

WHETHER THE HYBRID AND PUBLIC VENTURE CAPITAL FUNDS ARE THE FIRST INVESTORS OF YOUNG INNOVATIVE COMPANIES?

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Abstract. The paper deals with the issues of investment of hybrid and public venture capital funds. The results show that hybrid and public venture capital funds in Latvia in most cases are the first investors. Only a smaller part of these investments are investments of the early stages of funding. The results of our research suggest that venture capital funds with public participation avoid projects with a high level of information asymmetry. The consequence of this can be underfunding of young innovative companies with the potential for rapid growth, which, in turn, is not consistent with the goals of public subsidies of venture capital funds in the context of the need to stimulate innovative economic development.

Key words: venture capital, public and hybrid venture capital funds, start-up financing, seed investment, the first investors to start-up companies.

JEL code: G21, G24, G28, G32, L25, M13 Introduction

Introduction

The issues of funding are key issues to the development of young innovative companies with rapid growth potential (Veugelers, 2011). The greatest difficulties in financing young innovative companies emerge in the early stages of funding (Reid, Nightingale, 2011; Prohorovs, Jakusonoka, 2012). At the same time, Ernst & Young (EYGM, 2014) notes that there are significant regional differences in the participation of business angels and incubators and other venture capital investors in the financing of young innovative companies. In some cases, the alternative to financing of young innovative companies with the potential of rapid growth in the early stages of their development may be hybrid and/or fully public venture capital funds (VCF). To finance young companies operating in the sectors of the economy based on knowledge and high technology, governments of various countries use VCFs with public participation (Cumming, 2005). The aim of our research was to obtain and analyse data on the stages of financing, in which hybrid and public VCFs of Latvia invested, and the number of cases where these funds were the first investors. If the first investors of portfolio companies were not VCFs, the aim of the research was to determine the categories of investors which were the first investors.

In the research, we put forward two hypotheses. The first hypothesis: in most cases, hybrid and public VCFs of Latvia are not investors at the early stages of financing. In making the first hypothesis, we proceed from the fact that, firstly, after the global financial crisis of 2008-2009 VCFs reduced their investment activity in the initial stages of financing (Prohorovs, 2013). Secondly, VCFs of Latvia are about 20 years old, i.e. approximately two times younger than VCFs of Western European countries and, due to this fact, the tradition and practice of venture investing in Latvia are less developed. Accordingly, management companies and venture capitalists of Latvia may not have sufficient work experience in the conditions of information asymmetry and, therefore, are not prone to increased risk, which is characteristic of the initial stages of financing. **The second hypothesis: hybrid and public VCFs of Latvia in most cases are the first investors of companies** (regardless of the stage of company financing). In making the second hypothesis, we proceed from the fact that, firstly, the activity of business angels is poorly developed in Latvia (Prohorovs, 2014). Secondly, with the exception of the Green Technology Incubator (legal name: Green Industry Innovation Center) created in 2014, (Green Technology Incubator, home page), in Latvia until 2016 there were no other business

incubators and accelerators, specializing not only in training the teams of start-up companies, as well as allocating funding for the most promising companies. Third, according to the information we have (perhaps due to the fact that Latvia is a young country with one of the lowest per capita income among the EU countries), in Latvia there is low activity of family, friends and non-professional investors ("fools") involvement (FFF) in venture capital financing of young innovative companies. To obtain data, we have conducted a special survey which includes an analysis of investment of all hybrid and public VCFs of Latvia for the period of 2010-2015, as well as an analysis of the types of VC investors who invested in companies prior to the investment of VCFs of Latvia.

The research contribution includes new data on the structure of investment of hybrid and public VCFs by stages of funding, on the structure of the first investors in the companies, as well as the testing of the theory of information asymmetry on the example of investment of hybrid and public VCFs. Our findings can be used for the development of national, regional and European policies to improve the forms, methods and types of financial support for young innovative companies and to increase the effectiveness of public and hybrid VCFs.

