3) to forecast the potential of IVC in Latvia in terms of number of BAs and possible amount of investment;
4) to compare the indicators and formation of IVC between Latvia and the North European countries;
5) to compare the indicators of IVC for Estonia, Finland, Latvia, and Sweden with the indicators of R&D expenditure, the Summary Innovation Index, the indicator of Doing Business, and the position in the Global Venture Capital and Private Equity Country Attractiveness Index for these countries;
6) to identify the IVC development level in Latvia;
7) to justify the need to develop the IVC industry in Latvia;
8) to provide recommendations for the development of the informal venture capital in Latvia.

**Novelty of the research**

The data on the IVC and quantitative and qualitative characteristics of IVC in Latvia have been presented and created for the first time.

1. The research justified the necessity to develop the IVC industry in Latvia.
2. The research produced a forecast of the IVC investment potential in Latvia.

**Methods of the research**

The methodology of the research involves: results of the survey of managers of BANs in Latvia; an analysis of current scientific information sources; data of the European Commission, EBAN and the EVCA; data provided by the national BANs and the Latvian Guarantee Agency; and the National Development Plan of Latvia for 2014-2020. In addition, a number of other legislative, regulatory, statistical, and information materials listed in the bibliography were used in the research. The research employed the following methods: a questionnaire survey, the logical and constructive methods, and comparative analysis.

**Structure of the research**

The research was done in various government and public organisations of Latvia (the Ministry of Economics (MoE), the Investment and Development Agency of Latvia (IDAL), the Latvian Guarantee Agency (LGA), the Latvian Chamber of Commerce and Industry (LCCI), the Latvian Private Equity and Venture Capital Association (hereinafter the LVCA), SSE Riga Mentor Club, Connect Latvia, Imprimitur Capital Fund Management, ZGI Capital, the Latvian Inventors Association, and Seed Forum Latvia). A survey was conducted on the existence of clubs or networks of BAs (further BAN) in Latvia and the availability of any generalised information about the performance of IVC and BAs. The heads of two BANs – the Latvian Private Investors Association and Amber Sea Business Angels Club – also participated in the survey. The author is familiar with the heads of the two BANs. Therefore, questionnaires were sent to and obtained from the respondents in electronic form. The questionnaire survey was conducted in January 2013. Hence, the research involves a questionnaire survey of the heads of all (100%) available BANs in Latvia and meets the requirement of a high professional level of the respondents. For the survey, the author developed a questionnaire of 14 questions that specified the activity of BAs in Latvia (the questionnaire for assessing the activity of BAs in Latvia is shown in Annex 1).

The questionnaire was developed in a way so that qualitative and quantitative characteristics of IVC in Latvia could be obtained after processing its data. In the questionnaire, the respondents were asked to make a qualitative assessment in the traditional way - in the five-points system. The respondents were given an opportunity to add some comments right in the questionnaire in order to obtain additional information explaining or complementing their replies to the questions. It should be mentioned that both BAN heads are known entrepreneurs having sufficient information about the business environment in Latvia and extensive experience in the environment of BAs. Speaking about the quality and adequacy of the survey’s questions, it should be noted that the views of two experts – early stage investors in venture capital companies – as well as the fact that the author of this paper is enough familiarised with the research object not only in theory but also practically, since he is an entrepreneur and private investor, a member of the Latvian Private Investors Association, a board member of the LVCA, and the deputy head of the LCCI’s Council for Knowledge Economy were taken into account when developing the survey questions. Therefore, one can conclude that the information obtained has a sufficiently high level of reliability.

**Informal venture capital and its impact on business and the economy**

In their work, Mason and Harrison define BAs as follows: “A high net worth individual, acting alone or in a formal or informal syndicate who invests his or her own money directly in an unquoted business in which there is no family connection and who, after making the investment, generally takes an active involvement in the business, for example, as an advisor or member of the board of directors” (Mason and Harrison, 2008). A broader definition of BA is given by the European Business Angels Association (EBAN): “A business angel is an individual investor (qualified as defined by some national regulations) that invests directly (or through their personal holding) its own money predominantly in seed or start-up companies with no family relationships. Business angels make their own (final) investment decisions and are financially independent, i.e. a possible total loss of their business angel investments will not significantly change the economic situation of their assets. BAs invest with a medium to long term set time-frame and are ready to provide, on top of their
individual investment, follow-up strategic support to entrepreneurs from investment to exit. They respect a code of ethics including rules for confidentiality and fairness of treatment (vis-à-vis entrepreneurs and other BAs), and compliance to anti-laundering” (EBAN, 2013). Financing BAs, as opposed to financing friends and families, can be attributed to the “smart money” along with financing venture capitalists (hereinafter VCs). According to S.Mason and R.T.Harrison, BAs are the source of “smart money” supporting new businesses in their early stages and are widely recognised as an important part of the entrepreneurial ecosystem (Mason and Harrison, 2013). Venture capitalists play an important role in the development of entrepreneurship not only because financial resources are important for new businesses but also because investors help form the early stages of the strategy and management of a company (Wiltbank et al., 2009; Gullander, Napier, 2003). It distinguishes BAs from VCs, for whom in-depth participation in the activities of their funded companies is not typical. In their research, W.R.Kerr, J.Lerner, and A.Schoar prove that higher growth, ability to attract investment and survival, and entrepreneurial success is specific to those companies in which BAs have made an investment (Kerr, Lerner, Schoar, 2010). BAs play an increasingly important role in the economies of countries around the world (Mason, Botelho, Harrison, 2013; OECD Publishing, 2011). According to D.Ibrahim, the IVC market is not only growing but it is becoming more organised by creating groups and networks of BAs (Ibrahim, 2010). BAs can play an important connecting role with other investors such as VCs (OECD Publishing, 2011). According to H.Etzkowitz, BAs and syndicates of BAs cover the lack of funding at the early stages, thus, opening opportunities for financing VCFs in the next stages of investment (Etzkowitz, 2008:133-134). Investments made by BAs are the previous step of the “escalator” before VCFs (Mason, Botelho, Harrison, 2013). According A.W.Sahlman and E.Richardson, BAs and VCFs complement each other (Sahlman, Richardson, 2013). According to Staffan Gullander and Glenda Napier, IVC plays an important role not only in terms of providing funds to start-up companies but also because of the great influence on the development of the economy (Gullander, Napier, 2003). According to S.Mason and R.T.Harrison, BAs are an increasingly important factor in the success of the entrepreneurial economy (Mason and Harrison, 2013). The author believes that, compared with VC funds, the position of BAs regarding their “exit” from the company and other issues can be different or a lot more flexible at least for the reason that they invest their own and not borrowed money. Accordingly, BAs are not obliged to fulfill the terms of an investment memorandum, the terms of the agreement with investors, and the standards established by the regulators which VCFs are associated with. In his research, R.Fairchild shows that in some cases the cooperation of entrepreneurs with BAs can yield better results than with venture capitalists; although, VCs are able to create a higher value of the company than BAs (Fairchild, 2011). R.Fairchild believes the entrepreneur expects to establish better contacts and a trusting relationship with BAs rather than with VCs; besides, the entrepreneur’s relationship with BAs have more confidence and reduces the risk of avoiding the obligations and the threat of expropriation (Fairchild, 2011). According to Nosfingser and Wang, entrepreneurs’ choice of investors between VCs and BAs also depends on the type of product and the entrepreneurial experience of project initiators. Starting up a company and developing a new product are more associated with IVC (Nosfingser, Wang, 2011). A.W.Sahlman and E.Richardson state that there were 1,500 companies funded by VCFs per 10,000 IVC-funded companies in the tech business in the USA (Sahlman, Richardson, 2010). According to the author’s experience, the amount of initial capital the company needs may be smaller than the funds usually given, especially if the fund is not specialising in seed financing. Other authors have the same opinion (Iruarrizaga, Santos, 2013; Avdeitchikova, 2008). S.Avdeitchikova also believes that the BAs often make investments that are refused by VCFs because of high uncertainty (Avdeitchikova, 2008). The average size of investment by syndicates of BAs in Europe amounts to EUR 200,000, while the amount of investment by an individual BA ranges from EUR 15,000 to one million EUR (European Commission, 2010). The average size of investment by a BA is EUR 50,000 (Evaluation of the EU Member States’ Business Angel Markets and Policies Final Report, 2012). However, investments by BAs are not only the previous step of the “escalator”, as they can compete and compete with seed and start-up VCFs for projects. A study by T.Luukkonen shows that in Finland (unlike in Latvia), public capital is more focused on financing seed projects (companies), while private VCFs make more investment at the later stages of the development of companies (Luukkonen, 2008). According to C.Mason and R.Brown, although companies with a high growth potential are of great importance for the economy, it is not necessary to identify the support of these companies with government support for the commercialisation of technologies (Mason, Brown, 2013). This aspect should be considered in making the investment policy of VCFs, if they are financed by public capital, as it was properly done in the case of the Latvian VCF Imprimatur Capital. IVC would be able to partially compensate for the lack of seed funds if it were sufficiently developed in Latvia. According to some researchers, including Brzozowska, financing BAs can largely compensate for the territorial or regional shortage of venture capital (Brzozowska, 2008). A study by Harrison, Mason, and Robson shows that BAs can invest depending on several factors, make both short- and long-term investments, and make investments at the place of their residence as well as outside it (Harrison, Mason, Robson, 2010). The situation with the lack of venture capital instruments can be characteristic of a number of countries with a transitional and post-transitional economy or an economy
J. Vadinjala notes the key role of the expansion of business formation, including IVC, in the transformation of transitional economies (Vadinjala et al., 2011). At the same time, it is also clear that the countries transforming their economies have no sufficient saturation and “penetration” of the various forms of VC. So, K. Shperlik notes that Russian IVC has not yet received sufficient development (Shperlik, 2013). But even in the countries undergoing economic transformation and not having a developed VC market, there is a change in the preferences of venture investors. According to PWC, the year 2012 put the end to the wave of “emotional” start-ups and unreasonably high expectations of investment in Russia, thus, shifting the focus of investors from the early stages of development to a later one (PWC, 2013). The view of PWC is confirmed by I. Agamirzyan, a chairman of the Russian State Venture Capital Fund (RVC); according to him, there is a shortage of funds to finance the VC industry at the seed stage as well as for technological projects. The RVC plans to focus on these projects (Agamirzyan, 2013). In Lithuania, a very small part of investors is interested in financing young innovative enterprises (Stankeviciene, Lakesviciene, 2012). In the USA, the size of the IVC market is not smaller than that of the institutional VC market (Sohl, 2003). In the UK, informal VC investors funded eight times more projects and invested nearly as much capital as institutional venture capital investors (Mason and Harrison, 2000). BAs invested 16 times more often in seed companies than VCs (Sohl, 2007). In 2008, BAs invested USD 19.2 billion in the USA, of which 45% was invested in enterprises at the early stages of their development (Sohl, 2009). According to PWC, in the USA, IVC investors financed early stage ventures by 27% more than VCs (PWC Money Tree, 2009). In Ireland, BAs invested 41% more funds than VCFs in 2011 (Diaz-Moriana, O’Gorman, 2013). According to A.W. Sahlman and E. Richardson, the number of BAs continues to increase (Sahlman, Richardson, 2010). In Europe, 86% of total investment by BAs is made in enterprises at the seed and start-up stages (European Investment Fund Research & Market Analysis, 2012). A comparison of investment by investment stage and number of companies financed by IVC investors and VCFs in Europe for the year 2012 is presented in Table 1.

