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VENTURE CAPITAL INVESTMENTS AND FINANCING IN ESTONIA: A CASE STUDY APPROACH

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VENTURE CAPITAL INVESTMENTS AND FINANCING IN ESTONIA: A CASE STUDY APPROACH

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Abstract

The aim of the article is to describe how Estonian venture capitalists make financing and investment decisions, and compare these results with theoretical recommendations found in corporate finance and venture capital literature. The focus is on the methodological procedures in venture capital investment and financing. A case study approach is used to collect information about the current practice of venture capital investments and financing in Estonia.

Five of the largest Estonian venture capital funds were analyzed in this article, and different problems have been presented in the article. Some of them require an academic and some a practical solution. The problems are divided into four parts: venture capital deal structuring, corporate governance and investor protection, the cost of venture capital and valuation.

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Venture capital deal structuring is discussed first, and we look at of the following topics: syndication, staged investment, use of financial instruments, ownership share and dilution problems. Syndication of investments, staged investments and convertible financial instruments are used quite rarely by Estonian venture capitalists. Most Estonian venture capitalists take a minority holding in their portfolio companies and the ownership share changes mainly due to the use of convertible instruments and financial options. Estonian venture capitalists do not consider this kind of dilution a big problem.

Most Estonian venture capitalists do not have a measure of the required rate of return as considered in financial theory. The determination of the rate of return among Estonian venture capitalists is more intuitive: they use an internal rate of return instead. The required rates of return used by Estonian venture capitalists have about the same interval as in the rest of the world.

Corporate control and investor protection are important issues in the venture capital process. These are closely linked to deal structuring. The Estonian Commercial code has average investor protection, but it restricts the use of preferred shares, which are often used in venture capital deal structuring abroad. Some corporate control problems have arisen at the board level in Estonia.

Although venture capitalists do not use complicated models to find the cost of capital, they pay much more attention to complicated valuation models. Multiples, book value, and DCF methods are used. Numerical analysis is not as important as the authors expected.

Much attention is paid to the linkages between these themes.

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INTRODUCTION

Although only a small fraction of corporate investments is financed through venture capital, research on venture capital is both important and challenging (Vauhkonen 2004). Venture capital is often the only source of finance for high risk and small start-up companies. As history has shown, some of these companies (e.g. Microsoft, Intel) can grow to become a major employer and play a very important role in country's economic life. The challenging part stems from the fact that finance literature provides little guidance as to how much the venture capitalist should pay to fund new projects. As stated by Cossin *et al* (2002): "Valuing early-stage high-technology growth-oriented companies is a challenge to current valuation methodologies".

Usually, projects financed by venture capital are characterized by a high level of uncertainty (both economic and technological). This complicates the process of estimating an appropriate discount rate. Information asymmetry, heterogeneous expectations and differences in the level of risk aversion complicate the matter further. In venture capital deal making, the allocation of control rights is almost as important as the allocation of cash flow rights. Since most companies financed by venture capital are not listed, which makes it hard to exit the investment, the protection of investors' rights is of utmost importance. Last but not the least, the deal should be structured in such a way that it gives the entrepreneur sufficient incentive to work hard. All these aspects make financial contracting in venture capital financing a very complex task to achieve. This raises the question: "How are these deals made in practice?"

There are some good surveys about venture capital financing in developed countries (see e.g. Kaplan and Strömberg (2003), Dittman *et al* (2004), Manigart (2000, 2002), Lehtonen (2000),

Sapienza *et al* (1996)). The situation in developing and transition countries has been examined less. Still, there are also a few empirical studies that investigate venture capital financing in transition countries (see e.g. Karsai *et al* 1999). The current paper attempts to further elaborate this field by examining venture capital financing practices used by Estonian venture capitalists. The development of the venture capital market in Estonia has received much attention over the last two years due to plans to initiate a government supported venture capital fund.

The aim of this article is to describe how Estonian venture capitalists make financing and investment decisions and compare these results with theoretical recommendations found in corporate finance and venture capital literature. The focus is on the methodological procedures in venture capital investment and financing. A case study approach is used to collect information about the current practice in venture capital investments and financing in Estonia.

Venture capital investments have not been studied very exhaustively in Estonia or abroad because the investments are made in private enterprises, and there is a shortage of quantitative and qualitative data. It is quite difficult to conduct such research in Estonia because of the lack of official statistics about the venture capital market. There is neither a public venture capital fund nor a venture capital association. Many national venture capital associations have been formed elsewhere, and therefore venture capital market overviews and analyses are quite often carried out. The aim of the empirical part of this paper is not to provide a market overview in Estonia, but to analyze and instigate discussion about venture capital investment and financing methods and procedures in Estonia. The emphasis of the empirical part is on a methodological approach and the usefulness of corporate finance theory in venture capital setting.

The empirical part of the article consists of five case studies. They provide a good analytical overview of the Estonian venture capital sector, and enable us to highlight the problems. Interviews were the main method of research. Structured interviews were carried out with Estonian venture capitalists at their offices in 2004–2005. The interviews were generally arranged with CEOs, and sometimes with financial managers and accountants. Almost all the interviewees wanted to remain anonymous.

The paper is structured as follows. It consists of two sections. The first section provides a theoretical background. It starts with a discussion of deal structuring. Next, the issues of corporate control and investor protection are analyzed. The problems associated with the estimation of the cost of capital in the case of a project in its early stages are analyzed and the last subsection presents a brief overview of valuation issues. The second section contains an empirical study. The empirical study is divided into six subchapters. The first describes the methodology and the sample used in the case study, then the structure and methods of venture capital investment and financing are analyzed, followed by an analysis of the problems associated with the cost of venture capital, corporate control and investment protection and valuation. The synthesis ends the second part of the paper.

At first glance, it may seem that these are quite different themes, but the authors want to emphasize the linkages between them. One thing causes another and some simultaneous problems arise.

1. Theoretical background

1.1. Venture Capital Deal Structuring: instruments, staged financing, syndication and dilution protection

Three control mechanisms are common to nearly all venture capital financing: 1) the use of convertible securities; 2) syndication of investments; and 3) the staging of capital infusions (Gompers 1995).

Brennan and Schwartz (1993) argue that the most plausible rationale for the use of convertibles lies in their insensitivity to company risk — that is, they are best suited for use in the case of high risk and asymmetric expectations. Green (1984) points out that convertibles can be used to reduce the problem of excessive entrepreneurial risk taking arising when a straight debt is used. Cornelli and Yosha (2003) claim that the use of convertibles reduces "window dressing" activities. Schmidt (2003) states: "…, convertible securities are a powerful incentive mechanism that can induce efficient investment without making both parties residual claimant on the margin". Empirical surveys in the United States have shown that convertible securities (especially preferred shares) are indeed the most widely used instruments in venture capital financing (Sahlman 1990, Kaplan and Strömberg 2003).

Sahlman (1990) notes that staged capital infusions are the most potent control mechanism a venture capitalist can employ. Sahlman (1993) pointed out that staging the commitment of capital is one of the best ways to allocate risks between entrepreneurs and venture capitalists and that such an arrangement is beneficial to both parties. As the risks associated with the project (and required rate of return) decreases during the lifecycle of the project, staging capital infusion results in greater ultimate ownership for the entrepreneurs. At the same time, it has been

argued that the best guarantee for a venture capitalist is entrepreneurs' substantial share after entrance (Koski 2000; Sherman 2000). By putting these two statements together, we see why it is wise to use staged capital infusion. If the entrepreneur's share decreases below 50%, then problems of corporate control will arise (Golis 2002). By staging the capital commitment, venture capitalists gain a valuable real option — an option to abandon the project (Sahlman 1993). The option to abandon is valuable as it makes it possible to put a stop to the venture without losing too much money when external factors become unfavourable, e.g. market demand does not increase as expected or competitors suddenly emerge. The use of multiple financing rounds seems natural as the investments are made step by step. Financing rounds are usually related to significant stages in the development process such as completion of design, production of a prototype, patent filing or the introduction of a second product (Gompers and Lerner 1999).

Another control mechanism is syndication of investment. Bygrave (1987) initiated the academic research on the syndication of venture capital investments. In the context of financial markets, syndicates are groups of investors that jointly make an investment decision. These syndicates are commonly formed among lenders (syndicated loans) and equity investors, particularly venture capitalists. In the context of venture capital, Bygrave (1987) and Lerner (1994) recognized a syndication relationship when at least two venture capitalists invested in the same venture in the same financing round.

Syndication relationships serve as a mechanism for spreading deal-related information to trusted partners, and as a mechanism to reciprocate prior invitations to syndicates and prior sharing of deal information (Bygrave 1987). Syndication also means risk sharing via portfolio diversification. Rational investors diversify their portfolios to reduce idiosyncratic risk and to make their portfolios more efficient (Markowitz 1952). However, venture capitalists find it more difficult to diversify their portfolio than

public market investors because of the high informational asymmetries of the private investment market (Sahlman 1990), and possibly because of the smaller size of their funds and the difficulty of divesting underperforming investments. In order to achieve an optimal level of portfolio diversification, and to reduce their financial value at risk, venture capital firms may choose to syndicate large investments (Seppä 2003).

In addition to previously mentioned aspects, syndication may lead to:

- Better decision-making. If several independent investors first check each other's willingness to invest in a potentially promising firm and then jointly invest in it, the selection they make may be superior to a decision based on only one decision-maker (Sah and Stiglitz 1986).
- Enhanced value-adding activities on the part of a venture capitalist. The potential value-adding activities of a venture capitalist include monitoring financial and operational performance, recruitment of management, arranging finance from complementary sources, serving as a sounding board for the entrepreneurial team, arranging incentive plans, providing access to auditors, lawyers, and investment banks, and setting company policies (MacMillan *et al*. 1988; Gorman and Sahlman 1989; Rosenstein *et al*. 1993; Sapienza 1992; Sapienza *et al*. 1996; Hellman and Puri 2000; 2002). No single venture capital firm can have superior capabilities in all these areas when compared to a group of venture capital firms including the focal firm (Seppä 2003).

Another aspect in deal structuring is the protection against a dilution of ownership. Current shareholders face a problem of dilution every time new equity or convertibles (including warrants and employee stock options) are issued. Dilution as a notion is hard to understand at first because it is biunivocal in venture capital literature. First, dilution is a situation where after a financing round earnings per share (EPS) dwindle and the book value of common stock decreases. Second, the issue of

new shares in the next financing round results in the original shareholders owning a smaller share of the company.

The dilution of EPS and the book value of common shares is not a real economic problem in many cases (Stewart 1993). The dilution of ownership on the other hand could be dangerous, especially if the share of ownership directly affects the control rights of the investor. However, as pointed out in the section 1.2, ownership share and control rights do not have to be connected in the case of venture capital financing.

