

A Public Venture Capital Fund as an Economic Policy: The Estonian Development Fund

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I. Introduction

The Estonian Development Fund (Arengufond in Estonia, hereafter abbreviated as EDF) is a public institution subject to the Estonian Parliament whose aim is to contribute to the economic development of Estonia. Under the Estonian Development Fund Act, it is stated that the EDF should perform risk capital investments with private investors into start-ups with high growth potential. Under the same law, it should also provide entrepreneurial education and growth programs for the start-ups. There are primarily two reasons for establishing the EDF investment scheme in Estonia: 1) the transition of Estonia from having the Soviet-era economic structure and 2) the reduction of the equity gap in the early stage of financing. The EDF was established in 2006 and it fully invested Early Fund I and Early Fund II. The EDF and its one hundred percent subsidiary the SmartCap had made eighteen investments in seed and start-up phase, garnering a total of 8.7 million EUR by July 2013. It also had the chance to gain one full exit and one partial exit during the same

period of time. In 2015, the EDF investment scheme was reformed to give way to a new one: a scheme with less state intervention, aiming to strengthen the entrepreneurial ecosystem in Estonia by creating competition between venture and private equity capital investors.

II. Estonia-ITC diffusion, high-tech start-ups and venture capital investment

1. ITC diffusion and high-tech start-ups

Estonia, officially the Republic of Estonia, is a state in the Baltic region of northern Europe, which re-established its political and economic independence from the Soviet Union in 1991 and became a European Union member state in 2004. In 2010, Estonia became a member of the OECD as the thirty-fourth member country. Estonia's population of 1.32 million makes it one of the least-populous member states of the European Union and ranked 154th in the world (World Bank, 2015a). The Gross Domestic Product (GDP) in Estonia is worth 19.5 billion EUR in 2014; also ranked 104th in the world (World Bank, 2015b). Just after the independence from the former Soviet Union in 1991, economic stagnation was observed. However, more recently, the economy has been steadily growing after the global financial crisis in 2008-2009 (table 1). Manufacturing, wholesale and retail trade, and real estate activities are the main fields of economic activity in Estonia (table 2).

Estonia is recognized as a developed nation by ICT diffusion (Nauwelaers, Maguire and Ajmone Marsan, 2013). According to the Ministry of Foreign Affairs of Estonia, all Estonian schools are already connected to the internet. All Estonian towns and villages are covered by the network of public internet access points. Furthermore, utilization of the ITC in government services is also progressing. In 2013, the percentage of electronic tax declarations in Estonia reached over ninety-five. The government has made changes on the cabinet meetings; they use paperless sessions using a web-based document system (figure 1).

Under this well-equipped ICT, the ICT high-tech entrepreneurial activities have been raised in Estonia. Cassidy (2014) describes the entrepreneurial activities in Estonia as follows:

Estonia may be tiny, but in tech terms it's a giant. It has a population of just 1.3 million, yet produces more start-ups per head than any other country in Europe. [...] the tech-savvy country that launched Skype a decade ago countries to be a hotbed of entrepreneurs and innovation.

According to Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, the reasons why Estonia has had a lot of high-tech start-ups are 1) the heritage

of Skype as a role model, 2) the Estonian spirit "I can do it!", 3) fewer alternatives for people to millionaires, 4) the global mindset which started from the beginning due to the small domestic market, and 5) the relatively strong political leadership: e-services, tax regime, and public focus (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

Table 1 The key economic Indicators in Estonia

	2011	2012	2013	2014
GDP at current prices (billion EUR)	16.4	17.6	18.7	19.5
Real growth of GDP (percent)	8.3	4.7	1.6	2.1
GDP per capita at current prices (EUR)	12356	13334	14218	14860
Unemployment rate (percent)	12.5	10.2	8.6	7.4

Source: Web page of the Ministry of Foreign Affairs of Estonia

Table 2 The total GDP by main fields of economic activity in Estonia -as % of the total GDP-

Manufacturing	16.0
Wholesale and retail trade; repair of motor vehicles etc.	12.7
Real estate activities	10.5
Transport and storage	8.0
Construction	7.1
Public administration and defense; compulsory social security	7.0
Information and communication	5.0
Education	4.9
Administrative and support service activities	4.6
Professional, scientific and technical activities	4.0
Electricity, gas, steam and air conditioning supply	3.5