Table 1. Comparison of the amount of investment by investment stage and number of companies financed by IVC investors and VCFs in Europe in 2012

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Seed</th>
<th>Start-up</th>
<th>Later-stage venture</th>
<th>All Venture Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC (VCs), bln EUR</td>
<td>0.13 (0.4%)</td>
<td>1.89 (5.1%)</td>
<td>1.3 (3.6%)</td>
<td>3.34 (9.1%)</td>
</tr>
<tr>
<td>Number of companies</td>
<td>361 (6.8%)</td>
<td>1.882 (35.7%)</td>
<td>892 (16.9%)</td>
<td>3.068</td>
</tr>
<tr>
<td>IVC (BAs), bln EUR</td>
<td>1.683 33%</td>
<td>2.703 53%</td>
<td>0.714 14%</td>
<td>5.086</td>
</tr>
<tr>
<td>Number of companies</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
<td>2913</td>
</tr>
</tbody>
</table>

Source: author’s calculations based on EVCA, Yearbook 2013; EBAN, European Angel Market 2012; European Investment Fund Research & Market Analysis, 2012

That only recently exited this stage of economic development.

The same view is shared by Elitzura and Gaviousb who, for a number of reasons, consider seed financing from BAs being preferable for companies (Elitzura, Gaviousb, 2003). According to Madill and co-authors, investment from BAs is often a prerequisite for investment from VCs; thereby, increasing the number of companies that receive funds from BAs is of interest to all potential investors (Madill, Haines, Riding, 2005). According to Kraemer-Eis, BAs offer a number of advantages compared with VCFs, as lower transaction costs allow them to invest at a lower level and BAs are geographically more accessible and more often invest in local markets (Kraemer-Eis et al., 2012). As shown in Table 1, the amount of private IVC investment, in developed countries, is not just a complement to but in the cases of seed and start-up investment, it exceeds the amount of formal venture capital investments (Table 1).

Current state of seed financing by the VCFs in Latvia

Since investments by BAs are the previous step of the “escalator” before VCFs (Mason, Botelho, Harrison, 2013), let us see what the situation in Latvia is with the VCFs funding the very first stage of the early stages of financing, i.e. the VC seed stage. At the beginning of 2014, Latvia had only one fund – Imprimature Capital – specialising in the seed stages of new projects (Prohorovs, 2013a). The management company Imprimature Capital also manages the only fund in Latvia that specialises in projects at the start-up stage, technological projects, and projects that are based on intellectual property (Aulis, 2013; Imprimatur Capital Fund Management, 2013; and LGA, 2013). In the summer of 2013, a tender for the management of public capital of three more funds, EUR 10.5 million each, ended which would finance about 50 enterprises, i.e. EUR 630 thousand per project on average (LVCA, 2013). The existing practice shows that the average amount of seed investment in Latvia is much less than
EUR 630 thousand. It should be noted that the main strategy of only one of these three funds – ZGI Capital – involves seed financing (ZGI Capital, 2013). Another fund, which is in the investment stage – BaltCap Latvia VCF –, specialises in the last of the early VC stages, i.e. early growth as well as in financing the next stages of development of enterprises (LGA, 2013). Therefore, in Latvia, only one of the six VCFs being in the investment stage (providing finances) - Imprimatur Capital - specialises in financing technological business projects at the early stage. As stated in its strategy, another fund – ZGI Capital – deals with seed financing and start-up projects (ZGI Capital, 2013). All six of the above-mentioned funds are funded from public sources at not less than two-thirds of the total. It should be noted that at the beginning of 2014, not a single VCF operated without public capital in Latvia. Obviously, the two VCFs (Imprimatur Capital and ZGI Capital) cannot objectively have extensive expertise and industry specialisation, so they cannot cover all venture projects at the early stages of their development in Latvia. Some of the funds simply might not like a prospective project or its team. Besides, in 2014, the investment cycle of the seed fund Imprimature Capital ends. Foreign venture capital funds left the Latvian market during the crisis (Prohorovs, 2013a). Therefore, it is very likely that there will be a failure in the logical financing chain from BAs to seed funds from 2015 onwards. In any case, an analysis of the current situation with the specialised funds for financing the early stages of projects in Latvia shows that the importance of and the need for accelerated development of IVC and modern forms of functioning of BAs in the form of formalised groups and syndicates of BAs increase.

