

Informal venture capital investments: an asset class to consider

-An overview of informal venture capital activity and informal investor performance in Finland

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Summary in Swedish – svensk sammanfattning

Syftet med denna avhandling är att för första gången redogöra för riktgivande mått på finländska affärsänglars avkastning genom att granska enskilda realiserade riskkapitalinvesteringar i onoterade bolag som investerare i avhandlingens tillämpade sampel gjort. De avkastningsmått som tillämpats för att mäta investerarnas prestation och deras prestation i förhållande till respektiva aktörer inom riskkapitalgenren representerar de branschspecifika och allmänt accepterade indikatorerna på avkastning. De avkastningsmått som använts är internräntemåttet som baserar sig på nettonuvärdesmetoden och avkastningsmultipeln som återspeglar en totalavkastning i förhållande till investerat kapital. Av dessa mått är avkastningsmultipeln den mer intuitiva modellen att räkna avkastning på den typ av investeringar som huvudsakligen granskas i avhandlingen.

Avhandlingens analys baserar sig på resultat från ett sampel på total 40 affärsänglar som under observationsperioden varit aktiva i Finland och som sammanlagt gjort 126 rapporterade realiserade investeringar vid tidpunkten av insamlandet av data. Den aggregerade summan som investerats av dessa individer under observationsperioden var 11 384 461,19 euro, och den resulterade i en aggregerad bruttoavkastning på 42 638 557,6 euro. Den totala summan investerades under observationsperioden inkrementellt i 126 bolag, av vilka 54 procent genererade en negativ avkastning eller avkastade lika mycket som det investerade kapitalet i nominella termer. Av investeringarna genererade 46 procent en positiv nominell bruttoavkastning. Storleken på samplets enskilda investeringar varierade mellan 2 000 euro och 650 000 euro. Den största delen, runt 70 procent av investeringarna, var mellan 2 000 och 100 000 euro och investeringsbeloppens median låg på 50 000 euro. Den totala och nominella sammanslagna avkastningen för samplet var 3,75 mätt med den intuitiva avkastningsmultipeln (avkastning/investerat kapital). Samplets sammanslagna avkastning motsvarade en internränta på 30,1 procent. På grund av internräntemåttets krav på konsistent kassaflödesfördelning, gjordes det en normalisering av dessa för att komma till en meningsfull avkastningsindikation.

Insamlingen av data till avhandlingen pågick under en relativt lång period (2.6.2017–21.10.2017) och data som insamlats och använts representerar en period på 30,8 år, dvs. 1.1.1987–03.10.2017. Affärsänglarna valdes till undersökningen på grund av deras aktuella eller tidigare medlemskap i FiBAN, Finlands största oberoende nätverk och takorganisation för affärsänglar i Finland. Även om samplet är relativt litet, kan den relativa andelen mottagna svar anses vara av betydlig storlek då siffrorna jämförs med motsvarande tidigare undersökningar. Som avhandlingens mätinstrument användes ett frågeformulär, men i praktiken krävdes det åtminstone ett eller flera samtal till respektive affärsängel för att få svar på formulärets frågor. Data dokumenterades i ett kalkylbladsprogram. Formulärets frågor kan hittas i sin helhet i avhandlingens bilaga.

Förutom en kvantitativ undersökning av konkreta avkastningsmått och prestation hos finländska affärsänglar, har avhandlingens syfte varit att göra en utförlig kartläggning och genomgång av centrala teman inom genren för affärsängelinvesteringar. Denna kartläggning baserar sig främst på tillgängliga vetenskapliga artiklar, rapporter, undersökningar samt kvalitativa data som samlats i samband med kvantitativa data i den

aktuella undersökningen och som relaterar till de enskilda investeringar som samplets affärsänglar gjort.

Avhandlingen har delats upp i följande kapitel, som i detalj redogör för drag hos affärsänglar samt faktorer i deras omgivning som påverkar både aktivitet och utkast både ur ett historiskt perspektiv och rådande läge.

I kapitel 1 ges en introduktion till de ämnen som behandlas i avhandlingen och till avhandlingens centrala teman. Syftet med kapitlet är att förse en läsare med tillräcklig kontext för att läsaren skall kunna på egen hand tolka och ta del av avhandlingens resultat som redogörs för i en senare del av avhandlingen.

I kapitel 2 beskrivs avhandlingens syfte, vilket varit att redogöra för riktgivande avkastningsmått som, åtminstone i princip, representerar den genomsnittliga avkastningen på finländska aktiva affärsänglars realiserade riskkapitalinvesteringar. Syftet har också varit att genom avhandlingens innehåll skapa en förståelse vad gäller de fundamentala element som påverkar verksamheten av dessa investerare samt analysera de metoder och verktyg som affärsänglar tillämpar i sin beslutsprocess och hur externa faktorer i investerarnas omgivning påverkar investeringsverksamheten.

I kapitel 3 presenteras avhandlingens centrala teori. Kapitlet innehåller en detaljerad redogörelse för de enskilda delarna inom värdekedjan av privat kapital. Kapitel 3 fungerar som ramverk för analysen och slutsatsen där resultaten från avhandlingens undersökning jämförs med samt analyseras utgående från denna teoriram.

I kapitel 4 presenteras de konkreta forskningsfrågorna som sammanfaller med syftet i kapitel 2.

I kapitel 5 presenteras en redogörelse av avhandlingens teoretiska ramverk. Syftet med kapitel 5 är att presentera och rangordna den använda teorin och på ett tillräckligt klart sätt presentera de använda avkastningsmått samt identifiera potentiella för- och nackdelar med dessa.

I kapitel 6 presenteras avhandlingens metod. Kapitlet omfattar en detaljerad granskning av datainsamlingsprocessen samt de reella och teoretiska bristerna i datainsamlingsprocessen, metoden och data som påverkar avhandlingens resultat.

I kapitel 7 erbjuds en detaljerad genomgång av datainsamlingsprocessen samt egenskaperna hos insamlat data.

I kapitel 8 analyseras avhandlingens empiriska resultat mot utvald och tillgänglig referensdata i syfte att skapa kontext till avhandlingens resultat.

I kapitel 9 granskas avhandlingens resultat och slutsats presenteras.

Avhandlingens teori baserar sig på tidigare undersökningar som riktat sig på affärsängelinvesteringar men även på andra områden inom riskkapitalgenren. Eftersom forskningen inom området för affärsängelinvesteringar är relativt snäv, även på global nivå, har en stor del av teorin lånats från nära relaterade områden, till exempel formellt riskkapital (eng. formal venture capital) som är ett högst relevant och tangerande

område till informellt riskkapital, dvs. affärsängelinvesteringar. Avhandlingens teori är huvudsakligen hämtad från vetenskapliga artiklar, böcker, lagstiftning, rapporter och sammanfattningar som stöder avhandlingen, analysen samt slutsatserna i sin helhet.

Teoridelen inleds med en omfattande introduktion till avhandlingens centrala ämnen. Värdekedjan inom privat kapital bestående av aktörer från buyout-aktörer som gör investeringar i stabila och relativt stora bolag till formella riskkapitalinvestorer (eng. formal venture capital investors) och affärsänglar (eng. informal venture capital investors) som investerar i riskfyllda tillväxtbolag beskrivs i detalj för att möjliggöra en jämförelse mellan dessa. Det har ansetts viktigt i avhandlingen att redogöra för särdrag hos dessa för att läsaren skall kunna förstå förhållandet mellan dessa aktörer.

Kapitlet fortsätter med en beskrivning av utvecklingen av riskkapitalinvesteringsaktiviteten i Finland. Det kan konstateras att utvecklingen inom området satt igång under 1980-talet i Finland i samband med liberalisering av finansväsendet och en förflyttning till en allt mer eget kapital-driven finansiering av affärsverksamhet. I kapitlet behandlas även andra centrala aktörer inom den privata- och offentliga sektorn samt deras inverkan på utvecklingen av riskkapitalgenren och finländska tillväxtbolags tillgång på riskkapital. I all sin korthet kan det konstateras att i Finland har genren vuxit fram genom samspel och interaktion mellan de olika intressenterna med avvikande agenda och det vore godtyckligt att rikta allt beröm till enskilda aktörer, då just detta samspel mellan aktörerna, transformationen i lagstiftning och reglering, tidigare utvecklingen i andra länder och en skift i attityd som möjliggjort en uppsving av affärsängelinvesteringar.

I teoridelen beskrivs även den rådande konkurrensen mellan de olika aktörerna inom privat kapital, men också den omfattande symbiotiska växelverkan och samvaron mellan dessa aktörer, som tillsammans utgör den vitala värdekedjan för privatkapital. Det är just denna värdekedja som ofta möjliggör att tillväxtbolags visioner kan materialiseras. Längre fram i samma kapitel behandlas beskattningen av kapitalinkomst och den rådande lagstiftningen samt dess påverkan på privata investerares benägenhet att investera i riskfyllda privata bolag. Beskattning av kapitalinkomst är den faktorn som till allra högsta grad påverkar affärsänglars benägenhet att genomföra denna typ av investeringar och är mycket relevantare än t.ex. den allmänna utvecklingen på marknaden och marknadssentimentet.

Teoridelen inleds med en identifiering och en djup genomgång av karakteristiska drag hos affärsänglar, deras investeringsverksamhet, preferenser vad gäller investeringsobjekt, mognadsgrad, industriområde, etc. Dessa investerares olika investeringsfilosofier och investeringsstrategier har även en central roll i teoridelen. I underkapitlen ingår även diskussioner som involverar bland annat investerarnas riskaversion, förvärvsutredningsverksamhet (eng. due diligence), riskreducering och andra relevanta ämnen som är starkt förknippade med investeringar i privata och onoterade bolag. Affärsänglarnas aktivitet, strategier, karaktärsdrag och prestation jämförs även med motsvarande investerare från de andra genrer inom privatkapital för att skapa kontext och tillräckligt med referenspunkter för en läsare som inte känner till rådande avkastningskrav för olika typer av riskkapitalinvesteringar.

Syftet med teordelen är att skapa ett tillräckligt referenverk för att en läsare skall kunna tolka avhandlingens resultat och avhandlingens slutsatser på ett ändamålsenligt sätt. Utan en tillräcklig och omfattande diskussion vore det för en läsare lätt att dra intuitiva, dock felaktiga slutsatser. Ett exempel på dessa slutsatser kunde vara att den förväntade avkastningen för investeringar typiska för affärsänglar motsvarar en 30.1 procents internränta, då detta i verkligheten endast (enligt avhandlingens slutsats) är ett korrekt antagande för ett litet antal affärsänglar i näringskedjans top som besitter ett brett professionellt nätverk, tillräckligt med tillgängligt kapital. Dessutom förutsätter detta antagande att en affärsängel skall ha möjligheten och tillräckligt med kapital att göra minst några investeringar under fåtal år samt vara beredd att binda det investerade kapitalet i flera år i dessa investeringar.

I avhandlingens analys ligger fokus på att redogöra för avhandlingens resultat på ett klart sätt och att jämföra resultaten mot resultat från tidigare undersökningar inom området för affärsängelinvesteringar och nära relaterade områden inom privatkapital.

De centrala fynden från avhandlingens analys och slutsatser kan sammanfattas på följande sätt.

Baserat på tidigare undersökningar och den aktuella undersökningen kan man konstatera att affärsänglar runt världen gör upp en högst homogen grupp. Ifall man genom en generalisering av karaktärsdragen porträtterar en stereotypisk affärsängel får man följande: en man i 50 års ålder med företagarbakgrund som accumulerat tillräckligt förmögenhet för att kunna placera 10–30 procent av sitt obundna kapital i en handfull riskkapitalinvesteringar.

En högst intressant observation är att de finländska affärsänglarnas prestation motsvarar i hög grad den uppmätta prestationen i referensundersökningar som använts i avhandlingen för jämförelse och stöd. Mätt med de allmänt accepterade måtten för denna typ av riskkapitalinvesteringar, skiljer sig internräntemåtten som uträknats från avhandlingens sampel med endast några procentenheter från resultaten i avhandlingens referensundersökningarna. Även andra parametrar som avkastningsspridning, prefererade industrier, innehavsperiod och andra mått skiljer sig mycket lite i den aktuella undersökningen i jämförelse med resultaten från tidigare undersökningar inom området för affärsängelinvesteringar.

Utgående från det tillämpade samplet kan vi se att de finländska affärsänglarna i snitt upplevt 3,1 realiserade investeringar där bolagen avyttrades (eng. exit) genom konkurs eller frivillig upplösning av bolaget (43 procent), överföring av innehavet mot vederlag till strategisk eller finansiell köpare (41 procent) eller avyttring genom annat tillvägagångssätt. Innehavsperioden varierade mycket, men låg i den aktuella undersökningen på 4,75 år (medianvärde) för investeringar som ansågs lyckade, dvs. som genererade positiv avkastning.

Samplets affärsänglar föredrog ICT bolag som utgjorde 38 procent av alla realiserade investeringar samt bolag inom servicebranschen som utgjorde 24 procent av alla realiserade investeringarna. Resultatet motsvarade till stor del det förväntade utfallet, eftersom ICT bolag anses generellt presentera möjligheter vad gäller tillväxt och skalbarhet, vilket står högt på listan av de prefererade egenskaperna hos bolag som affärsänglar traditionellt söker.

Som förväntat föredrog samplets affärsänglar att investera i syndikat med andra investerare. Runt 80 procent av investeringarna gjordes i syndikat med andra affärsänglar (47 procent), andra affärsänglar och formella riskkapitalinvesterare (19 procent) och med övriga oklassificerade investerare (10 procent).

Då samplets affärsänglars uppmätta avkastning eller prestation ställs i förhållande till den allmänna marknadsavkastningen under normala omständigheter, eller till prestationen hos andra aktörer inom området för riskkapital, kan man dra följande slutsatser. Samplets affärsänglar överträffar i sin helhet nästan undantagslöst alla de andra klasserna inom området för privat kapital och avkastningen på allmänna kapitalmarknaden. Det skall dock minnas att avkastningspridningen mellan samplets enskilda affärsänglars investeringsportföljer var av betydlig storlek, och att en stor andel av de 40 investeringsportföljerna åstadkom en negativ avkastning och att endast ett fåtal investeringar genererade över 10 gånger de investerade kapitalet under observationsperioden.

Avhandlingen är långt ifrån uttömmande vad det gäller förståelsen av den finska affärsängelgenren, affärsänglars aktivitet, deras inverkan på omgivningen samt riskkapitalinvesteringar över lag. Det återstår stora tomrum i vetenskapliga material vad gäller affärsängelinvesteringar i Norden och framför allt i Finland. Målet med denna avhandling har varit att kartlägga verksamheten i Finland i stora drag, samt minska de rådande klyftorna inom vetenskaplig litteratur som behandlar ämnesområdet för affärsängelinvesteringar i Finland.

Abstract

This thesis will dive into the category of private equity, commonly known as informal venture capital. The thesis provides an in-depth review of the fundamental domains of informal venture capital investments and the informal venture capital environment in order to equip an inexperienced reader with an elemental, although holistic knowledge base of the industry and the current situation in Finland. It should be mentioned that the informal venture capital investor-term is a direct synonym to the commonly used term “business angel” and both terms will be used throughout this thesis.

The primary focus of the thesis is on delivering indicative return measures on informal venture capital investments in Finland and general characteristics of the informal venture capital industry. The aim is to discuss, revolve around and try to provide some answers to the following key questions set for this thesis: 1) How do the Finnish business angels perform in general; 2) How are Finnish business angels performing in terms of return on investment when compared to formal private equity peers?; 3) Are Finnish business angels employing similar strategies, processes and reasoning for decision-making purposes as observed in previous studies targeting venture capital firms and informal venture capital peers and 4) How have the informal venture capital environment, activities and methods of the investors changed in Finland during the last decades. The thesis will also put the informal venture capital industry into a larger perspective by shedding light on paradigms and elements from other private equity genres in terms of investor practices, preferences and some technical approaches used by them.

High dissonance can be found among the results from previous studies addressing informal venture capital performance in Finland. Only a few studies have examined the informal venture capital activity in this geographical region, the most recent of which was conducted by Lahti (2011). In his study, Lahti provides some characteristics of the activity, environmental factors and paradigms employed by venture capital firms and business angels.

Mason and Harrison (2002a) have conducted an elemental performance study of informal venture capital investors in the UK. The current study resembles to some extent the one

conducted by Mason and Harrison (2002a) and is therefore central for benchmarking purposes. Lahti's (2011) paper will also play a significant role in this thesis, since it is used as a reference when analysing the empirical characteristics of Finnish business angels and their investment practices in the current study. Lumme et al. (1998) conducted the pioneering study on Finnish informal venture capital activity in the early 1990s. Because the marketplace for informal investors has experienced a significant transformation since then, their study will mostly be used to create a context to the current settings and provide historical substance when reviewing the evolutionary aspects of the genre in Finland. The work of Van Osnabrugge (2000) is utilized for explaining fundamental reasoning and approaches distinguishing informal from formal venture capital investors. Wiltbank et al. (2009) and Landström's (1995) papers targeting investment strategies have been used to further examine the alternatives venture capital investors are presented with. The performance benchmarking data have been extracted from various sources, the most important of which is the aggregate statistics provided by Investeurope (former EVCA), the European Investment Fund and other less significant sources.

