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Is Venture Capital Jewelry?

- A study of the Credibility Value Added from Venture Capital investment in Sweden

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ABSTRACT

Title	Is Venture Capital Jewelry? - A study of the Credibility Value Added from Venture Capital investment in Sweden
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Key Words	Credibility, Non-financial Value Added, Venture Capital, Entrepreneurship, Corporate Finance, Asymmetric Information, Agency Theory, Transaction Cost Economics
Purpose	The purpose of our thesis is to, based on theory, investigate if venture capital investment generates value by increasing the credibility of Swedish start-up firms. If so, we continue by studying which factors influence the credibility value added in Sweden.
Methodology	The methodology is based on the concept of non-financial value added (NFVA) and we use primary data collected through a survey. The study uses an online questionnaire that is sent to a number of start-up companies which have received VC investment. In the questionnaire a leading person within the venture is asked to answer questions regarding his or her perceived value from receiving venture capital; as well as how this has improved the firm's credibility towards outside stakeholders. The responses are used to construct combined measures for a number of variables. Using the constructed variables we first analyze the value adding effect of credibility enhancement from receiving venture capital. In a second model we also analyze some mechanisms' impact on the credibility value added. The models are estimated using multivariable regression analysis in an OLS-framework. We use the output of these estimations to test 9 hypotheses. The result of the hypothesis testing is the basis for our analysis, from which we try to arrive at a conclusion regarding our main research problems.
Theoretical Perspectives	We present background theories of importance to the understanding of our thesis. The theoretical framework includes sections about Asymmetric Information and Signaling theory, Agency theory and Transaction Cost Economics.
Empirical Foundation	We present an introduction to the concept of Venture Capital and the Swedish Venture Capital market. We also review previous research regarding the concept of Non-Financial Value added.
Conclusions	We conclude that the credibility improvement from VC investment is value adding to Swedish start-up firms. Regarding the mechanisms that influence the value added from credibility enhancement, we conclude that supplier switching cost and the amount and quality of contact increases the non-financial value added of credibility. Finally we also find the management experience to have a significant, positive impact on the credibility value addition.

SAMMANFATTNING

Titel	Is Venture Capital Jewelry? - En studie av värdetillskott genom förbättrad trovärdighet från Venture Capital-investeringar i Sverige
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Nyckelord	Trovärdighet, Icke-finansiellt värdetillskott, Venture Capital, Entreprenörskap, Corporate Finance, Asymmetrisk information, Agentteori, Transaktionskostnadsteori
Syfte	Syftet med vår uppsats är att undersöka om venture capital-investeringar genererar värde genom att öka trovärdigheten hos svenska nystartade företag. Om så är fallet, vill vi även undersöka vilka faktorer som påverkar värdet av trovärdigheten.
Metod	Metoden bygger på konceptet icke-finansiellt värdetillskott och vi använder oss av primärdata. Studien grundas på en internetbaserad enkät. I enkäten så ombeds ledande befattningshavare inom företag som erhållit venture capital att svara på frågor om det upplevda värdet av att erhålla venture capital samt hur detta har påverkat trovärdigheten gentemot utomstående aktörer. Svaren används sedan för att konstruera variabler. Först så analyserar vi dessa variablers värdeskapande effekt via ökad trovärdighet. I en andra modell så undersöker vi och analyserar ett antal variablers effekt på värdet av ökad trovärdighet. Undersökningen bygger på minstakvadratmetoden (OLS) och är av flervariabelskaraktär. Resultaten från denna används slutligen för att testa 9 hypoteser och är grunden för våra slutsatser.
Teoretiska perspektiv	Vi presenterar teorier som är viktiga för förståelsen av uppsatsen. Dessa inkluderar asymmetrisk information, agentteori och transaktionskostnadsteori.
Empiri	Uppsatsen innehåller en introduktion till konceptet venture capital och en kortare beskrivning av den svenska venture capital-marknaden. Den innehåller även en genomgång av tidigare forskning inom området icke-finansiellt värdetillskott.
Slutsatser	Vi kommer fram till att trovärdighetsökningen av venture capital-investeringar är värdeskapande för unga svenska företag. Angående de påverkande faktorerna, så kommer vi fram till att leverantörers kostnader för att byta kund samt mängden av och kvaliteten på kontakten mellan företaget och venture capital-investeraren ökar det skapade värdet. Slutligen så kommer vi också fram till att företagsledningens erfarenhetsnivå påverkar värdetillskottet från trovärdighetsökningen från venture capital-investeringen positivt.

Preface

We would like to take this opportunity to thank some people that have helped us accomplish this thesis. First we thank our supervisor, Lars Oxelheim, for supervising this thesis. Secondly, we wish to thank Claes Svensson and Hans Landström at the Lund School of Economics and Management for giving valuable insights. We also want to thank Hossein Asgharian and Niclas Andrén for the Master in Finance program. Further, we want to thank all participants from the different start-up firms for answering our survey.

Finally we wish to thank, Amanda and Anna, for supporting us, although the work with this thesis has taken a lot of our time this spring.

Lund, Sweden 2010-05-31

N.A. Jesper Johansson

K. Ludvig Persson

“A good reputation is more valuable than money.”

Publilius Syrus (Roman author, 1st century B.C.)

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1 Introduction

1.1 Background

Entrepreneurs are important. Famous economist Joseph Schumpeter said that entrepreneurs break the equilibrium by introducing innovations into the system in the form of new products, new methods of production or new markets (Schumpeter 1911, 1926, 1934). At the 2008 "Progress Through Innovation" Conference five Nobel Laureates, Samuelson, Klein, Maskin, Phelps and Merton, discussed the subject of Entrepreneurship and Development. Merton sums up, *"…being able to develop the right infrastructure to support innovation, to support entrepreneurial effort, to support the development of the economy, has big payoffs and the opportunity to do so, I think, is there."*[1]

The society is dynamic, constantly evolving and the uncertainty about the future is increasing. At the same time peoples' preferences are changing, information is spreading rapidly and new products are needed. New possibilities arise frequently and renewal is crucial (Landström and Löwegren, 2009). In the current economic climate it is more important than ever to foster innovation and entrepreneurship in order to obtain sustainable economic growth and relieve the recent recession (Eisberg, 2009 and Audretsch, 2009). Entrepreneurship renders important welfare effects (Acs et al., 2008), for example it has been shown that entrepreneurship and fast growing new firms reduce unemployment (Wong et al., 2005).

However, when starting up his or her company the entrepreneur faces several difficult problems. The most straightforward problem is the lack of resources to start conducting business (Eisberg, 2009). In order to develop operations most firms require capital, employees, inputs, machines etc. Stinchcombe (1965), states that securing the needed resources is an uncertain and hazardous process. Another major obstacle is the fact that the entrepreneur and the firm have little experience. Sörensen and Stuart (2001) argue that this lack of tested routines and methods causes problems with activities such as planning and production. Further, as stated by Aldrich and Auster (1986), young enterprises lack the strength to withstand problematic downturns. Yet another problem is lack of knowledge,

[1] See the full conference discussion video at http://legatum.mit.edu/content-173

Maula (2001) says that newly established firms are limited in their awareness of important aspects such as competitors, markets and technology.

All these difficulties make it very problematical to succeed as a start-up firm. According to Bracamonte (2009), about a third of all newly established Swedish firms go into bankruptcy already during their first year of operations. External stakeholders are of course aware of this. In the same way as Akerlof (1970) describes the market for used cars in terms of high-quality cherries and low-quality lemons and the problems of assessing whether a particular car belongs to one or the other of these two; there are cherries and lemons among the newly established firms. Why should a supplier deliver goods to the newly established firm, it may not exist in three months? When choosing a new car, why should the customer pick one from an uncertain start-up business? As a creditor, how can the bank be sure that the entrepreneur will pay all money back?

Further, we argue that the founder is much better informed than any external stakeholder about the potential benefits and risks in the start-up and has an incentive to exploit his asymmetric information to his/her advantage. Kaplan and Strömberg (2004) identify four generic information problems for an external financier. First, there is a moral hazard problem where the financier is less informed about whether the entrepreneur will perform his duties in the best possible way or change his or her behavior. Second, the entrepreneur is often better informed about the quality of the investment. Third, the authors identify problems of disagreement and how they are solved. Finally, there is a holdout problem as the investor cannot be sure that the entrepreneur will remain in the company and fulfill the designed obligations. Taken together, the issues described create problems for the entrepreneur when dealing with employees, suppliers, customers, external financiers or banks. Since traditional sources of external financing, such as banks, often require some type of collateral or history of positive cash flows they are in general difficult for a start-up firm to obtain.

In order to reduce effects of asymmetric information, contracts and incentive plans can be used. Economic theorists also discuss two ways to mitigate problems of adverse selection, signaling and screening. Signaling represents the action the salesperson can take in order to prove the quality of the car. One such signal is to show credibility. Credibility is in this thesis describing the passive process where the venture accrues certain attributes, variously termed certification, reputation, validation and legitimation, from being associated with a venture

capital (VC) firm. Screening oppositely represents the investigating actions taken by the car-buyer. For an entrepreneur signaling can be difficult, especially if the start-up is his or her first and he or she is young. Backes-Gellner and Werner (2003) suggest that showing previous academic success could be one way to prove credibility. If the entrepreneur is unsuccessful in convincing the outside world about his or her quality, the second option is to let someone investigate him or her and the business. This could be a very costly process. Imagine if every customer, every supplier, every employee and every investor should conduct a full assessment of every firm before making a decision. This is where the venture capitalist fills a gap as a signal of quality. If one believes that venture capitalists are holding tight to their wallets and carefully considers any investment, they would most likely investigate any start-up investment thoroughly and hence would only high quality firms receive venture capital investments. For a start-up firm a venture capital investment would then qualify as a credible signal. By telling banks, employees, customers and suppliers that the firm has received venture capital the entrepreneur proves that the start-up has passed the screening process and thus exhibits potential. Hence, it is reasonable to believe that a potential credibility enhancement from a venture capital investment is value adding.

Often, research about the value adding effects of VC investment is conducted based on US data.[2] This should not surprise the reader interested in VC capital since it is widely accepted that the US market for venture capital is the largest (NVCA, 2009). It is also possible that there are network effects that further enhance this focus due to data availability and an established research background. However, this focus has resulted in a framework for VC research that is influenced by the institutional setting, structural framework, regulatory foundation and culture of the U.S. We find it reasonable to believe that there are differences between the venture capital industry in the U.S. and other countries due to differences in these factors[3]. Further, the NVCA in its report on the US VC industry also suggest that the importance of the U.S. VC industry as the premier VC market in the world is diminishing (NVCA, 2009). Based on these arguments, we aspire to study the VC industry in a different setting than the U.S.

The SVCA, in its report about the Swedish Venture Capital industry, conclude that Sweden had among the largest proportions of turnover by private equity financed companies

[2] See for example Maula (2001), Kaplan and Strömberg (2004), Hsu (2004)

[3] See for example Cumming and MacIntosh (2002), Ljungqvist (2007) and Engelen and Van Essen (2008) for discussions about legal and institutional frameworks and their effect on financing.

compared with GDP in 2007 in Europe (SVCA, 2009). The report also points out that 42% of all investments are made in start-up companies. These facts indicate that there is a high degree of importance attributable to the Swedish VC industry. Therefore we propose that it is worth the attention of academic research.

1.2 Problem discussion

It is possible to see venture capital as any other type of financing. Just as well as investing own funds, asking family and friends or going to the bank, an entrepreneur may raise venture capital (Ogden, 2002). However, this is not entirely true. We argue that more than other providers of financing, the venture capitalist may also provide non-financial value adding contributions; that is valuable information, resources or connections which is not plain cash (Maula, 2001). The starting point of our problem discussion is therefore the question:

Do venture capitalists, besides investing needed capital, also contribute to the venture in other ways?

This problem has already been thoroughly investigated in previous research. Several authors have concluded that venture capital investors provide a wide range of valuable, non-financial inputs to the start-up firm.[4] This could be for example strategic advice, access to business networks, assistance in recruiting, actively assisting the entrepreneur in planning, legal agreements, hands-on operating tasks or by helping the start-up with its expansion plan (Large and Muegge, 2008).

However, one can also ask oneself whether the sheer association with a venture capital investor, although not providing active support is beneficial?

We argue that because of information asymmetry between the firm and outside stakeholders, it is hard for a young start-up company to prove its quality when trying to establish business relationships. Since venture capital firms carefully investigate their future investments, they could also add value to the start-up simply by being associated to it (Torres and Murray, 2003). The venture capital firms' screening and monitoring capabilities may signal quality (Meggingson and Weiss, 1991) and should hence increase the start-up's credibility.