### Table 2. Qualitative assessment of the performance of BAs in Latvia

<table>
<thead>
<tr>
<th>Questions</th>
<th>Situation assessment in points from 1 to 5 (first respondent)</th>
<th>Situation assessment in points from 1 to 5 (second respondent)</th>
<th>Mean value of the two respondents</th>
<th>Position of the factor according to the mean value of the two respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do you assess the situation with the number of BAs organisations?</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6-8</td>
</tr>
<tr>
<td>2. What is the number of BAs networks in Latvia?</td>
<td>0</td>
<td>1</td>
<td>0.5</td>
<td>9-10</td>
</tr>
<tr>
<td>3. How do you assess the situation with the number of BAs?</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
<td>3-5</td>
</tr>
<tr>
<td>4. How do you assess the situation with the number of active BAs (not less than one project a year)?</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
<td>3-5</td>
</tr>
<tr>
<td>5. How many serial entrepreneurs do you know in Latvia (such as Normunds Bergs)?</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
<td>3-5</td>
</tr>
<tr>
<td>6. How many direct investment companies such as Proks Capital do you know?</td>
<td>4</td>
<td>0</td>
<td>2.0</td>
<td>6-8</td>
</tr>
<tr>
<td>7. Are business angels in Latvia often offered to finance new technologies and innovations?</td>
<td>4</td>
<td>2</td>
<td>3.0</td>
<td>2</td>
</tr>
<tr>
<td>8. Are business angels in Latvia often offered to finance new business models?</td>
<td>2</td>
<td>2</td>
<td>2.0</td>
<td>6-8</td>
</tr>
<tr>
<td>9. Are project initiators ready to engage business angels in the management of the enterprise?</td>
<td>4</td>
<td>5</td>
<td>4.5</td>
<td>1</td>
</tr>
<tr>
<td>10. Have investments been made by syndicates of business angels? If yes, how many such deals do you know?</td>
<td>0</td>
<td>1</td>
<td>0.5</td>
<td>9-10</td>
</tr>
</tbody>
</table>

Source: author’s construction based on the survey of the heads of BAs clubs in Latvia
The indispensable link of the “escalator” may almost disappear and a gap in the structure of supply in the market of alternative financial instruments may emerge if the investment policy does not change in Latvia (regarding allocating public capital primarily to finance seed VCFs).

**Qualitative analysis. Research results and discussion**

The author’s information that Latvia has two BANs – the Amber Sea Business Angels Club and the Latvian Private Investors Association – was confirmed in the result of surveying organisations and individuals in Latvia. The same information about the number of BANs is provided by the information portal DELFI (Rus.DELFI.lv, 2013). Based on the results of the survey of the heads of BANs, first, it seems appropriate to consider the qualitative assessment of IVC in Latvia. The qualitative assessment of IVC in Latvia is presented in Table 2. The second and third columns of the table present the respondents’ replies (in a five-point system), while the fourth column gives the mean value of the assessments by the two respondents. In the fifth column, all qualitative indicators are ranked by position according to the average values of the respondents’ replies.

Such a fact as large range of opinions of the respondents immediately draws the attention. For clarity, a range of opinions of the respondents is shown in Figure 1. The respondents’ opinions coincide only in one question, and the opinions differ not much (only by one point) in three other questions. The author believes that this difference in the assessment of the quality of development of informal venture capital can be explained by the fact that the first respondent manages the Latvian Private Investors Association which primarily focuses on projects in Latvia, so the situation seems to him more than satisfactory. The total score of the first respondent’s assessments was 29 points (the average score was 2.9). The second respondent assessed the ten factors, and the total score was 15 points (the average score was 1.5), i.e. two times lower.

The second respondent manages the Amber Sea Business Angels Club. This club mainly focused on international projects with a high level of internationalisation and on cooperation projects primarily with Commercialisation Reactor and BAs from other countries as well as with venture capital funds as potential investors and co-investors in projects of this BAs club (Amber Sea Business..., n.d.). The Amber Sea Business Angels Club informs about its strategy. It makes syndicated investments in the countries where it has members (Latvia, Great Britain, and Russia). Therefore, internationalisation is inherent to this club already at the organisational stage, which is characteristic of VC. On its webpage, the club also provides information about its investment projects and its cooperation with VCFs. In most cases, the Amber Sea Business Angels Club attracts projects by using Commercialisation Reactor which is supported by the IDAL (Investment and Development Source: author’s construction based on the survey of the heads of BAs clubs in Latvia

**Fig.1.** Range of the respondents’ opinions on the performance of BAs in Latvia
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The team of Commercialisation Reactor managed to attract a small private investment that would go to each proto-company to check the viability of the business (Kolyako, 2013). Commercialisation Reactor incubates projects developed mainly in the post-Soviet territory, so the club is more focused on these projects (Commercialisation Reactor, n.d.). Such an approach is not unique. For example, at the annual forum of German BAs held by the BAN of Germany (BAND brings together more than 40 regional BANs of Germany), a significant portion of the projects presented is based on technology and innovation know-how of the Eastern Europe and the CIS (Annual Forum of Business …, 2006). Therefore, one can assume that the second respondent assesses the level of development of informal venture capital more critically based on his experience of international cooperation among BAs, international approaches, and practices. The second respondent takes a more active position regarding the integration of BAs among venture capitalists. This is confirmed by the fact that in October 2013 the Amber Sea Business Angels Club became an associate member of the LVCA, which might indicate the willingness of BANs to integrate.

Among the items of the questionnaire, which received top assessments, the first place was taken by the factor encouraging entrepreneurs to engage BAs in business management. In the beginning of this paper, it has already been shown that BAs are ready to actively participate in start-up companies, and that is one of the advantages of financing these companies by BAs compared with VCs. Among the qualitative factors, the second place was taken by the factor “Are business angels in Latvia often offered to finance new technologies and innovations?”. This fact also confirms that the informal venture capital represented by BAs in Latvia as well as worldwide is demanded by innovative and technologically advanced companies. So, both of these factors, highlighted by the Latvian respondents, are fully in line with international trends and suggest that efforts should be made to promote the development of informal venture capital. The low level of interaction of BAs should be noted (number of BANs, syndicates of BAs) among the qualitative characteristics with the lowest score. It limits the exchange of information and best practices, cooperation with potential partners, and, in its turn, the supply of investment for start-up companies. It seems that Latvian BAs and BANs and other interested organisations still underestimate the benefits of cooperation; or maybe they do not have enough organisational and financial resources to create a national BAN and participate in EBAN. In 1999, the European Network of BAs – EBAN – was founded in Europe (Centre for Strategy …, 2012). EBAN is the pan-European representative for the early stage investor community, gathering over 100 member organisations from 28 countries. Its members are: federations of BAs, BANs, early stage venture capital funds, BAs, and other market stakeholders (EBAN, 2013).

The small number of private equity firms is the fact that confirms the low IVC development level in Latvia. Though, in some cases, BAs are actually behind these companies which manage their finances and organise their activities as legal entities. They may have various reasons for structuring their activities in such a way, for example, legal reasons, or due to no interest in personal publicity. Activities of BAs and the entire venture capital industry may be restrained by a small number of serial entrepreneurs in Latvia – the respondents have information on only eleven serial entrepreneurs in Latvia. In some European countries, the process of formation and development of the informal venture capital sector is supported by their government. According to the first respondent, the head of the association of private investors in Latvia, an incentive programme for IVC could contribute to the activation of BAs. Yet, the introduction of a support programme, funded from the EU financial sources aiming to stimulate the establishment of a business angels movement was rejected in 2009 (this information was obtained from the survey). Let us consider some aspects of the formation of IVC in Latvia compared with six North European countries having a relatively small population. The comparison of data on the parent organisation of BAs, representation in EBAN, government support, and existing regional BANs are shown in Table 3.

It should be noted that in Latvia, unlike the vast majority of European countries, there is no national association of BAs (BAN). The Latvian organisations, unlike the Lithuanian and Estonian and national BANs of most other European countries, are not the members of EBAN (EBAN Members, 2013). Each of the countries under consideration have their own specifics and features that cannot be shown in summary form in Table 3 and compared; thus, only the most interesting features and facts about the IVC development in these countries are presented in the paper.

The Estonian Business Angels Network (EBAN) and the Estonian Venture Capital Association. EstBAN is a member of Seed Funds and other Early Stage Market Players (Estonian Business Angels Network, 2013). EstBAN has close cooperation with the Finnish Business Angels Network (Estonian Business Angels Network, 2013). The objective of the association is to increase the amount of seed investment in Estonia and use it for the development of a knowledge-based economy and exports. In 2012, the amount of early stage investment by BAs in Estonia totalled approximately EUR 1 million. By 2015, EstBAN plans to increase it to EUR 5 million. The number of EstBAN enterprises funded by BAs can grow up to 25 per year (rus. DELFI.ee, 2012).