However, venture capitalists need protection against future financing rounds having a lower valuation than the valuation of the current (protected) round (Kaplan and Strömberg 2003). There are several methods for achieving this. Under so-called full ratchet, the protected security receives a claim to enough additional shares in the subsequent financing to reduce the price of the protected issue to the price of the new issue (Ibid). Still, full ratchet is hardly ever used and other (less extreme) protective clauses prevail. According to the empirical study by Kaplan and Strömbrerg (2003), almost 95% of the financings include anti-dilution protection.

The last issue we discuss in this section is the share of ownership and its variation during different rounds of financing. Venture capital investments are made in early stage ventures and therefore it is obvious that the ownership shares change during the investment horizon. These changes can happen quite often due to different incentive schemes that involve stock options and similar instruments. If the development of the company is quicker or results are better than expected, then the share owned by entrepreneur usually increases and vice versa.

1.2. Corporate control and investor protection in venture capital financing

Corporate control is a fundamental concern for investors (Gompers 1995). Traditional finance assumes that all common stock has been created equal and each shareholder receives the same payoff per share owned (Dyck and Zingales 2002). In the last twenty years, however, a different view has slowly gained acceptance. According to this new view, a controlling shareholder can obtain some benefits that are not shared by other shareholders (*Ibid*). Examples of such benefits are influence over who is elected to the Board of Directors or the position of CEO, the power to build business empires, and the ability to transfer assets on non-market terms to related parties or consume perquisites at the expense of the firm (Nenova 2003). Besides extracting private benefits from the firm, a controlling shareholder can enhance its value by changing business strategy. Control rights matter because they allow the controlling party to make decisions in the presence of a conflict of interests (Hellman 1998). The difference in shareholder's rights, and especially how these rights are exercised, causes a differential in the per-share value of a control ownership block and a minority ownership block (Pratt 2001).

Venture capitalists' equity holdings are usually illiquid, which means that governance via exit in the short-term is not an option (Wright and Robbie 1998). The selling process takes a considerable amount of time (up to one year), is costly (both parties have to perform due diligence and estimate the value of the company) and the number of potential buyers is limited (i.e. buyers have some monopsonistic power) in the case of private equity (Abrams 2001).

As the control issues are very important in venture capital financing, financial contracts between venture capitalists and entrepreneurs include detailed descriptions of how control rights are divided. Kaplan and Strömberg (2003) found that in

VC financings cash flow rights, board rights, voting rights, liquidation rights, and other control rights are separately allocated and that allocation of control rights between VC and entrepreneur is a central feature of the financial contract. These rights are often contingent on observable measures of financial and non-financial performance (*Ibid*). Another feature of venture capital financing is that control rights received by venture capitalists are usually disproportionately large to what they would get under the "one share one vote rule" (see Sahlman 1990). Gompers (1997) found that the control rights received by venture capitalists are greater when the problem of asymmetric information is larger (Kirilenko 2001).

1.3. Cost of venture capital

The required rate of return demanded by an investor depends both on the characteristics of the project and on the type of financing instrument used.

In case of listed companies, the cost of equity can be determined by using the Capital Assets Pricing Model (CAPM) or some other market equilibrium model. The simplicity of CAPM has made it a standard benchmark in the industry. According to the CAPM, the required rate of return depends on the risk-free rate, the systematic risk of the company (or project) measured by beta, and the market risk premium. In the case of well-developed capital markets, obtaining that data is not a very difficult task. Although there are some fundamental and technical issues associated with the use of CAPM (see e.g. Damodaran (2005), Fernandez (2004), Sander (2000), Levy (1971), Fama and French (1992) etc), it is still by far the most widely used model for estimating the cost of equity (Bruner *et al* 2001, Pereiro 2002).

However, in the case of venture capital, the use of CAPM is difficult for the following reasons.

- Investments are made to a non-listed company and therefore liquidity risk exists.
- The unsystematic part of the total risk is much greater due to technological risks.
- The entrepreneur is sometimes forced to invest most or even all his wealth into one project, which makes it difficult to diversify the risks. In that case, he wants compensation for the total risk not only for the systematic part of it. Jones and Rhodes-Kropf (2004) argued that diversifiable risk should be priced even if the investor is fully diversified.
- The technological uncertainty declines during the project life cycle, i.e. the risk and thus the required rate of return depends on the stage of the project.
- Using staged financing instead of lump sum financing reallocates the risks between entrepreneurs and venture capitalists and thus may affect the cost of outside equity.
- Quite often, the distribution of control and voting rights does not correspond to the distribution of cash flow rights. This, however, affects the risk taken by an outside investor and his required rate of return.

Although scientists have tried to adjust CAPM for use in venture capital projects (see Smith and Smith, 2000) a completely different approach is utilized by practitioners. The managers of venture capital funds must compete with each other to obtain funds from investors. Therefore, they are mostly interested in the relative performance of the fund — that is, the fund is successful if its performance is better than the performance of competitors. The Association of Investment Management Research (AIMR) has deemed the IRR as the most appropriate measure of returns presentation for venture and other private equity investor investments. The European Venture Capital and Private Equity Association (EVCA) and The British Venture Capital Association (BVCA) have also adopted the IRR as the best measure of performance (http://www.ventureeconomics.com/vec/methodology.html). For example, Venture Economics calculates annual IRR for each

fund as cash-on-cash to the investors on a cumulative year-by-year basis, modified to incorporate the year-end valuation of the partnership's unliquidated holdings or residual value (*Ibid*).

It is highly questionable whether a fund level IRR can be used as the required rate of return on the project level. First, there is an issue with management fees and other costs associated with the management of the fund. Second, most funds invest their money in the project gradually, which means that they have quite large cash balances in the first years. Last but not the least, such an approach implicitly assumes that all accepted projects are within the same risk class.

Even though debt is not the predominant form of financing in venture capital deals, there are some venture capital funds dealing with so-called mezzanine financing. Loans to the venture capital projects are risky and therefore the usual yield-to-maturity is not the right measure of the cost of such a debt. Quite often, these loans are convertible or callable, which complicates the matter even more (see e.g. Brennan and Scwartz 1977, Ingersoll 1977). In these cases models that incorporate option-pricing theory are appropriate to use (see e.g. Hsia (1981)).

1.4. Appraisal of venture capital projects and valuation of early-stage companies

In their empirical paper, Dittman *et al* (2004) found that valuation methodologies had a statistically and economically meaningful impact on the investment performance of venture capitalists. Therefore, the proper choice of valuation method and the correct application of methodology are rather important.

Standard finance textbooks recommend valuation methods based on discounted cash flow (DCF) analysis (Brigham *et al* 1999, Brealey and Myers 2000). It is also possible to value

companies by using multiples (comparable company method) or based on the value of a company's assets. Nowadays, asset based valuation is usually not recommended any more, as the role of intangible assets and human capital in value creation is growing steadily. Still, there are some occasions, when the use of different variants of asset-based valuation may be appropriate. Probably the most innovative approach to valuation is a technique based on option pricing theory. Black and Scholes (1973) have argued that all corporate securities could be viewed as combinations of properly selected options.

Valuation techniques developed in mainstream corporate finance are applicable in venture capital too, but access to information may pose a particular problem (Wright and Robbie 1998). Early stage investments require valuation approaches that can handle uncertain and/or rapidly growing future cash flows in markets, which may scarcely be established (*Ibid*).

From the techniques listed above, the option pricing approach has characteristics that fulfil most of those requirements. Most venture capital projects have many real options (e.g. growth options, options to stage investment etc.) attached to them. Besides, if staged financing is used, an additional flexibility is created. Traditional valuation techniques are not capable of valuing those real options correctly. Therefore it is of no surprise, that most of the recent academic research has taken this direction (see e.g. Willner (1995), Benaroch and Kaufmann (1999), Seppä and Laamenen (2001), Davis *et al* (2002), etc).

Here once again the differences between the theory and practice are quite remarkable. While academic research has taken the direction of applying option pricing models in the valuation of venture capital projects, these are rarely used in practice. The National Venture Capital Association (NVCA) in the United States recommends that the Private Equity Industry Guidelines Group (PEIGG) guidelines should be taken as the basis for valuation procedures (http://www.nvca.org). These guidelines

emphasize the use of the concept of fair value (US Private Equity Valuation Guidelines 2004). In order to obtain fair value, an analyst should rely on recent cost or the latest round of financing data (*Ibid*). However, if subsequent events may have material impact on company value, one should perform multiples or comparable companies transaction methods (*Ibid*). DCF methods are recommended only on specific occasions (*Ibid*).

2. A Methodological Approach to Venture Capital Investment and Financing in Estonia

2.1. Methodology, description of the cases and hypotheses

The case study methodology is used as the research method in this paper. The case study investigates a contemporary phenomenon within its real-life context, in particular when the boundaries between the phenomenon and context are not evident (Yin 1989). Case descriptions are prepared in order to analyze case study evidence and the dominant model of the analysis is exploratory, using an explanation-building and pattern-matching technique. The only way to gather data is to conduct interviews. This is especially due to the fact that we are searching for explanations among Estonian venture capitalists. The results will enable us to answer how and why questions.

Defining the research questions is probably the most important step to be taken in a research study. The main questions posed are how and why, which are the most important questions in a case study research. The main questions posed are[3]:

[3] The list of all questions is presented in appendix 1 (Protocol Question)

1) How do venture capitalists structure deals in Estonia? Why?
2) How do venture capitalists find the cost of venture capital in Estonia? Why?
3) How do venture capitalists protect their ownership rights in Estonia? Why?
4) How do venture capitalists make valuations in Estonia? Why?

The cases are not sampling units, but experiments or multiple surveys — a multiple-case study design is used. The authors take a holistic view and use a single unit of analysis to make analytical rather than statistical generalizations. The holistic design is advantageous when no logical subunits can be identified. The subunits are present in this study, but can be classified as business secrets. In order to analyze the cases by subunits, business plans have to be accessible. Unfortunately, nobody revealed such information.

Interviews constituted the main method of the research. Structured interviews were carried out among Estonian venture capitalists at their offices in 2004–2005. The interviews were generally arranged with CEOs, and sometimes with financial managers and accountants. Each interview took approximately one hour. Almost all interviewees wanted to remain anonymous.

Although the interviews with the venture capitalists were not recorded, the authors can assure the reliability of the study. A case study protocol was used and written notes were taken. The reliability is high because of the interview technique. Case study interviews were used, which enabled the interviewer to explain and discuss the problems and questions. This ensured that the interviewee really had understood the question. As it was an advanced finance research, this technique was in accordance with the objectives.

The analysis includes five venture capital cases. The description of the cases is presented as follows.

Case A is a big and experienced venture capital provider in Estonia. It manages two different funds. The first fund is meant for start-up financing and the second is for growth-staged financing. It was one of the first venture capitalists in Estonia. It finances different sectors. It has made many venture capital investments in Estonia and abroad.

Case B is a small venture capital provider in Estonia, which does not actively invest in business ventures anymore. It has a small portfolio of Estonian and foreign ventures.

Case C is a venture capital provider in the Baltic States who has made investments in Estonia over the last decade. It has made quite large investments and has quite a large investment portfolio consisting of companies operating in different sectors.