Source: Web page of the Ministry of Foreign Affairs of Estonia

Figure 1 The information society indicators in Estonia

- 80% of the population aged 16-74 years uses the internet.
- 98% of households with children have internet capabilities.
- All Estonian schools are connected to the internet.
- Rapid wi-fi internet connections are available in more than 1007 public places; in many places that service is free of charge. The area of wi-fi internet is constantly growing and encompasses all of Estonia
- 98% of banking transactions in Estonia are conducted through the internet.
- Income tax declarations can be made electronically via internet. In 2013, over 95% of income tax declarations were presented through the e-Tax Board.
- Cabinet meetings have been changed to paperless sessions using a web-based document system.
- There are more mobile phone contracts than residents - 139 per 100 people.
- Estonia is completely covered by digital mobile phone networks.

Source: Web page of the Ministry of Foreign Affairs of Estonia

2. Venture capital investment in Estonia

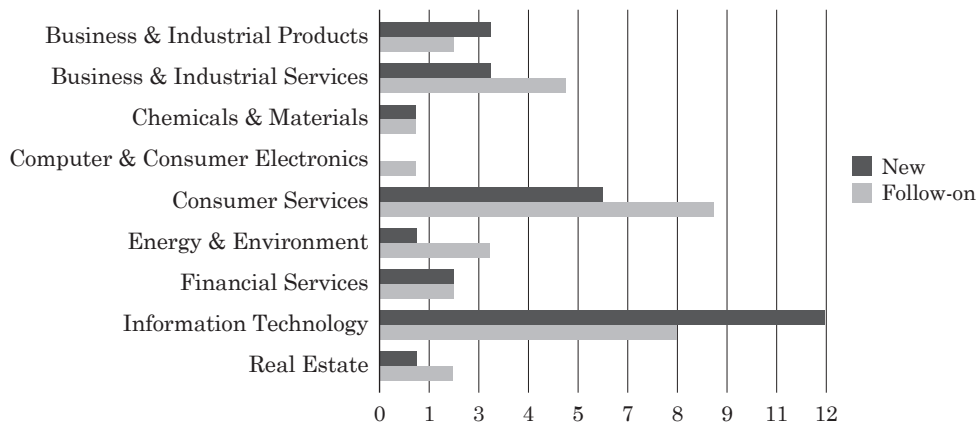
According to the Estonian Private Equity and Venture Capital Association (hereafter abbreviated as EstVCA), all forty investing members in the EstVCA have 578 million EUR of assets with a total of seventy-two active portfolio firms under management in 2014. Since its establishment in 2009, their portfolio firms have created 7,735 employees (Estonian Private Equity and Venture Capital Association, 2015).

With regard to investments in Estonian firms, 48.2 million EUR were invested in sixty firms which consist of twenty-eight new and thirty-two follow-on investments. Twenty-three percent of the investments came from local capital, meanwhile, seventy-seven from outside Estonia. The sector split of sixty newly or follow-on investee firms in 2014 is illustrated in figure 2. Information technology is the highest and consumer services follows. The development stage of the investees in 2014 is shown in figure 3. The seed stage shared thirty-three percent, the highest, and the start-up stage follows with thirty percent (Estonian Private Equity and Venture Capital Association, 2015).

According to Kakko, there was little venture capital investment especially in the seed, start-up and early stage in Estonia in the early 2000's. Kakko describes the situation confronted at that time as follows:

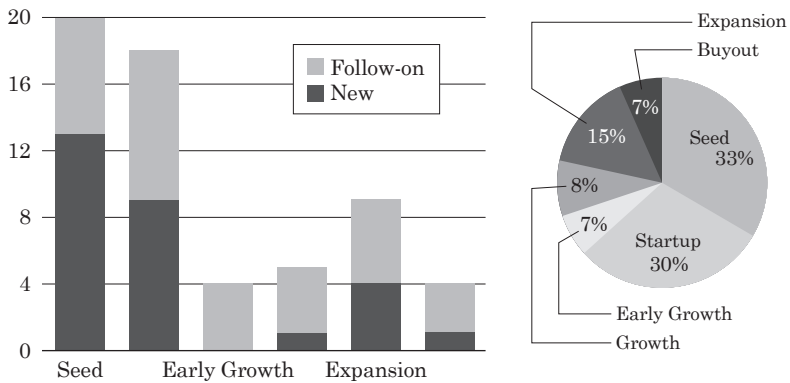
We had to start by explaining what venture capital is and what angel investors are to the Estonian public and convince them that financing high-tech start-ups was critical for the Estonian economy. However, thanks to the rapid activation of entrepreneurial high-tech start-ups, we were able to establish the EstVCA in 2009 faster than what we