Lithuanian Business Angels Fund 1 (a risk capital fund for investments into innovative and export oriented companies in Lithuania). “The Fund will invest only together and on equal basis with a Business Angel. The European Investment Fund (www.eif.org) is the founder of the Fund. Its size is EUR 8.42 million. The Fund Manager – a consortium of MES INVEST Ltd and Strata Ltd. The investment principle – the Fund invests in equal proportion together with a Business Angel, i.e. the Fund invests 50% (including 5% invested.
by the Fund Manager) and the Business Angel invests 50% of total investment amount. The investment amount of the Business Angel is from EUR 50 000 up to EUR 400 000 per company. The Business Angel also dedicates to work together with the management of the company one day per week” (Business Angels Fund I, 2013; EBAN, 2013). Despite the lack of publicly available materials on the association, networks, and BAs clubs in Lithuania, according to the data of the author, there are at least two groups of BAs totalling 31 in number in Lithuania. Business Angels Fund I, to some extent, performs a consolidating function for BAs. Investments made by business angels operating through BANs amount to EUR 1.5 million (EBAN, 2012). Business Angels Fund I is an associate member of EBAN (EBAN Members, 2013).

In Sweden: “During 2003-2004, the Swedish Development Agency (NUTEK) ran a project with the aim of increasing the number of BANs in Sweden” (EBAN -- Directory of Network, 2008). NUTEK has stimulated the creation of some 20 regional networks through grants of around SEK 150 thousand each. “From 2005 the Swedish Private Equity & Venture Capital Association (SVCA), supported by NUTEK, acts as a National Association for business angels and business angel networks in Sweden. SVCA is responsible for supporting the regional BANs as well as for enhancing the level of knowledge on business angel activities in general. Working for a more investor friendly environment, developing tools to improve and facilitate the BAs’ investment process as well as providing forums for networking and educational activities are also part of SVCA’s work. The fact that SVCA’s member base incorporates all types of private equity investors gives the association a unique possibility to work for improved interaction between investor groups and to bridge the gap between business angels and venture capital investors” (EBAN -- Directory of Network, 2008). NUTEK in cooperation with FSF and the University of Lund supports a long-term research of the Swedish business angel market with the aim of mapping the actors in this market and to get a more accurate picture of the business angel activity in Sweden (EBAN -- Directory of Network, 2008). The fund STING Capital has a close working relationship with a network of private investors, STING Business Angels, and with the venture capital community in Sweden. Of the members of STING Business Angels, 21 have invested in STING Capital and, thereby, together constitute one of the major investor groups in the fund, and these private investors are also invited to co-invest with STING Capital in investments exceeding a certain size. Size (in EUR million) – 8.9, Life of fund (max) 10 years, type of fund – public-private partnership, investment strategy (sector) – early stage technology cases, ICT, medtech, cleantech (EBAN, 2013). The great majority (91%) of investments are in syndicates” (Centre for Strategy…., 2012).

In Denmark: “By the end of 2003, the national organisation aims at becoming a non-profit business angel association serving the structure of regional and sector-based networks with coordination, back office services, conferences, and matchmaking infrastructure. DBAN became a part of the DVCA in 2004, the Danish Venture Capital Association” (EBAN, 2008). DVCA has more than 200 members representing the whole investment chain from business angels through venture capital and private equity to institutional investors and associate members (DVCA, 2013).

In Norway: “Until late October 2003, VentureLab, www.myventurelab.com, together with the Seed Forum Norway and Seed Forum Alumni, have organised a new entity called NorBAN. The purpose of NorBAN us to be an interest organisation for private investors, to organise and to take the initiative to establish local and regional business angel networks as local organisations in NorBAN, to develop and
carry out systems for matchmaking between entrepreneurs and private investors and to work for the reduction of risk among private investors. NorBAN organises “Road shows” to start up regional BAN structures in at least 7-10 regions. The shows are organised in cooperation with Seed Forum Norway – the Norwegian national tool to finance Norwegian early stage companies with (foreign) private equity (www.seedforumnorway.com) – and possibly in cooperation with Innovation Norway (national coordinator) and SIVA as the national coordinator for the local innovation centres. As an interest organisation for private investors, NorBAN seeks to promote tax incentives for business angels, establish new BAN structures and a national seed capital scheme” (EBAN, 2007).

BAs activities in Finland emerged as organised structures in 1996 initiated by a matching service of SITRA (PreSeed Finance Finnish National Fund for Research and Development), which is an independent public foundation under the supervision of the Finnish Parliament. Seed Fund Vera Ltd makes capital investments in innovative enterprises at their early stages. The majority of the fund investments are syndications with business angels. Finnvista also manages the business angel network Investor Extra, with more than 140 angels. Year of creation-2005. Size (in EUR million) – 96. Type of fund (%) – Public-private partnership (5% private; 95% public). Investment strategy (sector) – Technology companies. Average amount of the deal (in EUR million) 0.364” (EBAN, 2013).

As it can be seen from a brief review of the formation of IVC in the above-mentioned countries, government organisations support IVC in various forms in all the countries, except Latvia and possibly Estonia.

BAs activities in Europe

Owing to the private initiative and, probably, the government support, an upward trend for BAs networks may be observed in Europe. From 99 BANs in 1999, their number increased to 460 in 2012 (EBAN, 2012). Even in the crisis and post-crisis periods (2008-2010), the number of networks grew by not less than 12% a year (EBAN, 2013; the author’s calculations). The promising development trend of IVC is confirmed by the European data - the number of BANs in Europe increased contrary to the consolidation trend concerning the European venture capital market (European Commission, 2010). The study by Sofia Avdeitchikova and Lars Niklasson, on behalf of the Swedish Agency for Economic and Regional Growth, on the state of the informal venture capital sector in five countries – the UK, France, Finland, Denmark, and Belgium – concluded that several European countries held a variety of activities to encourage BAs to make investments, including support for BANs, establishment of joint investment funds, and other support measures for encouraging BAs to invest in small companies (Avdeitchikova and Niklasson, 2009). Researchers of BAs in Slovenia and Poland speak about the need for government support for IVC in the new EU Member States (Helinska-Hughes, Vadnjal, Hughes, 2009). One can state the fact that presently the private initiative is not strong enough in Latvia, and IVC cannot form at the national level. After having considered the information on IVC, submitted by the above-mentioned countries, one can conclude that it would be entirely appropriate that the government of Latvia assists in forming IVC at the national level and helps with participation in EBAN. It has to be especially considered that there is only one small seed fund in Latvia (and that it is fully funded by public capital). The information indicates that the European early stage investing sector is growing and continues to fill strategically the gap created by venture capital funds withdrawing from early stage investments (EBAN, 2010). Besides, both the environment and elements of infrastructure exist in Latvia to revitalise BAs.

According to Gullander and Napier, BANs and public development agencies are involved at the initial stages of building a national IVC system, while research institutes, incubators, network organisations, banks, lawyers, and other interested organisations engage at the stage of development universities. A further expansion takes place due to the involvement of independent investors, VCs, co-investment funds, seed capital funds, semi public venture organisations (Gullander, Napier, 2003). The OECD report Financing High-Growth Firms says that BAs and entrepreneurs are working in a large ecosystem consisting of various players such as accelerators, incubators, universities, centres of entrepreneurship, venture capital companies and funds, and service providers such as lawyers, accountants, investment bankers, and others (OECD, 2011). In an ecosystem of IVC, a number of organisations, including universities, may have not only an interest in obtaining finances from BAs but also an additional interest in taking over experiences of the most successful BAs by students and teachers for educational purposes. This approach is used in some universities around the world, particularly in Baylor University (Baylor Angel Network, 2013; Finding Angel Halos …, 2011).

According to Avdeitchikova and Niklasson, the development trends in informal capital are as follows:
- more interest in cross-border investments;
- greater professionalisation among business angels;
- greater interest in co-investments between business angels and “early stage VC funds”;
- more interest in support for the “ecosystem” (e.g. interaction between incubators/entrepreneurs/private and government investors (Avdeitchikova and Niklasson, 2009).