Case D is a venture capital provider in the Baltic States. It has made quite small investments in different sectors for less than 10 years in Estonia.

Case E is a mezzanine capital provider in the Baltic States. Its portfolio consists of quite a few enterprises operating in different sectors, but the investments have been quite large. This case differs most considerably from others, because it does not provide equity capital.

There was a professional and experienced management team in all the venture capital funds in Estonia.

For the purposes of comparison and discovering profound explanations, the information gathered from Estonian venture capital backed entrepreneurs will be presented in the synthesis. Earlier statistical research among Estonian venture capital

entrepreneurs cannot be directly linked to the case study analysis.

Venture capital investments abroad are made primarily in high-tech industries that are contributing to innovation. The picture is different in Estonia. Estonian venture capitalists invest primarily in ordinary production and service enterprises, which are not very risky, innovative or young. This may also influence the use of innovative financing methods and structures. There are many differences, for example, between the valuation of high-tech and ordinary production companies.

Venture capitalists consider the capacity of the Estonian venture capital market very small and the projects that have been accepted have also been quite small. Therefore, syndication is very rarely used as a method of financing, inhibiting the use of staged investment and financing, which is very common in the venture capital sector abroad. Syndication is commonplace, even in first-round investments (Lerner 1994).

Most Estonian venture capitalists have a medium investment horizon. The average investment horizon is 4.25 years. The average venture capital investment period abroad is 3–7 years (Gladstone 1988; Smith, Smith 2000). This can be related to stage financing. Early-stage ventures are estimated to take on average of 6.16 years to mature; expansion stage ventures, 5.1 years; and acquisitions or MBOs/MBIs, 4.74 years (Manigart *et al*. 2002). The investment horizon also has an impact on the required rate of return (*Ibid*).

Based on empirical studies conducted abroad, some hypotheses can be proposed:

H1: Syndication is used in venture capital financing in Estonia.

H2: Most investments are made in the growth stages of companies in Estonia.

H3: Staged investments are often used by venture capitalists in Estonia.
H4: Estonian venture capitalists use preferred shares as instruments for deal structuring.
H5: Estonian venture capitalists take a minority holding in their portfolio companies.
H6: Dilution is a big problem among Estonian venture capitalists.
H7: Estonian venture capitalists use a modified CAPM.
H8: The average required rate of return is the same level in Estonia as in America and Western Europe.
H9: The Estonian Business Code poses problems to venture capitalists as minority holders in Estonia.
H10: Estonian venture capitalists use multiples for evaluating ventures.

These are the hypotheses, which should be answered in the following sections.

2.2. Venture capital deal structuring in Estonia

2.2.1. Syndication of venture capital investments in Estonia

Syndication is rarely used by Estonian venture capitalists because such a small venture capital market does not provide any opportunities to do so; however, none of the representatives of venture capital funds are against using syndication. Syndication is used when the venture capital fund has insufficient capacity to finance the entrepreneur alone or the opposite side has specific knowledge to offer. In four cases out of five, syndication has taken place. Syndication is not used in case D.

It must be noted that syndication is used when a venture capital fund has insufficient capacity to finance a project, but also due

to risk sharing and knowledge accumulation. This is the situation in case B.

> *Syndication is used when a project is big and the venture capital fund is not capable or ready to finance it alone. Syndication is advantageous when the opposite side has specific knowledge or the risk is too great. Risk sharing is the main reason for syndication.*
>
> **Representative from case B**

Syndication has taken place with other venture capital funds, commercial banks and "business angels" in Estonia. There are very few venture capital funds in Estonia and this may be the reason why commercial banks have been supplemented. Empirical research does not support the fact that commercial banks are taking part in syndication abroad.

The only case where syndication is not used is case D. The representative from case D said that they had considered syndication. The reason could be because their projects have not been so large. The representative from case E also pointed out small projects as being a problem. The Estonian venture capital market is too small for syndication.

Therefore, Hypothesis 1 was almost supported. Only one venture capital fund did not use syndication, but syndication was used quite rarely. It can be stated that Estonian venture capitalists are not against syndication. The reason why syndication is used so rarely is the fact that the projects accepted are quite small. Syndication decreased the investment risk. The influence of syndication on the required rate of return will be considered afterwards.

2.2.2. Investment stages and instruments

There are no clear definitions of the different investment stages; the differences should be seen as relative measures of company development rather than absolute measures. Gompers (1995) considers the stages in the development of firms before an IPO as follows: seed, start-up, early stage, first stage, other early, expansion, second stage, third stage and bridge. Second, third and bridge stage funding is considered to be late stage financing.

Estonian venture capitalists do use staged investments and convertible instruments, but only rarely. Complicated financing structures are not used during stages. The representative from case A pointed out that they even have different funds for different stages.

> *We have two venture capital funds: the first is meant for start-up financing and the second is for growth-stage financing. We use staged investments as well. This is common when additional capital is required to achieve the objectives. We do not set vetoes on continuing with the investors in later financing rounds. Complicated financing structures are not used; only common stock and convertible bonds are used for financing.*
>
> **Representative from Case A**

The second case differs from case A because start-up projects cannot be financed, staged financing is used to decrease the risks and a dynamic process of converting the finance instruments during staged venture capital financing also exists.

> *We are not a traditional venture capital provider, because we do not finance start-up projects. There are so few good start-up projects in Estonia that we cannot use the portfolio theory for diversification. The likelihood of*

failure is so great. Staged investments are used when necessary and this is realized by the venture capitalist. It may be indicated on the term-sheet in advance. We do not set restrictions on continuing with the same investors in later rounds. The reason for using staged investments is to decrease the risks. Common stocks and convertible bonds are the principal financing instruments used during the venture capital process. Convertible bonds are converted to common stocks during the investment, and the ownership share changes as a result.

Representative from Case B

By comparison with the preceding cases, only mature growth-staged investments are supported in case C. This is due to the risks involved. The risks are also decreased by using short investment rounds, which could be estimated using real options. However, option theory is not used. Many financing instruments are used to protect the venture capital company.

We support investments of mature growth-staged firms. There is no room for start-ups. Staged investments are indicated on the term-sheet in advance. There are 2–3 rounds during the venture capital process. The time between the rounds is 0.5–1 year. If the first round goes wrong, we do not proceed and prefer to liquidate the investment. We are not against taking on other venture capitalists in later rounds. The object is to increase the value of the investment, and we hope that the venture capitalist will bring knowledge to the portfolio company. Common stocks, preferred stocks and convertible bonds are used as financing instruments.

Representative from Case C

Start-up investments are precluded in case D and E due to the enormous risks involved. There must be more portfolio com-

panies in order to allow some investments to fail. The representative from case B was of the same opinion. Portfolio theory cannot be applied in the venture capital sector in Estonia. It also decreases syndication.

> *We use staged investments and indicate this on the term-sheet in advance. We do not place vetoes forcing the same partners to continue in later stages. This depends on negotiations. Common stocks are used in the first round and subordinated debt may be used in later stages.*
>
> **Representative from Case D**

Staged investment is not used only in case E. The venture capitalist does not take the ownership share and deal structuring is a little bit different. Convertible debt, subordinated debt and preferred shares are used in mezzanine financing. Preferred shares are not used in case E due to the Estonian Commercial Code. These problems are analyzed in detail in the section of corporate control and investor protection.

> *We do not use staged investments. We do not make the restrictions that the same financiers must proceed in next financing round although we have the power to do so. Subordinated and convertible debt is used as financing instruments.*
>
> **Representative of Case E**

Estonian venture capitalists avoid start-up investments due to the considerable risks involved. Growth-stage investments are preferred instead. This is not a restrictive factor for staged investment, however.

Hypothesis 2 was supported, because Estonian venture capitalists primarily made investments in the growth stage. Hypothesis 3 was not supported due to the fact that most investments

were not staged. Hypothesis 4 was also not supported, because none of the venture capitalists used preferred shares in deal structuring. The small size of most projects, little use of syndication, short-term investments and problems related to the Estonian Commercial Code may have contributed to why hypotheses 3 and 4 were not supported.

The staging of capital infusions allows venture capitalists to gather information and monitor the progress of firms, maintaining the option of abandoning projects. Prospects for the firm are periodically revaluated during the various stages. This leads to venture capital valuation problems, which are discussed in detail in section 2.5.

The staging of capital, however, may also induce investor opportunism. When the entrepreneur and the investor renegotiate the terms of the financial contract before a new stage is financed, the investor may appropriate rents, knowing the entrepreneur will lose something if s/he switches to a new investor. Empirical evidence confirms the active use of staged financing by venture capitalists (Kaplan and Strömberg 2003). This was not noticed in Estonia.

2.2.3. Ownership share in the venture capital process

The average ownership share taken by Estonian venture capitalists was 39% with a standard deviation of 21%. Venture capitalists abroad take a minority ownership on average and take the board sheet in order to protect minority interests (Lehtonen 2000). That is also the case in Estonia.

In the sample analyzed by Kaplan and Strömberg (2003), the venture capitalist typically controlled 50% of the cash flow rights; founders, 30%; and others 20%. Kaplan and Strömberg conclude that the founders give up a large proportion of ownership (*Ibid*). This finding contradicts the results of Lehtonen

(2000), who argued that venture capitalists usually take the minority ownership and protect their interests with extensive term sheets and shareholder agreements.

Ownership shares have changed in Estonian venture capital backed companies, often due to the use of convertible instruments and financial options. This is not really a staged investment because the change only occurs in capital structures without additional financing. The changes redistribute the risk level, and the required rate of return will change as well. The variation in the ownership share can be connected to staged financing. Staged financing was carried out in only 15% of enterprises.

The venture capitalists considered the ownership share a very important part of deal structuring. The share of ownership changes due to the convertible bonds in case A and B, the required ownership share depends on staged investment and business law in case A and there are two funds specialized in different sectors, which also influence ownership share.

> *The required ownership share is 51–100% for the first fund and 33.3–100% for the second fund. The reason for using a majority holding is the wish to be entrepreneurs ourselves. 33.3% of ownership is needed due to Estonian Business law: otherwise, the second party can change the articles of association in her favour and make an opportunistic decision regarding the ownership. We are also ready to take a 10% share if the entrepreneur is reliable and trustworthy.*
>
> **Representative from Case A**

A significant minority holding is taken in case B. By comparison with the case A, the ownership share also changes due to the use of option contracts prepared for the managers. If the managers have a stake in the company, it enhances their motivation.

A significant minority holding (20–50%) is needed. We do not want to take a majority holding because of the considerable risks involved. The share of ownership changes due to the use of convertible instruments and option contracts for managers. Convertible bonds are used as financing instruments at first. They will be converted to common stock during the venture capital process.

Representative for Case B

Corporate control considerations are also important when making ownership decisions. A larger share is preferred to a smaller in case C. It is not the same as a significant minority holding because sufficient control rights accompany shares of more than 50% (appendix 2).