Figure 2 Investments in Estonian firms by sector in 2014



Source: Estonian Private Equity and Venture Capital Association (2015)

Figure 3 Investments in Estonian firms by stage in 2014



Source: Estonian Private Equity and Venture Capital Association (2015)

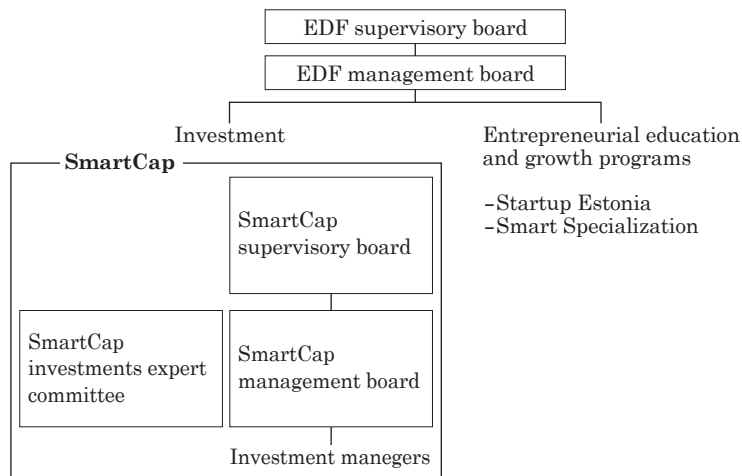
expected (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

III. The Estonian Development Fund

1. The structure of the EDF

The EDF was established by the Estonian Parliament in 2006. The legal basis of the EDF scheme is the Estonian Development Fund Act. Unlike other Estonian government agencies, it does not operate under the executive branch. However, it reports directly to the legislative branch. Nevertheless, in its everyday business, the Ministry of Economic Affairs

Figure 4 Structure of EDF



Source: Created by the author based on the website of Arengufond

and Communications plays certain supervisory duties in terms of it (Meelis Kitsing, Head of Economic Analysis, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 4th 2015).

The EDF is composed of a supervisory board, a management board and its subsidiary the SmartCap which is one hundred percent owned by EDF. The supervisory board consists of nine members appointed by the Parliament, the Government and the Rector's Conference. Both the ministers of Finance and Economic Affairs and Communications are also members of its supervisory board. Parliamentarians and independent experts are also members of the board (Meelis Kitsing, Head of Economic Analysis, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 4th 2015). The management board is responsible for not only investment but also other entrepreneurial education or growth programs (figure 4).

(1) The investment

The first mission of the EDF is to conduct investment activities for start-ups and early stage firms in Estonia. The aim of the investment activities is to offer funding to start-ups by developing the Estonian venture capital market and by exerting a positive influence on the whole start-up ecosystem in Estonia (Mari Vavulski, Project Manager, the Estonian Development Fund, in discussion with the author, March 6th 2015).

The EDF implements its investments through its subsidiary firm, the SmartCap. The SmartCap also has its own supervisory board, management board and investment expert committee (figure 4). Its supervisory board has four members who are external experts like entrepreneurs, venture capitalists and investment bankers. It regularly designs and approves its investment strategy and supervises the implementation with the internal auditors. The management board makes investment proposals to be submitted to the expert committee. It also makes investment decisions on the basis of the suggestions made by the expert committee. While the investment expert committee, which has seven external experts, provides investment recommendations on the investment projects prepared by the management board and investment managers in the SmartCap. It also examines the investment strategy approved by the supervisory board and assesses the specific investment projects (figure.4).

(2) The entrepreneurial education and growth programs

The second part of the EDF's mission is to provide entrepreneurial education and growth programs. The management board of EDF is responsible for the provision of entrepreneurial education and growth programs in addition to the investment through the SmartCap. As for the entrepreneurial education and growth programs, it provides different kinds of programs for existing or potential entrepreneurs such as Startup Estonia and Smart Specialization.

The Startup Estonia is a government-led initiative managed by the EDF and financed by the European Regional Fund. The aim of the program is to give a boost to the development of Estonian start-ups ecosystem. Therefore it launched different training activities to support the emergence and the development of start-ups as well as to improve their accessibility for money available. By cooperating with other investors, it has initiated seminars and other knowledge-sharing events and published success stories in order to enhance the awareness of and trust in entrepreneurs for potential investors (Mari Vavulski, Project Manager, the Estonian Development Fund, in discussion with the author, March 6th 2015).