The author believes, in relation to the situation with BAs in Latvia, the first three trends noted by Avdeitchikova and Niklasson are already being implemented in Latvia on the basis of the Amber Sea Business Angels Club and Commercialisation Reactor, and the fourth trend is implemented partially. An example of the fourth trend – IVC ecosystem development – might be the Lithuanian Business Angels Fund I. The author believes that an interesting alternative for BAs, BAs clubs,
and networks in small countries is not the creation of a national association (a federation, a network) of BAs, which requires additional organisational and financial resources but their entry into the national associations of VC&PE. Such an organisational solution is implemented in Sweden where a centralised organisational structure for BAs is SVCA (Swedish Private Equity & Venture Capital Association, 2013), according to the Swedish Venture Capital Association that has been responsible for the promotion and coordination of BANs in Sweden since 2005 (Centre for Strategy…, 2012). SVCA is a member of EBAN (EBAN members, 2013). A similar solution is implemented in Denmark (OECD Publishing, 2011). In the case of Latvia, the decision to represent the interests of IVC through the LVCA would seem quite logical for several reasons. First, one of the two BAs clubs, which is most active particularly in venture projects (Amber Sea Business Angels Club), became a member of the LVCA in the autumn of 2013. Second, the LVCA significantly enhanced and strengthened its activities in 2012 and 2013 and actively cooperated with the LGA, the MoE, and the LCCI. The revitalisation of the LVCA ensured an increase in its membership in 2012 and 2013 from 28 to 37. Third, and it is apparently most important, both BAs and VCs tackle the same problems – how to finance rapidly growing companies. Based on this, both formal VC and IVC, in most cases, have the same goals and objectives – strengthening of infrastructure and creation of an appropriate VC ecosystem. Besides, the LVCA is an associate member of the EVCA from 2003 (LVCA, 2013). Therefore, for such a small country as Latvia and given the insufficient activity of BAs in Latvia, the option to create an institutional structure of IVC like it is in Sweden and Denmark seems quite rational and allows speeding up the development process of IVC and exploiting public resources more efficiently.

Quantitative analysis. Introduction

Data on the informal VC sector are not included in national and other statistical reports and databases. Accordingly, the data can originate from sources such as EBAN, national and other BAs networks as well materials of IVC researchers, including questionnaires, surveys, and interviews with reliable respondents. While working with data on IVC, it is necessary to consider that there are BANs that are part of the EBAN network and provide certain data on a voluntary basis. Yet, there are BANs being part of the EBAN network and providing no data and BANs being not in the EBAN network and, accordingly, not providing data (European Commission, 2010). One can assume that anyway some data such as the number of BAs and the amount of annual investment by BAs, made by the respondents in the questionnaire, are largely underestimated, as not all BAs enter the BAs clubs, and they (BAs) often do not reveal their activities. It has been noted by many researchers of informal venture capital, for example, Mason and Harrison (Mason and Harrison, 2000). The problem of lack and inaccuracy of data is typical for IVC in other countries, too, which is formally reported both in EBAN documents as well as in other studies. For example, Kraemer-Eis and others noted that the greatest difficulty in obtaining information was to determine the size of the BAs community, and data on investment were rarely disclosed (Kraemer-Eis et al., 2012). Relatively accurate data can be obtained only from the information provided by BANs. Therefore, the present research on IVC in Latvia is based upon data on the visible BAs market. This note is essential and provides greater accuracy in the research compared with the non-visible angels market. In some cases, especially in the case of the invisible market, data on IVC are estimated. Based on the above-mentioned, one can conclude that some data on IVC can have certain, sometimes substantial discrepancies. It is because, first, the data series are determined by different testing methods, including indirect methods. Second, much depends on the definition of the term BAs by different researchers and respondents. If speaking about the data presented in some of the sources of national and other BAs networks, in most cases they are not sufficiently completed and structured, even the most prestigious publications often do not adhere to the accepted classification of VC, while in some cases data are simply not available. In the present research, the author used, as much as possible, data from the same source or the same type of data on IVC from various sources. Maximum values and estimates of performance of BAs in different countries were not used for calculations and comparisons. Just for this reason (for obtaining the most reliable data), the author has not extended the range of respondents in this paper. This approach allowed getting more reliable data. In order to determine the IVC development level in Latvia in terms of quantitative indicators, based on the processed data specified in the questionnaire by the respondents, it would be logical to compare these data with the same indicators of other countries. For comparison, the neighbouring countries of Latvia – Estonia, Finland, and Sweden – were selected because of the adequacy of data to compare and the geographical proximity. Obviously, Sweden and Finland are the countries with higher levels of economic development than Latvia. Yet, for Latvia, these countries are among the leading partners in foreign trade and economic cooperation and, to some extent, an example, which could be followed, including in terms of IVC. The choice of Estonia, on which Latvia borders, can be explained by the facts that both countries simultaneously began the transition to a developed economy, Estonia, like Latvia, is a small country of Europe as well as data on IVC in Estonia are available. To determine the IVC development level in Latvia, the following parameters were compared in the present research: number of visible BAs, annual amount of investment by visible BAs, average amount of investment per visible BA a year, ratio of investment by visible BAs to GDP, and ratio of the number of visible BAs to the country’s population. The author also made a comparison of the indicators of seed and start-up investments by IVC and VC funds in these countries as well as compared
the positions of Latvia, Estonia, Finland, and Sweden in the index rankings indicating their innovative development and investment in R&D. This was done to identify the effects of and correlations between IVC indicators and these indicators, as IVC investors mainly finance young innovative companies with high growth potential (Mason, 2008; Gullander, Napier, 2003). In addition, a comparison with the index Doing Business was made to determine how much the business environment affects the activity of BAs.

Quantitative analysis. Research results and discussion

The results of processing the quantitative questionnaire data provided by the respondents are shown in Table 4.

It should be noted that after the questioning, respondents were refined business angels names mentioned them in the questionnaire to avoid duplication of information.

The research can state that, there are two BAs club and no other networks and national or regional associations of BAs in Latvia. In total, the respondents were able to identify 22 BAs in Latvia. Of them, 12 were active BAs investing once a year or more often.

The amount of investment by BAs in Latvia, according to the respondents, amounted to EUR 400,000 in the period of 2010-2012, i.e. EUR 133,000 a year on average or EUR 6000 per BA on average. This indicator is much lower than the average size of investment by a BA (EUR 19,000) in European countries; it possibly suggests either most BAs in Latvia are passive or the number of BAs (as defined by EBAN) is actually smaller. Based on the information on the webpage of both clubs and the respondents’ replies, one can conclude that nine BAs are Latvian members of these clubs (Amber Sea Business …, n.d.; Latvian Private Investors …, n.d.). According to the data of the author, the Amber Sea Business Angels Club has no two BAs (Table 4, Row 4) but not less than five. Such a reply was given by the respondent, as the following question was raised in the questionnaire: “How many BAs do you know in Latvia?”.

Table 4. Some quantitative indicators of the performance of business angels in Latvia

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>Quantitative assessment by the first respondent</th>
<th>Quantitative assessment by the second respondent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>How many business angels organisations do you know in Latvia?</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>How many of them really work?</td>
<td>2</td>
<td>I do not know</td>
<td>2 (the author identified a BAN)</td>
</tr>
<tr>
<td>3.</td>
<td>How many networks uniting BAs organisations do you know in Latvia?</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4.</td>
<td>How many business angels in Latvia do you know personally?</td>
<td>20</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>5.</td>
<td>How many of them fund at least one project a year?</td>
<td>10</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>6.</td>
<td>How many of them fund a few projects a year?</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2011 – EUR 100 000</td>
<td></td>
<td>2011 - EUR 100000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2010 – EUR 100 000</td>
<td></td>
<td>2010 – EUR 100000</td>
</tr>
<tr>
<td>8.</td>
<td>How many serial entrepreneurs such as Normunds Bergs do you know in Latvia?</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>9.</td>
<td>Amount of investment most often is less than EUR 50 thousand</td>
<td>EUR 50 thousand</td>
<td>EUR 200 thousand</td>
<td>EUR 125000 (average, according to the two respondents)</td>
</tr>
<tr>
<td>10.</td>
<td>Have investments been made by syndicates of business angels? If yes, how many such deals do you know?</td>
<td>no</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: author’s construction
Table 5. Quantitative indicators of the performance of visible BAs in Latvia, Estonia, Finland, and Sweden in 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of visible BAs</th>
<th>Investm. by BAs (EUR)</th>
<th>Ratio of the number of BAs to the country’s population (%)</th>
<th>Average investment by BA in 2012 (estimate)</th>
<th>Ratio of BAs investm. to GDP</th>
<th>Average amount per investor (EUR)</th>
<th>Average amount of the deal (EUR 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latvia</td>
<td>22</td>
<td>200,000</td>
<td>0.00108 (2,041,800)</td>
<td>9,090</td>
<td>0.0000090</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Estonia</td>
<td>43</td>
<td>1,000,000</td>
<td>0.00321 (1,339,700)</td>
<td>23,256</td>
<td>0.0000574</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Finland</td>
<td>450</td>
<td>28,400,000</td>
<td>0.00833 (5,401,300)</td>
<td>63,111</td>
<td>0.0001475</td>
<td>50,000</td>
<td>139,000</td>
</tr>
<tr>
<td>Sweden</td>
<td>850</td>
<td>23,300,000</td>
<td>0.00896 (9,482,900)</td>
<td>27,411</td>
<td>0.0000571</td>
<td>65,500</td>
<td>91,850</td>
</tr>
<tr>
<td>EU 27</td>
<td></td>
<td></td>
<td>0.00582</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: author’s calculations based on the European Commission, EU Employment and Social Situation, 2013; EBAN – European Angel Market 2012, Estonian Business Angels Network; Country Economy, 2013 (GDP); European Commission, 2010; author’s data (Latvia)