The findings presented in this thesis are based on answers from 40 business angel investors registered with the Finnish Business Angel Network (FiBAN). An ad hoc research method has been applied to conduct the study. The data have been assembled using a survey approach, and the study can generally be described as a performance study, measuring average returns on Finnish business angel portfolios and unique investments as well as investor practices.

A major difference between the current study and Lahti's (2011) is the aim. When Lahti (2011) mainly focuses on the development of informal venture capital in Finland and due diligence processes of business angels, the current study attempts to audit the performance of informal venture capital investors in terms of return on investment, as well as to provide an overview of the current environment affecting business angel activity and some insight into the properties and investment approaches of Finnish business angels. The approach resembles more the one taken by Mason and Harrison (2002a), i.e. an explanatory study with the focus on benchmarking performance and activity.

The presented study is utterly static in its nature. In contrast to, for example, Månsson and Landström (2006) who have studied the effects of macroeconomic changes on the business angel activity in Sweden (1992-2004), this study focuses mainly on the current situation in Finland and the Nordics and the performance of these actors compared to selected benchmarks and other private equity investors.

Since the disclosure of informal venture capital-related financial data is done on a voluntary basis, it takes great effort to find coherent and unbiased data on the performance of these investments (Månsson and Landström, 2006; Lahti, 2011).

Keywords: Business Angel, Venture capital, Private equity, Internal rate of return, Performance, Investment portfolio, Finland, Nordics

1. Introduction

Taking an innovation, a new product or service to the market usually requires both effort and capital resources (Landström, 1995). Ventures lacking the prerequisites needed to succeed in this endeavour are often forced to acquire both financial and non-financial assets from external parties. Since these fresh ventures usually lack both established entrustment of future performance and adequate tangible assets, obtaining sufficient debt funding to cover research and development costs, as well as enabling sales growth, can be either unfeasible (Landström, 1995), very expensive, or even undesirable (De Bettignies and Brander, 2006).

Only a fraction of the young and growth-minded ventures survives the journey from establishment to maturity stages where the business is profitable and is able prosper without continuous injections of external capital (Savaneviciene et al., 2015). Even though evidence suggests that only around 4-8 percent of these ventures will provide great growth potential and can be considered exceptional investment opportunities, some investors seem to be willing to embrace the unpredictable odds and supply this market segment with capital (Van Osnabrugge, 2000).

The owner of a venture generally possesses the right to future returns, value created, and other economic gains generated by owning and utilizing the firm's assets. This is what provides the owner leverage when seeking external funding in order to grow and develop the venture. Debt financing in the form of a traditional bank loan is the most common source of funding for entrepreneurs seeking to close the venture's capital gap (de Bettignies and Brander, 2006). Entrepreneurs, especially those starting up a venture in certain industries characterized by high R&D expenses transforming into intangible assets on their balance sheet, are typically left without sufficient loans, due to the banks' risk averse investment practices and restrictions set by overseeing entities. This is usually where new entrepreneurs are tempted to turn to a category of investors labelled private equity investors (de Bettignies and Brander, 2006; Hsu, 2004). The term "private equity" generally refers to a category of investors mainly conducting equity investments in unlisted and private companies (Landström, 1995).

A sub-type, belonging to the umbrella category of private equity (Landström, 1995), is the informal venture capital investors, who usually go by the name of business angels. Business angels (BA) are usually recognized as high net worth individuals, investing their own capital in unlisted companies either directly or through legal intermediate investment vehicles (Wiltbank et al., 2009; Landström, 1995; Lahti, 2011). Business angels often aim to exercise active ownership and contribute value by providing financial assets complemented with non-financial assets (de Bettignies and Brander, 2006; Hellmann and Puri, 2002; Månsson and Landström, 2006; Van Osnabrugge, 2000) to their portfolio companies, i.e. the companies they currently own an equity stake in or in other ways have taken exposure through, for example, a convertible loan provided to the venture. In turn, business angels expect compensation in the form of capital gains, dividend payments or both from the target company. In practice, most of these investors aim to realize the capital gain by selling the shares for a premium at a later point of time when the company is valued at a higher level. The higher valuation is typically based on realized and demonstrated cash flows or high probability to achieve future cash flows or even by achieving some key milestones in the business, service or product development process.

Private equity investors' expected return is typically higher than the requested returns observed on organized and relatively effective stock markets (Kaplan and Schoar, 2005); otherwise, there would be few incentives to invest in them due to the high level of risk taken through these types of investments (Månsson and Landström, 2006). Another factor contributing to the relatively high return expectations is the constraining nature of these investments. They are considered everything but quick-flips and since the liquidity is characteristically low for unquoted assets corresponding to venture capital investment, the investors can be forced to hold the position for a long time before realizing the investment. The academic interest towards this particular category of investors has accelerated notably since the pioneering studies by Wetzel (1983) in the early 1980s due to the category's observed positive influence on the development of small and innovative companies, hence the general economic growth and long-term prospects of any given country.

The significance of the business angel community has been growing steeply during the last twenty years and is progressively stepping up to the task of filling the funding gap existing between debt funding from credit institutions and formal venture capital

investors (Luukkonen, 2006; Van Osnabrugge, 2000). Business angel funding can be considered both a substitute and supplement for other sources of equity and debt funding to companies in need of capital resources. This is usually the case, since high-growth companies typically demand different sizes and types of resources at different maturity stages, and more risk-averse private equity actors tend to circumvent companies considered premature from their perspective (Kaplan and Schoar, 2005). The gap provides space for business angels, typically preferring to invest in early development stage companies, i.e. seed-stage, start-up-stage, early-stage (Mason and Harrison, 2002b) in hope of superior returns, commencing from at least 10 percent of the companies held in the portfolio (Wetzel, 1983).

The rise of the business angel category has been well documented on a global level, and especially in the US, which can be seen as the undisputed trail maker within this industry. However, what do we know about the development in smaller and more isolated countries such as Finland?

What we know at this stage is that business angels are considered having an increasing role as catalysts for new ventures and entrepreneurial activity in Finland (Lahti, 2011). This is partly because formal venture capital investors have generally converged toward investing in larger deals and target more mature companies associated with more moderate levels of risk (Lahti, 2011; Van Osnabrugge, 2000). This trend seems to also concern Finnish business angels to some extent (Lahti, 2011). Still, much evidence suggests that business angels tend to participate in significantly smaller deals than formal venture capital firms, which are professionally managed investment companies operating in similar manners and marketspaces as business angels (Van Osnabrugge, 2000).

The business angel scene in Finland is relatively immature compared to countries where the private equity genre has deep roots, and equity financing has had a significant role since the 1970s, for example the US (Lahti, 2011). There are several reasons for the lagging development in Finland as well as other Nordic countries, of which the foremost will be presented later in this thesis.

Thus, what is the carrot for governments around the world to create a favourable environment for private equity investors? Evidence suggests that venture capital

investments do not only have a direct positive impact on innovation and economic growth (Van Osnabrugge, 2000; de Bettignies and Brander, 2006), but also create the platform for emerging and entirely new industries and technologies (Bygrave et al., 2001). Even if the governmental funding plays a central role in supporting any given new industry or technology in the beginning, there will always be a need for the private side to step in at some point in order for the industry or technology to prosper in the long run, at least in many cases.

The Finnish government has made several efforts to boost investments in early stage companies and ventures in Finland. These initiatives typically aim to create incentives for private actors to engage in venture capital investments and create favourable prerequisites for the private sector. Rather than focusing on myopic gains, the government typically aims to achieve long-term structural changes (Hyytinen and Väänänen, 2002). This also means that a careful approach is advocated when comparing private venture capital investors to public ones. The government-funded organizations and initiatives will be addressed in a later chapter of this thesis.

The government's efforts and initiatives are very well documented and therefore we know much about the incentives, the scope and scale of these efforts as well as the outcome or effects they have had. However, what do we know about the business angels, their incentives, investments and their impact on the companies participating in the creation of new industries, technologies and contributing to economic growth?

Lumme et al. (1998) and Lahti (2011) have examined the investment processes and characteristics of Finnish informal venture capital investors. The previous studies leave room for much complementary research on informal venture capital in a Finnish context. Several topics have remained untouched and significant knowledge gaps can be found regarding the activity of business angels in Finland. The knowledge gaps exist mainly due to the negligible number of domestic studies produced on the topic, as well as related topics targeting the private equity industry in general. The performance of Finnish business angel investments, for example, is entirely unknown. There has not been a single study conducted on this topic. Some corresponding studies, addressing informal investor performance have been conducted in the US (Wiltbank et al., 2009), UK (Van Osnabrugge, 2000; Mason and Harrison, 2002a) and Sweden (Månsson and Landström,

2006). The current study aims to fill this knowledge gap and contribute to providing the reader with some indicative return measures of Finnish business angels' performance, strategies, processes as well as reasoning and incentives.

Comprehensive public material can be gathered on Finnish private equity- and venture capital companies' activity and performance through entities such as the Finnish Venture Capital Association (FVCA, 2017) or Investeurope (2016), the former European Private Equity and Venture Capital Association. The substantial transparency of the formal venture capital industry compared to the informal one can seemingly be one of the reasons for the great scope and depth of literature addressing formal VC, and the absence of research targeting informal VC. Only few studies address the activity of Finnish business angels as an isolated group or category. The only business angel performance indicators can be found in aggregate studies, where formal and informal investments have been consolidated in the same category. One of the reasons seems to be the lack of publicly shared information on this topic and the business angels' desire to stay anonymous.

Finnish business angels are not obligated to disclose any type of information of their investments to any type of authority other than for example tax purposes. It is impossible to extract information about business angels' investments and their investment portfolios, unless the business angel decides to provide additional information on a voluntary basis. The Finnish business angels are not listed in any centralized or comprehensive register, although the Finnish Business Angel Network (FiBAN), for example, administers a private register of significant size. The issue of targeting registered BAs when conducting studies, such as the one presented in this thesis, is that they only include the members of the network and do not necessarily represent the entire active business angel population operating in a given country. Few methodological approaches override this dilemma. The current study is based on data gathered through a survey, distributed to Finnish business angels via FiBAN's network. The questionnaire used for gathering information consisted mainly of questions addressing the investor profiles, preferences and investment cases, i.e. successful and failed realized investments. The parameters used to evaluate and benchmark the performance is comprehensively described in the theory section of this thesis. The methodological approach employed causes numerous biases, of which the foremost are presented in a later chapter and cannot be emphasized enough when drawing conclusions based on the findings presented in the current study. The gross internal rate

of return-measure was used as the main investment performance indicator in this study, since it is considered the principal performance measure for the venture capital industry in general (Mason and Harrison 2002a).

2. Purpose of the thesis

The main purpose of the thesis is to establish a comprehensive understanding of the business angel environment in Finland and the performance of Finnish business angels' investments made in private companies. The first subgoal is to determine the overall realization multiple (i.e. simple return multiple) and the portfolio return multiple and gross internal rate of return (IRR) of the investment portfolios based on the transaction-specific information derived from all unique investment cases. The second subgoal is to compare the attributes concerning properties, preferences and elements observed in the current study to findings in previous studies. This is done in order to determine if, or which of, the Finnish business angels' attributes and practices diverge from peers in other regions. Two types of data were gathered in the current study and the data collection process was conducted by using two separate questionnaires for different types of data: 1) Deal-specific questionnaire containing inquiries on financial information and additional questions on each of the unique realized venture capital investment conducted by the investor; 2) Investor profiles and preferences questionnaire, which contained inquiries on the surveyed unique investor profile.

The data were used to 1) Generalize and create an indicative profile of the average Finnish business angel according to the sample; 2) Examine drivers, preferences and strategies related to the investment activities; 3) Aggregate the financial data to measure overall expected returns, distribution of returns and performance of the unique investments and investment portfolios; 4) Benchmark the return against other investment alternatives and corresponding investors' performance. The complete survey can be found in the appendix chapter of the thesis.

The target audience of this study comprises business angels, organizations representing business angels, other investors as well as the academic community. The key takeaways from this study are: 1) To understand the fundamentals of informal venture capital investments; 2) Acquire insight into investment-related approaches, decision-making and investment strategies employed; 3) To obtain an indicative return measure of the Finnish business angel investors' average portfolio (consisting solely of venture capital investments) and general expected returns on informal venture capital investments in

Finland. The next chapter will introduce the field of private equity and equip the reader with some fundamental classification criteria needed before heading deeper into the field of informal venture capital.

3. Private Equity investments

In this chapter, different types of private equity actors and investments will be presented in order to provide a summary of the private equity (PE) field and the major distinctions between the actors belonging to this category. The purpose of this chapter is to provide a comprehensive in-depth description of the private equity and venture capital markets, explain critical environmental elements and describe some specific characteristics regarding the actors belonging to this category. The somewhat long introduction to chapter 3 is included in this thesis in order to provide the reader with some generalized and high-level actualities regarding the private equity industry's "value chain", i.e. how the different types of investors relate and interact with each other before going further into the topics regarding the venture capital industry and theoretical framework of this thesis in subchapter 3.1. The shallow presentation of the other private equity genres (traditional PE and VC) is done in order to provide some contextual extension to the topics discussed in this thesis. The emphasis of the chapter lies on informal venture capital investors, i.e. business angels.

The term "private equity" typically functions as an umbrella term for all types of actors focused on investing in unquoted companies, i.e. private companies, as mentioned in the introduction (Savaneviciene et al., 2015). It is commonly acknowledged that the actors in this category generally provide all the external equity funding (non-governmental) to small and medium-sized private companies. Private equity investors, as the name indicates, invest in unquoted companies directly or through different legal vehicles. Private equity investors are usually divided into subgroups according to which kind of maturity stages, investment criteria, investment strategies (Mason and Harrison, 2002a) and type of investment arrangements they prefer (Kaplan and Schoar, 2005). The subgroups can generally be seen as: 1) Traditional private equity firms (PE), which include private equity firms with a buyout focus and private equity firms with a growth equity focus; 2) Formal venture capital firms (VCs) and 3) Informal venture capital investors or business angels (BA). The theoretical approaches used in this thesis are mainly borrowed from literature targeting the formal and informal venture capital industry and the thesis will almost exclusively focus on examining the activity of these types of investors.

Traditional or so-called buyout private equity firms and growth equity firms tend to invest in mature companies (i.e. growth to buyout-stage, Table 3.1), characterized by comparatively low risk profiles (Kaplan and Schoar, 2005) due to their capability to generate positive operating cash flows. The companies that formal venture capital firms target are typically in the start-up to growth stages (Mason and Harrison, 2002a). Informal venture capital investors, or business angels, often prefer companies positioned in the seed to later-stage-venture maturity phases (Savaneviviene et al., 2015; Paglia and Harjoto, 2014; Evans and Thompson, 2009). It is difficult to draw a clear line between maturity-stage preferences among these investor categories, and unnecessary as well, since the investors, either on purpose or unintentionally, sometimes enter other private equity actors' target segments (Prowse, 1998). Table 3.1 presents the maturity stages used in this thesis.

TYPE OF PRIVATE EQUITY	MATURITY STAGE	NICHE MARKET FOR
VENTURE	Seed	BA/VC
	Start-up	BA/VC
	Later stage venture	BA/VC
BUYOUT	Growth	PE
	Rescue/Turnaround	PE
	Replacement capital	PE
	Buyout	PE

Table 3.1 Illustrative list of maturity stages and investors' preferred maturity stages (FVCA, 2016)

Traditional private equity firms and formal venture capital firms normally invest external investors' assets through limited partnerships established and actively managed by them (Kaplan and Schoar, 2005; Prowse, 1998). The main investment vehicle used among private equity and venture capital firms is a so-called "equity fund" (Kaplan and Schoar, 2005). Private equity firms aim to generate value to their investors by investing capital in unquoted companies, in hope of realized profits, by first increasing the target companies' intrinsic or perceived value and then selling the target companies onward to interested parties or taking them public, i.e. listing the company on a stock exchange of choice. The value increase is usually executed by both enabling and pushing organic growth (Prowse, 1998), as well as through different manoeuvres, such as mergers and acquisitions (from

now M&A, Metrick and Yasuda, 2010). These manoeuvres are usually seen when the portfolio company is positioned in a consolidating market, where a continuous sector-wide fusion-process can be observed or enabled (Kaplan and Schoar, 2005) in order to improve profitability and enhance strategic positioning of the target company, thus increasing the attractiveness of the asset. The PE firms usually create a growth strategy or “plan” with or without the management of the target company before acquiring a given firm positioned in some potentially lucrative market, niche segment or geographical area in which they have identified an opportunity to generate value. This is, of course, a very simplified generalization of the PE firms’ practices and there are often numerous attributes besides the ones mentioned that PE firms evaluate when screening for investment opportunities.

The importance of PE firms has grown significantly during the last decades. According to Metrick and Yasuda (2010), private equity funds managed globally around \$1 trillion of capital in 2010 and around two thirds of the amount was managed by buyout firms. Furthermore, nearly a quarter of all global M&A activity was private equity-related in the peak years of the early 2000s (Metrick and Yasuda, 2010). The figures presented above illustrate the tremendous global scope and impact of the private equity industry. However, more recent figures show that the private equity activity has contracted since the peak years and private equity actors were responsible for about 10 percent of the 38 000 M&A transactions (companies bought and sold) recorded globally in 2017 (Bain & Co., 2018). However, these types of actors have been raising funds at an accelerating pace during the last couple of years, and assets under management have been increasing significantly, reaching record figures once again in year 2018.