Literature Review

Financial market barriers for innovative projects of young companies are too high (Veugelers, 2011; Soderblom et al, 2013.). A common problem of European countries in recent years is the problem of VC attraction from private and institutional investors (Tykvova, et al., 2012). Difficulty in attracting capital in recent years occurred primarily in funds that finance just the early stages of company development, which is particularly characteristic of the CEE countries (Prohorovs, 2014 b). Low rate of return in relation to the risk rate makes it difficult to attract investment for early stage VC in Europe (Cincera, Veugelersb, 2013). Therefore,

governments of some countries use hybrid and public VCFs to cover gaps in the financing of young innovative companies, mostly in the early stages of funding (Cumming, 2005; Cumming & Johan, 2007; Snieska and Venckuviene, 2011). The social capital should not simply be used as a VCF financing tool, but also be a catalyst for attracting private investors, as well as creating more attractiveness for investors to finance innovative projects namely (Pelly, Kramer-Eis, 2011). Public and European Structural Funds play a significant role in the development of small and medium-sized enterprises through investing in VCFs in Lithuania (Snieska and Venckuviene, 2011). In their opinion, the government participation in the financing of VCFs should be carried out so that the innovative SMEs have benefited from these investments. According to Cumming and Johan (2007), in Australia the pre seed VCFs with public participation are the main suppliers of projects for seed stage funding by other VC investors. The life cycle of start-up companies begins with FFF investment (Gromov, 2010). According to him, FFF investments are followed by investment of business angels and other sources of seed capital. This is followed by venture investment in early stages of funding from business angels (BA) and VCFs, and already only then - of later stages of venture capital, which is usually provided by VCFs (Gromov, 2010; Calopa et al, 2014). This scheme is a classic model of financing for young innovative companies (Berger & Udell, 1998). In the UK, BAs play an important role in the financing of high-tech start-up companies in the early stages of development (Sharpe et al., 2009). According to them, one of the reasons for this is the government support through the exemption of BA investment from taxation. BAs are the most important link between the initial and subsequent stages of financing companies, using venture funding (Vasilescu, 2009). BAs and BA syndicates in some cases can not only supplement, but replace VCFs in the early stages of funding

(Prohorovs, 2014 a). Young companies with high growth potential in the emerging sectors of the economy are particularly vulnerable to gaps in funding (Reid and Nightingale, 2011). In their opinion, the reasons for this are a high level of information asymmetry, lack of collateral, lack of reputation, market uncertainty and a number of other reasons. In case of the financial gap in the early stages of development of the companies, the necessary sequence of funding stages of companies in need of venture capital is not provided (Masson et al., 2013). VCFs with public participation provide "work" for VCFs, funding further stages of development of the companies (Hall, Lerner, 2010). In their opinion, if the government stimulates VCF investment in the initial stages of development of the companies, it can have a positive impact on private investment in the next stages of financing. In turn, the presence of gaps in the financing of young innovative companies reduces the flow of private venture capital transactions, which is one of the major conditions of country attractiveness for venture capital (Groh, 2010). Government policies should focus on enabling high potential enterprises to grow rather than merely increasing the number of firms in the economy (Tewari et al., 2013). Developing an effective government program of subsidizing venture capital is not a simple task (Cumming, 2005). To eliminate the gaps in financing of young innovative companies in the early stages of development, concentration of government support of venture capital investment in the earliest stages of funding is required (Prohorovs, 2014 b). Hybrid VCFs only temporarily solve the problem of the missing funds, but do not solve the problem of improving the quality of the investors in the VC industry (Jaaskelainen et al., 2007). According to them, the government should use other forms and methods to stimulate investors, experienced venture capitalists and entrepreneurs for successful development of young innovative companies in key technology sectors. In the use

of the VC to fund new innovative products, the best result is achieved through the cooperation of public and private capital, provided that the syndicate is headed by private capital (Bertoni, Tykvova, 2012). The theory of information asymmetry explains the essence of venture capital investment (Amit, et al., 1998). The level of information asymmetry in VC investment decreases with the transition from the earliest stages to each subsequent stage of financing (Aernoudt, 2005). VCFs with public funding have the potential to reduce the negative effects of high information asymmetry in venture investment (Brander et al., 2010 b). Cumming et al. (2013) concluded on the advantages of hybrid VCFs, compared to fully public VC funds. The best results in VCF investment are achieved in the event that the government support is present, but not dominant (Brander et al., 2010 a). The government should use a broader set of tools to stimulate the VC than simply allocate more public funds to VCFs (Da Rin, et al., 2006).