Sufficient control is considered to determine the ownership share. The ownership share ranges between 15–100%. Due to the aim of being an active shareholder, the larger share is preferred. There are no concrete ownership shares desired. Even if we take a minority holding, vetoes are stated about ownership transactions in the term-sheet.

Representative from Case C

A minority holding is preferred in case D. The significant holding range is almost the same in case B. It is common in the venture capital world that venture capitalists obtain a lower ownership share when required by accounting rules. It is also emphasized by the representative from case D.

We take a minority holding usually of 25–49% of equity. A significant minority holding begins at 25% of equity. The fund has not taken the objective of being a majority shareholder because it lowers the motivation of the

> *entrepreneurs. The determination of ownership share is a matter for negotiation. If rapid growth is expected, we can agree on a lower ownership share. It is common in the venture capital world that the venture capitalists obtain a lower ownership share than that required by the accounting rules. The shares do not change often during the venture capital process. If the portfolio company cannot meet the targets, the ownership of the entrepreneur dwindles automatically in favour of the venture capitalist. Managers can use call options when the enterprise is successful and take the lost share back.*
>
> **Representative from Case D**

Case E is the only case where an ownership share is not taken. Convertible and subordinated debt are used as financing instruments. These are not equity instruments. Due to changes in capital structure, the share of convertible instruments also changes. This is mainly due to the option schemes for managers in Case E.

Hypothesis 5 found support. Most Estonian venture capitalists take a minority holding in their portfolio companies. Only in two cases out of five were majority holdings sometimes taken.

The variation in ownership share may cause corporate control problems. These are analyzed in detail in section 2.4. The second problem — dilution — will be analyzed in the next subsection.

2.2.4. Dilution

If we consider staged investments, dilution problems may arise because the shareholders' share dwindles. Venture capitalists are given a lower ownership share according to accounting rules. The expected value of the enterprise may be greater in the

future and then the venture capitalist will be in a better position. Venture capitalists search for those investments that satisfy their required rate of return. If the venture capitalist receives its share based on expectations made at the beginning of the investment, it may result in much larger yield than expected. Therefore, the entrepreneur provides a slightly smaller holding to the venture capitalist in order to protect him against dilution. This is also the case in Estonia.

Dilution is not a big problem for Estonian venture capitalists. Dilution is not a problem if the required rate of return is realized. The ownership share is not an objective in itself. The representatives from case A and C share this view. The representative from case B points out almost the same view.

> *There has been dilution in our venture capital process, but we have not had any problems with it. If we get the required internal rate of return, there is no problem. Dilution is not a problem when the share dwindles due to the option contract for managers. These are exercised to realize when the company is flourishing. It results in increased value.*
>
> **Representative from Case B**

The representative from case D also emphasizes the ownership rules of accountancy. He connected the dilution to the accounting rules.

> *Dilution depends on the ownership share taken according to equity. The ownership share may be smaller or larger than the accounting rule. Therefore, a direct dilution may result. We have not had a problem with dilution so far.*
>
> **Representative from Case D**

There were no problems of dilution in Case E, because no ownership share was taken. Although the share has been diminished in the capital structure during new financing rounds, the representative from Case E did not see this as a problem.

Hypotheses 6 found no support, because most Estonian venture capitalists did not consider dilution as a big problem. This may be because staged financing was carried out in only 15% of enterprises and the variation of ownership caused by the realization of option contracts has not been great. On the other hand, this is a question of attitude. Estonian venture capitalists pointed out that it is the required rate of return that is important, not the ownership.

2.3. Cost of venture capital in Estonia

Most of Estonian venture capitalists do not have a measure of the required rate of return as it is considered in the finance literature. The internal rate of return is often used instead. Although the well-known CAPM cannot be used in venture capital setting because it is a liquid market model and assumes perfect capital markets, the alternatives discussed in the theoretical section could offer a good solution.

The determination of rate of return among Estonian venture capitalists is more intuitive. Some venture capitalists take into account the systematic and non-systematic risk. The result is a large required rate of return and this is especially due to the enormous risks. Complex financial models are not used in Case A.

> *We want bigger returns (30-35%) than ordinary financial intermediaries do. The internal rate of return is considered the required rate of return for the project. We do not have a model for the cost of capital — this is determined more intuitively. We do not take into account*

the systematic risk of a project (IT sector excluded) as a beta coefficient in CAPM.

Representative from case A

It is quite surprising that systematic risk is not taken into account. The CAPM model states that only systematic risk may be taken into account. Non-systematic risk can be eliminated using diversification. Nevertheless, we have to bear in mind that it is somewhat different in private equity setting. The diversification cannot be high in venture capital investments. The second reason may be the fact that specific high-risk investments are made in early stage ventures. Ultimate success depends much more on business and technological (non-systematic) risks than on interest or exchange rate (systematic) risks.

Complicated financial models are not used in Case B either. The required rate of return mostly depends on different risks. A mean-variance model is used as a close approximation of the required rate of return in case B.

The internal rate of return is considered as a required rate of return. We do not use complicated models like CAPM because venture capital is not traded in liquid financial markets. The calculation of the cost of capital is not an exact science: there is no difference between returns like 28% and 32%. We do not reinvest the cash flows earned during the venture capital process. The required IRR is approximately 30%, but a lower rate is also acceptable if the standard deviation is lower. There is no great difference between getting a high yield with large risk or a lower yield without a risk at all, although we prefer a modern risk level.

Representative from case B

The internal rate of return on projects is a measure of the required rate of return also in Cases C, D and E. Systematic risk

is taken into account in cases C, D and E when evaluating the required internal rate of return. The evaluation of the return is principally similar to the CAPM although it is not a strict science.

As pointed out in the staged financing part of the paper, most of the venture capitalists do not finance start-up projects. Therefore, the required rates of return are not very high. A comparison is made with American and Western-European venture capital investments.

> *We do not require very high yields because we are not a traditional venture capitalist who finances start-ups. The minimal required internal rate of return is 25%. We avoid redundant risk and take into account the systematic risk when calculating the required rate of return. The IRR is also a measure of the required and realized return.*
>
> **Representative from Case D**

What is a required rate of return determined by positioning? Is it a bit like in marketing concepts? There are many types of investors operating in financial markets. The determination of the required return is completed primarily in connection with the risks and types of financing. These can be positioned as with Case E.

> *We determine the required rate of return by positioning. Commercial banks require 4-8%, mezzanine financiers 15-20%, equity providing venture capitalists 25-30%. Our minimum required rate of return is 16% and current yield must be 9%. Systematic risk is an important factor in evaluating required rate of return.*
>
> **Representative from Case E**

The results are aggregated in table 1. Venture capitalists require quite a high rate of return because of very high risks. The

survey conducted among Estonian venture capitalists showed that the required rate of return was between 16-35%. Estonian venture capitalist returns are around the same interval as in the rest of the world. Hypothesis 8 found support.

On average, venture capitalists require a return of between 36% and 45% for early-stage investments and between 26% and 30% for expansion investments, acquisitions, buyouts, and other later-stage categories (Manigart *et al* 2002). The required return of venture capital investments abroad is 20-100% (Koski 2000).

Table 1. Cost of capital and rate of return on venture capital investments

Case	A	B	C	D	E
Measure of the cost of capital	IRR	IRR	IRR	IRR	Positioned IRR
Matter of systematic risk	No	No	Yes	Yes	Yes
Required rate of return (%)	30–35	Min 20[4] Min 30[5]	Min 30	Min 25	Min 16

Estonian venture capitalists do not use a modified CAPM. Hypothesis 8 is not supported because most Estonian venture capitalists use the IRR as a measure of the cost of capital, but notwithstanding some elements are applied from the CAPM.

2.4. Corporate control and investor protection in venture capital setting in Estonia

Deal structuring and the choice of the correct financing instrument are very important when considering corporate control

[4] For debt capital
[5] For equity capital

issues and investment protection. Estonian venture capitalists do not use preferred shares to manage the control right. They take the same risk position as entrepreneurs. They have quite often a minority ownership, which puts them in an even more risky position. In order to protect themselves, they set vetoes and additional clauses in the term-sheet. These are as follows:

- vetoes on equity transactions
- a fixed capital structure
- fixed capital costs
- fixed board members
- option contracts
- fixed control variables

The representatives of venture capital funds highlighted investor protection problems and some corporate control considerations. The representative from case A highlighted some corporate control problems concerning the Estonian Commercial Code. These problems arise because venture capitalists are outside investors and therefore do not have much information and power to influence decisions.

> *Problems exist at the board level. The management board has a representation right and the relationship with the supervisory board is quite fuzzy in Estonian law. Investor protection is also a problem in Estonia according to venture capital (as outside equity) providers. Venture capitalists should get more rights than ordinary minority shareholders.*
>
> **Representative from case A**

On the other hand, there were no problems concerning corporate control and investor protection in case B. It is a question of attitude.

> *Investor protection is guaranteed well in Estonian business law. There have been no serious problems so far. The taxation of option contracts is the only problem we have faced. This is due to the income tax on fringe*

benefits. We also set vetoes in the term-sheet to protect ourselves.

Representative from Case B

The attitude towards corporate control problems depends on previous experiences with portfolio companies. Problems have mostly arisen when the venture capitalist has less than 33.3% ownership. Shareholders can block all those resolutions at a general meeting that require a supermajority, if share ownership is above 33.3% (appendix 2).

Corporate control problems also arose concerning minority investor status in case C. Venture capitalists should not be treated as ordinary outside minority shareholders. The representative from case A also pointed out this problem. This leads to the determination of sufficient share of ownership according Estonian Commercial law (appendix 2). Although vetoes can be stated in advance, the regulations by law also have to be considered.

The management and the supervisory board members are indicated in the term-sheet in advance. Although we usually take the minority share, we want more rights than an ordinary minority shareholder. It is common in the venture capital world. The problem is in using preferred shares as instruments that should guarantee greater investor protection. The Estonian commercial code does not allow for the use of preferred shares more than 1/3 of share capital. The minimal ownership share, which has substantial meaning, is 15% of equity in our opinion.

Representative from Case C

Another problem concerning the Estonian Commercial code is the regulation of preferred shares. As the representative from case E pointed out, preferred shares are allowed for use in no

more than 1/3 of share capital. It is especially a problem for case E, because of mezzanine financing.

The representative from case D pointed out the very intriguing problems of outside investor protection concerning minority shareholding. This problem also stems from the Estonian Commercial code again, but from a different viewpoint.

> *We set vetoes of equity transactions in the term-sheet even if we have a very low ownership share. The implementation of some paragraphs is a problem in the Estonian Commercial code. If a venture capital fund liquidates its holding and a new holder sells its holding within 6 months at the higher price, the venture capital fund will have no opportunity to obtain any profit. It is obvious that the entrepreneurs beguiled the venture capital fund due to the existence of asymmetric information. There is no such common law practice (solution) in Estonia. Another problem arises due to the minority holding: a minority shareholder cannot influence the dividend decision, for example. We do not understand the advantages given by a preferred share. A private limited company may not use preferred shares.*
>
> **Representative from Case D**

What could be the solution to this intriguing problem? This is actually a question of asymmetric information. Although venture capitalists are considered the best investors to deal with asymmetric information, some problems will remain.