Private equity firms can, in a sense, be compared to other actively managed funds and investment options for institutional investors and wealthy individuals who are pursuing portfolio diversification or superior returns. It should be noted that institutional investors together with wealthy individuals, family investment funds, investment funds and similar entities provide most of the capital to the private equity funds (Kaplan and Schoar, 2005).

Private equity firms differ from venture capital firms mainly in terms of preferred maturity stages of the companies they invest in, the typically significant use of leveraged financing (Kaplan and Schoar, 2005), the desired portion of ownership and size of unique

companies held in their portfolios (Bernile et al., 2007). Traditional private equity firms (growth-to-buyout focus) can sometimes also act as venture capital investors by establishing investment vehicles specialized in operating within this marketplace.

Private equity firms' investments are typically of substantial size, but their investment portfolios (fund portfolio) consist of rather few investment objects (objects held per established fund, Bernile et al., 2007). Typically, well-established private equity firms act as a general partner (GP) in more than one fund at the time and large PE firms can, for instance, manage several funds specialized in different asset classes (e.g. buyout focus, real estate focus, venture capital focus, etc., Kaplan and Schoar, 2005). One reason for the tremendous size of the unique investments is that these firms often desire to acquire the majority of the shares and votes in these relatively mature companies they target. The considerably high valuation of the companies pursued by the buyout-focused PE firms is motivated by the moderate levels of risk associated with the investment due to relatively stable operations of these rather well-established and (often) accredited target companies. The reason for acquiring the majority of shares and votes is typically to gain control of the company and obtain the right to exercise influence on the decisions affecting the target company (Kaplan and Schoar, 2005). The desired share of ownership ranges typically from 51 to 100 percent, but cannot be generalized, since the ownership share varies from case to case depending on multiple factors and is typically negotiated with the current owners of the target company. Additionally, there is a number of different PE firm or fund subtypes and some of them do not even prefer a majority stake in the portfolio companies.

Another typical property of traditional private equity firms is the use of leveraged financing (Metrick and Yasuda, 2010). By using a mix of equity and external debt, the PE firm is able to structure favourable deals where the risk associated with the investment is partially transferred to an external lender who is being compensated through agreed interest payments. The debt is used both for compensating the shortage of equity financing in order to cover the entire price tag (equity value) equalling up to the desired and final portion¹ of shares in the target company (Metrick and Yasuda, 2010), but also

¹ Traditional PE firms / funds typically establish a holding company that acquires 100 percent of the shares in the target company. The purchase price of the target company is typically funded by the PE firm, the previous owners as well as different layers of loans

to enhance the return on equity originating from the deal. A mix of debt instruments is typically used in financing these types of acquisitions. The debt package usually comprises a combination of senior and junior debt instruments as well as different portions of equity loans (e.g. shareholder loans from previous owners and equity loans from other parties), depending on the situation. The previous owner or owners often participate in financing the purchase of the company. If the return (IRR) of the deal is expected to exceed by far the cost of the external debt, it will be highly desirable for the PE firm to utilize external debt for financing the acquisition. There are additional types of financing arrangements provided by private equity investors to companies in general, e.g. senior loans, mezzanine financing (hybrid of debt and equity), etc. These other arrangements will not be addressed in this thesis. Investments and financing will solely refer to simple purchasing of shares and equity growth financing in this thesis, if not specifically mentioned otherwise.

An important distinction between traditional private equity firms and both formal and informal venture capital investors is the already mentioned utilization of leveraged financing. Venture capital investors tend more often to perform equity investments using solely their “own” capital assets when funding their investment activities (Metrick and Yasuda, 2010). Another distinction is that venture capital investors most often conduct minority investments, even known as private placements, and operates therefore in a very similar manner as business angels.

Metric and Yasuda (2010) argue that venture capital firms, as also PE firms, raise funds from external investors in order to swell the total value to paid in value (hereafter TVPI) and generate income by imposing annual management fees and carried interest fees based on the funds under management. These compensation fees typically range from 1.5 – 2.5 percent (annual management fee) and the carried interest fee (fee earned from transcending the established performance requirements) is usually around 20 percent (Kaplan and Schoar, 2005).

Venture capital firms tend to invest a smaller amount of capital into a larger number of small firms, when private equity firms with a buyer focus tend to invest larger sums into a relatively small number of companies. The categorical difference between venture capital firms and business angels is that: where venture capital firms invest external

investors' assets, business angels invest their personal assets, and bears therefore the entire downside of experiencing negative outcomes. This is, of course, to some extent compensated by personally experiencing the entire upside as well.

As other private equity investors, VC firms also practice active ownership in their portfolio companies (Bernile et al., 2007). The support activities are case sensitive, but often include helping with strategic and operational planning, budgeting, recruitment, commercialization and further fundraising, according to Bernile et al. In practice, VC firms have the same relationship with their portfolio companies as the business angels do. Both aim to actively boost growth and participate in strategic steering processes and development of these companies.

The two different categories of investors (formal and informal) have their respective weaknesses when it comes to non-financial support to the portfolio companies. Formal venture capital investors tend to hold a rather diluted portfolio, containing a high number of target companies. This can lead to a situation where both quantity and the quality of the support to individual firms in the portfolio is reduced (Bernile et al., 2007).

The number of target companies held in VC firms' fund portfolios varies significantly. Bernile et al. (2007) found in their international study that the median VC funds' portfolio comprised 9.5 companies and held on average 15.9 companies. The same study indicates that the median number of fund managers per fund was five and the median capital raised per fund was US\$101.5 million. According to the study, only 22.3 percent of the investments were made in early-stage ventures. Metrick and Yasuda (2010) came to entirely other figures in their US-based study conducted in 2006. They found that the median number of portfolio companies held by the US venture capital funds was 20 and the median capital committed per VC fund was US\$225 million. This indicates that US venture capital funds are of significantly larger size compared to global average. Metrick and Yasuda's (2010) findings align well with the results extracted from Maula et al. (2006) qualitative study targeting US, European and Israeli formal venture capital firms. Maula et al. found that US-based venture capital firms preferred fund sizes of US\$200 – US\$250 million in order to secure enough capacity for follow-up investments in the portfolio companies. Both Israeli and UK-based venture capital firms preferred smaller fund sizes, around US\$150 – 200 million according Maula et al. The focus of the current

study is on informal venture capital investors, and relatively little effort will therefore be given to the examination of portfolio sizes, structure and activities of both PE and formal VC firms.

The funds of traditional private equity firms tend to be of great size compared to both VC funds and business angel portfolios (Metrick and Yasuda, 2010). According to Metrick and Yasuda's study, the median PE fund made only 12 investments during the fund's lifespan and the median size of buyout funds in the sample was US\$600 million. However, these studies are US-based, and the PE and VC funds in the Nordic region are generally significantly smaller in size.

Lahti (2011) found in his study that the median portfolio size of Finnish business angels was 4 (Finland, year 2006). The Finnish business angel network's (FiBAN, 2016) annual report supports Lahti's findings. Månsson and Landström (2006) observed similar portfolio sizes in their study. According to them, the Swedish business angels' median venture capital portfolio consisted of 4.4 companies. The size of the business angels' portfolios was not addressed in the current study, since the purpose was specifically to examine realized investments, and not the entire investment portfolio of the investor. The reasons for not examining the unrealized investments will be explained later in this thesis.

The main distinctions between private equity firms, venture capital firms and business angels are presented in the Figure 3 below. The purpose of the figure is to provide an indicative illustration of how the different actors are positioned in terms of maturity of investment target (risk), the size of, and distributions of individual investments within the portfolio. The size of the individual investment reflects the maturity stages the different investors typically are targeting.

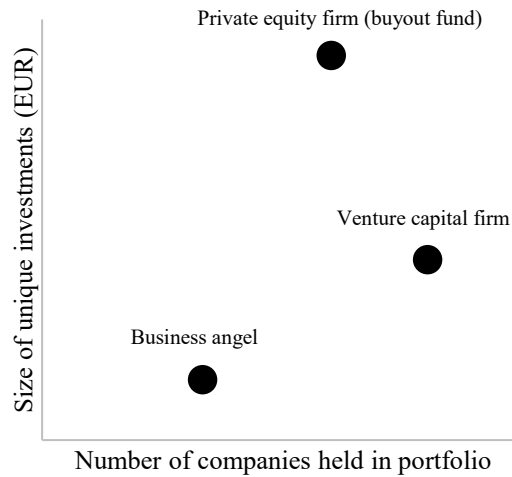


Figure 3. Illustration of PE investors positioning in terms of size of unique investment and number of investments held in the portfolio

3.1. Informal venture capital

The definition of informal venture capital is very limited in this thesis and refers only to business angels investing both directly and indirectly into privately held companies. The terms informal venture capital investor and business angel are often used parallelly in academic literatures addressing this topic. The two terms will also function as direct synonyms in this thesis.

In this chapter, the theoretical framework will be presented together with the findings from previous studies on related topics. The first subchapter will introduce the recent development of informal venture capital markets in Finland and briefly explain the former and current actors contributing or affecting the industry in Finland. This subchapter relates mostly to research question 4, i.e. how the informal venture capital environment has changes during the last decades in Finland.

Chapter 3.1 will thereafter continue with a section on the competition between actors in the relevant markets and further to the current legislative environment in Finland. The section is included in the thesis in order to further elaborate on research question 4. Country-specific knowledge and figures will be provided to enable the reader to place the Finnish-context into a wider perspective and perform a comparison to other marketspaces

and geographical locations. This has been eased by providing reference figures from previous studies conducted in other Nordic countries, the UK or the US to further add context to the things discussed.

The subsequent subchapters following 3.1.1 will contain an in-depth description of business angel characteristics i.e. demographics, attitudes and other relevant features. A review of investment processes, strategies and preferences will be found further on in chapter 3.1. These chapters provide the theoretical framework for research questions 1, 2 and 3, i.e. the performance of Finnish business angels in general, the performance compared to private equity peers and the strategies, processes, reasoning and decision-making of business angels.

3.1.1. The evolution of private equity and venture capital in Finland

Finnish SME's have traditionally been heavily dependent on debt financing from credit institutions (Lumme et al., 2013; Hyytinen and Väänänen, 2002). The components mainly responsible for the high degree of debt funding traditionally used in this region have been regulation, taxation and the availability of debt funding (Lahti, 2011). The aforementioned statement also aligns with other Nordic countries such as Sweden, where small and medium-sized companies (SMEs) have also been heavily reliant on debt funding until the 1990s (Månsson and Landström, 2006). One can argue that the debt-centric model, characterizing the Nordic countries has been one of the greatest obstacles for fundamental advances within the private equity industry when compared to the Anglo-Saxon countries, who have favoured equity-based funding for a very long period (Månsson and Landström, 2006; Black and Gilson, 1998).

The first significant steps were taken in Finland through the liberalization of the Finnish financial system in mid and late 1980s (Hyytinen and Väänänen, 2002; Luukkonen, 2006), which led towards a more equity-based SME financing model (Luukkonen, 2006) and opened market opportunities for both formal and informal venture capital investors in Finland.

The first signs of the private equity and venture capital industry were seen in Finland when the pioneering firms were established between 1960s and 1970s (Luukkonen,

2006). The operations of the firms at that time can be characterized as small-scale and the asset portfolios were significantly smaller than they are today (Luukkonen, 2006). The number and the size of actors in the Finnish private equity and venture capital industry have increased tremendously since the 1970s (Luukkonen, 2006). The evolution of the Finnish venture capital sector took a second significant leap the early 1990s (Lahti, 2011). The most predominant components, enabling the industry advance are presented next in this section.

Among the most crucial contributors to the development was the establishment of The Finnish Innovation Fund Sitra (previously known as The Finnish National Fund for Research and Development), a public foundation subordinate to the Finnish parliament. Sitra, which has been active since 1967 (Hyytinen and Väänänen, 2002), became more engaged in organizing the private equity and venture capital industry around the 1990s (Luukkonen, 2006).

Today, Sitra's objective is to offer funding to innovative companies within the technological industry or companies that otherwise possess special expertise within a certain field. Sitra's aim is primarily to invest in companies that possess the potential of becoming important business actors (Hyytinen and Väänänen, 2002). Sitra places a variety of requirements on the companies it invests in. According to Hyytinen and Väänänen (2002), Sitra uses the following investment criteria: 1) The market potential of products and services; 2) Uniqueness of- and possibilities to protect the technology owned by the company; 3) Growth aspects and 4) Management and competitiveness. Sitra finances the companies reaching up to its standard mainly through different forms of equity investments, but grants also debt financing to small companies (Sitra, 2017).

The reason why Sitra has played an important role as catalyst for the Finnish venture capital industry is due to Sitra's willingness to participate in syndicate investments together with private venture capital players. Through these arrangements, venture capital firms and business angels have been able to mitigate exposure and share the burden of transaction costs arising from due diligence processes and other ex-ante and ex-post investment-related costs.

Finnvera has been another important contributor, partly driving the advance of the Finnish venture capital industry. Finnvera was established through a fusion of two state managed entities in 1999 (Hyytinen and Väänänen, 2002). One of Finnvera's objectives today is to promote and develop internationalization and exports of Finnish SMEs. This is primarily executed by offering credits, securities, guarantees and financial services to companies seeking to expand operations abroad (Hyytinen and Väänänen, 2002).

Finnvera has delivered some explicit and latent advantages to the Finnish venture capital market. Finnvera's stimulation of both internationalization and exports has been seen as a supporting component for growth-minded and scalable businesses, looking for new geographical marketplaces. These are typically also the type of businesses targeted by venture capital investors. Finnvera is also capable of providing debt instruments to relatively high-risk businesses. Finnvera is able to grant loans to high-risk companies since the Finnish government (Finnvera, 2017) backs the loans and guarantees issued by Finnvera.

A third entity subordinate to the Finnish government is Business Finland, which has functioned as the leading external financier of SME research and development in Finland for a long period. Business Finland drives welfare and stable development by promoting technological development and competence of the industry in order to improve international competitiveness of Finnish businesses (Hyytinen and Väänänen, 2002). Business Finland funding is mainly intended for technology focused SME companies (Hyytinen and Väänänen, 2002). Today, Business Finland offers multiple sources of funding including industrial grants, loans, capital loans and research-funding. Besides providing capital, Business Finland offers consulting and advisory services to SMEs (Hyytinen and Väänänen, 2002). Business Finland, in its current form emerged when Tekes (the Finnish Funding Agency for Technology and Innovation) and Finpro Oy (a government-owned corporation for promotion of export) merged in 2018. The unit's focus has remained somewhat the same, although the purpose of the fusion was to make sure that the service chain offered to Finnish SMEs remained intact all the way from supporting of R&D activities to backing foreign exports, i.e. securing broader life-cycle services and support to Finnish growth-minded SMEs.

The Finnish Industry Investment Ltd (FII) has also been providing indirect and later direct support for newly started Finnish growth companies. The Finnish Industry Investment Ltd is an entirely state-owned company, focused on providing venture capital investments to growth-minded companies positioned on different maturity levels (Hyytinen and Väänänen, 2002). The company invests both through direct investments and by using venture capital funds as intermediates, i.e. a fund of funds-approach (Hyytinen and Väänänen, 2002). The Finnish Industry Investment's role as a financier of Finnish early-stage SMEs became significant after 1999, when legislation steering the operations of FII was altered and the risk-averse policies were loosened (HE 132/1999). This enabled FII to invest directly in seed and start-up-stage companies involving lower risk-adjusted returns than required by the private venture capital sector (HE 132/1999).

To gain some understanding on the scope and magnitude of the governmental financing in Finland, a closer inspection of the key figures is needed. Business Finland granted year 2011 a total of 32.6 million euro in subsidy financing to new and innovative companies in Finland (HE 177/2012). The same companies were granted subsidies of 16.3 million euro in total for R&D-activities, of which 15.8 million euro was in form of subvented loans (HE 177/2012). Finnvera invested the same year around 9 million euro directly and 4 million euro indirectly into recently established start-ups in Finland. The Finnish Industry Investment Ltd (Tesi) conducted that year direct investments of around 13 million euro and indirect investments of 15 million euro into Finnish growth companies. The above listed entities were the most substantial providers of governmental growth stage venture capital financing (HE 177/2012). The investment sizes of these governmental entities or entities funded by governmental means have varied during the years following 2011. Business Finland, for example, invested as much as 25 million euro in new and innovative start-ups during 2016 (Business Finland, 2016).

According to Hyytinen and Väänänen (2002), Finnish SMEs' have a great propensity to utilize government funding. As much as 27.9 percent of all SMEs reported that they had in the past acquired some type of government funding. The Finnish SMEs have also traditionally seemed to be well-informed about the alternatives and possibilities to acquire subsidy government financing.

The four government backed entities mentioned above (and others not mentioned in this thesis), combined with the efforts of the private actors belonging to the venture capital industry have contributed significantly to the growth-foundation established for innovative high-growth, although capital intensive companies in Finland. The long-term goals of public SME funding are usually to propel economic growth, reduce unemployment and support a continuous development industries and technologies. The actors in the private sector usually possess more myopic goals. The relationship between these parties can therefore, in this case, be considered more of a symbiosis or partnership, rather than rivalry and can, in many cases, benefit the both parties as well as the general public.

Even though the governmental entities or governmental financed entities have played a critical role in spurring the private equity- and venture capital industry in Finland, there are also other essential elements which have posed a significant impact on the development of the venture capital industry.