The Smart Specialization is a relatively new section in the European Union Structural Funds from 2014 to 2020 funding period that aims at defining the business sectors with a higher-than-average growth potential and added value, as well as opportunities to achieve a competitive advantage through R&D investments. It also aims to improve the cooperation between Estonian businesses and the science to establish new technology based businesses (Mari Vavulski, Project Manager, the Estonian Development Fund, in discussion with the author, March 6th 2015).

2. The investment policies of the SmartCap/EDF

The SmartCap/EDF has its own investment policies as a public venture capital institution. First of all, the SmartCap/EDF invests on equal conditions with the private sector co-investors including venture capital firms and angel investors. It was roughly on July 2013 that the EDF directly co-invested with private investors in eighteen start-ups either directly as the EDF or since 2012 through the SmartCap. It is because one of its aims is to be the catalyst of Estonian venture capital market which is just in its infancy according to Kakko. Therefore, it has tried to talk to private potential co-investors to add value to its portfolio firms so that their investment conditions and valuation tend to be market-based

even if it is a public venture capital firm (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

Secondly, it basically takes minority stakes ranging between ten to forty-nine percent in portfolio firms not to take a controlling shareholding. It is because of the belief that the management of the portfolio firms should be adequately motivated by its shareholding in the firms (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

Thirdly, it invests in high-tech start-ups which have global ambitions. Furthermore, it encourages its portfolio firms to move out to the global market and clients from the early stage. Nevertheless, it is a requirement for the firms to be registered in Estonia before they are allowed to have the initial investment (Andrus Oks, Investment Manager in the SmartCap, in discussion with the author, March 3rd 2015).

Lastly, it is intended to play a hands-on role for their portfolio firms as a non-executive board member. It has tried to build strong relationships with the entrepreneurs and support

Table 3 The EDF/SmartCap investment portfolios by size, year, phase, responsible VCists

Firm	Investment size (€)	Year	Phase	VCist
Cleveron	857,140	2008	Start-up	Indrek Kelder
Ilmarine Engineering	639,100	2008	Start-up	–
GOLIATH Wind	251,700	2009	Seed	Indrek Kelder
BioTaP	837,200	2009	Start-up	Indrek Kelder
United Dogs and Cats	479,337	2009	Start-up	–
Massi Miliano	960,000	2009	Start-up	–
GrabCAD	127,800	2010	Seed	Andrus Oks
Inner Circle	88,000	2010	Seed	–
Sportlyzer	95,800	2010	Seed	Andrus Oks
Modesat Communications	750,000	2010	Start-up	Andrus Oks
Cellin Technologies	351,500	2010	Start-up	Indrek Kelder
Self Diagnostics	210,000	2011	Seed	–
Realeyes	320,000	2011	Seed	Andrus Oks
My!WIND	51,000	2011	Seed	Indrek Kelder
NOW! Innovations	950,000	2011	Start-up	–
Wise Guys	325,000	2012	Seed	Andrus Oks
Defendec	1,200,000	2012	Start-up	Stanislav Ivanov
WeatherMe	250,000	2012	Start-up	–

Source: Created by the author based on the website of Arengufond and Kitsing (2014)

Note: The size of investments indicates a total size that combines all the investments made in different times. The investment year is based on the time when the SmartCap/EDF signed agreement with firms.

them in their aim for global success. In the SmartCap, there are investment managers under the management board. Each investment manager basically has his/her own portfolio firms which he/she is in-charge of until the exit (Andrus Oks, Investment Manager in the SmartCap, in discussion with the author, March 3rd 2015) (table 3).

3. The investment process

The investment process in the SmartCap/EDF involves six steps: 1) preliminary analysis, 2) agreement on the preliminary documentation, term sheet, 3) further investigation and analysis including due diligence, 4) final decision-making, 5) preparing the final documentation, and 6) transfer of funds. All the phases intend to be performed using the best practices of international private equity evaluation (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