There are many problems concerning mezzanine financing in Estonia. There is a gap in the Estonian Commercial Code concerning convertible instruments. Two problems exist: the restrictions on the use of preferred stock and the regulations.

The seat on the supervisory board is required despite no ownership. There have been no problems getting it so far. The legislation concerning mezzanine financing is missing in Estonia. It makes our business complicated. The Estonian commercial code does not allow the use of preferred shares to the value of more than 1/3 of share capital, but these are the main instruments in mezzanine financing. The solution is to use subordinated debt[6], but it also has shortages due to the law of Obligations Act.

Representative from Case E

Estonian venture capitalists highlighted that the Estonian Commercial Code does not regulate the usage of mezzanine financing and convertible instruments (table 2). Preferred shares are not allowed if more than 1/3 of share capital. Private limited companies are not allowed to use preferred shares at all. It restricts mezzanine financing in Estonia and financing entrepreneurs.

Table 2. Corporate control and investor protection issues

Case	A	B	C	D	E
Control problems	Rights between supervisory and management board	No	No	Supervisory board authority	No
Problems with legislation	Investor protection	No	Too many restrictions in commercial code	Implementation of commercial code; minority interests	Missing regulations for mezzanine financing
Problems with financial instruments	No	Taxation of option contracts	Preferred shares	Preferred shares	Convertible instruments

[6] Subordinated debt has not been allowed in Estonia since 2004 (Bankruptcy Act 2003)

A venture capitalist as a minority holder often has no power to influence dividend decisions. Some protection is provided by the vetoes stated in the term-sheet in advance. Even if a minority holding is taken, significant control rights are required and fortunately often achieved. The venture capitalist will get a board seat notwithstanding a shareholding (mezzanine financing). How big should the holding be to guarantee investor protection for Estonian venture capitalists? There are different views as pointed out during the interviews. Different possibilities are summarised in appendix 2.

There are also some problems at the board level (table 2). The rights between the supervisory and the management board are quite fuzzy. Venture capitalists always get a seat on the supervisory board, but some important decisions and everyday decisions are made by the management board. Some venture capitalists have a seat on the management board as well. This issue necessitates active involvement and majority ownership, leading us to the fact that venture capital is more than just money.

Hypothesis 9 was supported, because the problems were connected to minority holding and deal structuring. Some of these problems were also pointed out in the deal structuring sections.

2.5. Venture capital valuation in Estonia

The methods for venture capital valuation will be considered in this section. Other important problems that arise due to venture capital valuation include different (or heterogeneous) expectations and the use of real options in Estonia.

Although venture capitalists do not use complicated models to find the cost of capital, they pay much more attention to complicated financial valuation models. This may lead to another problem. The cost of capital is an important variable that enters the valuation model. Therefore, the results of the valuation may be biased.

In order to determine the value, good financial projections must be prepared. This is the biggest problem for case A. The projections are prepared by the venture capitalist due to large heterogeneous expectations. Discounted cash flow methods are very popular in case A, but problems exist.

> *Capital budgeting and the estimation of future cash flows are the problems. We can make a profound prognosis and find a return based on complicated models, but it may not materialize due to risk and uncertainty. Therefore, it is important to gauge the human capital and a numerical analysis is not as important as scientists might expect. We make the estimations ourselves because we cannot trust the entrepreneurs. If the expectations are too heterogeneous, we do not make the investment. Entrepreneurs overvalue the enterprise very often and have a large void in the finance. The valuation is based on free cash flows, but we do not use the whole model due to continuous value problems. It may give a very biased estimate. Multiples are quite important.*
>
> **Representative from case A**

The valuation of human capital was even more important than the numerical analysis in case A. This is also very important in cases B, C, and E. The venture capitalists stated that the existence of human capital is a prerequisite for investing. The money is not the only thing that matters. Venture capitalists have to instruct entrepreneurs to use money effectively.

Heterogeneous expectations are not as important as in case A. DCF methods are used and the entrepreneur makes the projections him or herself. This is the difference compared with case A.

> *Estimating the human capital and the history of enterprises is very important when making a venture capital investment decision. Human capital valuation is impor-*

> *tant because the growth potential depends on it. There was no substantial asymmetric information in the venture capital process. If we feel the information obscures, we do not make the investment. We use DCF methods for valuation. Multiples are less frequently used. Asymmetric information and heterogeneous expectations are not a problem. We do not make the prognosis ourselves, but use those given by the entrepreneur instead and adjust them if needed. The entrepreneurs should provide reasons for their expectations; otherwise, we do not make the investment due to the expectations being heterogeneous. Systematic risk is not important in the valuation, but the overall risk is very important because we cannot allow half of the portfolio companies to fail.*
>
> **Representative from Case B**

Multiples and DCF methods are used in case C. The venture capitalists use them together and take the expectation in order to get an unbiased estimate. The real option method is not used and numerical analysis is not very important again. Emphasis is on the valuation of human capital.

Case D differs from the others because the book value is used for the estimation. Book value is used because of uncertainty. The cost of capital is also very difficult to find, but this is an important input to the valuation models. The projections are subject to change in the distant future.

> *We make a prognosis for 5 years, which is the moment to make the liquidation. Book value and DCF methods are used to make the valuation. Multiples are not used. The evaluation of human capital is very important. The numbers cannot be trusted due to the great risk and uncertainty.*
>
> **Representative from Case D**

Case E is unique because the valuation is made regardless of ownership share. This is due to the specifics of mezzanine financing. Mezzanine financers use convertible debt, subordinated debt and preferred shares.

> *Although we do not take the ownership share, we pursue exhaustive due diligence. We use venture capital and DCF methods and comparable prices to evaluate enterprises. Illiquidity premium determination is the most complicated issue in the valuation process. We make the projected statements for 5 years. The most important is the human capital valuation not the numerical analysis. We also use some elements of the real option method because we evaluate the outgoing option.*
>
> **Representative from Case E**

The main results concerning valuation are summarized in table 3. Problems arise using conventional DCF methods in the valuation. Most Estonian venture capitalists are aware of the problems concerning DCF methods: estimation of cash flows in the early stages of the company and the calculation of continuing value. Therefore multiples are used as a benchmark to DCF results.

Table 3. Venture capital valuation issues

Case	A	B	C	D	E
Valuation method	Cash flow Multiples	DCF Multiples	Multiples DCF	Book value DCF	DCF Multiples
Prognosis	Venture capitalist	Entre-preneur	Jointly	Entre-preneur	Jointly
Heterogeneous expectations	Yes	No	No	Yes	No
Real options	No	No	No	No	Some elements

Net present value (NPV) is also an important criterion. All venture capitalists assured that they do not accept a project with a negative NPV. The project may also have a negative NPV, but it depends on the investors (their different discount rates and expectations). The authors want to emphasize that although venture capitalists do not use the models of cost of capital, they pay much more attention to complicated financial valuation models.

There were two approaches when dealing with projections. Some venture capitalists take the entrepreneurs projections; some make the projections themselves and others make projections jointly. Estonian venture capitalists did not consider heterogeneous expectations as big problems. The solution is not to make the investment at all or find a consensus during the negotiations. The use of real options may be a solution as well, but it is not used among entrepreneurs and venture capitalists. The elements of real option theory are only used in case E.

The authors expected that Estonian venture capitalists use more numerical analysis, but they pay much more attention to the evaluation of human capital. The existence of human capital is the most important criterion in continuing the venture capital process.

Hypothesis 10 was supported. Four out of five Estonian venture capitalists used multiples for evaluating ventures. This is mainly due to simplicity. The authors want to emphasize that multiples were used often with other methods.

2.6. Synthesis of the research results

The Estonian venture capital market is still in its infancy. There is neither a public venture capital fund nor a venture capital association. The market is small and therefore there are few venture capital funds. Five venture capital funds were analyzed in this article.

The average venture capital investment size was small and investments were made especially in the growth stage of companies (table 4) in Estonia. Investments made in case C and E can be said to be medium. There is no clear distinction between investment size, stage and horizon. Investment size could be connected to syndication. However, syndication is used so rarely that there is no reliable relationship. The results of syndication research are consistent with the findings of Lockett and Wright (2001). Syndication is both a function of the desire to spread financial risks as well as the need to share firm specific resources, knowledge.

The investment horizon was medium compared to the US and Western Europe. It was 5 years on average in cases A, D, E and 2-5 years in cases B and C. This may be one of the reasons why staged investments were rarely used. Growth stage investments were the second reason. Estonian venture capitalists provided funds to companies so they could grow rapidly. Staged investments are more common in early stage investments where more stages are ahead and the risk is enormous (especially in the seed stage).

It should be noted that the venture capitalists used some debt instruments (convertible or subordinated debt). These were used for reducing the risks. The share pointed out in table 6 is a stake in equity capital and we can see that venture capitalists prefer a minority holding, although the total share of capital may be more than 50% due to the debt holding. There was only one venture capital fund (case E) that did not make equity investments. One venture capital fund (case E) did not make staged investments and therefore did not use common stock.

The research conducted among venture capital backed entrepreneurs showed that 85% of deals were financed by common stock, 5% by convertible debt and 10% by ordinary debt. Preferred stock was not used at all. (Kõomägi 2005b)

Numerous surveys in different countries (see e.g. Pinegar and Wilbricht (1989), Kester *et al* (1998), Kjellman and Hansen (1995), Beattie *et al* (2004), Da Silva Mota and Nakamura (2004) etc) have shown that the most preferred source of financing is internal equity capital and if external financing is needed, companies try to use straight debt (either in the form of bank loans or bonds). The same holds for Estonia (Sander 2003). However, these surveys concentrate on large, mature and in most cases listed companies.

Table 4. General overview of venture capital investment and financing in Estonia

Case	A	B	C	D	E
Investment stage	Start-up Expansion	Growth	Rapid growth Exit	Growth	Growth
Staged investment	Yes	Yes	Yes	Yes	No
Financing instruments	Common stock, convertible bonds	Convertible debt, Common stock	Convertible debt, preferred shares, common stock	Common stock, Subordinated debt	Convertible debt, Subordinated debt
Syndication	Rarely	Rarely	Rarely	No	Rarely
Share (%)	51–100; 33,3–100; 10[7]	20–50; 100[8]	15–100	25–49	0
Variation of share	Often	Often	Rarely	Rarely	Rarely
Dilution	Yes	Yes	Yes	Yes	No
Dilution as a problem	No	No	No	No	No

The shareholding held by Estonian venture capitalists did not change often. This is mainly due to the execution of financial options. Four out of five venture capital funds made stage investments, which also changed the shareholding. The venture capitalist makes optimal investment decisions when he has a

[7] If entrepreneur is trustful

[8] Restructuring deal

fixed share contract and gets a fixed proportion of the cash outflows, and finances only a fixed part of future financing rounds (Admati, Pfleiderer 1994). All equity financing venture capital funds pointed out that dilution occurred, but nobody mentioned that this was a problem. Therefore, the variation in the shareholding was not a problem from the venture capitalists' point of view. Some venture capital backed entrepreneurs pointed out that dilution is a problem. Actually, it was the main dread of the entrepreneurs. Estonian venture capitalists did not consider dilution as a problem.