Several fundamental changes were made in the Finnish corporate law approximately in the same period as the establishment and engagement of the public SME financiers took place (Luukkonen, 2006). According to Luukkonen (2006), private equity and venture capital firms had in the past mainly been injecting their own capital into target companies until 1987. This approach restricted the investment sizes to exceed the investment firms' own unrestricted capital assets. The very fact that external investors were not easily able to invest their capital through private equity and venture capital firms stalled the private equity- and venture capital industry development in Finland significantly.

Since year 1987, private equity firms have adopted legal structures similar to US peers and transferred the focus to investing external investors' (e.g. institutional investors) assets through their investment vehicles, gathering revenue mostly from management fees and carried interest fees (Luukkonen, 2006). This has enabled larger fund sized, thus more capital to invest in target companies. The same phenomenon was noted in Sweden in the corresponding period according to Månsson and Landström (2006). They argue that the three main factors contributing to the development of well-functioning venture capital markets in Sweden was that: 1) The pension funds obtained the right to invest in riskier

asset classes; 2) The reduction of taxation on capital gains and 3) The establishment of new stock exchanges, enabling smaller companies to go public.

The establishment of the Finnish Venture Capital Association (FVCA) in the late 1990s can be seen as a sign of the industry obtaining a solid foothold in Finland (Lumme et al., 2013). FVCA main function is to improve the private equity investors' conditions and drive the Finnish private equity investors' interests (FVCA, 2017). The association provides aggregated statistics as well as other services to its members and stakeholders (FVCA, 2017). The FVCA should not be considered a business introduction service (BIS), but rather interest organization for private equity- and formal venture capital firms in Finland.

The establishment of the government funded entities and the upsurge of the private equity and venture capital market has contributed to a more favourable environment for the informal venture capital investors. The emergence of the informal venture capital industry has in general followed the same pattern as the formal one, i.e. Finnish investors' constitutional principles have been adopted from peers in the US and other more mature venture capital industries.

The business introduction services (BIS) have also had a significant positive impact on the venture capital, and especially the Finnish business angel scene (Lahti, 2011). This has also been noted in Sweden (Månsson and Landström, 2006). The BISs' mission is typically to promote, inform and match businesses searching for external equity (or debt) financing with business angels and venture capital firms looking for interesting investment opportunities (Lahti, 2011; Luukkonen, 2006). Through the introduction of BISs, business angels are not as dependent of their social and professional networks in order to find investment opportunities. The emergence of business introduction services has increased the yearly deal flow and increased the transparency of the business angel scene in general. BISs also enable and ease syndicate investments (Lahti, 2011). Syndicate investments enable business angels to participate in larger deals (Lahti, 2011) and provides risk mitigation possibilities for individual investors and venture capital firms. BISs also benefit the start-up community by expanding the reach of the start-up company and increasing the probability for these companies to getting in touch with the

right investors, possessing suitable skillsets or backgrounds from the company's point of view.

The first Finnish BIS was established through a governmental initiative. The responsibility of such services has later been passed on to other non-governmental organizations (Lahti, 2011), of which the Finnish Business Angel Network (FiBAN) is the largest in Finland. FiBAN's aims to "improve the possibilities for private persons to invest in unlisted potential growth companies" (FiBAN, 2017). FiBAN has also the objective of providing education to its members as well as lobbying and representing business angels' interests in Finland.

Through the increased exposure of business angel activity in Finland and the establishment of business introduction services, the concept of SME equity financing and business angel activity have gained increased awareness in the eye of the general public (Lahti, 2011; Månsson and Landström, 2006). Thus, increasing the deal flow and investment opportunities disclosed to the business angels (Lahti, 2011). This phenomenon has, in return, favoured considerably growth-minded small and medium-sized companies searching for capital.

The number of known Finnish business angels has increased rapidly since the first study by (Lumme et al., 1998) and there are today over 500 known business angels in Finland (FiBAN, 2017). The characteristics of business angels and business angels' investment activities will be further addressed in a later subchapter.

3.1.2. The competitive environment

Informal investors do not operate in a closed environment. Globalization has provided increased momentum for the industry, but also encouraged competition for appealing opportunities. Multiple factors influence the investment activities of business angels, venture capitalists and private equity firms. As Harrison and Mason (2000) state in their paper, the previous studies have neglected the fact that the formal and informal venture capital markets do not operate in silos, and that the markets usually overlap each other in many cases. The two types of actors do not necessary always function as sellers or buyers as well as partners in a vertical dimension, but also as competitors on a horizontal level.

The intention of this chapter is to provide knowledge on the relationships between the actors in the private equity industry. A brief summary of the current situation in Finland and corresponding PE markets elsewhere will also be given in order to understand why venture capital activity and performance will be used as benchmark when evaluating the results of the current study.

Both benefits and disadvantages arise from interactions between private equity investors. Some explicit benefits are syndicate investments between business angels and venture capitalists, for example. Through cooperation, these parties can gain from risk mitigation and achieve larger and more beneficial deals with the target companies (Harrison and Mason, 2000). According to Harrison and Mason (2000), formal venture capital actors sometimes prefer to co-invest with business angels in order to reduce the burden by limiting the companies' dependence on the venture capital firms' resources, i.e. strategic and operational support. By including one or multiple experienced business angels in the deal, the venture capital actor is able to transfer some of the ex-ante evaluation and the ex-post support and governance to the involved business angels (Harrison and Mason, 2000). According to them, this is something that has been observed in the US, especially in cases where venture capital firms have been targeting companies positioned in the information technology sector. It is fair to argue that the statement above could also be true for other complex industries, such as the biotechnology and life sciences, where intangible assets form a large portion of the companies' total value and where unbiased prognostication is difficult to achieve.

Sometimes the actors compete against each other by pursuing the same company of interest. This usually transfers some of the negotiating power to the owners of the companies, who potentially are able to negotiate better deals, i.e. more beneficial deal terms or higher company valuations.

An internal competition within the formal venture capital market is also obvious. The evidence suggests that some venture capital investors are more valuable than others from the target company's perspective. Hsu (2004) has studied the cost of venture capital affiliation for start-up companies. He calls this phenomenon "certification value", which refers to the cost of high-value formal venture capital affiliation for start-up companies. The higher price associated with affiliation with high-profile VC firms is motivated by

the legitimacy transferred to start-up companies and entrepreneurs with little or no former credentials (Hsu, 2004; Baygan and Freudenberg, 2000). Hsu's study, being based on 148 offers from VC firms to start-up companies, shows that these start-up companies were three times more prone to accept an offer from a high-profile VC firm. Hsu also found that reputable VC firms attained a 14 percent discount on the company's equity (i.e. valuation). The reason why start-up companies and entrepreneurs are paying a higher price for high-profile VC affiliation is generally that a) reputable VC firms are considered to offer more valuable business referrals, b) they provide better mentoring activities and c) they offer enhanced financial assistance to the companies (Hsu, 2004).

This phenomenon is assumed to exist in the informal venture capital markets, as well. The motivation is primarily the same as found in Hsu's (2004) study, since VC firms and business angels provide very similar types of value-added services to their portfolio companies and are considered to operate in overlapping markets (i.e. reached out to by start-up companies and low-maturity ventures). There is still very little knowledge about the competitive nature prevailing between informal and formal venture capital investors.

The informal venture capital industry is still lagging the formal one in Finland, when measured purely in documented capital amounts. A few essential industry figures concerning Finland will be presented next in this chapter.

Finnish VC firms invested directly around 80 million euro in domestic target companies during year 2016 (FVCA, 2016). The amount of capital invested by Finnish business angels grew by 43 percent to 53 million euro the same year. A tremendous increase can be observed in the aggregate figures of annual new investments by Finnish business angels since 2010. While the Finnish formal VC investments have remained approximately on the same levels since 2010, the capital invested by domestic business angels has increased at an astonishing pace of 562.5 percent in total or a compound annual growth rate (CAGR) of 37 percent during the same period (FiBAN, 2016). A notable observation is that Finnish formal VC investors' appetite for syndicate investments has grown rapidly since 2007 according to FVCA's (2016) report. The previously mentioned report shows that the portion of syndicate investments relative to total investments has risen from around 15 percent in 2007 to around 70 percent in 2016. It still seems as formal venture capital investors have increased their syndication with other formal venture

capital actors, since only 13 percent of the business angels in FiBAN’s network had participated in syndicate investments with formal VC firms in 2015 (FiBAN, 2015).

Foreign investments in Finnish target companies have also experienced a significant surge. Foreign investors injected around 21 million euro into Finnish start-up and early-stage companies during 2010 (FVCA, 2016). The same figure was 216 million euro in 2016, which means an increase of 929 percent or CAGR of 47 percent (FVCA, 2016). At the same time, the outflow of capital, i.e. the investments from Finnish VC actors into foreign ventures, was 40 million euro (FVCA, 2016). The domestic capital outflow increased dramatically in year 2016, but the net flow of formal VC investments has remained mostly positive during the period 2007-2016 (FVCA, 2016). It should be noted that the data presented in Table 3.1.2 only account for formal VC investments and do not involve the total foreign direct investments, which are included in the growth figure above.

YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
FOREIGN FORMAL VC INVESTMENTS IN FINNISH COMPANIES (MEUR)	28	36	14	18	26	9	44	50	21	31
FINNISH FORMAL VC INVESTMENTS IN FOREIGN COMPANIES (MEUR)	27	31	10	11	18	13	16	27	13	40
NET INFLOW OF FORMAL VC INVESTMENTS, FINLAND (MEUR)	1	5	4	7	8	-4	28	23	8	-9

Table 3.1.2 List of formal venture capital flows (FVCA, 2016)

Lahti (2011) argues that less favourable market conditions could possibly lead to a situation where business angels and venture capital firms would be more attracted to invest their capital elsewhere and even a higher degree of fresh domestic companies would be left dry. Market conditions in this case refer to taxation climate, institutional factors and legislation, economic growth and exit opportunities. This does not seem to be

an issue currently when considering the trend experienced in Finland over the past 10 years. However, some indication of internationalization and the erosion of national boundaries of venture capital investments can be extracted from the figures presented above.

Baygan and Freudenberg (2000) have studied the capital flows between OECD countries. Among the European countries, Ireland and Denmark seem to have rich net inflows of venture capital. Some significant net outflows can be observed from the UK and Switzerland (Baygan and Freudenberg, 2000). Baygan and Freudenberg argue that effective cross-border VC capital flows do not only have the ability to enhance the efficiency of the global venture capital markets, but that the phenomenon also potentially reduces the relative importance of domestic venture capital investors from the growth financing-seeking companies' perspective. This also increases the emphasis on the domestic supply factors, i.e. creativity and innovation, entrepreneurship and activity in general. The countries which have low entry barriers for entrepreneurship tend to have active VC markets (Baygan and Freudenberg, 2000).

Another dimension of the capital flow equation is the supply of institutional investors' and other investors' investable funds allocated to venture capital firms' investment vehicles. Since cross-border flow of capital from institutional investors has increased and both the concrete and mental boundaries are diminishing, a higher degree of competition can be expected on a global level for the institutional investors' capital resources. Baygan and Freudenberg (2000) support this argument by arguing that domestic supply is of less significance, when institutional investors' propensity to invest in foreign venture capital funds is relatively high. However, during long periods of low interest rates, spurring investors to increase the relative portion of allocation to the private equity industry, we see that private equity investors have more difficulties finding suitable investments rather than acquiring funding from institutional investors. This has mostly been noticed in the traditional private equity segment, of which raised-uninvested-capital-to-total-capital under management has been increasing steadily since 2012 and has hit a record level of US\$ 1.7 trillion in 2017 (Bain & Co., 2018).

The next subchapter will address the legal environment in Finland. The aim of the chapter is to present the Finnish taxation climate and provide examples of tax incentives

employed in Finland during the past years. The purpose is to provide some answers to why the utilization of legal investment vehicles is highly common among Finnish business angels as well as why taxation matters for business angels in general.

3.1.3. Legal environment in Finland

The Finnish taxation climate has traditionally not been favourable for business angels when compared to other countries. The country, as other Nordic countries, are commonly known for employing high taxation levels on both capital gains and earning income. The taxation on capital gains follows a progressive scheme in Finland, and the current tax rate is 30 percent for amounts falling short of 30 000 euro and 34 percent on the exceeding 30 000 euro (The Income Tax Act, Tuloverolaki 30.12.1992/1535). The tax rate on capital gains has been increasing during the past years in Finland. The rate was, for example, 25 percent in the early 1990s and 28 percent when Lahti (2011) studied the business angel community in 2006. Contrary to the high taxation levels on earnings-related and capital gain income, the company income tax rate is relatively low in Finland. The current company income tax rate is 20 percent, according to The Act on Income from Professional Activities (Laki elinkeinotulon verottamisesta 24.6.1969/360). The taxation structure has traditionally favoured investors who funnel their investments through some investment vehicle, a limited liability company for example. The use of legal investment vehicles provides the investor with better prerequisites for deductions on taxable income and optimizing the final taxation level, thus maximizing the personal wealth gains from investing.

Since business angels' capital supply to innovative companies is considered to constitute a significant contribution to economic growth, some initiatives have been taken for improving the conditions for angel investors in Finland. One of these initiatives have aimed to postpone a portion of the tax collected on capital gains, originating from informal investment activities. The foremost example of this is the HE 177/2012 initiative.

The HE 177/2012 initiative comprised a temporary law (year 2013 to 2015), enabling angel investors to deduct 50 percent of the nominal amount invested (between 100 00

euro and 150 000 euro) in a Finnish start-up company from the capital income during the year when the investment was conducted. In case the angel investor made several investments in start-ups, the 50 percent deduction principle was applicable up to capital investments of 250 000 euro (cumulative). The purpose of the temporary law was to transfer a larger share of the investors' capital to growth companies by permitting the deductions to be made by the investor in the year of the capital investments. The deductions were considered when calculating the tax on capital gains the year when the principal plus profits were returned to the investor (HE 177/2012). The deduction in question was only authorized for business angels who invested capital directly into small companies, i.e. investors using different types of investment vehicles were not able to utilize the exception.

The initiative was motivated by, amongst other things, the common understanding that there was a shortage of domestic growth companies (HE 177/2012) and that these companies' growth should not be crippled due to funding restraints. The stakeholders, preparing the initiative, recognized the potential of filling the existing funding gap by offering incentives for informal venture capital investors to shoulder the responsibility, together with governmental funding entities, also engaging with growth-minded start-up companies. The formal venture capital and private equity markets play a significant role for companies seeking growth and access to international markets, but usually only when the companies reached a significantly higher maturity stage. Since the size of the Finnish private equity market was around 350-million-euro year 2012 (HE 177/2012) and considered competitive to nature, there was a common understanding that the efforts (tax incentives) should be directed to the informal venture capital market. We ask the question: Why do the past incentives implemented in different countries mostly target the tax component and why do we address this issue in this thesis? Some answers to the question can be found by studying the past initiatives deployed in other regions.

According to Mason and Harrison (2002), the impact of interest rates, inflation and gross domestic product have very limited ramification on business angels' appetite to invest. The willingness to invest is primarily determined by the possibilities to exit the portfolio companies (Mason and Harrison, 2002a; Månsson and Landström, 2006), and by legislative aspects. Several studies (for example, Lahti, 2011) have pointed out that informal venture capital investors' behaviour is significantly affected by changes in

taxation policies and tax rates. This argument is supported by Maula (2007), who claims that, from all kinds of angel investment activation incentives employed in different countries, the tax incentives have had the most prominent consequences on the investment activity. The high tax rate and the limited possibilities for deductions can arguably be one of the reasons for the high utilization rate of investment vehicles among Finnish business angels.

In the next chapter we will move on to the core of this thesis, i.e. informal venture capital investors or business angels. The chapter will provide a fundamental demonstration of business angel activity in general and shed light on business angel features observed in previous studies.

3.1.4. Basic features of business angels

Very little is known about the investment practices of Finnish business angels (Lahti, 2011). It is not unthinkable that the characteristics of Finnish business angels would widely corresponds to those found in studies performed in other geographical regions. At least the results of studies conducted in Sweden by Månsson and Landström (2006) as well as Landström (1995), indicate that the demographical properties and preferences of Swedish business angels are very similar to those observed in the few previous studies conducted in Finland and to those observed in the current study. Studies conducted by Reitan and Sorheim (2000) in Norway, Mason and Harrison (2002) and Van Osnabrugge (2000) in the UK, Haines et al. (2003) in Canada, Wiltbank and Boeker (2007) in the US suggest that business angel profiles in different regions are highly aligned.

Business angels do not form an entirely homogeneous group on a global level. Still, it is possible to do some generalization within this population. We start by looking at some of the basic properties of these types of investors.

It seems as a large share of the business angels has entrepreneurial backgrounds (Månsson and Landström, 2006; Lahti 2011; Lumme et al., 1998; Lahti, 2011; Reitan and Sorheim, 2000; Haines et al., 2003; Mason and Harrison, 2002; Wiltbank and Boeker, 2007). Månsson and Landström (2006) found that as much as 90 percent of the Swedish business angels participating in their study, had started at least one company. They also observed

that the investors with entrepreneurial backgrounds had started a median of 3 and average of 4.4 companies. Lahti (2011) found that the corresponding share, i.e. business angels who had started at least one company, was 83 percent in Finland in 2006, and that the median number of companies founded by these investors was 2.8. He also found that the business angels lacking entrepreneurial experience usually had managerial experience from large enterprises, or experience from the financial industry. The results from Reitan and Sorheim's (2000) study are well in line with those found in Lahti's (2011) study. Their study shows that Norwegian business angels typically possess an entrepreneurial background and that the business angels have primarily acquired managerial experience from either owning a company or from managerial positions in other companies.