In the 1) preliminary analysis, the first investment criterion is return of investments, ROI. The firms selected should show high-growth potential, with the expected gross internal rate of return, IRR on realized investments of an average of thirty-five percent. In the second stage which is 2) agreement on the preliminary documentation, term sheet, all investment decisions are made on the basis of the information provided, including the business plan and its supplementary information such as contracts, external consultants, cash-flow prognosis and should be profit-driven. In the third stage which is 3) further investigation and analysis including due diligence, it is prepared by investment managers and approved by the lawyer with the assistance of independent business or technology experts, external auditors. In the fourth stage, which is the final decision-making, the decision is made by the two bodies: the investment expert committee and the management board. They evaluate the opportunities and risks internally and externally by hiring industry experts. Investments that have a significant size are presented to the investment expert committee for the final decision. The average investment process starts with the receipt of the information package from the start-ups and ends with the transfer of funds. The whole process usually takes three to nine months (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

IV. The background to the EDF's establishment

The preparation for the establishment of the EDF started in 2002. There were mainly

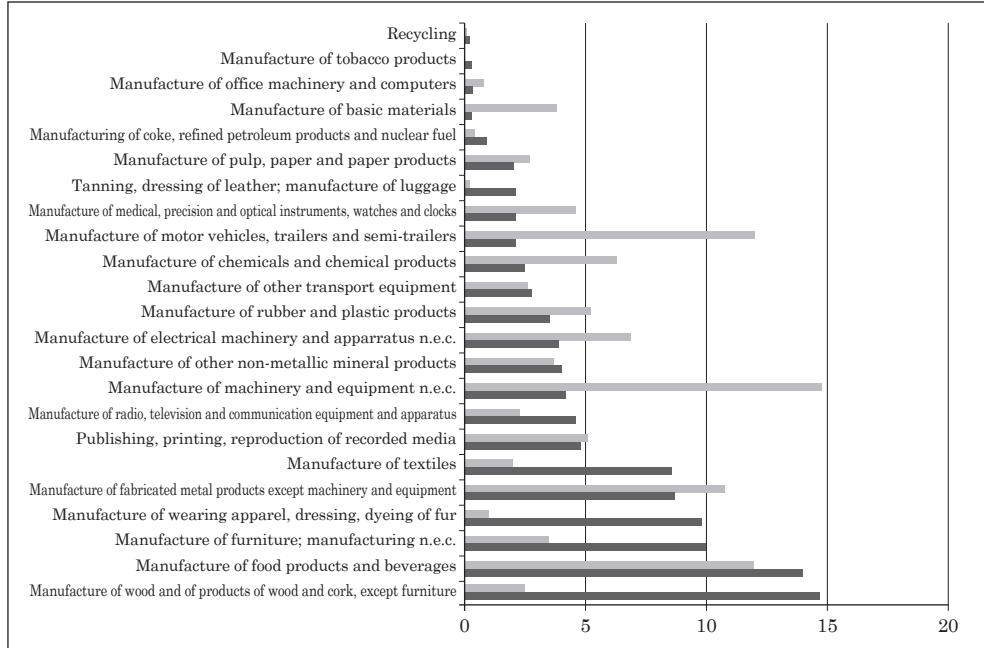
two factors considered in establishing the EDF public venture capital scheme in Estonia. The first one was 1) the transition of Estonia from having the Soviet-era economic structure, and the second one is 2) the reduction of the equity gap in the early stage of financing.

1. The transition of Estonia from having the Soviet-era economic structure

Before the establishment of the EDF, the Estonian economy was still in its transition phase from having the Soviet-era economic structure into having a knowledge-intensive economy. Many Estonian firms had established based on continuous availability of low-cost resources, labor-intensive and low-tech, oriented towards the local market, subcontracting or low added-value (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

Figure 5 shows the comparative data of Germany and Estonia's share of employment in the manufacturing industry in 2004. It clearly shows that Estonia garnered a higher share of employment in the labor-intensive and low-tech industries such as the “manufacture of wood and of products of wood and cork”, “manufacture of food products and beverages”,

Figure 5 The comparison of German and Estonian economic structure in 2004



■/Germany, ■/Estonia
Source: Kelder and Viimsalu (2009)

“manufacture of furniture” and “manufacture of wearing apparel, dressing, dyeing of fur”. On the other hand, Germany accumulated a higher share of employment in the following industries: “manufacture of machinery and equipment”, “manufacture of motor vehicles, trailers and semi-trailers” and “manufacture of food products and beverages”. In other words, at that time Estonia had the majority of employment in sectors which had the lowest added value compared with those of Germany (Kelder and Viimsalu, 2009).