Data and Methodology

In the period of 2010-2015, Latvia had five VCFs in the investment cycle. At the same time, one more hybrid fund acted in Latvia (Baltcap). However, its specialization in stages of financing and investment strategy is more in line with Private Equity Funds; therefore, the data on the investment of this fund were not included in the research. All five VCFs considered in the research have public capital investment. The generalized results of research of the five VC funds exclude the data on investment of Imprimatur Capital Seed Fund, since it is a special fund with 100 per cent public capital, which aims only at the pre seed and seed funding for innovative projects. Therefore, the data obtained on investment of Imprimatur Capital Seed Fund in the present research were not added to the amount of investment of the four analysed VCFs, but were used only for the purpose of evaluating the effectiveness of the Fund's activities from the perspective of the subsequent investment of

other VCFs in the companies, which in the pre seed stage were financed by Imprimatur Capital Seed Fund. One of considered funds is hybrid (with the participation of public and private capital). The share of public capital in this VCF is about 67 per cent. Three other VCFs were almost completely funded by public capital (under the terms of the tender for the VCF management, the contribution of private management companies (General Partner, GP) was 5 per cent of the fund amount). To obtain data on investments of the five VCFs of Latvia and information, whether these investments were the first for portfolio companies, the special survey was conducted. If the fund was not the first investor in the portfolio companies, they had to answer the question, what kind (type) of investors was the first investor of the company invested by the fund. All VCFs were given assurances of confidentiality

that the results of the survey will be used only in aggregated form without specifying the names of the funds and portfolio companies. The survey of the VC funds in Latvia was conducted in November 2015 and included data on investments for 2010-2015. One of the VCFs considered in the research, in accordance with its strategy, focuses only on the initial funding stages, and three other VC funds do not have specialization in stages of funding, thus their strategy allows them to invest both in early stages of VC financing, and in later stages. All VCFs considered in the research are managed by private management companies. This may mean that the management principles of these VCFs and investment decisions taken by them are based on commercial viability and principles specific to the asset management companies of private VCFs.

Table 1

Total number of investments of hybrid and public VC funds in Latvia in 2010-2015 and the number of investments where the VC funds were not the first investors

Type of investment, according to stages of funding	Seed		Start-up		Expansion		Grand Total	
	Total	Presence of company's investor prior to VCF investment	Total	Presence of company's investor prior to VCF investment	Total	Presence of company's investor prior to VCF investment	Total	Presence of company's investor prior to VCF investment
Type of investment, according to stages of funding	14	9	14	1	32	3	60	13

Source: the data of author's survey

In total in the period under review the VCFs of Latvia with public participation have invested funds in 60 companies. Of the 60 investments, 32 investments (53.3 %) were made on the Expansion stage, that is, not in the early stages of funding. 14 companies were financed both in the Seed (23.3 %), and the Start-up (23.3 %) funding stages, that is in the early stages of funding. As a result of the data obtained in the research, we have proved the first hypothesis put forward by us that, in most cases, hybrid and public VCFs of Latvia are not the investors of early stages of funding.

From this we can conclude that among VCFs with public participation the capital investment in

the later stages of funding dominates. Considering the stated fact from a position that it is in the early stages of funding, there are gaps in the financing of young innovative companies, as it is evidenced by the results of many studies (Cumming & Johan, 2007; Reid & Nightingale, 2011; Snieska & Venckuviene, 2011). Our data indicate that the majority of investments of Latvian VCFs with public participation are not focused on young, innovative technology companies with potential for rapid growth. Although, according to some researchers, for example, Pelly & Kramer-Eis, 2011, Tewari et al, 2013, public policy should be aimed at financing young innovative companies with the potential of

rapid growth. In our opinion, there are two main reasons for this situation. First, the government of Latvia provides VCFs with public participation with quite a lot of freedom of action in the investment policy, not concentrating the subsidized VCFs on investment in the early stages of funding, the most risky for private investors and young innovative companies. This may reduce the risk of VCFs with public participation, but does not fully solve the issue of accelerating the development of innovative economy by means of public capital. Second, having enough freedom in the investment policy, private management companies (GPs) which won the tender for management of VCF with public capital, when choosing to finance projects of the later stages of funding are trying to reduce the level of information asymmetry for their investments (since, the information asymmetry level decreases with the transition from the earliest stages of VC investments to each subsequent stage of funding (Aernoudt, 2005)). That is, they avoid unnecessary risks inherent in the financing of young innovative companies. Although, according to Brander et al. (2010 b), one of the objectives of VCFs with public capital is to reduce the negative impact of information asymmetry for the subsequent stages of funding and attracting private investors.