There are only three stages mentioned by Estonian venture capital-backed entrepreneurs. According to the responses of venture capital backed entrepreneurs, 10% of venture capitalists entered their company during start-up, 85% in growth and 5% in the decline stage (Figure 1). (Kõomägi 2005a)

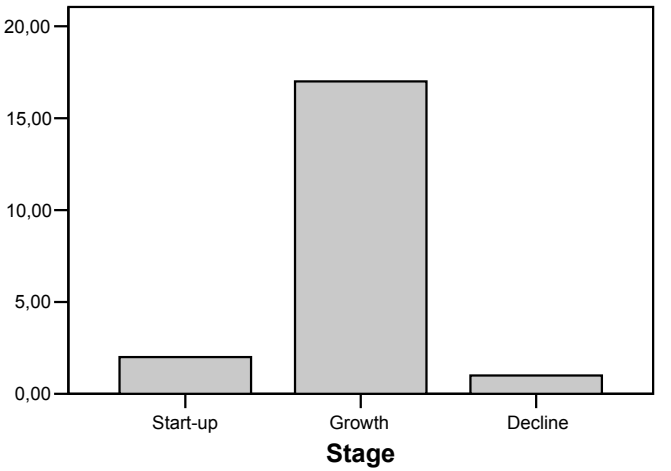

Figure 1. Venture capitalist's investment stages in Estonia (Kõomägi 2005a)

Venture capitalists usually enter their portfolio company during the early stage, although it has shifted to later stages in recent years (Lockett, Wright 2001). More venture capital investments are made in the later stages in Asia in comparison with Europe (Allen, Song 2002).

Estonian venture capitalists pointed out that the Estonian Commercial Code is quite fuzzy as far as decision power is concerned. Estonian venture capitalists also interpreted the substantial ownership share quite differently. There have not been any lawsuits, but problems have arisen. Many problems have been prevented due to the vetoes stated in term sheets in advance. It may be the best solution vehicle for overcoming these problems.

Following figure 2, the cost of venture capital and required rate of return were the second topics analyzed in the article. It was the most difficult part of the discourse. Most Estonian venture capitalists and venture capital backed entrepreneurs did not acknowledge any determination of cost of capital. They used the project's internal rate of return for determining the cost of capital (figure 2). Some venture capitalists found the cost of capital by positioning. Nevertheless, we have to admit that there is no good model that has been developed to estimate the cost of venture capital in the world.

Venture capital backed entrepreneurs were also questioned about which methods they use when calculating the required rate of return. Seventy-five percent of respondents did not use any models, 20% used CAPM and 5% a modified CAPM. They determined it more intuitively. It can be concluded that Estonian venture capital backed entrepreneurs use the models of cost of capital more. The reason for this may also be influenced by the research method: venture capital backed entrepreneurs answered the questionnaire, but venture capitalists were asked in interviews in which they explained the evaluation. (Kõomägi 2005c)

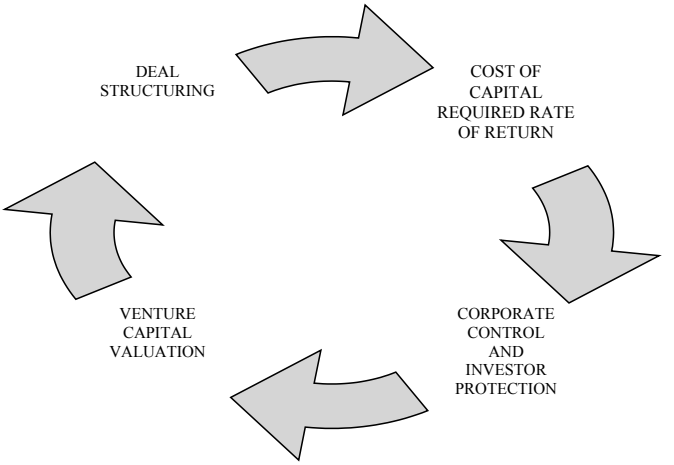

Figure 2. Venture capital decision-making process

Another problem arose considering the IRR. The IRR is based on the assumption that the cash flows are reinvested. Due to the specifics of venture capital investments, cash flows are often not reinvested during the venture capital process. These results may be mathematically biased. The bias depends on the ratio of cash inflows during the venture capital process (except final cash flow) and the final cash flow. If the ratio is high, the bias is high. Usually the ratio is low in venture capital investments.

There is a problem concerning reinvestment in case B. The IRR assumes that cash flows must be reinvested at the IRR. If the cash flows are not invested, actual return is lower than calculated. The following numerical example demonstrates the problem.

Let us assume that the initial investment was 190. At the end of year 1, the cash flow is 100 and 120 for second year. Total cash inflow is 220. The IRR is 10%. If the cash flows are not reinvested, the return is only 7.61% ($IRR_{actual} < IRR_{accounting}$).

Correct IRR is only achieved if the cash flows are reinvested. This can be proved by the following calculations: $100 \cdot (1.1) + 120 = 230$, and $190 \cdot 1.1 \cdot 1.1 = 230$.

The cost of capital depends on risk. Systematic risk was taken into account in cases C, D and E. Systematic risk was not taken into account in cases A and B. According to the CAPM model, there is no risk premium for bearing non-systematic risk. The interviewer must admit that the result may be somewhat biased, because the question considered the beta coefficient. On the other hand, venture capitalists' portfolios are not well diversified and the CAPM model cannot be used. During the interviews, the venture capitalists pointed out that some elements of CAPM models were used. Some venture capitalists (case C and D) took into account the risk free rate of return and beta coefficient.

There are several fundamental and technical issues associated with the use of the CAPM. The technical issues arise from the incorrect choice of market index or return interval, no synchronous trading and the existence of bid-ask spreads, etc (see e.g. Damodaran (2005), Fernandez (2004), Sander (2000), Levy (1971) etc). The fundamental issues stem from the fact that there may be other priced components of risk not captured by the CAPM (see e.g. Fama and French (1992)). In addition, surveys have shown that corporate managers are mostly concerned with the occurrence of bad outcomes — that is, they worry about possible losses (MacCrimmon and Wehrung (1986), March and Shapira (1987)). Psychological experiments carried out by Kahneman and Riepe (1998) gave similar results. The CAPM views the systematic part of total risk in relative terms as the risk, but investors may prefer some downside risk measures as these correspond better to their perception of the risk.

The required rate of return also depends on the type and stage of the financing. There is a clear difference between debt and

equity financing when considering the required rate of return. A subordinated loan is substantially less expensive than equity based venture capital financing in Estonia, but it is more expensive than an ordinary bank loan. The required rate of return is the greatest in early stage financing (case A) (table 4).

Usually, the required rate of return depends on the stage of the project (see table 5). Psychological risk theory has been applied to explain the profiles found (Ruhnka & Young 1991). The existing research shows that the risk of the loss associated with venture capital investment decreases steadily as the venture reaches higher stages of development (Seppä and Laamanen 2001). According to the survey by Ruhnka and Young (1987), venture capitalists expect that the risk of loss associated with venture capital investments decreases steadily as a venture reaches higher stages of development. Their results indicate that the aggregate risk of loss is as high as 66% for seed investment, and around 20% for bridge financing (*Ibid*).

Table 5. Venture capitalists' required rates of return for different stages of development

Development stage	Rate of return demanded	
	Wetzel (1981)	Ruhnka & Young (1987, 1991)
Seed	73%	50.0%
Start-up	54.8%	50.0%
Third stage	42.2%	37.5%
Fourth stage (Expansion)	35.0%	30.0%
Exit stage	35.0%	22.5%

Source: Seppä and Laamanen (2001)

Table 5 shows that venture capitalists use very high discount rates in assessing potential investments. This phenomenon is caused by the very optimistic cash-flow projections made by entrepreneurs, but there is evidence that high discount rates are used even in the case of internal projections (Jones and Rhodes-Kropf 2004).

The influence of syndication on required rate of return is contradictory in the finance literature. Mason and Harrison (2002) found that syndication increases the rate of return, but Lockett and Wright (2001) and Leleux, Surelmont (2003) found that it decreases because of risk reduction. We cannot make statistically significant relationships with it in the Estonian sample. Estonian venture capitalists stated that syndication may help to decrease risk and therefore it may be that the rate of required return is lower.

The authors reached the conclusion that the cost of venture capital and the required rate of return are the topics of the venture capital process, which need further explanation and consideration in Estonia and abroad. The academicians must admit that the estimation of the cost of capital in venture capital setting is an unresolved problem.

There are quite many problems in the corporate control and investor protection side in Estonia. Corporate control problems arose in cases A and D. The venture capitalist as an outside equity provider needs more control rights and needs to take part in management. However, many vetoes have been stated in the term sheet in advance to protect the shareholding and interests. The venture capitalists' role is to advise entrepreneurs in different functional areas of companies — venture capital is more than money.

Only one venture capitalist did not see any problems concerning investor protection. Venture capitalists are quite often minority shareholders, but a substantial shareholding begins at 51%. The vetoes are a partial solution to the problem.

The biggest problem concerning venture capital financing from the corporate control point of view in Estonia is the use of specific financing instruments: subordinated debt and preferred shares. It was a problem in cases C, D and E. The Estonian Commercial Code does not allow for the use of these instru-

ments as much as desired and the protection side is questionable, based on the views of Estonian venture capitalists. Here is a recommendation to Estonian legislators to improve the Estonian Commercial Code.

Sahlman (1990) points out that staged financing is the best control mechanism, which enables us to abandon the project if the problems of asymmetric information arise. As it became clear in the first empirical section, staged financing is not very often used by Estonian venture capitalists.

According to the empirical studies, the interests of ordinary minority shareholders are relatively well protected in Estonia (see Pistor *et al* 2000, Pajuste 2002). However, the enforcement of laws and regulations (effectiveness) in transition countries usually lag behind the quality of the law (extensiveness) (Pajuste 2002). Investors are quite well protected in common law countries, but the French law system has the worst protection (Leleux *et al* 2003). Worse investor protection causes concentrated ownership (Smith, Smith 2000). The German civil law system does not have good investor protection either. The Estonian civil law system is quite similar to the German. Weak investor protection may be one of the reasons why the venture capital market is not well developed in Estonia.

An indirect method to measure the importance of corporate control considerations is to study ownership[9] concentration and external financing data. Usually, in countries with poor protection of minority shareholders the concentration of ownership is high (La Porta *et al* 1998), and companies rely very little on external equity (Pistor *et al* 2000). Estonia is a country with high ownership concentration. Only 2% of public limited companies have more than 50 shareholders (see Fig. 3).

[9] There is a strong connection between ownership share (see point 2.2.3) and corporate control (see point 2.4).