[4] See for example Flynn and Forman (2001), Maula (2001), Hsu (2004) or Dolvin (2005)

Sweden has among the largest proportion of venture capital investment in relation to GDP in Europe (SVCA, 2009). Sweden also has a somewhat different venture capital climate than for example the U.S. For example, the VC market is significantly younger in Sweden than in the US (Karaömerlioglu and Jakobsson, 2000). As stated in the APAX (2006) ranking, Sweden has a substantially lower Private Equity environment score than for example UK or US. This means that the private equity environment is less favorable in terms of financing environment, market opportunities, legal framework, entrepreneurial environment and risk. Further, the Swedish population in general has lower amounts of savings to invest in ventures, than other in other countries (Kling, 2007). This has a negative impact on entrepreneurship, since private savings is an integral part of start-up funding (Ogden, 2002). We argue that differences like these would impact the value added from venture capital investment. Therefore we propose that investigating the Swedish market would contribute to the existing research and set out to study newly established Swedish firms.

Do venture capital investments add value to Swedish start-up firms by increasing their credibility?

Further, if venture capital increases the credibility and thereby has an important value adding effect on young Swedish firms; we want to, based on theoretical intuition, investigate why this is the case. In what relationships is the increased credibility important and under which circumstances does it generate the most value?
We study the question:

Is the credibility enhancement from venture capital investments beneficial to Swedish newly established firms and which factors influence the credibility value added?

1.3 Purpose and problem formulation:

In this thesis we, based on theory and previous findings, want to investigate whether a venture capital investment adds value to newly established firms by enhancing credibility in their contacts with outside stakeholders. We argue that according to theories of asymmetric information, signaling, agency theory and transaction cost economics, this should be the case. If this intuition proves to be correct, we continue by studying which factors influence the

credibility value added. The mechanisms we investigate are based on theory and previous research. Since we argue that there are differences in legal, cultural and entrepreneurial environments between Sweden and the countries often studied in previous research, we want to investigate this problem in a Swedish setting.

In order to do this, we derive the following questions from our problem discussion, which we aim to answer in this thesis.

1. Does venture capital investment generate value by increasing the credibility Swedish start-up firms?
2. Which factors influence the credibility value added in Sweden?

1.4 Delimitation

Our thesis has no intention of investigating other possible value adding mechanisms than credibility. Although several other factors are included in our value added model as control variables, we have no intention of investigating them further.
Second, we are not concerned about other measures for value addition than the perceived value added. Several reasons for this are presented later in the thesis.
Finally, the thesis sets out to investigate the Swedish market, thus we do not study foreign start-up firms.

1.5 Thesis general applicability

This master thesis is of use to anyone interested in entrepreneurship and how venture capitalists can create enhanced value in a start-up firm. For scholars, the thesis adds to previous research regarding non-financial value added by using a more detailed approach in the measurement variables and focusing on a single value adding mechanism, credibility. Previously used methods are also applied on a new dataset. For managers in newly established firms the thesis gives insights in the importance of utilizing other aspects of a VC investment and suggests how to better add value from credibility. For VC investors it oppositely addresses ways to enhance the value of an investment.

1.6 Definitions

Credibility is in this thesis describing the passive process where the venture accrues certain attributes, variously termed certification, reputation, validation and legitimation, from being associated with the VC. Credibility is a common concept in the literature of organization, entrepreneurship, corporate finance and marketing (Large and Muegge, 2008).

Non-financial Value Added (NFVA) is in this thesis defined as the contributions provided by investors apart from financing. The contributions should add to the firm value and can be internal, such as strategic advice or external, such as providing credibility.[5]

In the **start-up** phase of venture capital investing, investments usually go to companies that are less than one year old. The start-up company often uses the funds for developing products, testing prototypes, and market testing in experimental quantities to selected customers (Sahlman, 1990). The phases are explained in fig. 1-1 below:

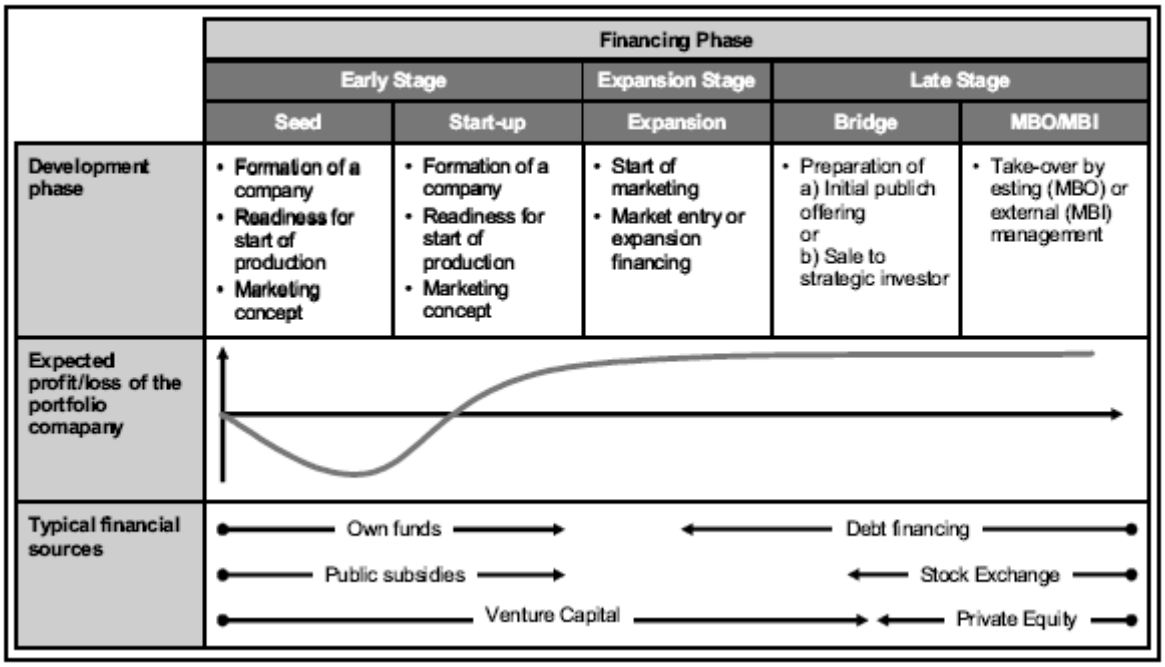

Figure 1-1 Development phases of growth companies (Kleinschmidt, 2007)

1.7 Thesis Outline

In chapter one, we give a background to our thesis subject and problem. In chapter two we introduce the reader to Venture Capital. In chapter three we present some important findings

[5] For a further discussion about NFVA, see chapter 3 "Literature Review" or Large and Muegge (2008)

from previous research about NFVA. In chapter four for the thesis relevant theories are explained. In chapter five we present the rationale about our hypotheses. In chapter six data collection and methodology is presented. In chapters seven and eight we present our empirical models. Chapter nine contains the results of our hypothesis testing. The analysis of our results is presented in chapter ten. Finally we answer our main research questions in chapter eleven, conclusion.

2 Venture Capital

There is often confusion regarding the concepts of venture capital, private equity and risk capital. In general, a firm's financing can consist of debt, equity (i.e. risk capital) or both. Equity can also be referred to risk capital since the equity investors, in contrast to the debt creditors, take a higher risk. Risk capital can be used to describe any type of investment in a risky project, however many academics speak of risk capital in a more narrow manner. The European Commission defines risk capital as "equity financing to companies in their start-up and development phases" (European Commission, 1998). Further, risk capital can be invested in both public and privately held companies. Risk capital that is invested in privately held companies is commonly referred to as private equity. Often, it is hard to separate between different kinds of private equity (Isaksson, 2006). The Swedish Venture Capital Association suggests that private equity is divided into the three subgroups of Business Angels, Venture Capital and Buyout Capital (see fig. 2-1 below).

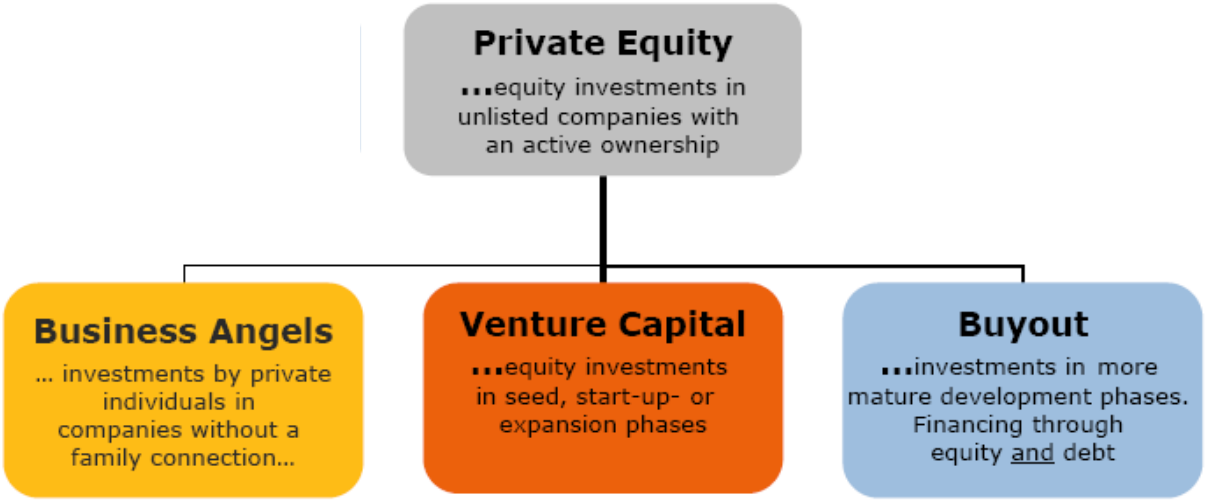

Figure 2-1 Private equity and subgroups (SVCA, 2009)

The European Private Equity and Venture Capital Association, EVCA, defines venture capital as "Professional equity co-invested with the entrepreneur to fund an early stage (seed and start-up) or expansion venture." (Isaksson, 2006)

In practice there is little difference between Business Angel investments and Venture Capital investments, especially if the Business Angel is very active. According to Isaksson (2006)

Business Angels tend to be more involved in the operations of the start-up firms. They also often invest at earlier stages than the Venture Capital firms.

In this thesis we are interested in the value addition of venture capitalists. As Hellmann (2000) argues, the role of the venture capitalist can be seen as a sports coach guiding its athlete. The entrepreneur is the athlete and thus is the one who plays the actual game, while the VC chooses which players to use, how to train and motivate them and tries to offer the best possible conditions for them to succeed.

Venture capital is a major industry in Sweden. The Swedish venture capital market dates back to the 1970's when the first formal venture capital firms were founded. Over the following three decades the industry went through two major cycles of growth and contraction. The first cycle started in the early 1980's and ended around 1988-89. The second major cycle started around 1993 and peaked around 2000-2001 (Isaksson, 2006).[6] There is possibly a third cycle after the 2001 dot.com crash, as the market has accelerated since, until the recent economic turmoil.

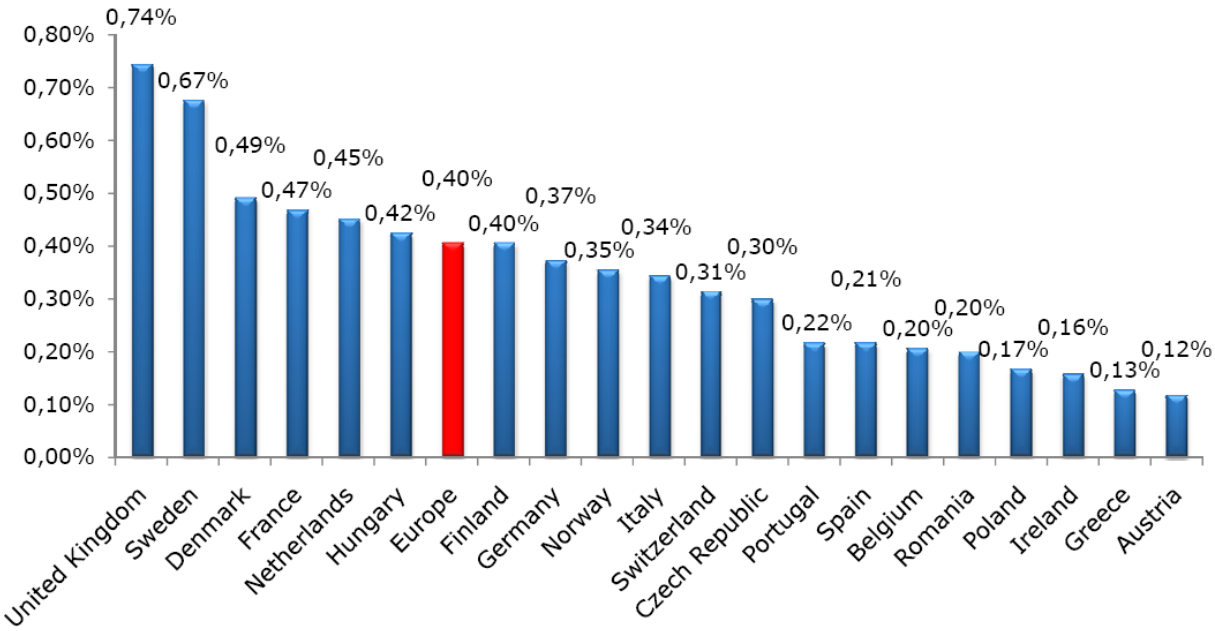

Figure 2-2 Venture capital industry as percentage of GDP (SVCA, 2009)

As seen in fig. 2-2 above, the Swedish VC industry accounts for 0.67% of GDP, this is very high in a European comparison. This equals about € 26.1 bn in total funds invested. The turnover of the portfolio companies equals ca 8% of the Swedish GDP (SVCA, 2009).