What comes to the age of the business angels, Reitan and Sorheim's (2000) found that the Norwegian business angels participating in their study were on average 47 years old and 97 percent of them were men. Norwegian business angels seem to be of younger age when compared to their Swedish and Finnish peers. Månsson and Landström's (2006) study showed that the average age of angel investors participating in their study was 56 and the share of male participants was 96 percent. All the participants in Lahti's (2011) study performed in Finland were men. Lahti's (2011) sample was rather small, which to some extent explains the lack of women participating in his study. Eleven percent of the Finnish Business Angel Network's members were women in 2015, according to FiBAN (2015). The figure presented by FiBAN (2015) is presumably more accurate and can be considered to better represent the gender split found in the entire Finnish business angel population. The average age of FiBAN members was 51 in year 2015 (FiBAN, 2015). Everything stated above indicates that rather few individuals is able to accumulate enough wealth to function as a business angels before reaching the age of 50.

Finnish business angels are by far more educated than the domestic average. According to FiBAN (2015), around 85 percent of organization's members possess a university degree or a degree from an equivalent institution. Månsson and Landström's (2006) study showed that the corresponding figure was 69 percent for Swedish business angels included in their sample. Reitan and Sorheim's (2000) study backs the previously stated. They observed in their study that a substantial share of the Norwegian business angels was highly educated. This is also the case in the US, according to e.g. Wetzel (1983).

3.1.5. Business angel investments

The size of the informal venture capital markets has surged during the past years in Europe. Even though the amount invested by business angels has grown in most countries at the same pace as the real wealth of the investors (Avdeitchikova, 2008), the industry's growth can also be explained by the increased awareness and propensity of wealthy individuals to perform venture capital investments (Avdeitchikova, 2008). One should not either downplay the impact originating from the increased number and activity of the business angel networks in Europe and the national governments' catalytic role as drivers of the industry expansion. The legislative and institutional transformation in the European countries starting in the 1980s has also played a significant role, as stated in an earlier chapter of this thesis.

This chapter will contain industry figures and basic characteristics regarding business angel investments. The chapter will present the elemental components of business angel investments on a rather superficial level and provide little explanation to the underlying structures of the industry. A deeper, and more theoretical approach to the topics mentioned in this chapter will be provided later in this thesis. The primary purpose is to equip the reader with the necessary industry figures and knowledge to be able to form a reasoned comprehension of the findings presented later in this thesis, and to have enough references when comparing the results of the current study to findings from previous studies. The chapter will cover the topics in a logical order, starting with investment sizes of business angels.

The size of the capital invested into unique target companies varies significantly within the informal venture capital industry. Business angels typically invest alone or in syndicates with other business angels or venture capital firms (Prowse, 1998). The investment size is often determined by the demonstrated capital demand of the target company, and not only by the investor's desire to acquire a specific portion of the company's shares based on a well-motivated and accustomed pre-money valuation of the company, i.e. the funds transferred to the company are typically earmarked for certain growth-enabling activities rather than for compensation to the previous owners who are willing to dilute their holdings. The median amount invested in unique target companies

(per investor) typically varies from US\$76 000 in Norway (Reitan and Sorheim, 2000) and US\$50 000 in the US (Wiltbank and Boeker, 2007) to 20 000 euro (per investor per round, FiBAN, 2016) in Finland. The median investment size of the Finnish business angel investors corresponds well with overall Europe, since the average size invested per European business angel (individual target company) was 20 437 euro according to the European Business Angel Network (EBAN, 2014).

When examining the financial instruments used, we see that business angels typically prefer equity investments (Prowse, 1998), i.e. acquiring shares (and votes) in the target companies often through share issues. High variance between the investors' required ownership can be observed in previous studies. Some indicative figures can be found. Lahti (2011), for example, found that Finnish business angels' median ownership was 11 percent subsequent to the investment. FiBAN (2016), however, observed a median ownership of only 2 percent subsequent to the investment.

De Bettignies and Brander (2006) have studied the endogenous effects of ownership ratio. According to them, increased ownership acquired by the investor weakens the entrepreneur's incentive and input. In turn, low investor ownership ratios lower the investor's incentive to allocate resources on support activities and tend to make the investors more passive in nurturing the investment. De Bettignies and Brander argue that companies and entrepreneurs often benefit from offering venture capital investors a higher stake than required in order to ensure enough attention from the investor ex-post investment. Similar problems emerge when the ownership of the entrepreneur decreases past a critical level. A way to mitigate problems arising from high stakes acquired by investors is through the employment of pay-out and asset claim policies, i.e. equity arrangements. According to De Bettignies and Brander (2006), venture capital investors typically have multiple mechanisms to select from when assessing and building efficient incentive schemes for the entrepreneurs.

In theory, a company's pre-money valuation and the investor's preferred equity stake should widely determine the absolute amount of capital invested in the target company in a given fund-raising round (Miloud, 2012). This is not always the case, since a variety of direct and ambiguous factors determine the final investment size and ownership ratio. Some sources (e.g. Miloud, 2012) claim that the share price is seldom a figure arrived at

through systematic calculations and forecasts, but rather formed by the means of negotiations and compromises between the entrepreneurs and investors. Miloud argues that valuation methods such as discounted cash flow models, earning multiples, trading multiples and net asset methods, which are frequently used in traditional corporate finance practises, produces highly inaccurate results when employed in a venture capital context. This is due to a single fact: many these methods are based upon some assumptions and relatively reliable information regarding the target being under assessment. This is one of the many reasons for the tremendous gap between projected outcome and real outcome observed in venture capital valuations (Miloud, 2012). However, investors are still required to pay more for the target companies when the overall market sentiment is positive and overall valuation levels are inflated, as seen in 2017 and beginning of 2018.

The rise of pre-money valuation levels has been well documented, for example, in the US (ARI, 2015). According to a study conducted by the Angel Resource Institute (ARI), the median investment round size has grown from around US\$500 000 during 2012 to around US\$850 000 in 2015. Simultaneously, the average ownership attained from a round has decreased from about 25 percent in 2012 to around 20 percent in 2015 (ARI, 2015). The rise in pre-money valuations does not only concern informal venture capital investors, but the entire private equity industry (Bain & Co., 2015; Bain & Co., 2018). The valuation level is, of course, determined to some extent by the industry in which the company operates as well as other company-specific properties. The industry-specific growth projections and high-value M&A deals observed in the industry (in which the target company is operating in), is assumed to also affect the overall valuations, as observed in the rapid surge of valuations during the IT-hype in Finland in the 1990s (e.g. Lahti, 2011). A higher valuation can also be presumed when the company operates within consolidating or rapidly transforming markets (Kaplan and Schoar, 2005) as well as in defensive and growing niche markets, for example. The inflammatory valuations mean in practise that the investors are forced to allocate more capital in absolute terms in order to acquire equal portion of shares in the target companies.

It takes time to execute the investor's vision for the company and to elevate the perceived value of the target company in order to gain a positive return on the investment. Holding

periods are therefore rather drawn-out for business angels as well as for other private equity investors.

The holding periods usually range from 0 - 5 years but can reach up to ten years and more (Wiltbank and Boeker, 2007; Månsson and Landström, 2006). The aforementioned is supported by the findings of Mason and Harrison (2002a). The median holding period for successful investments was 4 years in their sample (in the UK). The average holding period in Wiltbank and Boeker's (2007) study was 3.5 years (in the US). According to Månsson and Landström (2006), only 65 percent of the Swedish business angels in their study expected holding periods of less than five years.

These results can be compared to the traditional or formal private equity industry, where quick flips are rather unusual as well (Kaplan and Schoar, 2005). This can be demonstrated by the findings of Bain & Co global private equity report 2015, which states that the median holding period has stretched out since the private equity boom around 2008 and was 5.7 years for buyout firms in 2014 (Bain & Co, 2015). The corresponding figure was 5.0 years in 2017. To ensure development periods of sufficient lengths, PE firms often include capital commitment period prerequisites of at least 5 – 10 years in their general investor agreements (Kaplan and Schoar, 2005). One essential thing to be remember when comparing business angels to formal venture capital peers is that the aforementioned is not of concern for these investors, since they do not experience pressure from external investors, and can therefore hold the portfolio companies until a satisfying offer is presented or the investment written off. This enables business angels to hold on to interesting companies and ride out business cycles, which in turn can be highly rewarding for the investor when finally realizing the investment when both the company and the market is in a favourable state.

Lengthy holding periods in private equity investments (all categories) are generally needed in order to grow and develop the target companies, thus enhancing the value of these companies. Since informal venture capital investors typically prefer early-stage investments, they are usually forced to take the businesses to the next level before formal venture capital investors, private equity firms or other parties take an interest in these companies. Likewise, traditional PE firms need time to prepare the portfolio company for an IPO or sale at a premium price to other interested buyers (Kaplan and Schoar, 2005).

It is also important to remember that private equity investments, especially in early stages, are highly illiquid, i.e. the capital invested in the company usually stays frozen for a long period before the investor is able to exit the company and realize the profit (or loss). Company-specific by-laws or shareholder agreements can also restrain the investor from exiting the company, at least on favourable terms. This is arguably one of the reasons for informal venture capital investors to only have a relatively small portion of the overall investment portfolio allocated to these illiquid investments.

Mason and Harrison (1994) found that informal venture capital investors' positions held in unquoted companies, only comprised around 5 – 10 percent of these investors' overall wealth (UK). Månsson and Landström (2006) found similar figures in Sweden. According to their study, Swedish business angels allocate on average around 11 percent of their total wealth to venture capital investments.

More radical numbers have also been observed in the Nordic region. Reitan and Sorheim (2000) found that as many as 20 percent of the 425 Norwegian business angels participating in their study, had allocated more than 50 percent of their total wealth in unquoted companies. Still, most studies suggest more moderate portions, as the ones observed in Sweden (Månsson and Landström, 2006) and UK (Mason and Harrison, 1994).

Several signs of industry evolution can be observed in the European region. When business angels' general focus has moved from "love money" i.e. investing in friends' and family's businesses to investing in businesses of previously unknown owners, the investors have also been forced to employ new methods to tackle the problems emerged by information asymmetry between the entrepreneur and the investors (Van Osnabrugge, 2000). Månsson and Landström (2006) noticed that Swedish business angels have become more professional in screening and selecting investment opportunities. The same seems to apply for Finnish business angels according to Lahti (2011), who has compared business angel activity in year 2006 to the conditions prevailing in Lumme et al. (1998) study conducted in the early 1990s.

Finnish business angels have adopted investment methods from peers in other countries (Lahti, 2011) with long traditions of equity-based financing, such as the US. Some investment practices of business angels have also been borrowed from formal venture capital and private equity investors. This phenomenon can be considered normal and the same maturation path has also been observed in other countries, for example in Sweden (Månsson and Landström, 2006).

One explicit sign of maturation is the increased syndication of investments. According to Lahti (2011) over 70 percent of the Finnish business angels that participated in his study performed their investments in syndicates with other business angels. This figure was 95 percent for FiBAN members in 2015 (FiBAN, 2015). FiBAN's (2015) report shows that the members' initial investments were in 49 percent of the cases conducted together with other business angel members and 13 percent of the investments were made in syndicates with venture capital firms. Månsson and Landström (2006) observed a syndication ratio of 77 percent among the Swedish business angels.

The results from FiBAN's (2015) and Månsson and Landström's (2006) studies should be interpreted with great scepticism, since the samples of the both studies have been collected by surveying business angels belonging to business angel networks (BANs). It can be assumed that these studies indicate a higher syndication level than observed in the overall business angel population, since deal flow and investment activities are sometimes coordinated by the BANs. Still, syndicate investments seem to be preferred by most of the informal and formal venture capital investors. Next, we present some figures regarding the investment rounds and syndication activity of formal and informal venture capital investors in order to understand how the vast share of the business angels' investments are conducted.

Van Osnabrugge (2000) has performed a comparison of informal and formal venture capital investments. Van Osnabrugge (2000) found that business angels provide the primary source for equity funding to firms needing capital injections below US\$500 000 in the US and 400 000 GBP in the UK. Van Osnabrugge (2000) suggests that the role of business angels in small venture-funding has become greater due to the fact that venture capital firms are moving on to later-stage investments and that angel investor funding makes up the single greatest source of risk financing to small and entrepreneurial

companies. Van Osnabrugge's (2000) findings from the US and UK seem to correspond to those of Maula et al. (2006) in Finland. According to Maula et al. (2006), companies seeking below 600 000 euro of external equity funding from formal venture capital actors, have the relatively lowest probability to secure it. Maula et al. (2006) findings show that most of the companies reaching out to formal venture capital investors were seeking amounts between 200 000 – 399 000 euro. Only 1.6 percent of these companies received funding from the venture capital firms included in the study. According to the data presented by Maula et al. (2006), a much higher success rate was achieved by companies seeking funding rounds over 600 000 euro. This is highlighted by the findings of the Finnish Venture Capital Association (FVCA, 2015). FVCA (2015) shows in their 2015 Finnish Venture Capital Review that the average investment size per VC (per target company) was 590 000 euro. The former figure implies that formal venture capital investors prefer investment rounds of significant size, providing the portfolio companies with enough funding. One can draw a conclusion that this would imply that these investors seek companies with ambitious and capital-intensive goals to e.g. move forward rapidly with expansion plans. Since the same study indicate that over 80 percent of the investments were performed as syndicates with other venture capital investors, it can be assumed that the average total size of the rounds exceeds by far the 590 000 euro-figure presented above. Corresponding average size of angel investment (total investment per target company) was 54 200 euro and the median total round size for business angels was 218 500 euro in 2016, according to FiBAN. The average size of VC investment could, in this case, be misleading, since the average measure is rather imprecise when calculated on data lacking the properties of a normal distribution and containing great outliers. The average was used case due to lack of the median measure for the venture capital investors round sizes presented by the FVCA.

The above indicates that there still is a significant difference in total investment sizes between formal venture capital investors and informal ones. Both in Finland, as well as in other countries. One conclusion that can be derived is that formal venture capital investors, and their informal counterparts, compete on a horizontal level mostly for target companies requiring smaller absolute investments and which are prone to turn to both types of financiers when seeking external capital injections. Next, some industry figures regarding absolute and relative market sizes will be presented in order to understand the scope of the global informal venture capital industry.

The business angels in Reitan and Sorheim's (2000) sample had invested over the three-year observation period US\$119 million in 1 560 companies, with a pace of US\$40 million per annum. Their sample comprised 425 Norwegian business angels. Over 50 million euro was facilitated through FiBAN's (2016) network in year 2016. The entire Finnish informal venture capital market is considered to be of greater size, since FiBAN's members do not account for all active domestic business angels in Finland. Avdeitchikova (2008) has estimated the informal venture capital market size to be around 385 - 450 million euro in Sweden. Among the Nordic countries, Sweden seems to have the largest informal venture capital market, at least according to Avdeitchikova's (2008) study. Her figures have not been confirmed in any way. The data collected from Sweden by EBAN (2015) recorded only investments worth 21.8 million euro in the country during 2015. The Nordic venture capital markets are still considered to be in a developing stage, and significant growth figures have been observed during the last couple of years.

The size of the US informal venture capital market alone has been estimated to approximately US\$30 billion (Sohl, 2003). However, this figure has neither been confirmed. More modest figures have also been presented. Measuring accurate totals has been, as in other countries, almost impossible. The US informal venture capital market exceeds by far all the other geographical regions that are commonly seen as coherent and separable markets. The size of the European informal venture capital market was estimated to be around 6.1 billion euro in year 2015 and the size of the entire European early stage-investment market was 8.6 billion euro according to EBAN's (2015) annual report.

EBAN (2015) found that the UK was the leading actor in Europe with informal venture capital investments up to 96 million euro, followed by Spain with 55 million euro. Finland ranked fifth in 2015, right behind Germany and France, with an annual investment aggregate of 37 million euro (53 million euro in 2016). Several studies "guesstimate" the value of the informal venture capital markets in both Europe and the US to entirely different figures. Evan and Thomson (2009), for example, claim that the UK informal venture capital market alone would be around £4.3 billion. Several different approaches have been taken when defining the business angel scope, which also greatly inflicts the size estimates for informal venture capital markets. A careful approach is therefore

advocated for when comparing the results from studies conducted in different periods or geographical regions.

A better understanding of country-specific business angel activity can be gained by projecting the invested capital against the gross domestic product (GDP) of a given country. When related to GDP, Finland accommodates the second most active business angels in Europe (measured by location of the business angel). According to EBAN (2015), only Estonia has a higher angel investment ratio corresponding to around 0.035 percent of the country's GDP. The size of business angel investments in Finland has increased significantly compared to year 2014 and was around 0.02 percent of the GDP during 2015 (EBAN, 2015). The European average was the corresponding year 0.007 percent, to put the figures into perspective. It seems odd that not more effort has been placed on expanding the scarce pool of research on Finnish business angel activity, when examining the figures presented above. Some global estimates have also been brought forward by Reynolds et al. (2002). They claim that of the 37 countries included in their study, the total average of formal VC markets would be equivalent to 0.2 percent of the GDP, and the size of the informal markets would correspond 1 percent of the countries' GDP.