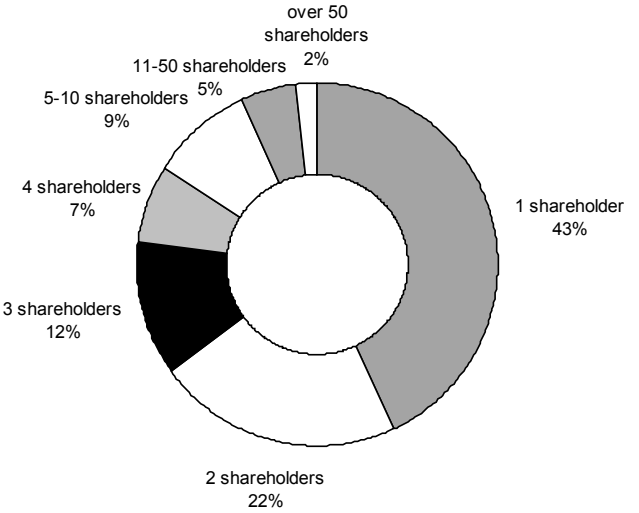

Figure 3. Distribution of Estonian Companies according to the number of shareholders
Source: Estonian Central Registry of Securities Statistics — Investor and Entreprenuer, autumn 2004.

High ownership concentration is a sign of relatively poor protection of minority shareholder interests. A direct method to assess the importance of corporate control issues is just to ask the managers (or investors). Table 6 presents the results of six surveys about financing preferences among CFOs conducted in four different countries: the United States, Finland, Brazil, and Estonia.

The Mann-Whitney's *U*-test was performed to determine whether the opinions of Estonian CFOs about the importance of corporate control considerations differ statistically from the opinions of their American and Brazilian colleagues[10]. The

[10] Unfortunately, due to lack of data, authors could not use the same test to compare opinions of Finnish and Estonian CFOs.

results indicated that Estonian financial managers are more concerned about voting control than their colleagues in the United States and Brazil, and that these differences are statistically significant at least at the 10% level.

Table 6. Importance of voting control in financing decisions (The managers were asked to rank the factors on a scale from 1, "unimportant" to 5, "important".[b] Means are calculated from rankings 1 through 5)

Authors	Country	Year of publication	Importance of voting control
Pinegar and Wilbricht	USA	1989	3.24
Kamath	USA	1997	2.84
Hittle, Haddad, and Gitman	USA	1992	3.04
Kjellman and Hansen	Finland	1995	2.83
Sander	Estonia	2003	3.70
Nakamura and da Silva Mota	Brazil	2004	3.30

Venture capitalists are not the only ones who need protection in the venture capital process. Estonian venture capital backed entrepreneurs also had some worries. Fifty-five percent of respondents mentioned that venture capital could be very expensive. Only one entrepreneur pointed out the dilution problem. This case is surprising because the venture capitalist took the minority share on the enterprise. Twenty percent of respondents pointed out the problem of declining decision power. This could be connected to dilution, because the latter may cause it. It could be concluded that decision-making is more important than dilution. Twenty percent of respondents did not have any worries at all. These entrepreneurs gave a minority holding to the venture capitalist and used common stock as a financing instrument in the venture capital process. (Kõomägi 2005b)

Venture capital valuation is the topic that incorporates all the themes discussed above. There is no unique method to value venture capital, although a venture capital method was developed. Estonian venture capitalists mainly used multiples and DCF methods.

DCF methods are not popular in Western Europe (except in Belgium, Holland and Germany) and the US (Manigart *et al* 2000; Dittmann *et al* 2004), but they are very popular in Eastern Europe. This may give biased estimates in the venture capital world because the investments are made in early-stage ventures (Karsai *et al* 1999). The majority of DCF users apply a subjective *ad hoc* adjustment (especially in choosing the discount rate) (Dittmann *et al* 2004).

Multiples were also very popular in Estonia. Multiples are also used in United Kingdom and in France (Manigart *et al* 2000).

The survey carried out among Estonian venture capital backed entrepreneurs showed that 40% of them did not use any valuation method at all. Others used the DCF and EVA models. This does not mean that the ones who did not use any methods did not make the valuation. The valuation was done more intuitively, often based on free cash flows or projections of balance sheets. The entrepreneurs found that complicated mathematical models would have not helped to increase the precision of the estimate.

DCF methods have a significant assumption — good projections of financial statements. Venture capitalists make the prognosis themselves only in case A. This could also be connected to heterogeneous expectations, which are present in case A. Entrepreneurs very often overvalue the enterprise. However, due to asymmetric information, the venture capitalists may also go astray. The representative from case A emphasized that the prognoses are conservative nevertheless. Heterogeneous expectations were also present in case D, although the entrepreneur made the prognosis.

The authors consider a jointly made prognosis to be the best solution. This was the situation in cases C and E.

In valuation practice, methods based on DCF analysis are most popular (see Bruner *et al* 1998). In the case of capital budgeting, large U.S. companies prefer NPV or IRR analysis (Graham and Harvey 2001). In Estonia, the situation is a little different. KPMG conducted a survey on M&A activity in Estonia in 2004 (Visse 2005). The survey showed that Estonian companies make extensive use of valuation methods based on profits or net book values (*Ibid*). A survey on capital budgeting in Estonian companies conducted in 2002, showed heavy reliance on the payback and accounting rate of return (Hammer 2004). Still, net present value was also used relatively often (*Ibid*).

Unfortunately, real options were not used by Estonian venture capitalists. Real options are quite a new and intriguing topic, which needs to be discussed in the near future. While academic research has taken the direction of applying option pricing models in the valuation of venture capital projects, these are rarely used in practice. Even though Graham and Harvey found that more than 25% of large U.S. companies have used the real option method (ROV) in capital budgeting, other surveys are not so optimistic. For example, Collan and Långström (2002) found no evidence that ROV had been used in Finnish companies. This method is also hardly ever used in large Estonian companies (Hammer 2004).

Valuation can be connected to the value of control (see the section on corporate control considerations). Dyck and Zingales (2002) found the average value of control to be around 14% (ranging between –4% and +65% in different countries). Nenova (2003) obtained relatively similar results. In the *Mergerstat* Control Premium Study the average value of control was found to be higher than 40% (Pratt 2001). At the same time it has also been argued that most public companies, at least under strong market conditions, tend to trade at or near their

controlling interest value (Nath 1990). This, however, is not the case in the venture capital market.

In conclusion, the authors want to emphasize once more the connections between the different themes analyzed in this article — the venture capital decision-making process in Estonia (figure 4).

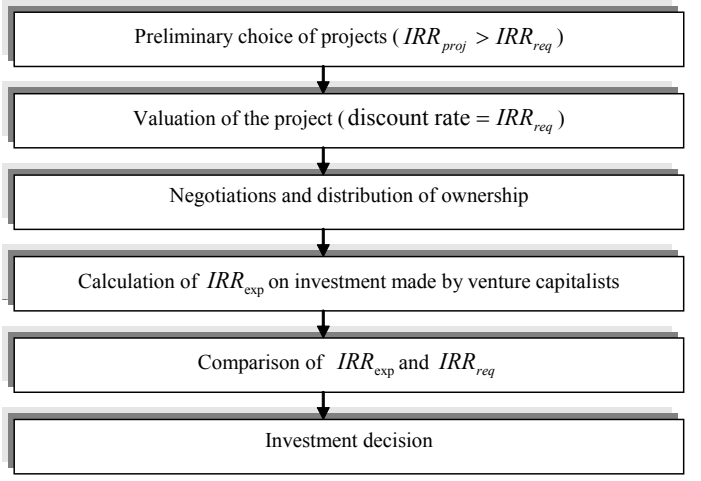

Figure 4. The quantitative decision-making process among venture capitalists in Estonia

According to figure 4, the quantitative decision-making process among Estonian venture capitalists begins with the determination of the internal rate of return of the project and the required rate of return. The internal rate of return from the project must be greater than the required in order to continue. The required rate of return is seen as the discount rate. Distribution of ownership is the third part of the process, enabling the calculation of the expected internal rate of return and its comparison with the required rate of return. Venture capitalists

accept the project if the required rate of return is lower than the expected internal rate of return. This constitutes a simple mathematical model of the venture capital decision-making process in Estonia.

Much emphasis has been placed on the internal and external validity of the study. Internal validity is obtained by pattern matching and explanation building. Finance is not an exact science. There are many imprecise relationships in entrepreneurial finance. In order to find the casual and substantive relationships, four closely linked themes (deal structuring, cost of capital, corporate governance and valuation) were discussed in this paper. This approach enabled us to find the causes and effects. Figures 2 and 4 show the final linkages of these relationships.

External validity was guaranteed by using replication. A case study analysis does not allow us to make statistical generalizations. Analytical generalizations can be made about the Baltic region because of the fact that most of the venture capitalists operate in Lithuania and Latvia. Comparison has been made with Finnish case studies. Similar comparisons have been made with Western-European and American venture capital investments.

Conclusion

The Estonian venture capital market is still small and therefore there are very few venture capital funds. The five biggest venture capital funds were analyzed in this article. Many problems were brought out in the article, some of which require an academic and some a practical solution.

Although, in four cases out of five, syndication had taken place, the small venture capital market in Estonia does not offer the opportunity to use syndication very often. Syndication is used than the entrepreneur needs it and the venture capital fund has insufficient capacity to finance the entrepreneur alone or the opposite side has specific knowledge to offer. Hypothesis 1 was almost supported.

Estonian venture capitalists do use staged investment and convertible instruments, but only rarely. Complicated financing structures are not used during the stages. Hypothesis 2 was supported because Estonian venture capitalists made their investments mainly in the growth stage. Hypothesis 3 was not supported due to the fact that most investments were not staged. Hypothesis 4 was also not supported because none of the venture capitalists used preferred shares when deal structuring. The small size of projects, rare use of syndication, short term investments and problems concerning the Estonian Commercial Code may be the why hypotheses 3 and 4 did not find support.

Hypothesis 5 found support. Most Estonian venture capitalists took a minority holding in their portfolio companies. Only in two cases out of five were majority holdings sometimes taken.

Hypothesis 6 found no support because most Estonian venture capitalists did not consider dilution as a big problem. This may be because staged financing was carried out in only 15% of enterprises and the variation of ownership caused by the realization of option contracts was negligible.

Hypothesis 7 was not supported because most Estonian venture capitalists use the IRR as a measure of the cost of capital, but notwithstanding some elements are applied from the CAPM. The internal rate of return is often used instead. There was a problem concerning the required rate of return — the problem of reinvestment. The IRR assumes that cash flows must be reinvested and even to the same value as the IRR. If the cash flows are not invested, the actual IRR becomes lower than calculated, and this is the case in Estonia.

Venture capitalists require quite a high rate of return because of the very high risks. The survey conducted among Estonian venture capitalists showed that the required rate of return was between 16–35%. Estonian venture capitalist returns have about the same interval as those in the rest of the world. Hypothesis 8 was supported.