2. The reduction of the equity gap in early stage of financing

Since the IT bubble burst in the early of 2000's, investors preferred more risk-free investments, increasing the equity gap in early stage of financing in Europe. In Estonia, the overall number of investments, potential investors and potential investees was also low. As there was a general lack of capital in the Estonian private equity market, the market gap size was estimated to be between half a million EUR and five million EUR. There was lack of capital for investments of any size, especially for growth-oriented innovative start-ups (Kelder and Viimsalu, 2009).

Even before the establishment of the EDF, efforts from the Estonian government already aimed at enhancing entrepreneurial activities, supporting the start-ups and technology transfer, financing R&D and product development. Most business support measures in Estonia were governed by the Enterprise Estonia and were designed to provide start-up grants such as training and counselling grants to tackle competence problems among entrepreneurs or R&D support grants encourage firms to take development risks. Overall, these grants offered some help to a lot of firms, but did not have enough volume and focus to help growth of firms achieve success through grant financing as banks were not willing to finance start-ups and early stage firms without collateral. Moreover, there was a total lack of venture capital to invest in start-ups and early stage firms. Hence high-tech firms reaching an early stage and needed additional capital were not being offered in sufficient amounts on the market and were not provided through existing public support schemes (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

According to Kelder and Viimsalu (2009), the development stages of a firm were identified to be as follows: 1) seed - to allow a business concept to develop, perhaps involving the production of a business plan, prototypes and additional research, prior to bringing a product to market and commencing large - scale manufacturing, 2) start-up - to develop the

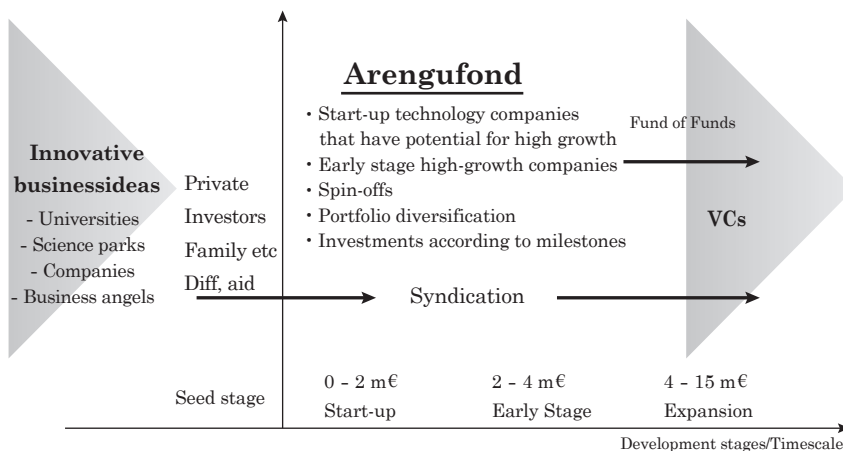
firm's products and fund their initial marketing, 3) early stage - to initiate commercial manufacturing and sales in firms that have completed the product development stage, but may not yet be generating profits, and 4) expansion - to grow and expand an established firm. Based on these stages, the Estonian government supporting measures had mainly supported 1) seed and early 2) start-up stages. Lange, De Bruin, Kleyn, Favalli, Muñoz and Di Anselmo (2004) pointed out the importance of overcoming the equity gap in the early stage of financing. To be specific, the market failure in Estonia existed in 2) start-up, 3) early stage, and partly 3) in expansion. In addition to the insufficient amount of grant, there was only one fund registered in Estonia and actively looking for this early stage investment. That was the Ambient Sound Investments which was established by the founders of Skype. Other funds were either closing or looking into making investments in more mature firms which were mostly found in traditional sectors with low technological intensity or the ones found outside Estonia (Lange et al., 2004).

From the vantage point of the demand side, even early stage firms considered only viable sources of resources personal savings and bank loans due to insufficient awareness and misconceptions. Many heard the term "venture capital" but did not have enough knowledge of it (Heidi Kakko, Board Member of the EstVCA and former CEO of the SmartCap, in discussion with the author, August 31st 2014).

3. Other options: state-secured loans, grant scheme

During the preparation phase which typically lasts for about four years, state-secured

Figure 6 The roll of the EDF: covering the equity gap



Source: Kelder and Viimsalu (2009)

loans for financing growth were a parallel idea to the public venture capital fund (Kelder and Viimsalu, 2009). However, loan schemes were eventually dropped because they immediately created a financial burden on the still unstable start-ups and did not cover the equity gap.