Start-up companies in Finland seem to enjoy a privilege compared to European peers. Besides having one of the most active business angel communities, Finnish companies also received the highest amount of VC funding, when adjusted by the GDP during 2015. According to Investeurope (2015), the investments as percent of GDP observer was 0.051, which approximately also was the average for the 2011 - 2015 period (measured by the location of target company). The European average size of total investments as percent of GDP was 0.024 in year 2015 (Investeurope, 2015). Finland did not rank nearly as high when measuring corresponding figures of investments by location of the VC firms. This backs the validity of the reports showing a significant net inflow of venture capital to Finland, as also stated in a previous chapter.

It is very difficult to generalize the deal-specific characteristics of the investments done in early-stage companies by business angels, since each of the cases usually involve unique factors affecting the pooled overall results. When examining previous studies

addressing informal venture capital, it is important to steer attention to the time aspect of the studies and the sample properties and definitions used in the studies.

The next chapter will try to explain the company attributes evoking interest among informal venture capital investors, and which industries these investors primarily target, as well as the arguments driving the choices.

3.1.6. Industry and characteristics of VC investors' portfolio companies

Venture capital investors have traditionally pursued companies with scalable business models or businesses that are able to amplify operations rapidly (Puri and Zarutskie, 2012). Usually these companies can be found within the technology industry or emerging industries. The biotechnology industry is one example of such industry that has received a lot of attention lately (de Bettignies and Brander, 2006).

Evidence suggests that the majority of business angels are either active or former entrepreneurs (for example Lahti, 2011). Business angels usually possess industry-specific knowledge from one or several industries (Lahti, 2011; Månsson and Landström, 2006). Since angel investors, besides tangible assets, also offer their human capital and professional networks for the utilization of the target companies (Lahti, 2011), it would seem reasonable that they would prefer companies within familiar industries. The holistic evaluation, i.e. conducting due diligence activities, evaluating business plans, business models and entrepreneurial skillsets, performing market research, etc. should by all sense be less exhausting when examining familiar environments. Still, many business angels value opportunity and potential over convenience (Landström, 1995) even though, for example Mason and Harrison's (2002a) as well as Wiltbank and Boeker's (2007) empirical evidence suggest that industry experience of business angels significantly correlates with the outcome on such investments.

Landström (1995), found in his study that business angels tend to circumvent uncertainty and that according to his study, business angels were more inclined to turn down an investment opportunity if they felt that there was not enough information available on the company or the management of the company. The same thing applied to knowledge of the industry in which the target company was operating. A great share of investors

mentioned their lack of industry-specific knowledge as a criterion for turning down an investment opportunity (Landström, 1995). Landström means that both formal and informal venture capital investors are primarily looking for management ability amongst the entrepreneurs as well as a clear-cut and well-motivated demand for the product or service offered by the target company.

When looking at figures from previous studies targeting the informal venture capital industry, a clear tendency can be noticed. The vast majority of the angel investors most often fail to pick winners, and around 50 percent of their investments will turn out to generate a negative return on the principal (Wiltbank and Boeker, 2007). How are informal venture capital investors trying to tackle this issue? One answer is enhancement of industry-specific knowledge, enhancement of decision-making processes and utilization of augmented investment strategies. The first one will be discussed in this chapter, while a more in-depth examination of two distinct investment strategy-dimensions will be presented in the next subchapter.

Cin (1991) divides the decision-making process of a venture capital investor into 4 phases. Awareness and auditing of opportunities, interaction with the representatives of the company, discussion and debate of terms, and finally the decision. Cin means that the investor is primarily interested in the product, market, and the return-factors in the first phase, while the focus is on the representatives' (managers or entrepreneur) skillsets and financial factors regarding the target company in the second one. The process can be perceived as bifold. First, the investor examines the external factors and environment and makes an intuitive or calculative evaluation before allocating time to the second phase, i.e. thorough review of the company's management team and a fundamental inspection of the company's internal and environmental factors. The industry-specific knowledge plays a significant role in the decision-making process. As Landström (1995) noticed in his study, business angels are more inclined to invest when they are familiar with the industry of the company. This does not necessarily mean that the success-rate would be higher when investing in companies representing familiar industries, but rather that it affects the decision-making process, and should therefore be taken into consideration.

While the decision-making is highly relevant to this chapter, we will get back to the topic in the risk and evaluation chapter. In the following segment, business angels' favoured

industry sectors will be examined, and an attempt is made to explain why certain branches are preferred over others. Much of the theory used in the current chapter, as well as in other chapter of this thesis is borrowed from papers addressing the behaviour of formal venture capital investors and their target company preferences. There are two main reasons for utilizing formal venture capital theory when examining informal venture capital investors' preferences. First, there is a common consensus that formal venture capital investors seek similar attributes in target companies as informal peers and for the same reasons. The second reason is simply that far more effort has been allocated to examining the firm-level variables that formal venture capital investors prefer, compared to the informal venture capital investors.

The attributes determining the venture capital investors' propensity to invest are generally related to industry affiliation and innovation performance (Engel and Keilbach, 2007). Engel and Keilbach have studied firm-specific attributes determining VC affiliation. Their sample consisted of 21 571 companies located in Germany, of which 142 had received venture capital financing. The empirical findings from their study confirmed the following assertions. Formal venture capital investors prefer: a) That the founders possess high educational degrees (doctoral degree was highly associated with VC funding); b) The target company holds at least one patent before VC engagement (companies with 5 - 19 patents were even more highly associated with VC funding); c) The company is affiliated with the R&D-focused industry-category. Likewise, companies affiliated with manufacturing of electrical apparatus and machinery were likely to acquire VC funding, according to them.

Numerous studies targeting the informal VC industry confirm Engel and Keilbach's findings regarding the formal VC industry. Lahti (2011) found that 47 percent of the Finnish business angels' investments in his study were steered into IT-related target companies. Månsson and Landström (2006) observed that a lower, however, still relevant portion of all investments were made in the IT-industry. According to them, around 22 percent of the informal venture capital investments were steered to this category. Reitan and Sorheim (2000) claim that the most important industries for Norwegian informal VC investors are the industry and technology-sectors. The divergence in Lahti's (2011) and Månsson and Landström's (2006) results, in this respect, can possibly be explained by differing sample sizes, since EBAN's (2015) report shows that the largest category in

Europe to invest in, both by the number of deals (37 percent) and amount invested (22 percent) was the ICT-industry (European aggregate). The previous venture capital literature has largely failed to unambiguously define what the “ICT” term refers to and includes. The term “ICT” refers in this thesis to businesses providing hardware and software solutions, as well as nearly related product or service offerings.

FiBAN (2016) employs a narrower approach when measuring industry preferences of its members in 2016. FiBAN has dissected the traditional industry categories to multiple sub categories where the largest one, measured by capital invested was the “Business services and Fintech”-category accounting for 21 percent of the total followed by the “Lifestyle and Consumer goods” (13 percent) and “Media and Marketing” (12 percent) categories. When comparing to formal VC investments in Finland, the provided figures seem moderate. FVCA (2016) claims in their report that slightly over 60 percent of the total Finnish formal venture capital was apportioned to the ICT industry in year 2016. Investeurope (2016), who claims that 56.7 percent of the total flow of formal venture capital was allocated to high-tech companies in year 2015 confirms the findings of FVCA (2016). FVCA (2016) and Investeurope’s (2016) results were expected to conform, since both entities use the same data source, i.e. the non-commercial Pan-European private equity database, PEREP analytics.

The table below (Table 3.1.6) presents the industry distribution of informal venture capital in Finland and Europe in year 2015. The comparison between Finland and the European average was based on data from 2015 for two reasons; a) The lack of data regarding the Pan-European average for year 2016 and b) because FiBAN changed their category definitions in year 2016, as already mentioned above.

INDUSTRY	FINLAND (-%) ¹	EUROPE (-%) ²	$((\text{FINLAND} - \text{EUROPE})^2)^{1/2}$
ICT	29	22	7
MOBILE	7	8	1
CREATIVE INDUSTRIES	4	9	5
BIOTECH AND LIFE SCIENCES	2	11	9
HEALTH CARE/MEDTECH	9	5	4
IMPACT INVESTING	0,8	0	0,8
ENERGY	1	2	1
ENVIRONMENT AND CLEANTECH	20	1	19

RETAIL AND DISTRIBUTION	3	4	1
FINANCE AND BUSINESS SERVICES	6	10	4
LOGISTICS AND TRANSPORT	2	4	2
MANUFACTURING	4	13	9
OTHER	10	11	1

Table 3.1.6 The industry distribution of Finnish informal venture capital investments 2015, ¹FiBAN (2015) ²EBAN (2015)

The major differences between the Finnish and European informal venture capital investors' industry preferences are highlighted with dark grey (Table 3.1.6). Clear divergencies can be found in four of the industry categories. Finnish business angels seem to deeply favour the ICT industry as well as the environment- and cleantech industries. The European average, however, indicates higher preference among manufacturing and biotech and life science industries, according to the FiBAN (2015) and EBAN (2015) statistics.

The deep traditions of forestry and the significant size of the Finnish forestry industry can, to some extent, explain the domestic investors' interest in the environment and cleantech sectors, which diverges significantly from the European average.

Aside from the answers of a more speculative nature contributed above, the number one reason for venture capital investors selecting targets from the ICT industry is considered the scalability of the businesses, i.e. low replication costs (Puri and Zarutskie, 2012). Other attractive industry-specific attributes are the typically modest initial investments required due to the intangible nature of assets (R&D-related) and the performance of former exits observed in the industry, including recent examples such as Tencent's acquisition of Supercell or the stock listing of Rovio, only to name a few profitable exits observed within the IT industry during the recent years in Finland. A great variety of intrinsic and subjective factors influence the investment decisions of business angels, and it would be an impossible endeavour to cover all angels in this thesis. Instead, only the most relevant are included, in order to explain informal investors' general preferences. After presenting the last couple of findings related to the firm and industry-specific attributes affecting investment decisions in the current chapter, the thesis continues with a review of general investment strategies employed by informal venture capital investors and aspects related to the subject.

An obvious, but relevant observation is that the legal form of the company affects the venture capital investors' appetite to invest in it. Engel and Keilbach (2007) found that companies holding the legal form of limited liability company (and corresponding limited structures) have a significantly higher probability of acquiring venture capital financing. Limited liability companies are highly favoured for their optimal legal structure from an investor's perspective. The form allow investors to limit their exposure to the capital amount invested, thus mitigating the value at risk, which could be high in case the liabilities of the company could be transferred to the investor.

In 2016, there were 280 000 companies registered in Finland (Federation of Finnish Enterprises, 2016). According to the government proposal HE 177/2012, only around 5 percent of these can be classified as growth companies by international standards. It is commonly known that business angels prefer to invest in companies driven by a group of individuals rather than one single entrepreneur. The fact that 180 000 (64 percent) of the 280 000 companies in Finland are driven by a single person, only 38 percent have a limited liability legal structure and 8 percent of the entrepreneurs seek to grow their business rapidly (The Federation of Finnish Enterprises, 2016), reduces the attractive investment opportunities to a relatively small number in Finland. Despite that, the significant net venture capital inflow, the engaged and active business angel community and the increasing number of new entrants point to the fact that Finnish start-ups are generally considered attractive investment objects, even in a global context.

3.1.7. Investment strategies

The purpose of the following subchapters 3.1.7-3.1.9 is to discuss and provide some theoretical substance relating to research questions 1, 2 and 3. For logical reasons, we start by shedding light on investment strategies, processes and decision-making where after we move on to business angel performance and comparing their performance to other private equity investors.

Several fundamental divergencies among investment strategies on different dimensional levels employed by venture capital investors can be observed. Evidence from previous studies show that the choice of strategy also affects the type of companies business angels

seek to invest in (Wiltbank et al., 2009). Thus, the impact can be observed in the overall performance of the investors' venture capital portfolios. Some of the most relevant results, originating from studies addressing business angels' investment strategies will be presented in this section.

Wiltbank et al. (2009) identify two different dimensions of investment strategies employed by business angels: a) Predictive strategies and b) Non-predictive control strategies. There are some fundamental distinctions among the characteristics of the above-mentioned strategies. Investors preferring predictive strategies aim to control the fallout of a given investment through employment of logical prediction practices, consisting of market research, financial and operational modelling, etc. These applications equip investors with concrete and measurable indicators (Wiltbank et al., 2009) of potential returns and probabilities to achieve the projected outcomes. It is only natural to use methodical approaches to identify and mitigate risk and achieve desired outcomes if only possible (Wiltbank et al., 2009). The main issues related to predictive strategies lies within the concept of prediction in itself. It is commonly agreed that it is rather difficult to produce accurate predictions when the level of uncertainty is high. The tremendous number of variables determining the outcome, and the complex nature of equity investments in early-stage ventures, puts to question the usability of predictive strategies when performing early stage equity investments (Wiltbank et al., 2009).

The strengths of predictive strategies are explicit. The predictive strategies force the investor to address and evaluate a set of factors and realities affecting the outcome of the investment. Methods associated with predictive strategies also usually provide the investor with documentation arguing for a certain decision. This type of documentation can be of significant importance to formal investors in order to motivate certain investment decisions to stakeholders who ultimately bear the costs of such decisions.

Some generalizations of investors employing predictive strategies can be found. Wiltbank et al. (2009) study shows that the predictive approach tends to lead to highly-weighted positions in firms with high market potential and considerable returns if turned successful. The conclusion extracted from this fact, is that the overall success (venture capital portfolio performance) of investors employing predictive approaches is highly dependent on the accuracy of the investors' predictions, as one would assume.

Non-predictive control strategies seek to achieve desired outcome by changing the probabilities of events influencing the success of the venture, thus the performance of the investment and investor (Wiltbank et al., 2009). The non-predictive control strategy-approach is dynamic and agile to its nature. The aim is to improve probabilities by manipulating the controllable internal and external factors in order to achieve original or later altered, however, equally ambitious goals (Wiltbank et al., 2009). Wiltbank et al. (2009) advocate employment of this approach in situations characterized by high degree of uncertainty, for example when considering early-stage venture financing. Non-predictive control strategies are deeply associated with affectual logic.

Affectual logic emphasizes the properties of the actors instead of the current settings of the marketplace. The employment of affectual logic requires a reversed approach to the assessment of venture performance. Rather than identifying the venture and its surroundings, the focus is on establishing who the owners and management of the venture are, the extent of their knowledge and networks as well as the value of the assets they possess (Wiltbank et al., 2009). The concept of affordable loss is central in non-predictive control strategies. Wiltbank et al. (2009) explains affordable loss as a systematic approach where investors and entrepreneurs aim to achieve as much as possible with the current assets possessed by the entity instead of focusing on which assets to acquire in order to achieve the predetermined goals. Affordable loss can be seen as a form of asset optimization. The non-predictive control strategy approaches diverge on many levels from the predictive strategies, which normally allocate greater weight on the assessment of opportunities predetermined by external market forces and common assumptions.

The predictive and non-predictive control strategies should not be recognized as competing strategies, but rather as supplements to each other (Wiltbank et al., 2009). Depending on the settings, as well as the degree of uncertainty related to the investment opportunity, the investor can choose to employ the more suitable one of these depending on the investment case. Wiltbank et al. (2009) advocate to keep in mind that the predominant investment strategy has a significant impact on the real outcomes, thus the employment of the respective strategy should be considered carefully.

The different investment strategies presented by Wiltbank et al. (2009) can be considered as entirely different investment philosophies due to the fundamental divergences in these two approaches. As mentioned above, the predictive and non-predictive control strategies contribute in their distinct ways and are fitted for different settings.

Findings from Wiltbank et al. (2009) study on investment strategies indicate that employment of non-predictive control strategies lead to a reduced number of failed investments but does not reduce the number of highly successful exits. Wiltbank et al. (2009) also found that investors investing largely in seed-stage companies (instead of later-stage companies) enjoy a decreased share of investment failures. The seed-stage investments usually equal high levels of uncertainty, thus predicting outcomes through systematic predictive methods provide little comfort in these cases. These findings argue strongly for the consideration of non-predictive strategies, not only in a business angel context, but also for formal venture capitalists, entrepreneurs and managers executing decisions in situations associated with high levels of uncertainty.

Landström (1995) presents another dimension of investment strategies. He breaks down investment strategies in to two categories: a) Specialization investment strategies and a) Diversification investment strategies. He argues that informal investors usually tend to lean towards one of these investment strategies. According to him, investors seek to employ one of these strategies in order to achieve same objectives, to mitigate risk and avoid uncertainty.

Investors opting for the specialization strategy aim to invest in companies positioned in a certain development stage or in specific industries (Landström, 1995). These investors objective is usually to utilize their knowledge within that specific domain, in order to reduce uncertainty and improve outcome (Landström, 1995). The specialization approach can help to reduce the perceived uncertainty when evaluating investment opportunities (Landström, 1995). These investors seek to over time enhance their industry or investment stage-specific knowledge and by these means improve their ability to evaluate and execute investment decisions.

Landström argues that specialization investment strategies can be appropriate for informal venture capital investors due to information and transaction cost advantage. It is

not unreasonable to assume that some advantages could also be realized due to reduced need for addressing market research and examining the positioning of the company during screening and due diligence activities. Applying commonly adapted portfolio theory in the domain of informal investor activity is not always appropriate (Landström, 1995). This fact is partly motivated by the previously mentioned reasons, but also by evidence that informal investors' decisions are sometimes influenced by behavioural factors and are not always based on systematic approaches and rational reasoning. Another actuality is that the investment decisions are not merely motivated by financial gains (Landström, 1995), at least in the case of business angels.