The authors consider whether the companies had the investors before the Latvian VCFs with public capital invested in them. As displayed in Table 1, in 47 cases out of 60, VCFs of Latvia were the first investors. This means that only 13 companies out of 60 (21.7 %), which were invested by Latvian VCFs with public capital had investors in the earlier stages of funding. Moreover, 9 of the 13 above-mentioned investments were made by Imprimatur Capital Seed Fund with 100 % public capital (in the statute of the Fund, the government of Latvia initially limited the investment strategy of investing in Pre seed and Seed stages of funding of young innovative technology companies).

Accordingly, other classes (groups) of venture capital investors (not the VFCs) were the first investors in only four of the sixty projects (6.7 %). Our analysis confirms the second hypothesis put forward by us - hybrid and government VCFs of Latvia in most cases are the first investors in the companies.

Despite the fact that 78.3 % of the VCFs of Latvia are the first investors, our findings indicate that in Latvia there is a lack of investors in the initial stages of funding, including the investments of BAs, other private investors and VCFs with public capital specializing in the early stages of funding. According to the studies, the main goal of government support to venture capital is to attract private (including institutional) venture capital investors (Da Rin, et al 2006; Cumming and Johan, 2007; Jaaskelainen et al, 2007; Brander et al, 2010 a; Snieska and Venckuviene, 2011; Pelly, Kramer-Eis, 2011; Bertoni, Tykvova, 2012). It can be concluded that the policy of encouraging private venture capital investments in Latvia, especially in the initial stages of funding, needs to be improved.

In 32 examined investments in the funding stage of Expansion, only three projects before the VCF investments had investments of other investors. For the young, innovative technology companies with rapid growth potential is characteristic to have a "cascade" of certain sequence of investment. This is confirmed by a number of venture capital researches, for example, Hall & Lerner (2010), Masson et al., (2013). On this basis, we can assume that Latvian VCFs with public capital have funded not the companies, which are characteristic for the financing by venture capital investors (technology companies with potential for rapid growth, oriented to global markets). As it is known, investments in later stages of funding had significantly lower yields because they have lower information asymmetry (Aernoudt, 2005). It is a higher level of information asymmetry that

explains both the essence of venture capital, and increased profitability in venture capital investments (Amit, et al., 1998). In 93.3 per cent, the investments in the stage of Expansion made by VCFs with public capital were the first investments received by the portfolio companies. This fact confirms our conclusion that private management companies (GPs), which won the tender for management of VCFs with public capital try to significantly decrease the level of information asymmetry for their investments, by

choosing to fund the projects, not specific to venture capital investments.

The authors consider whether Latvian VCFs with public participation were the first investors, or, as it corresponds to the world practice, VCF investments followed by investors who typically invest in the earlier stages of funding. Table 2 shows the number of investments and types of investors (by stage of funding), who made investments prior to VCFs.

Table 2

Types (kinds) of investors who have invested prior to hybrid and public VC funds of Latvia

Types of investors (by stage of funding), who made investments prior to hybrid and public venture capital funds	Seed	Start-up	Whether the hybrid and public venture capital funds are the first investors of young innovative companies?	For all stages of funding
Pre seed public VC fund	9			9
Business angel		1	1	2
Other hybrid and public venture capital funds			2	2
Business incubators				0
Private, including foreign VC funds				0
TOTAL	9	1	3	13