[6] For a more thorough historic review of the Swedish Venture Capital industry, see Isaksson (2006)

Most of the investments are made in companies in the start-up stage (see fig. 2-3). We therefore find it interesting to investigate start-up companies further. It is also reasonable to believe that the credibility is important for these companies, since they are often relatively unknown.

When discussing the different types of coaches in the VC society it is important to make a distinction about how the VC is organized. There are two types of private VC investors, meaning they are not supported by any corporation. The professional VC firms are often general partners, while the institutional investors often act as limited partners (Sahlman, 1990). In this thesis we are interested in these two types of private VC firms. In Sweden, the professional, independent VC firm is the dominant type of VC organization (Isaksson, 2006).

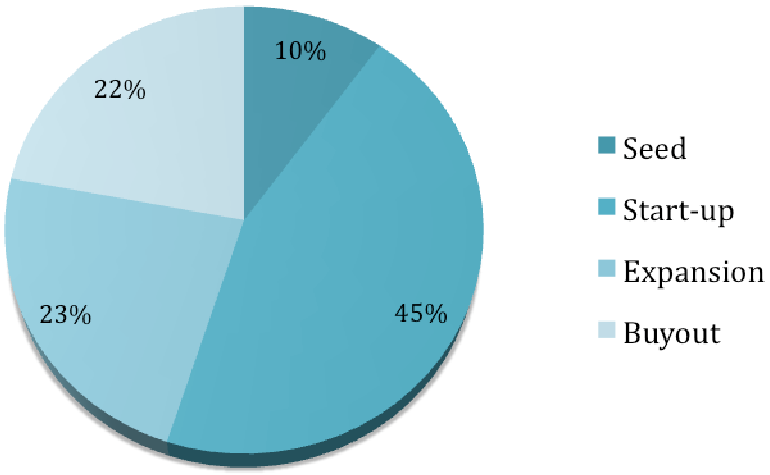

Figure 2-3 Number of investments by phase (SVCA, 2009)

Previous studies, such as Maula (2001) have focused on corporate VC. Corporate VC are different from the private VC since the fund sponsor is a corporation. We argue that the implication from this is that a private investor is only interested in the financial performance of a deal while the corporate VC might also be interested in strategic values. Since we are interested in the credibility enhancement from sheer association with a VC, we argue that the private VC perspective gives a clearer view. As a corporate investor the sponsoring company has a reputation of its own, and the screening is conducted on another basis than only financial outlook.

3 Literature review

3.1 Non-Financial Value Additions

Several studies that investigate the relationship between the start-up firm and its venture capital investor have been conducted. Most of these studies have focused on the investors' active participation in the venture.[7] Overall, previous research suggests that, in addition to providing financing, investors also contribute in other ways to the venture. For example Timmons and Bygrave (1986) state that, apart from looking for risk-money, entrepreneurs should also try to attract VC that are well-renowned in order to acquire non-financial gains. The authors suggest that this could include help with finding a key-management team, assistance with shaping strategy and offering credibility in contacts with suppliers and customers.

This type of non-financial value adding contributions can roughly be organized into two parts; within-firm benefits and outside-firm benefits. Within-firm benefits are contributions by the venture capitalist that enhance internal processes. Large and Muegge (2008) divide the value-adding, internal mechanisms into six different categories. First VC might, as suggested by i.e. Maula et al. (2005) and Busenitz et al. (2004), help the venture to recruit, select and assess employees. Second, as among others Saetre (2003) and Kaplan and Strömberg (2003) discuss, the investor may assist the entrepreneur in deciding about agreements. This could include providing contract terms or designing stock rights. Third, several researchers such as Knyphausen-Aufseß (2005) and Gabrielsson and Huse (2002) have found that the venture capitalist can offer strategic advice in terms of developing business concepts or setting targets. Fourth, the investor can work as a personal coach to the entrepreneur. Researchers as Maula et al. (2005) and Knyphausen-Aufseß (2005) state that the venture capitalist may give for example moral support, feedback and work as motivator. Fifth, as pointed out by for instance Maula et al. (2005) and Torres and Murray (2003), the investor can offer technical or business expertise. Finally many studies, i.e. Knyphausen-Aufseß (2005) and Busenitz et al. (2004), state that the investor might provide hands-on operating assistance. When speaking about externally oriented contributions that affect the ventures position towards outside stakeholders; previous studies mainly find two types, credibility and connections. According

[7] See f.e. Barney et al (1996), De Clercq & Sapienza (2001), Ehrlich et al (1994), Macmillan (1989), Sapienza (1992), Sapienza & Gupta (1994)

to Large and Muegge (2008) credibility is the fact that a venture by being associated with a VC passively may accrue benefits since the connection signals quality. Connections is the contribution by the investor when it comes to aspects of promoting the venture and acquiring a network of important stakeholders. Large et al. (2000) state that this is a critical process in a venture.

We have summarized the different NFVA contributions found in previous research in tab. 3.1 below.

Within-firm Contributions	Outside-firm Contributions
1. Recruiting	1. Credibility
2. Agreements (Negotiation and legal)	2. Connections and Business Networks
3. Strategic Advice	
4. Personal Support	
5. Knowledge	
6. Operating assistance	

Table 3.1 VC Non-Financial Value Additions (NFVA)

3.2 Relationships benefiting from credibility

In this thesis we are mostly interested in the credibility contribution discussed above. As Kaplan and Stromberg (2001) conclude, venture capital firms spend much effort on screening the quality of their investment opportunities. If external stakeholders acknowledge this, a venture capital investment should improve the credibility of the start-up. Several authors have stressed that receiving venture capital increases the reputation of the firm and thereby improves its position towards external stakeholders. Steier and Greenwood (1995) state that the investment works as a legitimation towards the outside. Gabriel and Huse (2002) argue that receiving venture capital makes external contacts easier. Saetre (2003) says that venture capitalists offer credibility. Torres and Murray (2003) state that an investment generates reputation benefits to the firm. These benefits can offer greater possibilities in several areas. Timmons and Bygrave (1986) state that VC-investments provide credibility in contacts with customers, suppliers and creditors. Perry (1988) agrees that having a VC investor improves the contact with customers. Gorman and Sahlman (1989) say that a VC investment helps the

entrepreneur when introducing firm to suppliers and customers. It also helps the firm to raise additional financing.

3.3 Settings when credibility is valuable

There is little previous research regarding what factors influence the credibility benefit from venture capital investment. Maula (2001) states that credibility is particularly valuable if the products of the start-up are essential for the business of the partners or customers, that is if customers or partners have high switching costs. The author also concludes that the reputation of the VC investor is important. The more well-renowned the investor, the higher the benefits of credibility. Hsu (2004) supports this view and states that start-ups are willing to accept a discount on the valuation of their company in order to access VC with higher reputation. Further, Maula (2001) suggests that credibility benefits are especially significant to young ventures. The younger the venture, the more important the VC when partners evaluate the firm. Maula (2001) also adds that close contact between the entrepreneur and venture capital investor is looked upon positively by outside stakeholders. The more frequently the investor and venture have contact, the higher the benefits from increased credibility. Hsu (2004) claims that one factor with negative effect on the benefit from credibility is the previous experience of the entrepreneur. If the entrepreneur has a reputation and network of his own, maybe from previous ventures, the value added from the enhanced credibility of venture capital investment is lower. Fernhaber and McDougall-Covin (2009) state that the value added from enhanced credibility via VC investment is higher if the start-up is attempting internationalization.

We sum up the different influencing factors suggested by past research in tab. 3.2 below:

Factors increasing the benefit from enhanced credibility from VC investment.	**Factors decreasing the benefit from enhanced credibility from VC investment.**
Customer Switching Costs	Previous entrepreneur experience
Supplier (Partner) Switching Costs	The age of the start-up
The reputation of the VC firm	
The amount and quality of contact between start-up and venture capital investor	
Venture internationalization	

Table 3.2 Credibility influencing factors

4 Theoretical Framework

4.1 Asymmetric Information and Signaling Theory

Akerlof (1970) pioneered and later received the Nobel Prize for his findings within the field of asymmetric information. In a setting where two agents are contracting and one agent has superior information while the other agent faces consequences due to being relatively poorly informed, the uninformed agent faces a problem of *adverse selection* since he or she does not know if relevant characteristics of the contract are good or bad (Klein et al. 2002).

Akerlof (1970) demonstrates the adverse selection problem by describing how a market might break down in a setting of asymmetric information. As an example he uses the market for used cars, where potential buyers are unsure about the quality of the product they are buying. Facing the risk of buying a "lemon" (a product with worse than described features), the potential buyer will demand a discount on the price. A seller with a product that is not a lemon will therefore be discouraged from entering the market. In the worst case only the lemons will remain on the market alternatively there will be a pooling equilibrium.

Akerlof (1970) presents applications for his research in several settings, of which insurance is another popular and easily recognized example. As an illustration of the adverse selection problem, one can imagine what would happen if an insurance premium would increase. Being better informed about their future need for insurance than the insurer, the people who insure themselves at a higher price will be those who are more certain that they will need insurance (Akerlof 1970).

As a reliever of the asymmetric information problem, Akerlof (1970) proposes signaling of quality. To reduce the asymmetric information problem this signal should be difficult for a low quality firm to mimic. This signal could be either costly (associated with an exogenous cost) or costless (only associated with an endogenous cost) (Copeland, Weston and Shastri, 2005). Spence (1973) builds on Akerlof's model of costly signaling and continues by investigating separating and pooling equilibriums. Rothschild and Stiglitz (1976) and Wilson (1977) continue in this direction and show that in the market with two types of customers, high risk and low risk, a separating equilibrium will exist. They also show that a Nash equilibrium may not need to exist. Riley (1975,1979) shows that the Spence model can be reduced to a single equilibrium that is pareto optimal. Crawford and Sobel (1982) on the other hand consider a model with costless signaling. A sender has private information and sends a signal to a receiver that takes action that determines the utility for both agents. They show a

set of rules that determine the equilibrium. Austen-Smith and Banks (2000) build on the model and show that the availability of costly signals may increase the precision of costless signals.

Applications for the theory of asymmetric information in corporate finance are several. Leland and Pyle (1977) apply the theory to management share ownership as a signal of commitment. In our setting of interest this would result in a signal from the entrepreneur that he or she believes in the prospects of the firm, if he retains a large share ownership. This would be considered information about the value of the firm by a rational investor (Maula, 2001).

Ross (1977) creates a model that applies to the leverage and capital structure decision as a signaling mechanism. Heinkel (1982) further develops a model where higher quality firms signal their quality through higher amounts of debt and several authors have continued in this line.[8] A renowned model based on asymmetric information is the pecking order hypothesis for new investments as presented by Myers and Majluf (1984) and Myers (1984). Other ideas about asymmetric information have later been presented and include IPO's, SEO's and stock repurchases.[9]

One specific type of signaling theory is particularly important for this thesis. This is the certification through third-party association. Booth and Smith (1986) develop a model that employs an underwriter as a signal in the setting of a firm raising capital. They show that the underwriter can be employed to "certify" that the issue price is consistent with inside information about future earnings prospects of the firm.

Lummer and McConnell (1989) investigate the role of banks as transmitters of information in capital markets. They propose that if banks either produce or are given access to information that is not available to other capital-market participants and then make lending decisions from this information, this should provide a signal of the borrowers' creditworthiness. They also state:

"*When a potential borrower applies for a loan, the bank evaluates the borrower, and the bank's loan decision signals the prospective borrower's creditworthiness to other capital-market participants.* "[10] The authors show that there is a positive stock market reaction to the

[8] See for example Blazenko (1987), John (1987), and Ravid and Sarig (1991)

[9] See for example Vermaelen (1984), Speiss et al (1995), Persons (1994, 1997), McNally (1999), Chan et al (2001), Dittmar (2002)

[10] Lummer and McConnell (1989), page 101

announcement of a firm receiving new bank financing. Slovin, Johnson and Glascock (1992) show that this signal is stronger for small firms and Best & Zhang (1993) suggest that this is also true for more opaque firms. Casolaro et al. (2003) state that this is to be expected if the disclosure by banks is more valuable for these categories of borrowers. Dahiya et al (2001), found a negative and significant impact on the borrowers' stock returns from a loan sale by the leading bank. Meggingson and Weiss (1991) investigate the certification effect of Venture Capital ownership in an IPO setting and show that the presence of venture capitalists in the issuing firms lowers the costs of going public and maximizes the net proceeds to the firm.

4.2 Agency Theory

It is widely recognized that the separation of ownership from control and the dispersed ownership structure of corporations, create problems that potentially reduce shareholder wealth. Some of these problems are referred to as agency problems and occur due to different interests between the shareholder (commonly referred to as the principal) and the manager (referred to as the agent) (Jensen and Meckling, 1976; Fama and Jensen, 1983; Hart, 1995). Jensen and Meckling define agency relationships as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegation some decision making authority to the agent". An illustration of the agency problem occurs when managers, who are responsible for important decisions of the firm, are not the primary claimants of the firm's net assets, and do not bear a major share of the wealth effects of their decisions. If both parties are rational utility maximizers then it is reasonable to believe that the agent will not always act in the best interest of the principal (Eisenhardt, 1989).