Employing a specialization strategy when performing informal venture capital investments does not indicate lack of portfolio diversification efforts or understanding the theoretical motivations regarding diversification. Since informal venture capital investors normally allocate only a portion of their wealth to venture capital investments, it can be assumed that their entire portfolio is far more diversified through complementary investments in quoted companies, real estate and other asset classes, for example (Landström, 1995).

The benefits of diversification are widely accepted, and diversification strategies are normally adopted within the financial industry and common wealth management practices. Informal investors employing diversification strategies usually aim to reduce idiosyncratic risk affecting certain companies or industries through systematic approaches, allocating the capital to multiple uncorrelated investment targets across multiple industries. The degree of diversification and the specific diversification strategy can vary tremendously among investors' portfolios, but the principle remains the same.

Landström noticed in his study that investors employing diversification investment strategies are required to rely on a higher degree on the assessment of the entrepreneurs' personal characteristics and abilities to achieve goals, rather than the assessment of the market and technology of the target companies. Still, there is adequate reason to believe that the informal investor environment and the practices employed have evolved and are more sophisticated today than what they were during Landström's study.

Another observation by Landström is that investors' employing specialized investment strategies experienced fewer investment opportunities but were more prone to invest when opportunities appeared. Landström found in his study that investors employing specialization strategies invested almost in 50 percent of the opportunities matching their preference profiles. The percentage was lower for investors advocating diversification strategies. Landström's study is still of little relevance and cannot be utilized to generalize the current informal investor population due to the small sample size and point of time the study was conducted.

The investment strategy dimensions highlighted in this section do not oppose each other and should only be seen as different alternatives a given investor is presented with. The dimension provided by Wiltbank et al. (2009), represent two fundamentally divergent investment strategy approaches, the predictive approach and the non-predictive control approach. An investor can strictly pursue one of these strategies or employ a mix of these, when encountered with different situations requiring alternative approach. Wiltbank et al. (2009) still advocates caution, since the selection of dominating approach has real consequences on the outcome.

Landström's (1995) contributions on investment strategy have been selected to represent another dimension of investment strategy in this thesis. The strategical approaches presented by him are generally derived from common portfolio theory, and are therefore applicable on investment activities in general, and not limited to the venture capital industry per se.

Figure 3.1.7 shows the different dimensions of informal venture capital investment strategies provided by Wiltbank et al. (2009) and Landström (1995).

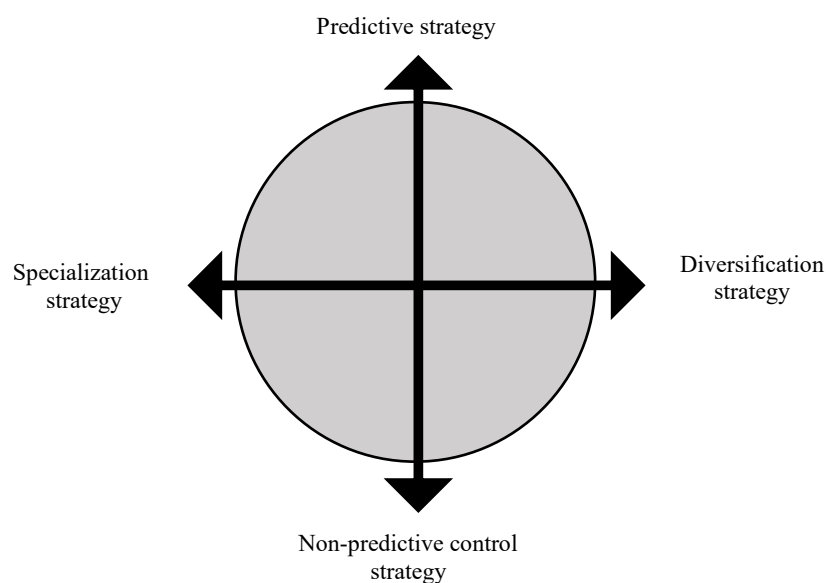


Figure 3.1.7 Illustration of Wiltbank et al. (2009) and Landström's (1995) investment strategy-dimensions

3.1.8. Risks and evaluation

What drives the urge of wealthy individuals to invest in risky assets classes? Maula et al. (2005) have examined business angel investments from a household portfolio theory perspective. Maula et al. (2005) bring forward earlier work by Guiso et al. (2002) in their paper. Guiso et al. (2002) have conducted empirical studies in the field of informal investments using the household portfolio theory approach. According to them, factors as age, financial wealth, education and taxation affect the propensity of households to invest in risky assets as well as portfolio diversification between different asset classes. Maula et al. (2005) tested the same theoretical approach in a Finnish context and found a positive relationship between persons holding a university degree and the willingness to perform small-sized angel investments in companies founded by unfamiliar or unrelated individuals. Another observation by Maula et al. was that the respondents own perceived skills to establish and manage a company had a positive relationship with performing micro-angel investments in non-related companies. The evidence provided aligns well with the high number of informal investors with entrepreneurial backgrounds found in previous studies by for example (Wiltbank et al., 2009; Månsson and Landström, 2006; Lahti, 2011). In the same study, Maula et al. found that female respondents were much

less likely to invest in asset classes involving risk levels corresponding to typical business angel investments. The aforementioned provides some explanation to the negligible share of female investors observed in previous studies targeting informal venture capital investors in different regions, however not much.

Venture capital investments are highly affiliated with risk and uncertainty (Landström, 1995; Maula et al., 2005). Venture capital investors normally require a return, corresponding to the level of risk taken on through a given investment decision, as expected according to common portfolio theory (for example Merton, 1973). The commonly experienced industry-wide uncertainty is mainly due to the high failure-rate among early-stage companies, especially companies identified as seed or start-up-stage companies. As explained in the introduction of this thesis, there are several reasons why company failures and shutdowns are normal among these types of fresh and aspirational companies. The high failure rate, accompanied with negligible or asymmetric information (Van Osnabrugge, 2000) and great variety of case-specific characteristics among investments contributes to the soaring level of risk associated with the venture capital niche market. Risk related to private equity investments has been addressed in numerous studies (for example Van Osnabrugge, 2000; Kaplan and Schoar, 2005). We start this chapter by addressing some fundamental elements of risk and risk management processes regarding private equity investments.

When people talk about risk or uncertainty in an everyday manner, they normally refer to the possibility of an abnormal or undesired outcome of a certain event. A distinction between risk and uncertainty has been made in this thesis, in order to form precise arguments and avoid ambiguity. Brunsson's (1985) definition of risk and uncertainty is therefore used in this thesis. Brunsson defines uncertainty as the investor's lack of confidence in the existing information and risk as the product of uncertainty experienced by the investor.

Brunsson divides further investment-related uncertainty into the following categories: 1) Uncertainty originating from not knowing if the investors picture of the company and investment corresponds to the actual one; 2) Uncertainty about the investors own judgement, even though the investor is conscious about the consequences of each decision

and 3) Uncertainty associated with the investor's estimations and their respective accuracy.

Even though uncertainty generally is affiliated with negative concerns, it is also the sole reason for providing venture capital investors with great upside potential. Venture capital investors are conventionally more willing to take on a higher degree of risk compared to equity investments in quoted companies or other less volatile financial assets (Van Osnabrugge, 2000). In turn, they are equipped with greater negotiating power and able to require higher returns (compared to liquid assets traded on efficient markets), corresponding or exceeding risk-adjusted returns demanded for investments fitting similar risk profiles. If venture capital investors would be risk-averse to nature, they would be better off making equity investments in quoted blue-chip companies, for example.

The two most paramount risk mitigation procedures for venture capital investors are the due diligence process and the post-investment interaction and support to the portfolio companies (Van Osnabrugge, 2000). Investors seek to identify, evaluate and mitigate risks related to investments through due diligence procedures. This is generally done by taking into consideration and evaluating a wide range of aspects before making the final investment decision (Lahti, 2011). The scope of the due diligence process can vary significantly, but include usually a thorough inspection of all the relevant domains of the investment object i.e. financial information, management of the company, products or services, the company's respective market positioning, market outlook, etc. The extended due diligence process also includes inspection of the company's environment and stakeholders (suppliers, customer, and key partners) as well as review of the legal obligations and other liabilities.

The formal due diligence process can be seen as a subcomponent of predictive investment strategies. One major purpose of these systematic approaches is to identify and evaluate attributes determining or impacting the outcome of the investment. The due diligence term refers mainly to the procedures ex-ante investment decision and constitutes normally the foundation or a part of the foundation the investment decision is made upon and is therefore an essential part of the subsequent evaluation phase. There is little known about the scope of the business angels' due diligence processes, although some indications are

provided by Wiltbank et al. (2009), Lahti (2011) and Månsson and Landström (2006) to name a few.

Wiltbank et al. (2009) study shows that the time spent on reviewing the target company has a significant impact on the outcome of informal venture capital investments. According to Wiltbank et al., investors who allocate more time on due diligence activities, are more prone to achieve a greater number of high-return outcomes on their investments but experience also a higher number of investment failures than their peers. They argue that these investors' portfolios will contain high concentrations of observations in each end of the spectrum, i.e. a relatively high number of companies producing superior returns as well as a high number of companies generating negative or no returns. Wiltbank and Boeker's (2007) also observed a relationship between time spent on due diligence and performance of the investments in their comprehensive 2007 study, including exit data from 539 business angels in the US.

Another finding by Wiltbank et al. (2009) is that a higher degree of interaction with the portfolio companies decreases the probability of investment failure on a general level. The latter finding provides some support to the argument that venture capital investors transfer some non-financial value to their portfolio companies through active ownership.

Puri and Zarutskie's (2012) results obtained from observing divergences in performance of formal venture capital backed companies compared to non-venture capital backed companies can be used to strengthen Wiltbank et al. (2009) argument. According to Puri and Zarutskie's (2012) study, 39.7 percent of the venture capital backed companies fail, when the corresponding percentage for non-venture capital associated firms is 78.9 after a period typical for VC investments. They also found that venture capital backed companies outperform non-backed peers, in measures of productivity. This finding was explained by venture capital firms' screening and monitoring processes ex-post investment. Another relevant observation in their study was that venture capital backed companies achieve greater growth in sales and employment, but also that a relatively higher ratio of the revenue is spent on salaries, i.e. the venture capital backed companies have a relatively higher number of employees and these employees have relatively higher salaries (Puri and Zarutskie, 2012). This indicates differing overall cost and

organizational structures employed in VC backed firms, which are significant disparities, not solely originating from increased capital supply for VC backed firms.

Van Osnabrugge (2000) who has examined venture capital investments from an agency theory approach found that, whereas formal venture capital investors focus on ex-ante risk mitigation, business angels tend to emphasise ex-post risk mitigation. Business angels are often eager to interact with and monitor the portfolio companies ex-post investment in order to achieve desired outcomes rather than turning down the investment opportunity due to unfavourable computed projections (Van Osnabrugge, 2000). This indicates a less systematic and more intuitive approach compared to formal venture capital investors. According to Van Osnabrugge, the method preferred by informal investors can be likened with the incomplete contracts approach.

The incomplete contracts approach assumes all contracts to be flawed by nature and that the effort required to produce a satisfying contract exceeds the benefits of such “fictive” contract (Van Osnabrugge, 2000). According to Van Osnabrugge, the main arguments for employing the incomplete contracts approach is the transaction costs related to ex-ante and ex-post contracting and contract monitoring, the bounded rationality and asymmetric information (arising from principal-agent relationships). These are the same elements making the opposite approach, the principal agent approach usually relatively expensive. The principal agent approach describes a method, in which extended contracting is used in order to steer the behaviour of the agent (entrepreneur) to act in favour of the principal (VC firm/business angel) and to circumvent the possibility of opportunistic behaviour by the agent (Van Osnabrugge, 2000). These agency problems usually emerge in the types of arrangements targeted in this thesis, i.e. in situations where control and ownership (often minority ownership) is held by different entities.

The principal agent approach is typically employed by VC firms in order to demonstrate augmented risk management capabilities and investment processes to institutional investors and other limited partners (Van Osnabrugge, 2000). According to Van Osnabrugge, one of the foremost reasons for business angels to employ the incomplete contracts approach is the lack of requirement for them to justify the investment decisions to external stakeholders. Hence, the employment of the principal agent approach could potentially be lower among formal VC investors if they solely invested their own assets.

The things discussed above also concern traditional PE firms (buyout focus), but potentially to a lesser degree, since these private equity firms tend to acquire the controlling interest in the target companies, simultaneously obtaining near total control of the target companies. The aforementioned leads to a situation where the control and ownership is possessed by the same entity and no agency problems arise, at least in theory.

There seems to be some evidence advocating the incomplete contracts approach for business angel investments. Wiltbank et al. (2009) findings indicate more favourable outcomes for business angels emphasising interaction with portfolio companies. Wiltbank et al. found that lengthier due diligence processes were associated with a higher number of high-return outcomes, but equivalently with high number of failures. These observations somewhat dilute the arguments advocating predictive strategies (discussed in the previous chapter) and emphasising comprehensive due diligence processes as a tool for risk mitigation for business angels, at least in theory. Van Osnabrugge (2000) means that informal venture capital investors not only tend to employ less sophisticated due diligence approaches and generally lack the full competencies and resources to execute sufficient due diligence, but also have no accountability to external parties for investment decisions made, and therefore lack incentives for extended inspections. Some evidence provided by Wiltbank and Boeker (2007) still indicate that business angels are in some sense capable of compensating or at least mitigating the risk arising from the lesser ex-ante due diligence processes by frequently interacting with the portfolio companies ex-post investment. Wiltbank and Boeker found in their comprehensive business angel study that frequent interaction with the portfolio companies (at least a couple times per month) was associated with greater returns. The next chapter will provide the reader with indicative measures of typical venture capital portfolio performance and findings from previous studies will be presented. The measures presented in the next chapter will also be used as a benchmark to the portfolio performances observed in the current study.

3.1.9. Formal and informal venture capital portfolio performance and structure

What do we thus far know about the performance of business angels and business angel portfolios compiled of typical venture capital investments? To answer this question

comprehensively, we start by examining the structure, or the lack of structure of these investment portfolios.

Landström (1995) means that the principles of the CAPM approach are not always appropriate to employ when compiling venture capital portfolios. This is mainly due to the nature of certain private equity investments. According to him, venture capital investors, at least those employing specialization investment strategies, possess some information and transaction cost advantages and should therefore consider holding a rather dense portfolio. Osnabrugge (2000) supports this argument by claiming that business angels typically lack the skills, resources or incentives to conduct sufficient ex-ante due diligence processes and should therefore focus on ex-post risk mitigation through support and monitoring activities. Since the support activities often include utilization of the business angel's expertise, social networks and managerial skills, it can be argued that this input is of greater value in case the business angel has a background from an industry aligning with the company's industry. De Bettignies and Brander (2006) also advocate portfolio specialization strategies. According to them, venture capital investors provide little value to the portfolio companies unless they have extraordinary managerial input and knowledge to offer to the company. As De Bettignies and Brander summarizes in their paper: "In our analysis, the VC cannot survive as a pure financial intermediary; bank finance would always be preferred to a VC who could not provide managerial value-added to the venture". Maula et al. (2006) provide a practical example of this. Maula et al. found in their qualitative study that multiple successful US venture capital firms, especially those in the Silicon Valley region, employ a tight industry focus when compiling investment portfolios (i.e. they employ a specialization investment strategy). Rather than screening through attractive opportunities presented or disclosed to them, they conduct market research and analyse some specific niche environment in advance and invests when the right candidate emerges (Maula et al., 2006).

There are probably as many investment strategies as there are venture capital firms and business angels. Maula et al. present only a few observed approaches taken by venture capital investors in their study.

Compared to business angels, formal venture capital investors are often forced to: 1) Govern funds of sufficient size in order to cover the firm's fixed and variable costs

originating from running the daily operations; 2) Demonstrate employment of rational strategies and risk mitigation activities in order to acquire funds and capital commitments from participating limited partners (e.g. institutional investors). These elements limit to some extent the portfolio structure of formal VCs, however not much. Business angels who only answer to themselves can practically hold only a couple of companies in their investment portfolios, as seen in many of the previous studies presented in this thesis (for example Månsson and Landström, 2006; Lahti, 2011; Wiltbank and Boeker, 2007) as well as in the current study.

Few studies have examined business angel performance in the Nordic region. Hence, we have to look further for relatively fresh portfolio performance indicators. Mason and Harrison (2002a) have reviewed business angel performance in the UK in the beginning of the previous decade. Their first hypothesis was that business angels would perform worse compared to venture capital fund managers (i.e. venture capital funds) due to their inferior investment experience, non-economic considerations and different approaches in due diligence and contracting practises, etc. (Mason and Harrison, 2002a). Their study offers a satisfying reference point, since their first hypothesis aligns with the most central inquiry in the current study.