Source: the data of author's survey

Of the 14 VCF investments in the Seed funding stage, nine investments, i.e. 64 per cent had other investors prior to VC funds. After the analysis of what category of investors have made investments of Pre seed funding, it turned out that all nine investments were made by Imprimatur Capital Seed Fund, which, as we have already noted, in fact, is a pre seed fund. Based on this information, we can state that Imprimatur Capital Seed Fund, being a wholly public fund, is a sufficiently effective mechanism to ensure the flow of transactions (the escalator) for the funds in the next stages of financing. One of the four VCFs considered by us is Imprimatur Capital Technology Venture Fund, which specializes in early stages of funding of technology companies with private capital share of about 33 per cent and an asymmetrical distribution of profit for the activity of the fund between the public and private capital. Our

findings indicate that virtually all seed investments and most of the investments in start-up stages of funding of Imprimatur Capital Technology Venture Fund were made in the companies, the pre seed funding of which was provided by Imprimatur Capital Seed Fund. One would expect that as VCFs proceed to subsequent stages of funding, the proportion of investors who made investments prior to VCFs, would have to increase. However, our findings show the opposite result - already in the start-up stage of funding, this share drops to 7 per cent, and in the Expansion stage - to 9 per cent (excluding 9 of 13 investments, which were made by Imprimatur Capital Seed Fund). Excluding the investments of Imprimatur Capital Seed Fund, the share of investors who had invested prior to VC funds considered in the research, would amount not to 21.7, but only to 6.7 per cent. Our data correlate with the data of Cumming &

Johan. They found that VCF with public participation, not specialized in the early stages of funding, are not inclined to finance the companies in the early stages of funding (Cumming & Johan, 2007).

Two main conclusions can be drawn from our data. Firstly, pre seed and seed VCFs with public capital are the most frequently used and, accordingly, effective mechanisms for financing of the first stages of the young innovative companies in Latvia. Secondly, we can state a positive experience of VCFs with public capital "doubled" under the control of one management company (GP), as it is due to this the principle of consistency, and thus ability to finance the early stages of funding following the pre seed stages of funding (the escalator principle) is provided.

It is also necessary to note that among investors, who made up funding prior to VCFs, there were only two investments by BA (0.3 %), and not a single investment by business incubators and other venture investors of initial stages of funding (FFF, accelerators etc.). However, the proportion of BAs and business incubators in financing the start-up stages of funding from 2007 to 2013 in Europe increased from 4.6 to 26.8 per cent (Dow Jones VentureSource, 2014). According to Soderblom et al. (2013), Sweden's experience suggests that for the start-up companies in the first stage of funding it is more appropriate to attract public grants, investments of small private investors and BAs, rather than VCFs. These facts show that in Latvia the infrastructure and tools of financial support for the initial stages of funding young innovative companies and venture investors in the initial stages of funding are developed insufficiently.

Conclusion

One of the major functions of hybrid and public VCFs is to eliminate the gaps of financing in the early stages of funding of young innovative companies. We found that there is a lack of investors for the initial stages of funding in

Latvia, including investments of BAs, other private investors and VCFs with public capital, specializing in early stage financing. In most cases (66.7 %), hybrid and government VCFs of Latvia are the first investors. However, the results of our research show that VCFs with public capital have made the most of their investments (53 %) in the Expansion stage of funding. Proceeding from this fact, it can be concluded that the government of Latvia provides VCFs with public participation with quite a lot of freedom of action in the investment policy, not concentrating the subsidized VCFs on investment in the early stages of funding.

The reason why Latvian VCFs with public capital, having relative freedom of action in the investment policy, avoid the early stages of funding (except Imprimatur Capital Technology Venture Fund), is their desire to significantly decrease the information asymmetry for their investments (we are not inclined to believe that there is no demand for venture capital in Latvia, though, in our opinion, in order to accelerate the development of innovative economy, the public institutions in Latvia need to encourage the demand for venture capital).

Based on the research data, we can also conclude that pre seed and seed VCFs with public capital are the most frequently used and, accordingly, effective mechanisms for financing of the initial round of young innovative companies. We can also note the positive effect of VCFs with public capital "doubled" under the control of one management company (GP), as it is due to the principle of consistency of investment rounds and ability to finance the early stages of funding following the pre seed stages of funding (the escalator principle).

We believe that the policy of encouraging private venture capital investments in Latvia, especially in the initial stages of funding of young innovative companies, is in need of improvement, and that in Latvia the infrastructure and tools of financial support for the initial stages of funding

young innovative companies and venture developed insufficiently.

investors in the initial stages of funding are

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