Different management structures of the fund through the existing grant scheme were also discussed. However it was also concluded that though the grant at that time were insufficient to meet the needs of high-tech firms which needed more money to conduct R&D, with the EDF investment scheme they provided a better backing and enabled early stage firms to achieve their goals (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

Accordingly, the EDF was finally established in 2006. It aimed to provide risk capital investments and fill in the missing parts which were typically situated between start-up, early stage, and the expansion stage firms (figure 6). Target firms which it should invest in were decided to be start-ups whose revenues were from zero to two million, and early stage firms whose revenues were from two to four million EUR (Kelder and Viimsalu, 2009) (figure 6).

V. The investment activities after the establishment of the EDF

The SmartCap/EDF invested in SmartPost for the automated parcel terminal network in 2008. It was the first investment of the SmartCap/EDF and had become its first exit. After SmartPost's operating for two years, the network along with its brand name was sold to Itella for 1.5 million EUR. Itella was a former Finnish Post (Kitsing, 2013). By the time the brand was sold, more than five percent of the population had already experienced using SmartPost's services in Estonia, twenty-five percent of Estonian distance selling parcel market was achieved and more than a thousand business clients registered to use the service, as said by SmartPost¹. In 2008, it also invested in Ilmarine Engineering. The total amount of investments made at different times was 639,100 EUR (table 3). However, this second investment was a failure.

In 2009, the SmartCap/EDF invested in three start-ups: BioTaP, United Dogs and Cats, and Massi Miliano and a seed firm, GOLIATH Wind. In 2010, it continued to invest in two

¹ By this time, the SmartPost has already changed its name to " Cleveron "

other start-ups and three seed firms. As time passed by, it also invested in five more firms, composed of one start-up and four seeds, from 2011 to 2012 through Early Fund I (table 3). In August 2012, Early Fund II was launched. Unlike the Early Fund I, Early Fund II was invested through the SmartCap.

The SmartCap/EDF made eighteen investments in seed and start-up phase with a total of 8.7 million EUR, in July 2013. It got one full exit, Modesat Communications in September 2012. Modesat Communications was acquired by Xilinx. Then there was one partial exit, Cleveron². However, three investments failed. The two social network firms: United Cats and Dogs and Inner Circle, and one engineering firm, Ilmarine Engineering did not materialize (Meelis Kitsing, Head of Economic Analysis, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 4th 2015).

The total sales revenue of all eighteen portfolio firms was twenty-seven million EUR, from 2008 to 2012. The vast majority of sales were generated by technology firms amounting to twenty million EUR and one engineering firm, seven million EUR. Regarding the profit, only three firms: NOW!Innovations, Cleveron, and GrabCAD, were profitable in 2012. All other fifteen firms made losses. Cleveron and Cellin Technologies were the only firms profitable in 2011. The same firms were also profitable in 2010, while other firms did not earn any profits in 2010 and 2011 (Meelis Kitsing, Head of Economic Analysis, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 4th 2015).

As for employment, the portfolio firms hired 94 individuals in 2008, 125 people in 2009, 145 in 2010, 134 in 2011, and 131 in 2012. Meanwhile, the average gross salary was 1,400 EUR in the portfolio firms in 2012. In comparison, the Estonian average salary was about 900 EUR in 2012 (Kitsing, 2014).

VI. The reform of the SmartCap/EDF scheme with less state intervention

The Estonian Government has reformed the SmartCap/EDF public venture capital scheme in 2015. The purpose of this reform, according to Sulling (2015) was to stop direct investments in start-ups. Hence, the state should not compete with the private sector. It added that the purpose of state intervention in the venture and private equity capital

² More recently, Fits.me, one of the portfolio firms was acquired in 2015 by Rakuten, a Japanese electronic commerce and internet firm.

market was to help the market through the creation of a competitive business environment between venture and equity capital providers. Moreover, it aimed to offer a wider range of financial options to Estonian firms. The government desertion was greatly affected by the fact that the venture capital market in Estonia has developed since the establishment of the EstVCA in 2009 (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