Agency theory is mainly concerned with two types of problems that can occur in agency relationships. The first is the problem that takes place when the goals of the principal and agent conflict and there is an information asymmetry so that it is difficult or expensive for the principal to confirm what the agent is really doing. In this case the principal cannot verify that the agent has behaved appropriately. The second issue is the problem of risk sharing that arises when the principal and agent have different attitudes toward risk. The problem here is that the principal and the agent may prefer different actions because of the different risk preferences (Eisenhardt, 1989).

One of the potential agency issues is *moral hazard*, which refers to when an agent might purposefully not perform as agreed. The agent may have hidden intentions, which are not revealed until decision making authority has been delegated (Pauly 1974).

The agency problem results in agency costs. Jensen and Meckling (1976) define three types of agency costs, (1) the monitoring expenses for the principal, (2) the bonding expenditures by the agent and finally (3) the residual loss.

After formulating the problems of the principal-agent conflict, the focus of the agency theory is then to outline contracts and mechanisms that reduce these potential problems and determining the most efficient contract governing the principal-agent relationship given assumptions about the behavior of people. (Eisenhardt, 1989).

4.3 Transaction Cost Economics

Transaction cost economics (TCE) discusses the economic mechanics behind transactions. Williamson (1981) describes a transaction as a transfer of a good or service that causes one activity stage to end and starts another. This transaction comes with different kinds of costs such as searching cost, contracting cost, monitoring costs and enforcement cost (Williamson, 1985). Depending on the efficiency of the transaction the amount of these costs will vary. Inefficiencies may occur due to asymmetric information, complexity or opportunism. Another problem is bounded rationality. Williamson (1981) state that a firm should organize its operations in order to minimize the inefficiencies and hence the sum of transaction cost.

One important factor when discussing TCE is asset specificity. Asset specificity is a concept that describes how specialized a certain asset is for a certain transaction. An asset can be specific because of a special location, because the systems between the buyer and seller must be compatible or due to a need for special skills and capabilities. This can make an asset more valuable in one transaction than in others (Williamson, 1981). If an asset is very specific it is very valuable for a certain transaction but less valuable in another. Such assets will impose switching costs. Since it is expensive for a customer/supplier to change to another partner, there will be interdependency between the partners. This interdependency makes trust an important factor. Because of the risk involved in being dependent, investments in asset specific transactions must be thoroughly screened (Maula, 2001).

5 Hypotheses to be tested

Previous research has suggested several possible non-financial value additions to start-up firms by venture capital investors. In chapter 3 "Literature review", we sum up the different ideas. In this chapter we combine these suggestions with relevant theories from chapter 4 in order to develop hypotheses about the value added to a venture from enhanced credibility from a VC investment.

As we have argued before newly established companies are often small and have a short history. This makes it hard for outside stakeholders to assess the quality of the company for purposes of investment, credit, partnership or employment. The recently started companies are also more risky due to lacking routines, new business relationships and lack of resources. Aldrich and Auster (1986) suggest that there is a liability of smallness and liability of newness in start-up firms. Due to these problems a signal of quality might be valuable. Since outside investors, such as VC firms, perform substantial screening of potential investments before an investment, we believe that one such signal of quality could be venture capital financing. This leads us to hypothesize that receiving venture capital increases firm value via a credibility improvement.

H1: The credibility enhancement to a start-up from a VC investment is value adding

Further we form some hypotheses regarding in what settings and situations credibility enhancement is largest. As we discuss in our literature review chapter, previous studies have shown that the credibility enhancement is larger if the start-up's customers have higher switching costs. Transaction cost economics suggests that a customer of very specific products is risky, since high asset specificity influences the risk of relationships (Williamson, 1979). Further as Maula 2001 argue, the higher the risk of the purchase, the more important will the reputation of the start-up be. Therefore we hypothesize that the value added from credibility enhancement is positively related to customer switching cost.

H2: The value added from credibility enhancement is positively related to customer switching costs

As we discuss above, asset specificity enhances the risk of a relationship. This should apply also to the start-up firm's relationships with suppliers. Maula (2001) suggests that the endorsement from a VC firm is positively related to partner switching cost.

It is common that the supplier offers trade credit and thus in effect is a creditor; this would be a further reason for a relationship between supplier switching cost and credibility.

These ideas lead us to hypothesize that the value added from credibility enhancement is positively related to supplier switching costs.

H3: The value added from credibility enhancement is positively related to supplier switching costs

The reputation of a VC firm would be a stronger signal of credibility if one can expect that a better reputation would be related to a better screening and monitoring ability. Even if this is not the case, a better reputation may act as a stronger signal if outside stakeholders base their judgment of the VC firm on reputation. Maula (2001) concludes that higher VC reputation is beneficial to the start-up firm's credibility. It seems that start-up firm's believe in this idea, since they according to Hsu (2004) accept a discount in their valuation when the VC firm is more reputable. This discussion leads us to hypothesize that the value added from credibility enhancement is positively related to the reputation of the VC firm.

H4: The value added from credibility enhancement is positively related to the reputation of the VC firm

An implication of agency theory is that asymmetric information between a principal (in this case the VC) and an agent (in this case the start-up) could result in agency costs. If the quality and amount of contact is high, asymmetric information would probably be reduced due to better monitoring. Further, better contact may align interests and possibly also risk attitudes. Maula (2001) adds that lots of high quality contact is looked upon positively by outside stakeholders. We therefore hypothesize that the value added from credibility enhancement is positively related to the amount and quality of contact between the start-up and its venture capital investors.

H5: The value added from credibility enhancement is positively related to the amount and quality of contact between the start-up and its venture capital investors

Fernhaber and McDougall-Covin (2009) state that the value added from enhanced credibility via VC investment is higher if the start-up is attempting internationalization. This seems reasonable from a perspective of information asymmetry since venture capital involvement would be a valuable signal of credibility in an international setting where the quality of the start-up is largely unknown. This leads us to our sixth hypothesis; the value added from credibility enhancement is positively related to the ventures internationalization.

H6: The value added from credibility enhancement is positively related to the ventures internationalization

If the entrepreneur or management team of the start-up is well renowned in the industry the information asymmetry between the entrepreneur and other stakeholders would be lower than for a less reputable management team, ceteris paribus. In this case third party certification would be less valuable. We find support for this idea in Hsu (2004) and hence hypothesize that the value added from credibility enhancement is negatively related to the start-up management's previous experience.

H7: The value added from credibility enhancement is negatively related to the start-up management's previous experience

It has been argued that a firm with a short track-record, as we can expect from a young start-up, can benefit from having a well known partner, since it can benefit from the partners legitimacy (Stuart et al., 1999; Stuart, 2000). From an asymmetric information perspective, this seems reasonable since the uncertainty about a young firm's prospects is large and thus also the information asymmetry. Maula (2001) suggests that the younger the firm, the larger the benefits from improved reputation. We therefore hypothesize that the value added from credibility enhancement is negatively related to the age of the start-up.

H8: The value added from credibility enhancement is negatively related to the age of the start-up

A similar argumentation could be applied to a small sized firm. This would be referred to as the *liability of smallness*, which has been discussed by several authors.[11] Accordingly we hypothesize that value added from credibility enhancement is negatively related to the start-up's size.

H9: The value added from credibility enhancement is negatively related to the start-up's size

[11] See for example Aldrich & Auster (1986), Freeman et al. (1983) and Stinchcombe (1965)

6 Methodology

6.1 Choosing research method

There are two main approaches to research methodology, deductive and inductive. Deductive reasoning works from the more general to the more specific. This can be seen as a "top-down" approach (see fig. 6-1). It starts with reasoning about a *theory* regarding the subject to be studied. This theory is then formulated in to a number of more specific *hypotheses* to be tested. Then even more narrow *observations* are collected to address the hypotheses. Finally the formulated hypotheses are tested in order to *confirm* or disconfirm the theories (Trochim, 2006). This is the method used in this thesis.

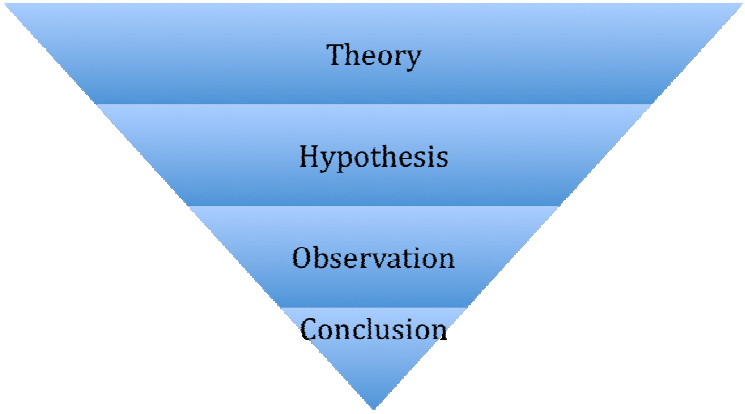

Figure 6-1 Deductive methodology

6.2 Literature

The literature used in our theoretical framework and as foundation for our analysis is primarily consisting of articles written by highly regarded economic scholars. Some theory and research methodology will be retrieved from printed materials, such as books published for academic use. Industry specific information is mainly retrieved from SVCA and NVCA, which we regard as reliable sources of information. For information about the specific portfolio companies in our sample information is gathered from our survey and complemented with information from SVCA. Articles are mainly gathered using the Electronic Library Information Navigator, ELIN at Lund University. We regard this as a reliable database for academic articles. When choosing articles we have the intention to refer to articles published in respected economic journals or dissertations from respected

universities. We attempt to include different research perspectives in our analysis, not only relying on one source of material, with the intention to increase our reliability.

6.3 Methodology outline

The methodology is based on the concept of non-financial value added (NFVA) as presented by Maula in his 2001 dissertation and as described previously in the text. This method has also been successfully implemented by Hsu (2004).

To understand the value adding effect of increased credibility from the signal of venture capital investment, and what mechanisms' that influence it, we use primary data collected through a survey. The study uses an online questionnaire that is sent to a number of start-up companies collected from the member database of the Swedish Venture Capital Association (SVCA). In the questionnaire a leading person within the venture is asked to answer questions regarding his or her perceived value from receiving venture capital; as well as how this has improved the firm's credibility towards outside stakeholders. Previous studies such as Sapienza (1992) and Sapienza & Gupta (1994) have shown a strong relationship between more objective measures of value addition and the perceived value added. Further, as Maula (2001) states, the high uncertainty in newly established firms may influence objective measures to be less reliable and thus the perceived measure can be considered equally reliable. The responses are used to construct combined measures for a number of variables (this variable construction and the models are more thoroughly described later in this chapter) which we investigate further. Using the constructed variables we first analyze the value adding effect of credibility enhancement from receiving venture capital. In a second model we also analyze some mechanisms' impact on the credibility value added. The models are estimated using multivariable regression analysis in an OLS-framework. We use the output of these estimations to test the hypotheses from the previous chapter. The result of the hypothesis testing is the basis for our analysis, from which we try to arrive at a conclusion regarding our research problems.

6.4 Data

Our thesis uses primary data collected through a survey. The survey is based on a questionnaire that is distributed to leading decision makers in Swedish VC backed start-up companies.

6.5 Population and Sample

The population we would like to target is entrepreneurs of VC backed start-up companies in Sweden. The companies used in the sample are backed by VC member firms of the Swedish Venture Capital Association (SVCA), Sweden's largest VC and private equity member organization. Using their database we identify VC firms investing in companies in the start-up stage. The database consists of approximately 320 member VC firms, out of which about 115 are active VC members. These VC members hold ca 1550 portfolio firms. From the 115 active members we would like to extract VC firms matching our criteria.

We use the following criteria to find the appropriate VC firms:

- The VC should state that it makes investments in Swedish portfolio companies.
- The VC should also state that it invests in the start-up stage of a venture.

Using these criteria we find a sample of 19 VC firms. These have investments in 234 portfolio companies. We then eliminate one portfolio company that is a VC firm itself. We also eliminate portfolio companies from the sample that do not mach the following criteria:

- The VC should still have ownership in the portfolio company.
- The portfolio company must be operating.

This results in 231 portfolio companies. In three cases we where unable to retrieve contact information. Out of these investments, 9 investments are present in two different VC firms' portfolios. One of the duplicate observations is therefore removed. This results in 219 portfolio companies, to which we send the questionnaire. In order to increase our response rate we also sent out two rounds of reminders. One of these rounds generated no responses and we suspect that this was due to problems with recipients SPAM filter. Therefore the last reminder was sent as separate e-mails.

From the 219 firms we received 44 responses, representing 20.1 % of our sample, which can be considered a low but adequate response rate. According to IAR(2010), online surveys on average generate a response rate of 30 %. Of the responses we received 42 were fully complete and 2 were partially complete. In total 3 questions were left unanswered. No responses were fully incomplete and disregarded. Thus, our study uses the 44 responses that were partially or fully complete as the final estimation sample.