Business …, n.d.). Analysing the webpages of the two clubs, one can make a comparison of these data and the respondents’ replies. Therefore, the first respondent said that the amount of investment requested by an applicant often does not exceed EUR 50 thousand. At the Amber Sea Business Angels Club, this amount already reaches EUR 200,000. Based on the results of the qualitative analysis, the discrepancy can be explained by the fact that the Amber Sea Business Angels Club has a more pronounced tendency to finance venture projects with an international focus and a high level of internationalisation. Let us analyse the quantitative data on IVC in Latvia in detail and compare them with similar data of the countries chosen for comparison. Table 5, along with the number of visible BAs and the amount of investment, presents other data by which one can understand the level of “penetration” by visible BAs in the economy and assess the IVC development level.

The indicators were expressed as a percentage of their population and GDP since each country has a different population and level of economic development. It was found that the number of BAs as a percentage of population in Latvia was 2.97 times lower than in Estonia and 7.71 times lower than in Finland, 8.30 times lower than in Sweden as well as 5.39 times lower than in the whole EU-27. When comparing the amount of IVC investment as a percentage of GDP in Latvia with that in the same countries, it turned out that it was 6.38 times smaller than in Estonia, 16.39 times smaller than in Finland, and 6.34 times smaller than in Sweden. Accordingly, it is logical that the average investment by BA in Latvia is 2.56 times smaller than in Estonia and 6.94 smaller than in Finland. Table 3 shows that Finland and Sweden have developed a regional network of BAs. Besides, a comparison of the sections “average amount per investor” and “average amount of the deal” (Table 5) shows that syndicated financing by BAs dominated both in Finland and Sweden, which, along with the number of clubs in these countries, indicated the benefits from cooperation for BAs. A comparison of the performance of IVC in the countries shows that Finland and Sweden had significantly higher performance indicators compared with the EU-27; Estonia was close to the average for the EU-27, and Latvia was still far behind Estonia. Accordingly, it can be concluded that, Latvia had a low IVC development level as of the end of 2012. A comparison of the amount of IVC investment with the amount of investment by VC funds in the initial stages of the development of venture capital companies (seed and star-up) in these same countries was performed since IVC is a source of financing young innovative companies with the potential of rapid growth. The results of this comparison are presented in Table 6.

As can be seen in Table 6, the amount of investment by VC funds in each of the countries several times exceeds the amount of investment by visible BAs. In 2012 in the four countries, in total, the amount of investment by visible BAs accounted for 29.63% of the capital invested in seed and star-up projects by VC funds. However, according to EBAN, the amount of investment by visible BAs accounted for only 10% of total investment by BAs in Europe (EBAN, 2012). If considering these data and projecting them into the countries analysed, then the situation will be opposite – the amount of investment by BAs in all the countries exceeds the investment by VC funds in seed and start-up projects 2.98 times. This indicator should be reduced by 14%, as BAs invest in seed and star-up projects on average 86% (Kraemer-Eis, 2012). As a result, the excess of IVC investment over investment by venture capital funds in seed and start-up projects reached 2.56 times. Based on the data, it is clear why the governments of several countries use a variety of tools to stimulate IVC investment. Beside the impressive IVC investment in seed and start-up projects, compared with the investment by VC funds, one has to note that the share of public capital in 135 European VC funds was 34% in 2011 (EVCA, 2012a). In Latvia, according to the data of the author, it was 65% (at the end of 2012). Perhaps in Latvia, by investing a small part of these financial resources in programmes promoting IVC investment, a substantial part of...
the public capital could be saved owing to an increased amount of investment by BAs. Several authors point to a correlation between IVC investment performance and development of young innovative companies with high growth potential and innovative development in general (Mason, Harrison, 2013; Schertler, Tykvova, 2009). Let us compare the countries’ IVC indicators with their R&D expenditure (as a percentage of GDP) and ranking in the Summary Innovation Index. A comparison of the countries’ IVC indicators with their ranking in the index Doing Business will be made to assess the effect of the entrepreneurial climate on the IVC indicators. Since the IVC development indicators might correlate with the countries’ rankings in the Global Venture Capital and Private Equity Country Attractiveness Index, this index was also included in the table. These comparisons are shown in Table 7.

As shown in Table 7, the highest position is taken by Sweden; its score in the Summary Innovation Index is 9.7% higher than that of Finland. Among the countries analysed, Sweden has the highest ratio of the number of visible BAs to the population – 7.5% higher than that of Finland. And it is despite the fact that in 2012 Sweden had a 2.58 times lower ratio of visible BAs investment to GDP (this is, to some extent, offset by the fact that the amount of investment per single transaction in Sweden in 2012 was 1.5 times smaller than in Finland, and possibly more effective investments by BAs) and a 13% lower R&D expenditure (as a percentage of GDP) than in Finland.

One can assume that in Sweden either invisible BAs are more active than in Finland or the amount of investments, in terms of percentage, by venture capital funds and corporate venture capital and their efficiency is significantly higher than in Finland or factors not associated with VC investments significantly affect the Summary Innovation Index. By comparing these two countries, one can note a higher correlation between the Summary Innovation Index and the ratio of the number of visible BAs to the country’s population. The fact that Sweden has a significantly higher ranking in the Global Venture Capital and Private Equity Country Attractiveness Index 2012 than Finland can indicate the correctness of this conclusion. The position of Sweden in the Summary Innovation Index was not affected by the fact that it was two positions below Finland in the index Doing Business. If comparing Latvia and Estonia, the situation is almost the same; the only difference is that the values of all the indicators differ significantly greater than between Sweden and Finland, with the exception of “Doing Business”, in which Latvia lags behind Estonia not much. Accordingly, based on this pair of countries, it is noticeable that the value

### Table 6. Comparison of the indicators of investment by BAs and VCs in Latvia, Estonia, Finland, and Sweden in 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Annual amount of investment by BAs (EUR)</th>
<th>VC investment (seed and start-up) (EUR)</th>
<th>Ratio of VC investment to BA investment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latvia</td>
<td>200,000</td>
<td>1400,000</td>
<td>14.29</td>
</tr>
<tr>
<td>Estonia</td>
<td>1,000,000</td>
<td>8,656,240</td>
<td>11.55</td>
</tr>
<tr>
<td>Finland</td>
<td>28,400,000</td>
<td>65,294,570</td>
<td>43.49</td>
</tr>
<tr>
<td>Sweden</td>
<td>23,300,000</td>
<td>103,158,370</td>
<td>22.58</td>
</tr>
<tr>
<td>Total, 4 countries</td>
<td>52,900,000</td>
<td>178,509,180</td>
<td>29.63</td>
</tr>
</tbody>
</table>

**Source:** author’s calculations based on EBAN – European Angel Market 2012; European Commission, Enterprise and Industry, Access to Finance Indicators, Venture Capital 2012; Estonian Business Angels Network Data; rus.DELFI.ee, 2012; author’s data (Latvia)