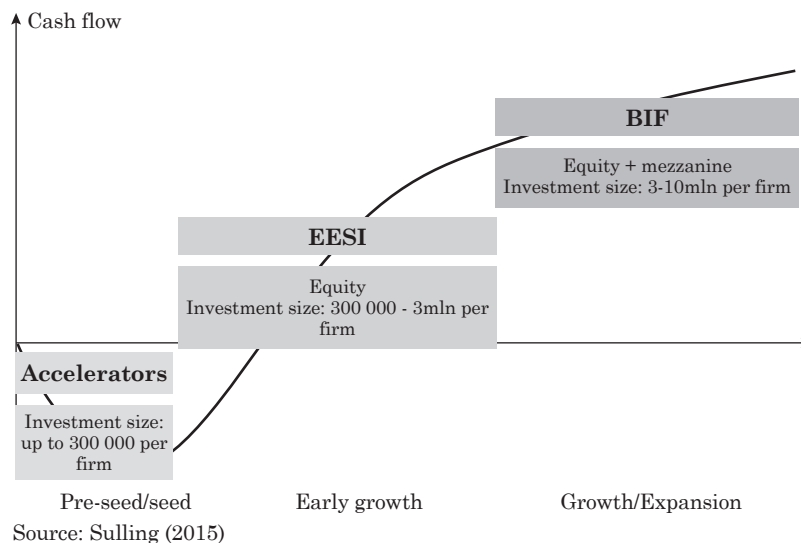
The new scheme consists of Accelerators, Estonian Early Stage Investment Fund (EESI) and Baltic Innovation Fund (BIF) (figure 7). The Accelerators are essentially micro funds for pre-seed and seed stage start-ups. The EDF will be selecting accelerators through public call in three industry areas, digital, life science and clean tech. It covers management cost, approximately four hundred thousand EUR for three years per accelerator as grants. The expected investment size per startup in total is up to three hundred thousand EUR (figure 7). According to the current scheme plan the EDF has allocated approximately eight million EUR for investments which are estimated to form a half of the total fund size and the remaining amount comes from private investors (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

The Estonian Early Stage Investment Fund (EESI) is an early stage "fund of funds." It invests into three to four sub-funds from the European Union Structural Funds resources. Aggregated amount of public investment is sixty million EUR. The expected investment size per firm in total is about three hundred thousand to three million EUR (figure 7). The sub-funds invest mostly into Estonian SMEs in seed, start-up and early stage phase. The "fund of funds" is managed by the European Investment Fund, but after the stabilization of sub-funds, the fund management task will be gradually transferred to KredEx, a newly inaugurated public venture capital agency in Estonia. Based on the current scheme plan, proposed sub-funds are: 1) two seed and start-up funds, public investment size into one fund approximately fifteen million EUR, which forms seventy percent of the total fund size; 2) business angels co-investment fund for start-up and early stage firms, public investment size approximately fifteen million EUR, forming half of the total fund size; 3) growth fund, public investment size, approximately fifteen million EUR, which forms sixty percent of the total fund size (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

Lastly, the Baltic Innovation Fund is also a "fund of funds" created by Estonia, Latvia

and Lithuania and the European Investment Fund with the purpose of increasing equity investments into growth and expansion stage firms of the Baltic States. The European Investment Fund invests forty million EUR alongside investments of twenty million EUR each from KredEx of Estonia, LGA of Latvia and Invega of Lithuania. The expected investment size per firm in total is from three million to ten million EUR (figure 7). The Baltic Innovation Fund invests a hundred million EUR into private equity and venture capital funds to which at least an equal amount of investments is added by private investors and pension funds based on the current scheme plan. Sub-funds invest into firms according to the investment policy of each particular fund, but the general target group includes Baltic firms with international development potential (Kadri Mats, Expert, Economic Development Department, the Ministry of Economic Affairs and Communications, in discussion with the author, March 6th 2015).

Figure 7 The new public venture capital scheme in Estonia



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Questions

Q1. Describe

1. The purpose of the EDF's establishment
2. The structure of the SmartCap/EDF

Q2. Discuss the pros and cons of the SmartCap/EDF's investment based on the following terms:

1. Equal conditions of investment with the private sector co-investors
2. Investment in minority stakes of the portfolio firms
3. Investment in technology-based firms with global ambitions
4. Hands-on activities after the investment

Q3. With regard to the management of public venture capital scheme, which do you think is more important, (A) or (B)? Explain why.

1. (A) investment in firms which focus on the domestic market but are likely to contribute to the local employment, or (B) investment in firms which have global ambition but are not likely to contribute to the local employment
2. (A) political accountability of government expenditures for public venture capital fund, or (B) successful investment result
3. (A) active involvement into the venture capital market to offer a wider range of financial options to start-ups, or (B) less involvement in the market not to compete with the private sector

Q4. With regard to regional economic policies in Japan, what do you think would be the possible implications the public can gain from the SmartCap/EDF scheme?

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