35 observations are spread over nine industries. The remaining 9 observations are listed as "other industries", meaning that they could not be clearly classified according to NAICS. A graph of the industry classifications of the sample is presented in fig. 6-1 below:

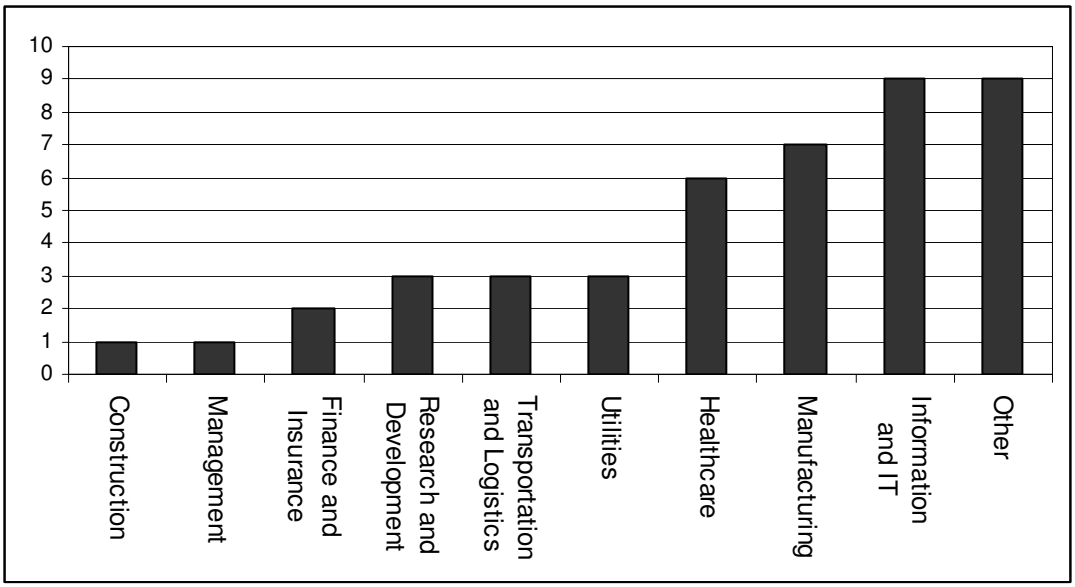

Figure 6-2 Industry-wide response distribution

6.6 Respondents

Our target respondent is a leading person within the start-up firm. Primarily we are interested in answers provided by the main decision maker in the firm around the time of venture capital investment. We focus our questionnaire towards the CEO of the company, if possible. We also find answers from founders, chairman of the board or another influential employee, such as the CFO, acceptable. The most important selection criterion is that the respondent has had insight into the firm at an early stage of its operations.

In our final sample 12 respondents are founders (or founder and CEO). 31 respondents are CEO:s. One respondent is CFO.

6.7 Survey

In order to retrieve primary data regarding the value added contributed by venture capital investment we used an online-based questionnaire tool[12]. Following previous research methods used by Maula (2001) and Hsu (2004), we design the survey to include a set of questions regarding the perceived benefits of receiving a venture capital investment. Sapienza

[12] We used Google Documents survey tool, www.gmail.com

(1992) and Sapienza & Gupta (1994) have shown a strong relationship between more objective measures of value addition and the perceived value added. Since our study has a somewhat different approach than previous studies, such as Maula (2001) and Hsu (2004), we have extract and added some questions that make the questionnaire more appropriate to our purpose.

The questionnaire was sent out via an e-mail containing a link to the survey for two reasons. First, we believe it is most convenient for the recipients and secondly we expect this to yield the highest amount of answers. Apart from introducing questions such as firm revenue size, age and number of employees, the questionnaire also included questions regarding the venture capital investor and the non-financial contributions given. These questions consisted of interval scale questions. In the interval scale questions the respondent was asked to grade a statement on a scale of 1 to 5, where one in most cases meant that the respondent totally disagreed and five that the respondent totally agrees. In some cases the scale referred to a different range, where one was considered a low value and five a high. The questionnaire is found in appendix 1.

6.7.1 Non-response analysis

We see no apparent pattern among our non responses. As seen in fig. 6-1 above, our responses cover many different industries. Although we only received a 20 % response rate, the responses seem to be distributed fairly in relation to the original data set in terms of VC owner. We received no responses from VC firms number 15-20, but these firms hold only very few portfolio investments. The two figures (fig. 6-2, 6-3) below show the original portfolio company distribution per VC firm and how our responses are distributed:

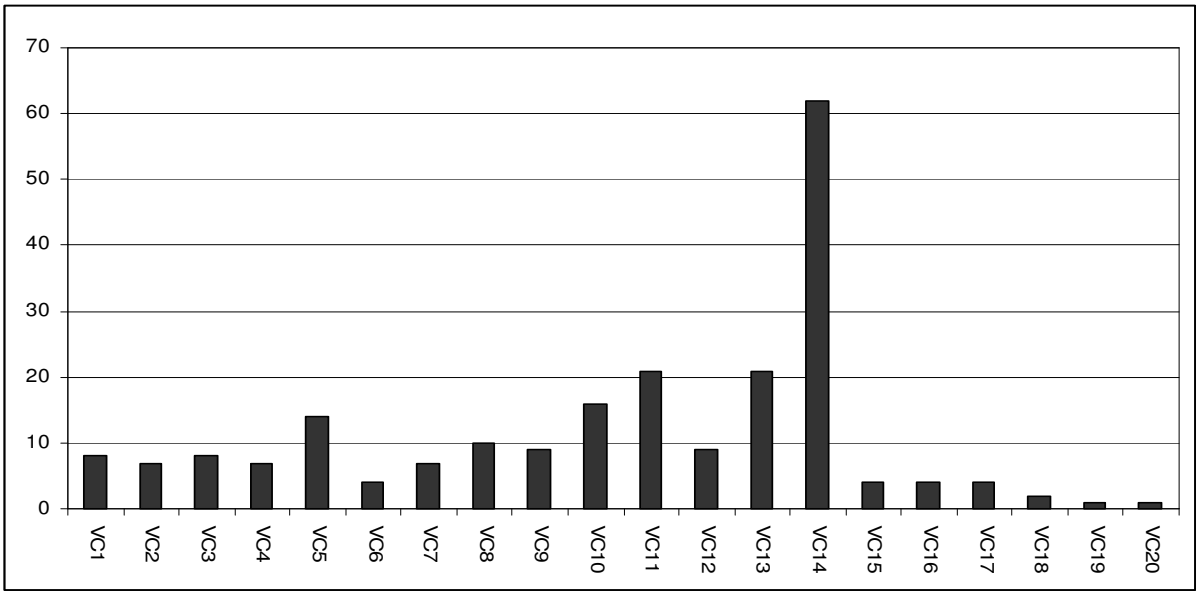

Figure 6-3 Portfolio company distribution

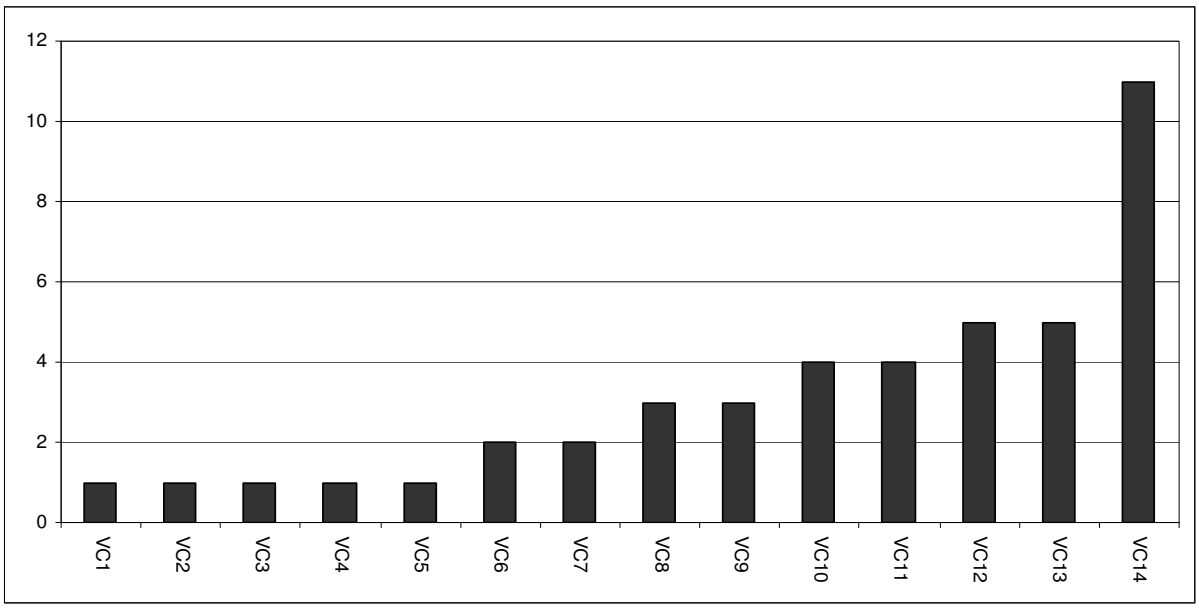

Figure 6-4 Response distribution per VC

Only three respondents left one question each unanswered. We do not see missing answers as a problem for our analysis. One potential bias in our survey could be if only successful, or oppositely unsuccessful start-ups have answered the questionnaire. However, since we are interested in the relationship between value added and other variables, the level of value added is less important. There could of course still be problems with having a success bias, if the relationships between the variables are dependent on level of success.

6.7.2 Constructing the variables

The variables included in the model are operationalized as multi-item scales, meaning that the answer from several questions are combined into one measure. This is done in order to reduce the uncertainty and ambiguity of subjective answers (Spector, 1992). The different measurement questions are included in order to create a combined measure for a theoretically founded or by previous research suggested impact mechanism. The statement items are scaled from 1 to 5. To ensure validity in the construction of our variables we ask a number of questions from different viewpoints, in order to measure an underlying concept. The questions are formulated to represent different components of the theoretical concepts discussed in chapter 3. To test the reliability and unidimensionality of the non-objective measures we conduct a Cronbach's alpha test (Cronbach, 1951).

The Value Added Model

The constructed variables in the Value Added model are presented in tab. 6.1 below:

Variable and items	Mean	Std. Error	Cronbach's α
Value Added • The VC investor has, apart from financing, provided valuable support • You are very pleased with having this VC investor • The non-financial support given by your VC investor has been critical to your success	3,08	1,03	0,79
Credibility • Being associated with the VC investor has increased your credibility towards your customers • Being associated with the VC investor has increased your credibility towards your suppliers • Being associated with the VC investor has increased your credibility towards banks • Being associated with the VC investor has increased your credibility towards investors • Being associated with the VC investor has increased your credibility towards your employees	3,20	1,05	0,88
Recruiting • The VC investor has helped you assess relevant candidates • The VC investor has helped you choosing employees	2,13	1,22	0,90
Strategic Advice • The VC investor has helped you with business development • The VC investor has helped you setting strategic goals • The VC investor has helped you with your strategic decisions	3,05	1,20	0,91
Negotiations and Legal • The VC investor has helped you with negotiations • The VC investor has helped you with legal agreements • The VC investor has helped you deciding about ownership rights	2,75	1,01	0,74
Personal Support • The VC investor has provided moral support • The VC investor has given valuable feedback • The VC investor has motivated the management team	3,31	1,13	0,94

Knowledge • The VC investor has provided business knowledge • The VC investor has provided technical knowledge • The VC investor has provided management knowledge	2,45	0,81	0,65
Operational Assistance • The VC investor has helped you with day-to-day management • The VC investor has help you with day-to-day work tasks • The VC investor has help you with day-to-day planning	1,46	0,72	0,94
Network • The VC investor has helped you finding candidates • The VC firm has helped you with expansion	2,35	1,00	0,54
Size - constructed as a 1-5 measure	2,94	1,08	Not multi item
Age - in years	10,76	12,40	Not multi item

Table 6.1Variable description and statistics – Value Added Model

It is common to request Cronbach's alpha of above 0.7 to claim a constructed variable to be acceptable (UCLA). Two of our variables do not meet this request and should thus be looked upon with awareness.[13]

[13] Note: These variables are not included in our final estimation, due to problems with low Cronbach's alpha and high multicollinearity.