### Table 7. IVC indicators and the positions of Latvia, Estonia, Finland, and Sweden in the VCAI, Summary Innovation Index, R&D European rating, and Doing Business in 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio of the number of visible BAs to the country’s population (%)</th>
<th>Ratio of BAs investment to GDP</th>
<th>Position in the VCAI</th>
<th>Summary Innovation Index</th>
<th>R&amp;D expenditure (% GDP)</th>
<th>Doing Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latvia</td>
<td>0.00108 (2,041,800)</td>
<td>0.0000090</td>
<td>61</td>
<td>0.225 (32nd position)</td>
<td>0.66</td>
<td>21</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.00321 (1,339,700)</td>
<td>0.0000574</td>
<td>43</td>
<td>0.500 (16th position)</td>
<td>2.18</td>
<td>24</td>
</tr>
<tr>
<td>Finland</td>
<td>0.00833 (5,401,300)</td>
<td>0.00014750</td>
<td>17</td>
<td>0.681 (5th position)</td>
<td>3.55</td>
<td>12</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.00896 (9,482,900)</td>
<td>0.00005715</td>
<td>8</td>
<td>0.747 (2nd position)</td>
<td>3.41</td>
<td>14</td>
</tr>
</tbody>
</table>

**Source:** author’s calculations based on the Global Venture Capital and Private Equity Country Attractiveness Index 2012; Innovation Union Scoreboard 2013 - European Commission – Europe; Eurostat, R&D Expenditure, 2012; Ranking of Economies 2013 - Doing Business
of the index Doing Business does not significantly affect the performance of countries in the Summary Innovation Index and the difference in the IVC development level. The score of Latvia in the Summary Innovation Index is 2.2 times lower than that of Estonia, and the ratio of the number of visible BAs to the population in Latvia is 3 times lower than in Estonia. If comparing the ratio of visible BAs investment to GDP, in 2012, it was 6.3 times lower in Latvia compared with Estonia. It leads to a conclusion that, to some extent, the development level of visible BAs correlates with the Summary Innovation Index, just like in Sweden and Finland.

If Estonia and Finland are compared for the same parameters, the Summary Innovation Index in Estonia is 36% lower than in Finland, the ratio of the number of visible BAs to the population is 2.6 times lower, and the ratio of visible BAs investment to GDP is 2.7 times lower. It can be seen that the difference in these indicators between Estonia and Finland is the same or less than that between Estonia and Latvia. Let us compare these countries in terms of R&D expenditure (as a percentage of GDP). In Estonia, it is 2.7 times higher than in Latvia but 2.4 times lower than in Finland. According to Schertler and Tykvova, countries with higher levels of innovation development are more attractive for both national (domestic) and foreign venture capital investors (Schertler, Tykvova, 2009). According to R.Kleer, allocating a government grant to projects dealing with R&D is a positive signal to private investors (Kleer, 2008). Several researchers, including Prohopovs and Pavljuks, find a correlation between the level of VC and the R&D expenditure (Prohopovs, Pavljuks, 2013; Stankeviciene, Lakstutiene, 2012). One can assume that the level (degree) of IVC development as well as the VC development level depends on the amount of investment in R&D.

A comparison of the quantitative IVC indicators (Tables 5, 6, and 7) shows that the IVC development indicators of Sweden and Finland are at a level significantly above the European average and the indicators of Estonia, while the indicators of Latvia are at a level much lower than those in Estonia.

In the course of the present research, it becomes obvious that IVC is a quite significant source of VC investment for young, innovative companies. By size, this source may be compared with the amount of investment by VCFs, while for the seed stages it is apparently greater than that of VCFs both in terms of amount of investment and, perhaps, in terms of number of projects funded. Besides, as shown earlier, IVC provides the continuity of the “escalator” of funding projects for VCFs. Given the emerging trends of cautious attitude by VCFs and their investors to finance the initial stages of venture projects and the trends towards the consolidation of BAs in groups and syndicates (which increases their financial and other opportunities), IVC expands its participation in the next stages of the “escalator” of early stages of funding (start-up and early growth).

Forecast of IVC development in Latvia

One can develop measures under which IVC investment growth will continue after identifying the causes and the conditions under which IVC increases its activity. This is particularly relevant given the fact that most countries have problems with balancing their national budgets, while VC funds, in contrast to IVC funds, in many European countries, to a significant extent, are sponsored by their governments. Obviously, in different countries, the potential growth rate of investment by BAs had and will have different dynamics. The new EU countries, including Latvia, have a number of hindering factors in the development of IVC – a lower per capita income (which leaves no available funds for investment), a shorter history of entrepreneurship in an open economy, less accumulated capital, and probably some other factors. However, these countries have the preconditions for a greater increase in the number of BAs and in the amount of IVC investment than the countries that already have higher performance IVC indicators. The number of BAs and their investment capacity will increase with the growth of the welfare of the population as a whole, entrepreneurs, top managers, and other highly paid professionals – the main source of potential BAs – as well as their mental attitude, the emergence of traditions, and the revitalisation of the movement of business angels, and governmental attitude and support to BAs.

The amount of IVC investment may depend on the number of BAs and their investable funds. Therefore, one can conclude that there are two basic indicators of IVC activity in the country: number of BAs and annual total investment by BAs. Yet, from the perspective of developing an innovative economy, the number of IVC-financed young innovative companies with high growth potential is also important. What targets in the development of IVC Latvia should achieve by 2020? The deadline for achieving these IVC indicators by Latvia (seven years) can be justified by the fact that it took about ten years since the organised activity of IVC investors began in the analysed Nordic countries, yet, in Latvia IVC is not at the zero development stage, and Estonia achieved its progress in a shorter time. Let us consider a possible forecast (and goals) of IVC in Latvia in terms of number of visible BAs and total BAs. Data on the population of the EU-27 and Latvia, and the number of visible business angels and the total number of business angels were used to make a forecast on the number of BAs in Latvia (the visible and invisible market). The average number of BAs was used in the calculation (visible and invisible market). Data of the Evaluation of EU Member States’ Business Angel Markets and Policies Final report (2012) instead of those of EBAN were used in this calculation, as EBAN data include reports from 34 countries, including such large ones as Turkey and the Ukraine. There are also other data on the number of BAs in Europe. For instance, according to the European Commission, the number of BAs is 250,000, of which approximately a seventh are members of BANs (European Commission, 2010).
The calculation of the number of BAs per million capita by the Global Entrepreneurship Monitor (GEM) shows that 256,000 BAs act in the EU-27 (GEM, 2011). Yet, these sources, in contrast to the Evaluation of the EU Member States’ Business Angel Markets and Policies Final Report, do not show the number of visible BAs. The forecast of the possible number of BAs in Latvia is shown in Table 8.

Based on the data presented in Table 8, one can calculate the proportion of visible BAs in total BAs. In the EU-27 countries, the average proportion of visible business angels in the total number of BAs was 14%. However, in different countries, these indicators are very different, for example, in Spain the proportion of visible business angels accounts for 4–5%, 20% in the UK, 50% in Poland, and 70% in France (Evaluation of EU Member States’ Business Angel Markets and Policies Final Report, 2012). It can be concluded from this that, depending on a number of factors, the number of visible business angels in Latvia may be substantially (several times) greater than in the EU-27 on average. One of these factors is the trend of the increasing number of invisible BAs in syndicates and BAs groups which, for various reasons, unite for better organisation and management which appeared in the recent years (Mason, Botelho, Harrison, 2013), as can be seen in the example of the BAN Amber Sea Business Angels Club. The problem is likely not related with how exact this number is (833) but to which institutions of Latvia and how they should contribute, so that the number of BAs approaches the European average, and over what period of time this can be achieved.

Let us consider the possible forecast (and goals) of IVC in Latvia in terms of number of visible BAs and total BAs. The average data and performance indicators of IVC from EBAN statements for the year 2012 were used to determine the possible targets of Latvia in terms of investment by visible BAs and total BAs. The forecasted number of BAs, shown in Table 8, was multiplied by the average amount of investment made by a BA. For visible business angels, the average annual investment made by a BA in 2012 amounted to EUR 19,470 (the annual amount of investment was divided by the number of BAs), and for the total number of BAs – EUR 19,482 (EBAN, 2012). According to EBAN, BAs invested in each company EUR 174,800 on average (EBAN, 2012). The number of funded companies might be greater if the average investment is smaller than the European average (EUR 174,800). According to researchers, 86% of the investments in companies (projects) by BAs are made at the seed and start-up stages (Kraemer-Eis et al., 2012). Therefore, along with the total number of companies funded by BAs, the table presents the number of companies (projects) that are at the seed and start-up stage. The forecast of the IVC investment potential in Latvia and the possible number of investees is presented in Table 9.