The Estonian Commercial code does not permit the use of preferred shares of more than 1/3 of total share capital. Therefore Estonian venture capitalists could not use preferred shares to manage control rights. Most of them took the same risk position as the entrepreneurs. They often took a minority ownership, and then in order to protect themselves, they set vetoes in the term-sheet.

There were also some problems at the board level in Estonia. The rights between the supervisory and management board are quite fuzzy. Venture capitalists always get a seat on the supervisory board, but some important decisions and everyday decisions are made by the management board. Some venture capitalists have a seat on the management board as well.

Hypothesis 9 was supported. The problems were connected to minority holding and deal structuring. Venture capitalists are not the only ones who have some concerns and need protection. Dilution and problems associated with declining decision-making power was pointed out.

Although venture capitalists did not use complicated models to find the cost of capital, they paid much more attention to complicated financial valuation models. Multiples, book value and DCF methods were used. Hypothesis 10 was supported. Four out of five Estonian venture capitalists used multiples. These were also considered as benchmarks for DCF methods.

Numerical analysis was not as important as the authors expected. The valuation of human capital is seen as the most important criterion for continuing the venture capital process. Venture capital involves more than just money, but there should be a competence management team to facilitate cooperation.

In conclusion, the authors want to emphasize the connections between the different themes analyzed in this article. These problems cannot be analyzed separately.

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KOKKUVÕTE

Riskikapitaliinvesteeringud ja -finantseerimine Eestis: lähenemine juhtumiuuringu põhjal

Seoses Eesti riskikapitalituru tekkega 1990. aastate alguses ja olulise elavnemisega 1990. aastate lõpupoolel on tekkinud vajadus ja võimalus uurida riskikapitaliprotsessi riskikapitalistide seisukohast teaduslikul tasemel.

Artikli eesmärgiks on kirjeldada Eesti riskikapitalistide finantseerimis- ja investeerimisotsuste tegemist ja võrrelda tulemusi teoreetiliste soovitustega korporatsioonide rahanduses ja riskikapitalialases kirjanduses. Töö on üles ehitatud meetodikeskselt, st lähtudes sellest, milliseid meetodeid riskikapitalistid riskikapitaliprotsessis kasutavad. Autorid otsivad vastuseid küsimustele, kuidas toimub riskikapitaliprotsess, miks ta nii toimub ning kuidas lahendada sellega kaasnevaid probleeme.

Riskikapitalialaste uurimuste keerulisus tuleneb avalikkusele kättesaadavate kvantitatiivsete andmete vähesusest. Seetõttu tuginetakse antud töös eelkõige kvalitatiivsetele andmetele, mis koguti riskikapitalistidega läbiviidud struktureeritud süvaintervjuude abil. Valitud uurimismetoodika võimaldab ülalpool püstitatud küsimustele vastused leida. Käesoleva artikli uurimisobjektiks on viis suuremat riskikapitalifondi Eestis.

Antud artiklis käsitletakse nelja probleemide valdkonda: riskikapitalitehingu struktureerimine, ettevõtte haldamine ja investorite kaitse, riskikapitali hind ning väärtuse hindamine. Rõhuasetus on nende teemade omavahelisel seostamisel, et luua uut teadusteavet.

Riskikapitalitehingu struktureerimist analüüsides käsitleti sünditseerimist, astmelist finantseerimist, valikut erinevate finantsinstrumentide vahel ja osaluse muutumist koos sellega kaasne-

vate probleemidega. Varasemate empiiriliste uurimuste kohaselt kasutatakse välisriikides tehingu struktureerimisel nii sünditseerimist, astmelist finantseerimist kui ka konverteeritavaid finantsinstrumente. Eesti riskikapitalistid kasutavad neid võimalusi aga harva. Projektide finantseerimisel pole enamasti mõtet luua mitmest rahastajast koosnevat sündikaati, kuna tehingute rahalised mahud on väikesed. Samal põhjusel ei leia kasutust ka astmeline finantseerimine. Konverteeritavate finantsinstrumentide vähest kasutamist põhjustab Eesti seadusandluse eripära ja investori kaitsega seotud probleemistik. Eestis toimub enamik riskikapitaliinvesteeringuid lihtaktsiate vormis, kusjuures riskikapitalist jääb tavaliselt vähemusosanikuks. Rahastamisprotsessis valitud finantsinstrument ja tehingu struktureerimine mõjutab riskikapitali hinna leidmist ning viimane omakorda riskikapitaliprojekti väärtuse hindamist ja selle muutumist riskikapitaliprotsessi käigus.

Riskikapitali hinna käsitlemise juures selgus ühe olulise tulemusena, et Eesti riskikapitalistid kasutavad nõutava tulunormi mõõduna valdavalt riskikapitaliprojekti sisemist tulumäära (IRR). Rahandusteoreetilisest seisukohast tuleks kasutada finantsturgude tasakaalumudelit CAPM või arbitraažiteoorial põhinevat APT mudelit modifitseeritud kujul. Sisemise tulumäära rakendamisel tekib Eesti riskikapitalistidel veel spetsiifiline probleem: kuna reinvesteerimist valdavalt ei toimu, siis hinnatakse realiseerunud tulunorm üle. Eesti riskikapitalistide nõutav tulunorm jääb aga Lääne-Euroopa ja USA riskikapitalistidega samasse suurusjärku (25–35%).

Riskikapitaliinvesteeringute ja -finantseeringu juures on tähtis ettevõtte haldamise ja investori kaitsega seotud küsimused, sest riskikapitalist on tavaliselt ettevõttes vähemusosanik. See probleemistik on tihedalt seotud riskikapitalitehingu struktureerimisega. Selgus, et Eesti Äriseadustik pakub riskikapitalistidele keskmist kaitset. Samas ei soosi seadusandlus eelisaktsiate kasutamist, mis on väga levinud mujal maailmas. Eelisaktsiad võimaldaksid riskikapitalistidele kui välise omakapitali omani-

kele lisakaitset. Eesti riskikapitalistid kasutavad oma õiguste kaitseks hoopis lisaklauslite (vetode) lülitamist investeerimislepingusse ning osalemist ettevõtte strateegilises (nõukogu liikmena) ja mõnikord isegi igapäevases juhtimises (juhatuse liikmena).

Kuigi Eesti riskikapitalistid ei pööra riskikapitali hinna leidmisele piisavat tähelepanu, kasutatakse väärtuse hindamisel valdavalt diskonteeritud rahavoogude meetodeid. Kuna aga riskikapitali hind on üks sisend väärtuse hindamise mudelites, siis võidakse lõppkokkuvõttes saada ikkagi nihkega hinnang. Üldreeglina peetakse investeerimisotsuse tegemisel numbrilist analüüsi vähem oluliseks kui inimkapitali väärtuse hindamist, selle üheks põhjuseks on kvantitatiivsete sisendite määramise keerukus.

Appendix 1. Protocol Question

The main themes were divided into five different parts: 1) general information, 2) deal structuring, 3) cost of venture capital, 4) corporate governance and investor protection, and 5) valuation of venture capital projects.

Sources of Data:
- Organizational chart
- Web pages
- Fund managers

Part 1. General information
- Who are the founders of the fund?
- How many funds do you manage?
- Which sectors do you invest in?
- How many portfolio companies do you have? Which?
- How long is the investment period?
- What is the minimum and maximum capital amount you invest?
- How long is your investment horizon? Why?

Part 2. Venture capital deal structuring
- Do you use syndication? Why?
- Which financial instruments do you use in providing money? Why?
- Which stages do you finance? Why?
- Do you take majority or minority ownership? Why?
- Is dilution a problem to you? Why?

Part 3. Cost of venture capital
- How do you find the cost of venture capital? Why?
- How big is your average required rate of return?
- Do you take into account non-systematic risk? Why?
- Do you take into account systematic risk? Why?

Part 4. Corporate governance and investor protection
- How do you protect your shareholding? Why?

- Do you have any problems with commercial legislation? Which?
- Do you have any problems in using financial instruments according the Estonian Business Code? Which?
- Are there any problems at the board level? Which?

Part 5. Valuation of venture capital projects

- How do you make the valuation of venture capital projects? Why?
- Who makes the financial forecasts?
- Are there any heterogeneous expectations?
- Do you use the real option method?

Appendix 2.
Shareholder's Rights in Estonia

Ownership	Shareholder's rights
> 0 %	The shareholder has the right to participate in the general meeting of shareholders and in the distribution of profits and, upon dissolution, of the remaining assets of the public limited company, as well as other rights provided by law or prescribed by the articles of association (§226). If new shares are paid for in money, a shareholder has a pre-emptive right to subscribe to the new shares in proportion to the sum of the nominal value of the shareholder's shares (unless these rights are barred by a resolution of the general meeting).
> 10 %	At the general meeting of shareholders, shareholders whose shares represent at least one-tenth of the share capital may demand a resolution on conduct of a special audit on matters regarding the management or financial situation of the public limited company, and the appointment of an auditor for the special audit (§ 330). In case of the liquidation of the company, shareholders whose shares represent at least one-tenth of the share capital can request a court to appoint the liquidators (§ 369). The court shall also specify the procedure for and amount of remuneration for the liquidators. Shareholders whose shares represent at least one-tenth of the share capital may demand the calling of a special general meeting (§292)
> 25 %	Shareholders whose shares represent at least one-quarter of the share capital may request that a special audit be conducted and that a court appoint an auditor for the special audit (§330). They also can block the resolution of the general meeting by which the pre-emptive rights of shareholders are barred (§345).
> 33.333…%	Shareholders can block all those resolutions of the general meeting, which require a supermajority (at least 2/3 of the votes represented at the general meeting.) including the resolution on the amendment of the articles of association (§ 300), decisions to increase and reduce share capital (§341, §356), decisions on dissolution (§ 365), merger (§412), division (§456) or transformation of the public limited company (§498, §504).
> 50 %	Shareholders can make all decisions that require a simple majority including elect and remove members to the supervisory board, elect an auditor, approve the annual report and distribute profit, issue convertible bonds, decide whether the company should buy back its own shares, etc (§ 298).

Ownership	Shareholder's rights
> 66.666…%	Shareholders can make the resolution on the amendment of articles of association (§ 300), decisions to increase and reduce share capital (§341, §356), decisions on dissolution (§ 365), merger (§412), division (§456) or transformation of the public limited company (§498, §504).
> 75%	The pre-emptive right of the shareholders may be barred by a resolution of the general meeting, which receives at least three-quarters of the votes represented at the general meeting (§ 345).
> 90 %	On the application of a shareholder whose shares represent at least 9/10 of the share capital of a public limited company (majority shareholder), the general meeting of shareholders may decide in favor of the shares belonging to the remaining shareholders of the public limited company (minority shareholders) being taken over by the majority shareholder in return for fair monetary compensation (§ 363^1).
> 95 %	A resolution on the takeover of shares belonging to minority shareholders shall be adopted if at least 95/100 of the votes represented by shares are in favor (§ 363^7).

Source: Estonian Commercial Code