The credibility model

The constructed variables in the credibility model (except the credibility, size and age variables which are presented above in tab. 6.1) are presented in tab. 6.2. below:

Variable and items	Mean	Std. Error	Cronbach's α
VC Reputation • The most important venture capital investor in your firm is well known to firms in your industry • When you were seeking financing, the chosen investor was your most desired alternative • The venture capital investor has many portfolio investments (objective measure, scale 1-5)	3,30	0,83	0,50
Contact • How often do you meet with your most important VC investor? • How often do you have contact with your most important investor via phone or e-mail? • How well do you fit with your investor socially (non-business)?	3,41	0,85	0,68
International Expansion • International expansion is important to your business • At the time of your first VC investment you had plans to expand internationally	4,34	1,01	0,72
Customer Switching Cost • Buying your specific products/services is an important decision for your customers • It is difficult for your customers to change to another supplier of similar products or services • Your specific products are crucial to your customers success	4,02	0,73	0,71
Supplier Switching Cost • You have suppliers with products/services which sell specific products that are crucial to you • It is difficult for you to change some of your suppliers • Buying from some of your suppliers is an important decision for you	3,88	0,99	0,87
Management Experience • How much experience of managing a company does the firm management have? • How much experience of starting a company does the firm management have? • How large business network does the firm management have?	3,71	0,79	0,73

Table 6.2 Variable description and statistics – The Credibility model

In the credibility model two variables have a Cronbach's alpha below 0.7. The contact variable has an alpha of 0.68. This is very close to 0.7 and we therefore choose to keep it in our model, but it should be noted as having a low internal consistency. The other variable with a low Cronbach's alpha is VC reputation. However, this variable is constructed using both subjective and objective items. This might be the reason for low internal consistency and we do not believe that a low Cronbach's alpha alone is reason to omit the variable. Also in the case of VC reputation, we recommend that the variable is looked upon with carefulness.

6.8 Validity, Reliability and potential methodology problems

Any research study has to consider its validity and reliability. Validity is to what extent the study reflects the world in an accurate way (Ryan et al, 2002). Reliability is to what extent a study would generate the same result if performed again (Bryman and Bell, 2003). Our data set is collected through a questionnaire and is primary data consisting of subjective responses. It is of much importance that this data is representative for the population of interest. To ensure validity in the construction of our variables we ask a number of questions from different perspectives, in order to measure a primary concept. The questions are formulated to represent different components of the theoretical concepts discussed in chapter 3. In order to ensure that we send the questionnaire to an appropriate group of companies, we use the official membership list of the Swedish Venture Capital Association and should therefore be able to come in contact with most of the companies in our population. We also conduct a non-response analysis, where we analyze if we see any systematic differences between the respondents of the study and other companies receiving the questionnaire. No such systematic deviations are found. However, the response rate is fairly low and this of course affects the reliability of the study. We argue that the observations can be regarded as a sample describing the larger population well since we have found no systematic pattern among our respondents. Having a higher response rate would probably increase the accuracy.

There are two aspects of the data that deserve special attention. This is that the study is based on subjective measures and consists of ordinal scale observations. As stated previously in the text, Sapienza (1992) and Sapienza & Gupta (1994) have shown a strong relationship between more objective measures of value addition and the perceived value added and Maula (2001) adds that the high uncertainty in start-up firms make objective measures unreliable. Since start-up companies in our study are not publicly traded, objective measures are in addition to

being unreliable also hard or impossible to obtain. We test items included in our variables for internal consistency using Cronbach's alpha. Second, since we use an ordinal scale we have to be careful about our conclusions. As an example, we can not say that a value, four, is twice as good as a value, two, just that it is better. We therefore only arrive at conclusions about value adding or not value adding, but nothing about the magnitude.

As for the models, we argue that basing our model and methodology on research presented in peer reviewed articles and dissertations secures a high validity. Perceived value added is the general choice for this type of research on NFVA[14]. The control variables we use where collected from previous empirical studies and reasoning published in peer-reviewed scholarly journals. Although we group our variables somewhat differently we argue that they measure the similar aspects of value addition.

We use statistical tools and software (EViews 7.0 and Microsoft Excel) with high reliability. The OLS-estimations and data are tested and fulfill the assumptions needed for statistical inference.

[14] See for example Large et al. (2000), Maula (2001), Gabrielsson and Huse (2002) or Hsu (2004)

7 The Value Added Model

The starting point for our hypotheses testing is to investigate the different explanatory variables using a multiple regression analysis in an ordinary least squares (OLS) setting.

Our first model investigates the relationship between value added and credibility, that is how much the improved credibility from receiving venture capital adds value. We use the value addition variable, which we have constructed from the different venture managers' answers of perceived value, as the dependent variable.
As our independent variables we use the measurement variable for credibility, the variable we are interested in examining, as well as control variables for the other possible value adding mechanisms discussed in our literature review (see tab. 3.1). We also argue that size should be included, as it can be expected to be a liability similar to age (Aldrich & Auster, 1986). Finally we include an intercept.

The starting point for our Value Added Model is written below:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \varepsilon$$

Equation 7:1 Starting point for Value Added Model

where

y = Value Added	α = constant
x_1 = credibility	x_2 = recruiting
x_3 = strategic advice	x_4 = negotiation & legal
x_5 = support	x_6 = knowledge
x_7 = operational assistance	x_8 = network
x_9 = size	x_{10} = age
ε = error term	

In order to avoid estimation errors we first investigate whether some of the variables are correlated by examining the matrix of correlation between the individual variables. In tab. 7.2 below, we present the matrix:

	Recruiting	*Strategic advice*	*Negotiation & Legal*	*Support*	*Knowledge*	*Oper. Assitance*	*Credibility*	*Network*	*Size*	*Age*
Recruiting	1	0,55	0,42	0,25	0,50	0,48	0,30	**0,79**	0,11	-0,06
Strategic advice	0,55	1	0,59	0,57	**0,65**	0,48	0,48	**0,69**	0,01	-0,06
Negotiation & Legal	0,42	0,59	1	0,37	0,45	0,48	0,59	0,45	-0,05	-0,01
Support	0,25	0,57	0,37	1	**0,60**	0,36	**0,61**	0,34	0,03	-0,13
Knowledge	0,50	**0,65**	0,45	**0,60**	1	0,51	0,46	**0,61**	0,08	0,00
Operational assistance	0,48	0,48	0,48	0,36	0,51	1	0,41	**0,65**	-0,16	-0,16
Credibility	0,30	0,48	0,59	**0,61**	0,46	0,41	1	0,34	-0,08	-0,17
Network	**0,79**	**0,69**	0,45	0,34	**0,61**	**0,65**	0,34	1	0,03	-0,06
Size	0,11	0,01	-0,05	0,03	0,08	-0,16	-0,08	0,03	1	0,47
age	-0,06	-0,06	-0,01	-0,13	0,00	-0,16	-0,17	-0,06	0,47	1

Table 7.1 Matrix of correlations – The Value Added Model

Our decision rule in order to avoid multicollinearity is that we allow correlations below 0,6. In cases of to high correlation we omit one of the collinear variables from our model. As we can see there are some cases where this occurs. Since the variable "network" is the variable that has most occurrences of to high correlation we choose to start by omitting this variable. Further we remove "knowledge" which has three occurrences. The Cronbach's alphas of these two variables where also unacceptable and we argue that they therefore should be excluded. Finally, we also take away the support variable, since it has to high correlation with the variable "credibility", which we have a strong a priori theoretical reason to include (Brooks et al., 2008).

These augmentations lead us to the following model which is the model to be estimated:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \varepsilon$$

Equation 7:2 The Value Added Model

where

y = Value Added

α = constant

x_1 = credibility

x_2 = recruiting

x_3 = strategic advice

x_4 = negotiation & legal

x_5 = operational assistance

x_6 = size

x_7 = age

ε = error term

.

7.1 Estimation Output: Value Added Model

We estimate the model using an OLS-regression framework. The output is presented in tab. 7.3 below:

Sample: 1 44				
Dependent Variable		Value Added		
Variable	*Coefficient*	*Std. Error*	*Prob.*	
constant	0,384	0,446	0,396	
credibility	0,284	0,118	**0,021**	**
recruiting	-0,002	0,109	0,986	
strat. Adv.	0,440	0,110	**0,000**	***
legal	0,158	0,135	0,251	
operational	-0,008	0,177	0,965	
size	0,024	0,103	0,820	
age	-0,008	0,009	0,362	
R-squared	0,697	Mean dep. var	3,032	
Adjusted R-squared	0,635	S.D. dep. var	1,025	

Table 7.2 Estimation output – The Value Added Model

The estimation consists of 44 observations. As we see two of the variables are significant. The "credibility" variable is significant at the 5 % level and the "strategic advice" variable is significant at the 1 % level.

The R^2-statistic is almost 0.7 which indicates good regression fit. Since we have many independent variables it is interesting to investigate the adjusted R^2-statistic which takes into account the loss of degrees of freedom. In our model the adjusted R^2 is 0.635, which indicates the model is fit appropriately.

7.2 Testing the OLS-assumptions: Value Added Model

In order to be able to arrive at conclusions through inference we have to test the underlying assumptions of the statistical model employed.

• Assumption 1: $E(\varepsilon_i) = 0$

The OLS framework assumes that the average value of errors is zero. If a constant term is included this will never be violated, thus this assumption is not a problem in our model. (Brooks et al., 2008).

• Assumption 2: $\text{var}(\varepsilon_i) = \sigma^2 < \infty$

This is the assumption of homoskedasticity, meaning that the variance of the errors is constant, σ^2 and finite.

We test this assumption using White's general test for heteroscedasticity (White, 1980).
It is useful since it makes few assumptions regarding the form of heteroscedasticity (Brooks et al., 2008). The output of the test is presented below:

Heteroskedasticity Test: White			
F-statistic	1.340731	Prob. F(7,34)	0.2620
Obs*R-squared	9.085487	Prob. Chi-Square(7)	0.2466
Scaled explained SS	5.858149	Prob. Chi-Square(7)	0.5564

Table 7.3 White's general test for heteroscedasticity – The Value Added Model

As seen in tab. 7.3 the null hypothesis of homoskedasticity cannot be rejected, thus we find no proof of the assumption being violated.

• Assumption 3: $\text{cov}(\varepsilon_i, \varepsilon_j) = 0 \, for \; i \neq j$

To test the third assumption that is the absence of autocorrelation among the residuals, we use the Durbin-Watson statistic. Durbin and Watson (1951) propose a test for autocorrelation by investigating the relationship between residuals cross-sectionally. Fig. 7-1 below illustrates the rejection and non-rejection regions for the D-W statistic.

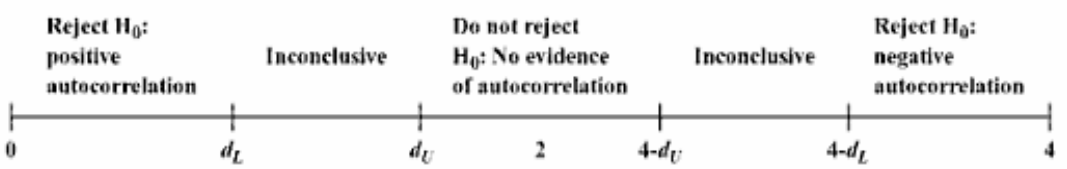

Figure 7-1 Rejection regions for the D-W statistic (Brooks et al., 2008)

In our model the DW-statistic equals 2.39. Looking at the tables for the upper and lower bounds for the DW-statistic for a 45 observation regression with 7 explanatory variables and an intercept (Savin and White, 1977) we find that our DW-statistic is close to the 4-d_U bound between the do not reject and inconclusive region[15]. Thus, we do not believe that the third OLS assumption is violated but the test is inconclusive.

• Assumption 4: *The x's are non-stochastic*

We assume that the x 's are non-stochastic and we se no reason or theoretical explanation for an endogeneity problem. We base the assumption of non-stochastic independent variables on logic and reasoning.

• Assumption 5: $(\varepsilon_i \sim N(0,\sigma^2))$

The fifth assumption, normality, is that the errors are normally distributed. Testing for normality is crucial if hypothesis testing of the parameters is to be conducted (Brooks et al., 2008).

We test if the residuals are normally distributed by examining the residual histogram. This is presented in fig. 7-2 below:

[15] d_L= 1.019 d_U = 1.704

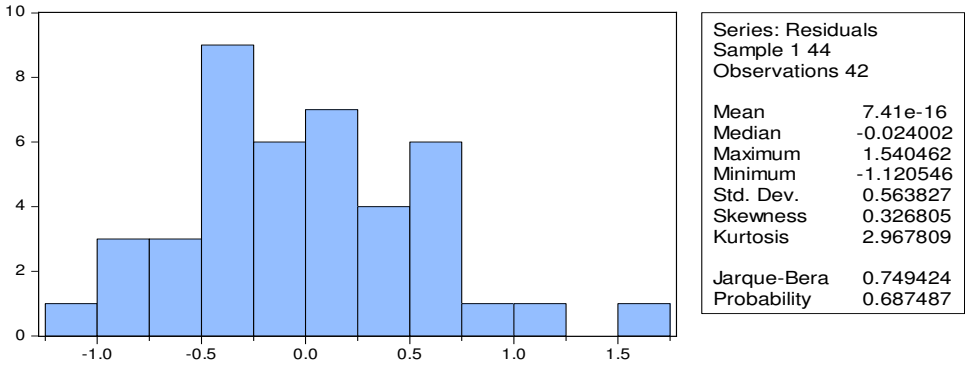

Figure 7-2 Residual Histogram - The Value Added Model

Since the residual histogram does not conclusively prove normality, we study the Jarque-Bera statistic. Jarque and Bera use a Lagrange multiplier procedure based on skewness and kurtosis to derive a test for normality (Jarque and Bera, 1980). If we can reject the corresponding null hypothesis of normality, this violates the fifth OLS assumption. In our model the J-B p-value is 0.687 and we can hence not reject normality.