One can consider the data obtained in several respects. First, the data can be compared with analogous performance

### Table 8. Forecast of the possible number of BAs in Latvia (based on European averages in 2012)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Visible Business Angels</th>
<th>Total number of Business Angels (visible and invisible market)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>28,500-30,000 (average 29,250)</td>
<td>170,000 – 240,000 (average 205,000)</td>
</tr>
<tr>
<td>Ratio of the number of visible BAs and total BAs to the population of the EU-27 (the EU-27 population totalled 502,369,2 thousand at the end of 2012)</td>
<td>0.000058</td>
<td>0.000408</td>
</tr>
<tr>
<td>Forecasted number of visible BAs and total BAs in Latvia (Latvia’s population – 2,041,8 thousand at the end of 2012)</td>
<td>118</td>
<td>833</td>
</tr>
</tbody>
</table>

**Source:** author’s calculations based on the European Commission, EU Employment and Social Situation, 2013; Evaluation of EU Member States’ Business Angel Markets and Policies Final Report, 2012

### Table 9. Forecast of the IVC investment potential in Latvia and the possible number of investees

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Visible Business Angels</th>
<th>Total number of Business Angels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast of investment by BAs a year (EUR)</td>
<td>2,297,460</td>
<td>16,228,506</td>
</tr>
<tr>
<td>Forecast of the number of companies funded by BAs a year</td>
<td>13</td>
<td>93</td>
</tr>
<tr>
<td>Forecast of the number of companies funded by BAs a year at the seed and start-up stages</td>
<td>11</td>
<td>80</td>
</tr>
</tbody>
</table>

**Source:** author’s calculations based on EBAN, European Angel Investment Overview 2012; European Investment Fund Research & Market Analysis, 2012
indicators of venture capital funds and the forecasts of their development. For example, according to the data of the author, all VCFs in Latvia, in the period of 2011-2013, funded no more than 21 projects at the seed and start-up stages, that was, seven such projects a year on average. In this case, the funds were mostly financed by public capital (Prohorovs, 2013a). Accordingly, if achieving this amount of investment, the visible business angels alone will be able to fund a half times more companies. It should be noted that in 2015 the visible BAs will be able to finance projects in the amount of EUR 5 million, i.e. 2.2 times more (rus.DELFI.ee, 2012).

Second, the effectiveness of support and incentives for each of these types of venture capital can be assessed after performing the above-mentioned comparison and analyses and comparisons of various aspects of the effectiveness of formal and informal venture capital. After examining the forecasted amount of investment and the number of projects, it should be noted that these values can be greater at the expense of some factors. For example, at the expense of investments made in financial instruments outside Latvia, as it is disclosed in individual declarations submitted to the State Revenue Service. Foreign investments were made by 679 people who filled in a declaration, and the amount of investment reached EUR 79 million (Valtmane, 2013). This is, EUR 165 thousand of foreign investment per each of these 679 people on average (Prohorovs, 2013b). Therefore, only the amount of foreign investment by private investors in Latvia is five times higher than the data presented in the forecast. In this context, a twenty-year old statement by American professor J.Freear is important for Latvia – still the main issue will be how to engage potential investors into the ranks of active BAs (Freear et al., 1994) and how to free up capital and knowledge for the benefit of latent angels society (Freear et al., 2002). This could be both a topic for future research and a subject of public policy. And, of course, the IVC performance indicators, which can be reached by Latvia, depend on to what extent IVC investment will be considered an element of government policy and what government support will be granted. Yet, in any case, the government and public institutions responsible for the development of various financial instruments and sources of finances as well as for innovative development of the country, can use the data presented in the present research to develop forecasts and targets for IVC investment.

Conclusions and proposals

The author believes that the intensification of IVC involvement in funding new companies can be beneficial to the state, at least for two reasons. First, it increases the supply of finances for young, innovative companies. Second, private capital into the VC industry of Latvia is attracted. This aspect is particularly relevant for Latvia, as the proportion of public capital in the existing VCFs of Latvia reached 65% at the end of 2012 (according to the data of the author), which was a much higher level than both in Europe on the whole and in the CEE countries. In such a situation, the role of IVC as a source of finances for young innovative companies increases. The task of stimulating the innovative development of Latvia in accordance with the priorities of the EU will be solved owing to the intensification of IVC development. In Latvia, the implementation of such an approach will help build human capital and implement the National Development Plan for 2014-2020, the slogan of which is “smart growth” (National Development Plan of Latvia for 2014-2020).

The author’s opinion is that an interesting alternative for BAs and BAs clubs and networks of small countries is not the creation of a national association (federation network) of BAs, which requires additional organisational and financial resources but their entry into the national VC&PE associations. The presence of a “coordination centre” for BAs would allow them to represent centrally and lobby the interests of BAs and BANs and more effectively develop this area of venture capital. Moreover, both BAs and VCs tackle the same problem – financing rapidly growing companies. In addition, both formal VC and IVC, in most cases, have common goals – strengthening the VC infrastructure and creating an appropriate ecosystem.

After performing and analysing both the quantitative and qualitative assessments of IVC in Latvia made on the basis of the survey as well as analyses of other sources of information, and after comparing them with the IVC development indicators of other countries, one can draw the following conclusions.

1. To date the government and other organisations and researchers have not carried out a qualitative and quantitative assessment of IVC and the impact of IVC on various aspects of the economy of Latvia.
2. In some countries, including Lithuania, Sweden, Finland, Denmark, and Norway, various forms of support are available and various IVC coordination systems exist.
3. In Latvia, the IVC industry has no any financial or organisational instruments of government support. Government support would accelerate the development of IVC in Latvia.
4. Latvia’s qualitative and quantitative IVC indicators are low and, for this reason, the country’s level of IVC development is low.
5. IVC in Latvia as well as in several other countries, could under certain circumstances be a significant source of finances for young innovative companies with high growth potential.
6. IVC investment in various European countries is an ongoing process and a growing segment of the VC industry enhancing its forms of operation, which, in some cases, cannot only complement but also replace VCFs at the early stages of development of companies.

Practical significance of the present research

1. The material of this research can be used by government institutions for analyses and evaluations of the
development of IVC in Latvia and the development of measures to stimulate the development of IVC in Latvia.

2. The material of this research can be used by the LVCA, the LCCI, BAs associations, and other public organisations to assess the current state of IVC investment in Latvia and for the development of measures to stimulate the development of IVC.

3. The data of this research can be used for research on IVC. Among the possible research topics, the author believes, the most urgent is to investigate the reasons for the low level of development of IVC in Latvia and to devise measures necessary for the accelerated development of it.

Bibliography


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Annex 1

Questionnaire for evaluating the activities of business angels in Latvia

<table>
<thead>
<tr>
<th>Questions</th>
<th>Quantitative evaluation</th>
<th>Situation assessment in points from 5 to 1</th>
<th>Notes, qualitative evaluation, description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How many business angels organisations do you know in Latvia?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. How many of them really work?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. How many networks uniting BAs organisations do you know in Latvia?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How many business angels (but not private investors) do you personally know in Latvia?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How many of them fund at least one project a year?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. How many of them fund a few projects a year?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Do you have statistics on investments by business angels in 2010, 2011, 2012 – number of funded projects, minimum and maximum amounts of investment in a project?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. How many serial entrepreneurs such as Normunds Bergs do you know in Latvia?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. How many direct investment companies such as Proks Capital do you know?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Why so small number of business angels act in Latvia?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Are business angels in Latvia often offered to finance new technologies and innovations?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Are business angels in Latvia often offered to finance new business models?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Are project initiators ready to engage business angels in the management of the enterprise?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Amount of investment most often is less than (thousand EUR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Have investments been made by syndicates of business angels? If yes, how many such deals do you know?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex 2

Source: author’s construction based on EBAN, European Angel Investment Overview, 2012

Investments made and business angels operating through BANs, 2012