• Linearity

Implicitly using an OLS-framework assumes that the appropriate model to describe our data is a linear model. One way to test this is Ramsey's RESET test (Brooks et al., 2008). The Ramsey's RESET test, investigates a number of specification errors, including a wrongly adopted functional form (Ramsey, 1969). See tab. 7.4 below:

Ramsey RESET Test		
	Value	Probability
t-statistic	1.469701	0.1511
F-statistic	2.160021	0.1511
Likelihood ratio	2.662889	0.1027

Table 7.4 Ramsey's RESET test – The Value Added Model

In our estimation we can not reject the null hypothesis of correct functional form.

• Results of the OLS testing

The tests above do not indicate any violations of the OLS-assumptions in our Value Added Model and we therefore believe our results to be reliable for statistical inference.

8 The Credibility Model

Our second model investigates what factors influence the value added from credibility. To study this we use an OLS-regression analysis. As dependent variable we use the same multi-item computed credibility measure as in the value added model. In order to test our hypotheses we include a number of independent variables. We choose to include the seven, possibly credibility influencing mechanisms suggested by earlier studies (see tab. 3.2). Since we are also interested in the possible effect of firm size, we add this variable. It seems reasonable to believe that the same uncertainty that previous researchers have linked to firm age also may apply to firm size. Finally we include an intercept.

The Credibility Model is written below:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \varepsilon$$

Equation 8:1 The Credibility Model

Where

y = Credibility

α = Constant

x_1 = VC Reputation

x_2 = Contact

x_3 = International expansion

x_4 = Customer switching cost

x_5 = Supplier switching cost

x_6 = Management experience

x_7 = Size

x_8 = Age

ε = error term

We control our regression parameters for multicollinearity using a matrix of correlations. The matrix is presented in tab. 8.1 below:

	VC Reputation	*Contact*	*International expansion*	*Cust. S. Cost*	*Sup. S. Cost*	*Management*	*Size*	*Age*
VC Reputation	1	0,25	0,27	0,18	0,20	0,38	0,12	0,12
Contact	0,25	1	0,24	0,13	0,17	0,26	-0,05	-0,23
International expansion	0,27	0,24	1	-0,06	-0,01	0,00	-0,22	-0,03
Customer Switching Cost	0,18	0,13	-0,06	1	-0,05	0,23	0,09	-0,07
Supplier Switching Cost	0,20	0,17	-0,01	-0,05	1	-0,10	0,00	0,03
Management	0,38	0,26	0,00	0,23	-0,10	1	0,07	-0,18
Size	0,12	-0,05	-0,22	0,09	0,00	0,07	1	0,47
Age	0,12	-0,23	-0,03	-0,07	0,03	-0,18	0,47	1

Table 8.1 Matrix of correlations – The Credibility Model

Since our decision rule is 0.6, we have no problems of multicollinearity. We do therefore not omit any of our suggested variables.

8.1 Estimation Output: Credibility Model

The output of the OLS-regression is presented in tab. 8.2 below:

Sample: 1 to 44				
Dependent Variable	Credibility			
Variable	*Coefficient*	*Std. Error*	*Prob.*	
Constant	-1,965	1,274	0,133	
VC reputation	-0,249	0,189	0,197	
Contact	0,456	0,167	0,010	**
Int. expansion	0,212	0,153	0,174	
Cust. S.Cost	-0,090	0,177	0,615	
Supp. S. Cost	0,394	0,139	0,008	***
Mngmt. exp.	0,647	0,188	0,002	***
Size	-0,028	0,142	0,846	
Age	0,002	0,013	0,843	
R-squared	0,544	Mean dep. var	3,207	
Adjusted R-square	0,433	S.D. Dep. var	1,076	

Table 8.2 Estimation Output – The Credibility Model

The estimation consists of 44 observations. As we see three of the variables are significant. The "contact" variable is significant at the 5 % level. The "supplier switching cost" and "management experience" variables are significant at the 1 % level.

The R^2-statistic is 0.54 which indicates fairly good regression fit. Since we have many independent variables it is interesting to investigate the adjusted R^2-statistic which takes into account the loss of degrees of freedom. In our model the adjusted R^2 is 0.43, which indicates the model fit is satisfactory.

8.2 Testing the OLS-assumptions: Credibility Model

• Assumption 1: $E(\varepsilon_i) = 0$

Since we include an intercept, this is assumption is not violated.

• Assumption 2: $\text{var}(\varepsilon_i) = \sigma^2 < \infty$

The output from White's general test for heteroscedasticity is presented in tab. 8.3 below:

Heteroskedasticity Test: White			
F-statistic	0.775755	Prob. F(8,33)	0.6266
Obs*R-squared	6.648306	Prob. Chi-Square(8)	0.5750
Scaled explained SS	3.578905	Prob. Chi-Square(8)	0.8930

Table 8.3 White's general test for heteroscedasticity – The Credibility Model

As seen in tab. 8.3 the null hypothesis of homoscedasticity cannot be rejected. We find no proof of the assumption being violated.

• Assumption 3: $\text{cov}(\varepsilon_i, \varepsilon_j) = 0 \, for \, i \neq j$

In our credibility model the DW-statistic equals 2.18. Looking at the tables for the upper and lower bounds for the DW-statistic for a 45 observation regression with 8 explanatory variables and an intercept (Savin and White, 1977) we find that our DW-statistic is in the do not reject region[16]. Thus, we do not believe that the third OLS assumption is violated.

• Assumption 4: *The x 's are non-stochastic*

We assume that the x 's are non-stochastic and we see no reason for an endogeneity problem. We base the assumption of non-stochastic independent variables on logic and reasoning.

• Assumption 5: $(\varepsilon_i \sim N(0, \sigma^2))$

The residual histogram is presented in fig. 8-1 below:

[16] $d_L = 0.974$ $d_U = 1.768$

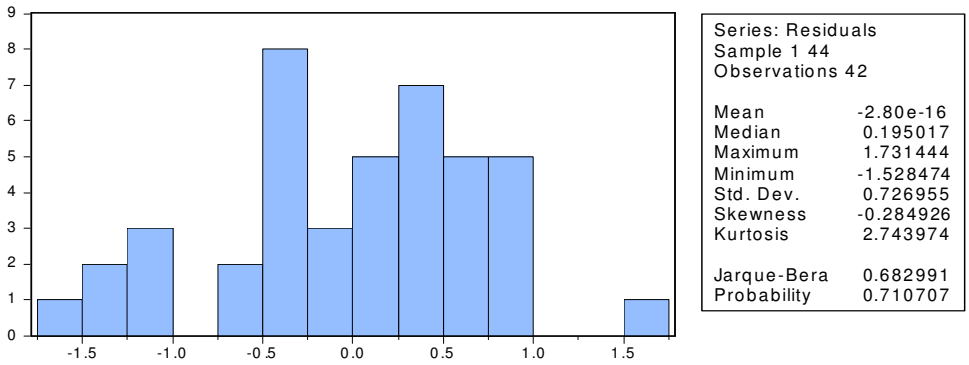

Figure 8-1 Residual Histogram – The Credibility Model

In our credibility model the J-B p-value is 0.711 and we can hence not reject normality.

• Linearity

Output from Ramsey's RESET test is presented in tab. 8.4 below:

Ramsey RESET Test		
	Value	Probability
t-statistic	0.444200	0.6599
F-statistic	0.197313	0.6599
Likelihood ratio	0.258179	0.6114

Table 8.4 Ramsey's RESET test – The Credibility Model

In our credibility model we cannot reject the null hypothesis of correct functional form.

• Results of the OLS testing

The tests above do not indicate any violations of the OLS-assumptions and we therefore believe the results of our credibility model to be reliable for statistical inference.

9 Results

The results are further discussed in chapter 10.

9.1 The Value Added Model

Hypothesis 1 : The credibility enhancement to a start-up from a VC investment is value adding

The credibility coefficient is positive and significant at a 95 percent significance level (β = 0.284, $p \leq 0{,}05$). Our hypothesis that the credibility enhancement to a start-up from a VC investment adds non-financial value is thus supported.

9.2 The Credibility Model

Hypothesis 2: The value added from credibility enhancement is positively related to customer switching costs

The customer switching cost coefficient is not significant at a 90 % significance level. Our hypotheses that the value added from credibility enhancement is positively related to customer switching costs this thus not supported.

Hypothesis 3: The value added from credibility enhancement is positively related to supplier switching costs

The supplier switching cost coefficient is positive and significant at a 99% significance level (β = 0.394, $p \leq 0{,}01$). Our hypothesis that the value added from credibility enhancement is positively related to supplier switching costs is thus supported.

Hypothesis 4: The value added from credibility enhancement is positively related to the reputation of the VC firm

The VC reputation coefficient is not significant at a 90% significance level. Our hypothesis that the value added from credibility enhancement is positively related to the reputation of the VC firm is thus not supported.

Hypothesis 5: The value added from credibility enhancement is positively related to the amount and quality of contact between the start-up and its venture capital investors

The contact coefficient is positive and significant at a 95% significance level ($\beta = 0.456$, $p \leq 0{,}05$). Our hypothesis that the value added from credibility enhancement is positively related to the amount and quality of contact between the start-up and its venture capital investors is thus supported.

Hypothesis 6: The value added from credibility enhancement is positively related to the ventures internationalization

The international expansion coefficient is not significant at a 90% significance level. Our hypothesis that the value added from credibility enhancement is positively related to the ventures internationalization is thus not supported.

Hypothesis 7: The value added from credibility enhancement is negatively related to the start-up management's previous experience

The management experience coefficient is *positive* and significant at a 99% significance level ($\beta = 0.647$, $p \leq 0{,}01$). However, we hypothesized that previous experience would have a *negative* impact on the value added from credibility enhancement. This hypothesis is not supported.

Hypothesis 8: The value added from credibility enhancement is negatively related to the age of the start-up

The age coefficient is not significant at a 90% significance level. Our hypothesis that the value added from credibility enhancement is negatively related to the age of the start-up is thus not supported.

Hypothesis 9: The value added from credibility enhancement is negatively related to the start-up's size

The size coefficient is not significant at a 90% significance level. Our hypothesis that the value added from credibility enhancement is negatively related to the start-up's size is thus not supported.

9.3 Summary of results

H1: The credibility enhancement to a start-up from a VC investment is value adding	Supported
H2: The value added from credibility enhancement is positively related to customer switching costs	Not Supported
H3: The value added from credibility enhancement is positively related to supplier switching costs	Supported
H4: The value added from credibility enhancement is positively related to the reputation of the VC firm	Not Supported
H5: The value added from credibility enhancement is positively related to the amount and quality of contact between the start-up and its venture capital investors	Supported
H6: The value added from credibility enhancement is positively related to the ventures internationalization	Not Supported
H7: The value added from credibility enhancement is negatively related to the start-up management's previous experience	Not Supported
H8: The value added from credibility enhancement is negatively related to the age of the start-up	Not Supported
H9: The value added from credibility enhancement is negatively related to the start-up's size	Not Supported

Table 9.1 Summary of results

10 Analysis

10.1 The Value Added Model

The result of our estimation supports the hypothesis that the credibility enhancement to a start-up from a VC investment adds other value apart from financing. This is in line with our argumentation from the perspective of asymmetric information theory and agency theory. It is also coherent with results from previous studies such as Maula (2001), although defined in a somewhat different manner. This suggests that there are similarities between the value added of credibility in a U.S. setting and in Sweden.

As Akerlof (1970) and Spence (1973) describe, one possible way to reduce the information asymmetry and mitigate the adverse selection problem is through signaling. In order to be valuable, this signal needs to be credible and include some information. In our setting it is straightforward to presume that the screening performed by venture capital firms includes some valuable information about the quality of the start-up; while the signal is credible since an investment is costly and not easily mimicked by low quality firms. This is coherent with the results in Meggingson and Weiss (1991). In terms of agency theory, as presented by Jensen and Meckling (1976), the monitoring aspects of VC investment would be value adding since it would reduce the moral hazard problem associated with separation of ownership and control if the VC continues to monitor the firm during the entire holding period. We are thus not surprised by our findings about the value adding effect of credibility; since this is reasonable to be applicable also in a Swedish setting. Although regulatory frameworks, business culture and institutional frameworks differ, uncertainty about the prospects of a Swedish start-up could be mitigated through signaling and monitoring; and thus be value adding. Our results imply that business relationships are dependent on trust also Sweden.

Since our results are in an ordinal scale we cannot arrive at conclusions regarding the magnitude of the value added. We see reasons for credibility enhancement from VC investment being less valuable to start-ups in Sweden than in other, larger countries. The market is small and hence the market participants might be better informed about each other simply since there are fewer market participants. Further, the VC industry is relatively large in Sweden and thus one can expect the signal to be less credible since many firms receive investments. This implies that the screening done by VC is less restrictive.

However, there might of course also be reasons that would increase the value of the credibility signal, such as high market uncertainty. We therefore suggest that it would be of value to investigate the magnitude of the credibility value addition further.

Finally, we choose to discuss some aspects regarding the control components of our model, although not being formulated as hypotheses. The only coefficient that is significant, apart from credibility, is the strategic advice coefficient. The fact that strategic advice is value adding is not surprising. This has been found also by Maula (2001) and is well in line with the resource based view discussed by Barney (1991), as it would be a valuable resource for the start-up firm. We have omitted variables such as personal support and knowledge due to high correlation with other variables. It seems reasonable to believe that these resources are hard to separate from strategic advice. One alternative way to treat the multicollinearity would be to group these variables into one. However, we did not believe this to be appropriate since they are related but fundamentally different.

The non-significant control variables are harder to analyze. There might be institutional, cultural or regulatory differences in the Swedish market that make these mechanisms less important. These other contributions suggested by previous research and economic theory would be an interesting topic for further research on the Swedish venture capital market.

10.2 The Credibility Model

The credibility model builds on previous studies on the subject of interorganizational endorsements.[17] From this work we have distinguished credibility (sometimes referred to as status, legitimacy or reputation) as one specific component and further investigated its importance in the Swedish market for venture capital. We have in our paper tested the impact on the credibility value addition from a number of theoretically founded variables.

Our estimation supports two of our hypotheses regarding the influencing factors on credibility value addition; supplier switching costs and amount and quality of contact. Both of these variables are found to have a positive impact on the dependent variable.

As we hypothesized, supplier switching cost increases the value addition from VC credibility enhancement. This is in line with transaction cost theory, since assets with high specificity increases the riskyness of relationships and thus makes the screening and monitoring done by

[17] See for example Podolny (1993, 1994), Stuart et al. (1999), Stuart (2000), Maula (2001)

the VC more valuable (Williamson, 1979, 1981, 1985). Surprisingly we do not find the same relationship for customer switching cost, which according to this argumentation would also benefit from screening and monitoring in the same manner. However, we believe that one reason for supplier switching cost being of more importance for the value of credibility is the fact that suppliers in many cases also act as creditors. Suppliers are not only concerned about the asset specificity but also about the credit worthiness of the start-up. For the start-up's customers, this is of less importance.

The other hypothesis that is supported is the positive impact on credibility value addition from a good and frequent contact between the start-up and its VC investors. We argue that agency theory (Jensen and Meckling, 1976) would imply that a regular and good contact mitigates the asymmetric information between the principal and the agent. One might also reason that the close relationship can align interest and risk attitude, thus mitigating problems of moral hazard. We also see explanations for this positive impact in transaction cost economics (Williamson, 1979, 1981, 1985). For example, a close relationship might reduce transaction cost between the investor and the entrepreneur by formulation of routines and mutual understanding. This can also increase the trust between the parties and improve compatibility.

In contradiction to our intuition, the management experience variable is found to have a positive impact on the value added from credibility. We had the idea that having a history and reputation of ones own, would lower the benefit from partnering with a screening and monitoring investor. Instead it seems to be an opposite relationship. By already being well known and experienced, the management team can increase the value added from credibility enhancement. We have some ideas regarding why this is the case. First, the more experienced management team may be capable to better market and utilize the fact that they have received investment. Second, there might be differences in how a manager in an experienced management team perceives the value added compared to the perception of a manager in a less experienced management team. Third, we see the possibility that a more experienced management team can find better VC investors (although not more reputable), and thus receive stronger signaling benefits. This discussion is speculative and would be interesting to investigate further.

The variables VC reputation, international expansion, size and age (and customer switching costs as discussed earlier) are not significant. These insignificances might be due to specific characteristics of the Swedish market. One idea regarding why VC reputation is not beneficial

is that the Swedish market lacks VC with reputation high enough to have an impact. It might also be the case that a high reputation by it self is not considered as having good screening and monitoring capabilities. One of the element questions used to construct the VC reputation variable is the number of portfolio investments by the VC firm, which is non-subjective, and the Cronbach's alpha of this variable is low. If the VC recklessly invests in many companies, the screening and monitoring might be a less credible signal. One explanation for the insignificant international expansion coefficient could be that Swedish VC investment is not a credible signal abroad. Regarding the variables for age and size, it could be the case that the variables are not good indicators for riskyness. If not so, the liability of newness and smallness may also be smaller than expected. These variables would be interesting topics for further research.

11 Conclusions

The main purpose of this thesis was to investigate whether a venture capital investment adds to the credibility of newly established firms in its contacts with outside stakeholders. We further wanted to examine in what way this credibility enhancement effects the firm. The study is conducted in a Swedish setting. We asked: "*Does venture capital investment generate value by increasing the credibility Swedish start-up firms?*" and "*Which factors influence the credibility value added in Sweden?*"

We conclude that the credibility improvement from VC investment is value adding to Swedish start-up firms. We see several motivations for this in asymmetric information theory, agency theory and transaction cost economics; since the signal of having a VC investors conveys information about the quality of the firm that is not easily mimicked by lower quality firms. Our thesis also supports the result from Maula (2001) that strategic advice from VC investors is value adding.

Regarding the mechanisms that influence the value added from credibility enhancement, we conclude that supplier switching cost and the amount and quality of contact increases the non-financial value added of credibility. Transaction cost economics supports the idea that buying products with high asset specificity increases the riskyness of the business relationships and thus credibility would be more valuable. We also see motivations in asymmetric information theory and agency theory, since the supplier in some cases also act as creditor. A creditor would be concerned about the quality of the borrower.

Agency theory implies that a having frequent, good contact with the investor mitigates the asymmetric information between the principal and the agent. The close relationship might align interest and risk attitude and mitigate problems of moral hazard. In terms of transaction cost economics, a close relationship might help the parties to formulate routines and mutual understanding and thus reduce transaction cost. Good contact can also improve trust between the parties and enhance compatibility.

Finally, we also find the management experience to have a positive significant impact on the credibility value addition. We argue that the experienced manager might be more capable to market and utilize the VC investment to signal quality.

11.1 Implication of results

11.1.1 Management implications

It is important for managers in start-up firms to understand the value of enhanced credibility from VC investment. Investment by a VC firm can improve the credibility of the start-up by signaling high quality in terms of credit worthiness and positive future outlook.
This is particularly important if the relationship with the start-up's suppliers has a character of high asset specificity. By having a VC investor the start-up can enhance the impression of being a reliable customer worthy of a risky relationship and trade credit. The value added is found larger if the management team is more experienced.

One way to increase the value of credibility is through good and frequent contact with the VC investor. Our study shows that this increases the credibility NFVA and thus the value of the firm. By having a good relationship with the investor the manager can reduce transaction costs, agency costs and mitigate problems of asymmetric information. The closer the relationship between the manager and the investor, the more valuable is the reputation gained from the VC investment in the eyes of outsiders.

11.1.2 Implications for venture capitalist investors

Understanding the mechanism of NFVA from a venture capital investment is important for a VC. Increased credibility is value adding for the start-up and thus also for the investor. The credibility is especially important when the start-up deals with suppliers in high switching cost relationships. Further, the experience level of the start-up's management seems to have a positive impact on the value addition from enhanced credibility. By including these two factors in the investment evaluation process, the VC can better create value.

When the VC has invested in a start-up it is possible to increase the NFVA by promoting frequent contact and trying to improve the quality of social interaction. The thesis also finds that it is valuable to provide strategic advice.

11.2 Contributions to research

Our thesis contributes in several ways to the research about venture capital and NFVA. First it tests the methodology used by Maula (2001) and Hsu (2004) in a Swedish setting with an original primary data set. This adds to their research as it investigates whether the suggestions

they have made also applies in a country with different characteristics. In comparison to Maula (2001) we also investigate not only technology firms, but instead study NFVA in a broader industry setting. The data set is also original in terms of instrument questions.
Second, our study extends the methods used earlier to include more detailed control variables.

Finally, a contribution is the investigation of credibility as a separate dependent variable, instead of being only included in a more general measure (such as legitimacy, endorsement or validation). In comparison to Maula (2001) as an example, he uses the term endorsement (where credibility is a subset) to investigate several mechanisms with possible value adding effect; while we only study the value adding effect of credibility. Thus we increase the focus and detail towards the value of credibility in a venture capital setting.

11.3 Suggestions for further research

From our analysis chapter we sum up some suggestions for further research below:

- Investigate the magnitude of the credibility value addition
- Investigate the control variables of the value added model further in a Swedish setting
- Further investigate the possible positive impact on credibility value adding from having an experienced management team
- Further investigate the underlying factors that make our non-significant variables of the credibility model to be of less importance in a Swedish setting

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Appendix 1 - Questionnaire

Company name

Your name

Your position in the company

Which year was your company founded?

Number of employees (0-1,2-4,5-9,10-19,20-49, 50-99, 100-200, more than 200)

In what industry would you categorize your firm?(Choice of industries)

Revenues (0-1,1-5,5-10,10-20,20-50, 50-100, more than 100 million)

How much experience of managing a company does the firm management have?
(1=no experience, 5=very much experience)

How much experience of starting a company does the firm management have?
(1=no experience, 5=very much experience)

How large business network does the firm management have?
(1=no network, 5=very large network)

How well known are the management team members in the industry?
(1=totally unknown, 5=very well-known)

The VC investor has, apart from financing, provided valuable support
(1=totally disagree, 5=totally agree)

You are very pleased with having this VC investor
(1=totally disagree, 5=totally agree)

The non-financial support given by your VC investor has been critical to your success
(1=totally disagree, 5=totally agree)

The VC investor has helped you choosing employees
(1=totally disagree, 5=totally agree)

The VC investor has helped you finding relevant candidates
(1=totally disagree, 5=totally agree)

The VC investor has helped you assess relevant candidates
(1=totally disagree, 5=totally agree)

The VC investor has helped you with business development
(1=totally disagree, 5=totally agree)

The VC investor has helped you setting strategic goals
(1=totally disagree, 5=totally agree)

The VC investor has helped you with your strategic decisions
(1=totally disagree, 5=totally agree)

The VC investor has helped you with negotiations
(1=totally disagree, 5=totally agree)

The VC investor has helped you with legal agreements
(1=totally disagree, 5=totally agree)

The VC investor has helped you deciding about ownership rights
(1=totally disagree, 5=totally agree)

The VC investor has provided moral support
(1=totally disagree, 5=totally agree)

The VC investor has given valuable feedback
(1=totally disagree, 5=totally agree)

The VC investor has motivated the management team
(1=totally disagree, 5=totally agree)

The VC investor has provided business knowledge
(1=totally disagree, 5=totally agree)

The VC investor has provided technical knowledge
(1=totally disagree, 5=totally agree)

The VC investor has provided management knowledge
(1=totally disagree, 5=totally agree)

The most important venture capital investor in your firm is well known to firms in your industry
(1=totally disagree, 5=totally agree)

When you were seeking financing, the chosen investor was your most desired alternative
(1=totally disagree, 5=totally agree)

Your venture capital investor has many portfolio companies besides your company
(1=totally disagree, 5=totally agree)

The VC investor has helped you with day-to-day management
(1=totally disagree, 5=totally agree)

The VC investor has help you with day-to-day work tasks
(1=totally disagree, 5=totally agree)

The VC investor has help you with day-to-day planning
(1=totally disagree, 5=totally agree)

Being associated with the VC investor has increased your credibility towards your customers
(1=totally disagree, 5=totally agree)

Being associated with the VC investor has increased your credibility towards your suppliers
(1=totally disagree, 5=totally agree)

Being associated with the VC investor has increased your credibility towards banks
(1=totally disagree, 5=totally agree)

Being associated with the VC investor has increased your credibility towards investors
(1=totally disagree, 5=totally agree)

Being associated with the VC investor has increased your credibility towards your employees
(1=totally disagree, 5=totally agree)

Buying your specific products/services is an important decision for your customers
(1=totally disagree, 5=totally agree)

It is difficult for your customers to change to another supplier of similar products or services
(1=totally disagree, 5=totally agree)

Your specific products are crucial to your customers' success
(1=totally disagree, 5=totally agree)

You have suppliers with products/services which sell specific products that are crucial to you
(1=totally disagree, 5=totally agree)

It is difficult for you to change some of your suppliers
(1=totally disagree, 5=totally agree)

Buying from some of your suppliers is an important decision for you
(1=totally disagree, 5=totally agree)

How often do you meet with your most important VC investor?
(1= 1-2 times per year, 2= Once every three months, 3= Once per month, 4= 2-3 times per month, 5= Every week)

How often do you have contact with your most important investor via phone or e-mail?
(1= 1-2 times per year, 2= Once every three months, 3= Once per month, 4= 2-3 times per month, 5= Every week)

How well do you fit with your investor socially (non-business)?
(1=totally disagree, 5=totally agree)

International expansion is important to your business
(1=totally disagree, 5=totally agree)

At the time of your first VC investment you had plans to expand internationally
(1=totally disagree, 5=totally agree)

The VC firm has helped you with expansion
(1=totally disagree, 5=totally agree)

I would like to receive a copy of the final thesis
(Yes or No)