Mason and Harrison found that the returns of UK based informal investors were distributed as following: 34 percent of the investments resulted in total loss of principal invested; In 13 percent of the cases, the invested amount was returned, or a partial loss was experienced; Around 10 percent of the investments returned a gross internal rate of return (from now on gross IRR) exceeding 100 percent and 49.8 percent of the cases returned a gross IRR between 0 – 99 percent. The median holding period for successful exits was 4 years in Mason and Harrison's (2002a) study. They also found that the largest share of the best performing investments (return as %) were harvested from cases where the initial investment had been less than £10 000 and had been made in start-up stage or rather well-established (stable) target companies. Another relevant finding of Mason and Harrison was that 36.7 percent of the high-performing investments were made together with multiple co-investors (other business angels and VC firms).

The performance studies targeting US business angels' returns indicate pooled overall gross internal rate of returns ranging from 22 percent (ARI, 2016) to 27 percent (Wiltbank

and Boeker, 2007). Wiltbank and Boeker's study showed that 52 percent of the exits turned out to yield negative returns and 7 percent of the exits returned over 10 times the originally invested amount. A highly skewed distribution among the results compiled by Wiltbank and Boeker can be observed, as also seen in the other performance studies addressing business angel performance. Further, Wiltbank and Boeker noticed that lengthier holding periods tended to be related to higher returns, i.e. that most of the high-yield investments were held for a longer period than the low-yield ones. This was also confirmed in Wiltbank et al. (2016) recent study on business angel performance and entrepreneurial sell-outs. The average holding period in Wiltbank and Boeker's (2007) study was 3.5 years.

When comparing the distribution of informal venture capital returns to formal ones, Mason and Harrison (2002a) found the following distinctions. The returns of informal VC investors showed less skewness compared to formal VC investors that invested mainly in early-stage companies (Mason and Harrison, 2002a). Another observation was that informal venture capital investors seem to be better at avoiding investments in companies that return nothing on the capital invested, but at the same time they invest in a relatively higher portion of companies that only produce moderate returns (Mason and Harrison, 2002a). The findings of Mason and Harrison can to some extent be explained by the theory provided by Wiltbank et al. (2009) and Van Osnabrugge (2000). According to Van Osnabrugge, formal venture capital investors are often forced to employ systematically, rational and well-documented investment approaches. The investment decisions of formal VC investors are usually backed by calculations and estimations typical for predictive investment strategies. Empirical evidence shows that these types of investment approaches based on estimations in situations tinged with high uncertainty, lead to high variance between the returns originating from the investments in the portfolio, i.e. high concentration of observations in each end of the spectrum. The findings of Wiltbank et al. (2009) and Van Osnabrugge (2000) can directly be used to explain the findings of Mason and Harrison (2002a). The return distribution found in Wiltbank and Boeker's (2007) study diverges to some extent from the one observed by Mason and Harrison (2002a). Wiltbank and Boeker observed return distributions resembling the distributions of formal venture capital returns, i.e. high portion of failures, but also a minority of exits returning realization multiples higher than 10x or more.

It was mentioned in previous sections that the formal venture capital industry was to be used as a benchmark to business angel performance in this study. We ask the question: How does the formal venture capital industry perform in general, and which specific return measures should be selected to provide a rightful representation of the industry performance? We start by reviewing the key findings on a global level, where after we examine the performance in the US and Europe.

According to Pitchbook's global PE and VC benchmarking report 2018, venture capital funds achieved globally a pooled IRR (all funds pooled, net of fund manager fees) between 7.4–9.6 percent on average on a 10-year horizon (as of Q2/2017). VC funds established post 2008 have generally been performing rather well. For the funds launched after the financial crisis in 2008, the ability to drive deal terms and enjoy the increase in overall valuation levels have significantly helped these funds outperform the ones operating before and during the financial crisis. These funds generated median returns of 12 percent (net pooled IRR) between 2010–2013. The long-term average one-year horizon pooled IRR was around 10 percent for VC funds globally, according to Pitchbook (2018). The one-year rolling horizon IRR was 7.5 percent for VC funds in Q2/2017.

When looking backwards, the European venture capital funds have historically performed poorly compared to US peers (Maula et al., 2006). According to EVCA (2013), US VC funds generated on average year 2013 an IRR of 5.9 percent based on a five-year horizon, while counterparties in Europe reached much lower levels during the same period, only 1.3 percent IRR based on a five-year horizon. More positive figures can be observed when examining the performance of the top half of the European venture capital funds. EVCA's (2013) report indicates an annualized net pooled IRR of 11.28 percent for these funds (recorded from inception in 1980 to 2013). The highest recorded annualized net pooled IRR of 12.87 percent was experienced during the top years from 1990 to 1994 (all European VC funds). The following assumption that can be drawn purely from the data gathered by EVCA (2013): 1) The overall net returns generated by European VC funds seems to be substandard compared to general benchmark small cap indices (e.g. HSBC Small Company Equity, EVCA, 2013); 2) Fall short of the returns of traditional PE funds (e.g. buyout funds); 3) The fund performance varies significantly within the EVCA's (2013) sample, i.e. European top-quarter venture capital funds achieved an annualized net pooled IRR of 18.51 percent, compared to the performance of the entire sample, which

was much lower during the corresponding period (1980-2013); 4) European venture capital funds have performed worse than US peers during the entire period from 1980 to 2013, according to EVCA (2013).

More recent figures concerning US VC fund performance can be acquired from datasets provided by The Cambridge Associates (Cambridge Associates LLC US Venture Capital Index, 2018), which include 1 806 US venture capital funds formed between 1981 and 2018. According to Cambridge Associates, US VC funds achieved on average (aggregated) a pooled IRR of around 12 percent on a one-year horizon, 7.9 percent on a three-year horizon and 15.7 percent on a five-year horizon (all presented performance data as of 3/2018). When compared to the figures presented by EVCA (2013), we notice a significant difference in the fund performance. This is somewhat explained by the point of time when performance is measured, e.g. if the three-year horizon is measured just after the financial crisis of 2008 or during periods where overall valuation levels steadily been rising for several years. One should remember that the presented pooled IRR figures represents a theoretical return based on calculations using international private equity and venture capital valuation-guidelines, and not on real return paid to the funds' investors. More recent figures concerning European VC performance was released in 2017 by the European Investment Fund (EIF). According to EIF (2017), its investments in European venture capital funds have generated a pooled IRR of 13.4 percent for funds with a vintage year in 2009, 15.6 percent for funds with a vintage year in 2011 and 6.7 percent for funds with a vintage year in 2013, for example. Table 3.1.9 presents the performance of the VC funds EIF has invested in. Funds with a vintage year of 2015 or later are in the initial stage of their investment life cycle. A performance analysis done on these funds would not generate meaningful results. However, the performance of the funds with a vintage year around 2012 provides us with rather good benchmarking figures for the results acquired in the current study. All the data shown is presented as of 6/2017.

EIF VC PORTFOLIO PERFORMANCE

VINTAGE YEAR	No. funds	Pooled IRR	Average IRR	Median IRR	Upper Quartile IRR	Lower Quartile IRR
2009	7	13.37 %	8.63 %	8.04 %	15.80 %	5.79 %
2011	10	15.63 %	9.16 %	4.95 %	13.70 %	-2.07 %
2012	17	8.52 %	9.52 %	7.61 %	11.43 %	1.65 %
2013	11	6.65 %	-1.12 %	-0.30 %	10.94 %	-14.84 %
2014	20	14.41 %	10.29 %	11.01 %	17.92 %	1.61 %

2015	20	7.80 %	-0.70 %	-3.51 %	11.01 %	-15.51 %
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Table 3.1.9 EIF venture capital portfolio performance as of 6/2017 (EIF, 2017)

Unlike other investors, the EIF has a policy-objective to support the development of the venture capital sector in Europe and will therefore conduct investments that other purely profit-seeking investors possibly would avoid. This is bound to affect EIF's above presented investment performance. However, since the presented figures are somewhat in line with the ones presented in previous reports on European VC fund performance, we can assume that these figures provide a useful proxy for overall European VC performance in 2017. The figures provide us at least with a performance indication of the industry, since EIF alone is responsible for more than 10 percent of the investments into European venture capital firms, including all Europe's top VC firms.

The following generalization will be made based on the above presented figures. Investors investing in both US and European-based VC firms can expect an average annualized IRR of around 8-12 percent (assumption) on their investments in the long-run. At least the statement largely applies to expected fund performance post 2008.

The overall aggregated performance of the European venture capital industry presented by the European Investment Fund (2017) will be used in our case, since these figures are the most recent performance indicators and is assumed to in the best possible way reflect the current performance of European VC funds and function as the most accurate benchmark for Finnish business angel performance. One obvious reason for selecting European venture capital performance figures for benchmarking purposes is because these companies operate in a similar environment, target similar companies in the same geographical region. Another reason is, of course, that there are simply no other suitable data sets available, since other reports on European VC performance date back to year 2013.

Private equity performance benchmarking does not constitute a central part of this thesis and the current section was mainly included for the purpose of laying the foundation for later chapters touching this subject. The analysis of traditional private equity (buyout and growth) as well as formal venture capital performance has therefore been left to a

minimum, and whether the performance figures concerning these types of investors are the most accurate or not is widely debateable. The reason for bringing forward these figures is mainly to enable comparison and to provide a contextual reference to the business angel performance figures presented in this thesis.

3.1.10. Exits

Exits form an important aspect of the entire private equity industry. There are several ways for shareholders to exit a company. A company can be sold to interested parties, taken public (initial public offering or e.g. technical listing) or liquidated or shut down in different ways. Although the majority of the venture capital firms' portfolio companies are exited by other means than IPOs, Black and Gilson (1998) argue that well-functioning stock markets are vital in order to create a favourable environment for the venture capital industry. Dynamic stock markets provide an attractive exit route for both original owners and subsequent investors. Mason and Harrison's (2002a) study shows that business angels typically exit their portfolio companies through trade sales, or through sales to other private equity actors, and that only a minority of companies are exited through IPOs. FiBAN (2016) found that only two percent of their members' realization of investments were executed through IPOs. The vast majority of exits, 65 percent, were made through trade sales or sales to other private equity actors.

Notable is that the owners' agenda also determines the type of exit preferred in each situation. For the owners, trade sales typically mean an almost complete exit from the company, i.e. all or the vast majority of shares are sold to the acquirer. When the company is sold to other private equity actors, these investors typically require the entrepreneur/management to continue as minority owners in the venture, in order to establish enough economic incentives for the management, thus lowering the risk arising from agency problems. IPOs are traditionally done in order to raise capital for growth or for enabling the shares to be used as currency when conducting M&A transactions and can be viewed more as a dilution of the ownership base than a change of ownership. Nevertheless, there have been several IPOs in Finland recently where the IPO has functioned as an exit channel for the current owners. However, these types of arrangement

typically include lock-up periods for the previous owner, meaning that the owners are required to hold on to some portion of their shares for a predetermined time even after the IPO.

Even though IPOs of business angels' portfolio companies are rare, stock market liquidity is considered to directly affect business angels' investment appetite, because initial public offerings generally provide one of the most profitable ways to reduce or get rid of owned shares in a portfolio company (Lahti, 2011). One could assume that the stock market liquidity also affects business angels indirectly. The indirect effect comprises the valuation aspect, when formal venture capital investors or private equity firms acquire angel-backed companies, with intentions of promptly taking the company public or selling it onward.

Venture capital investors perceive a market open for IPOs even more essential than a climbing stock market, according to Månsson and Landström (2006). Mason and Harrison (2002a) support this argument by providing evidence in their paper that business angels' willingness to invest in unquoted companies correlates positively with a downturn in opportunity to take companies public through IPOs. Maula et al. (2006) demonstrate this with a practical discovery from the interviews conducted with US venture capital firms. According to these firms, the cost of NASDAQ-listing has increased due to Sarbanes-Oxley legislation. This has turned focus towards trade sales and other types of exits. The interviewees also mentioned that the low costs and lower requirements of the London AIM stock exchange, for example, have even been utilized in some cases as an alternative.

Lahti (2011) argues that the Finnish stock market's liquidity was rather low during 2006 after the Finnish IT-boom, leading up to unprecedented company valuations, reached its peak in the late 1990s, and crashed. The evaporation of value (market capitalization) led to declined activity on the Finnish stock market (Lahti, 2011). The low activity and negative atmosphere were accompanied by, as well as led to, company delistings (Lahti, 2011). This, in turn, was assumed to have fed the negative cycle.

The opening of the Nasdaq First North marketplace in Finland during 2006 provided new possibilities for small technology-oriented firms looking for external capital resources, as

well as for founders and investors with intentions of realizing their investments (Lahti, 2011). The First North marketplace is intended for small and newly started growth companies, lacking the prerequisites for a listing on major exchanges, however seeking the benefits provided by the general financial markets (NASDAQ, 2017). The First North marketplace has enabled investors to take smaller portfolio companies public, hence potentially reduce the required holding period for all types of private equity investors striving to exit a company this way.

Why do investors prefer IPOs to other types of exits in many cases? The easiest answer can be found by examining historical returns. According to Puri and Zarutskie (2012) and Mason and Harrison (2002a), the most lucrative homeruns for investors originate from IPO exits. Although these highly successful exits are rare, they provide superior returns on the invested capital (Puri and Zarutskie, 2012). These exceptional exits can arguably function as one of the drivers steering capital to the venture capital- and private equity industry.

Even though IPOs of venture capital backed companies such as Facebook (FB) and Snapchat (SNAP) have received a lot of attention globally, it is important to understand that only a fraction of the listings generate hundreds of millions of euros to the original investors and owners, i.e. founders and business angels. In fact, Florin (2003) claims that the founders of the venture capital backed companies that go public through IPOs do not always even enjoy relatively higher exit returns due to venture backing, and that it is often the venture capital firms that gain the most of taking the portfolio company public. The aforementioned argument is based on Florin's (2003) findings. According to him, IPO performance (financial performance) was only higher for venture capital backed companies compared to non-venture capital backed firms when the venture capital firm owned 30 percent or more of the portfolio company. This argument seems to align with the issues discussed in chapter 3.1.5, i.e. De Bettignies and Brander's (2006) claim concerning endogenous effects of ownership distribution among stakeholders. Another negative aspect of venture capital affiliation from the founders' perspective seems to be that members of the top management team (founders) often are replaced by the VC firms after the IPO in many cases. Next, we examine the distribution of different exits by exit category.

Puri and Zarutskie's (2012) study showed that around 16.1 percent of the venture capital firms' portfolio companies are taken public at some point of time. The corresponding figure was 0.02 percent for non-venture capital backed companies. It is unfeasible to determine the percentage of business angel affiliated companies that are taken public on a global scale. Still, it is commonly known that a rather significant share of the companies taken public by venture capital or private equity investors have at some point also received funding from business angels, especially companies operating within the ICT industry.

The majority of the positive exits are executed through sales to other parties of interest than the institutional investors and household investors. Puri and Zarutskie's study shows that 33.5 percent of all venture capital portfolio companies were exited this way. As earlier mentioned, the buyers often comprise firms interested in the target company's IPR, expertise or customer base, for example (vertical, horizontal and conglomerate acquisitions), or are simply other investors, looking for portfolio extensions. All the above-mentioned alternatives are usually considered better outcomes than the last exit category, the negative exits.

According to Puri and Zarutskie, around 39.7 percent of all portfolio companies held by the VC firms in their sample failed during the observation period. VC firms are either relatively good at picking out companies with high probability of succeeding, or they are able to stabilize them, since 78.9 percent of non-venture capital affiliated companies failed during the observation period. Puri and Zarutskie provide some explanation to the high failure rate, even among venture capital firms' portfolio companies. According to them, VC firms possibly identify the portfolio companies with the greatest potential to grow and succeed in a relatively early stage, and steer most of the effort and capital into these companies. This means that VC firms simultaneously cut the funding to the companies with lower chances of providing lucrative exit opportunities. The same phenomenon has been observed within the business angel category.

The following chapter contains the theoretical framework. A comprehensive presentation of the sample and methodology will be presented in the chapter's subsections.

4. Research questions

1. How do the Finnish business angels perform in general?
2. How are Finnish business angels performing in terms of return on investment when compared to formal private equity peers?
3. Are Finnish business angels employing similar strategies, processes and reasoning for decision-making purposes as observed in previous studies targeting venture capital firms and informal venture capital peers?
4. How have the informal venture capital environment, activities and methods of the investors changed in Finland during the last decades?

5. Theoretical framework

5.1. Literature

The literature concerning venture capital activity is mainly extracted from papers published in peer-reviewed journals. The target has been on issues published after year 2000 and onwards. The focus has been on studies addressing informal and formal venture capital investor activity in Finland, Sweden, Norway, the US and the UK. The results from the current study have been benchmarked against findings from the US and Europe for comparison purposes. The benchmark studies used in this thesis represent primarily theoretical approaches on informal venture capital investor behaviour and performance, but also aggregate reports compiled by industry representatives (e.g. EBAN, Investeurope, EIF, etc.) have been utilized in order to produce a holistic overview of the current situation from a global perspective.

5.2. Performance measures employed in the current study

The measures employed in this study were chosen for obvious reasons. The primary argument for selecting the performance measures was the wide acceptance of these measures in both academic literature as well as in the business sector examined in this thesis. The realization multiple and the IRR function as complementary measures when demonstrating the performance of specific investments executed during the observation period of the current study. However, the measures do not qualify as substitutes, since the realization multiple does not account for certain aspects and does not therefore deliver any significant value on a stand-alone basis. The performance of private equity and venture capital funds is often measured by the means of total value to paid in capital (TVPI), remaining value to paid in capital (RVPI), distributions to paid in capital (DPI) and other similar return measures. These measures are appropriate for measuring fund performance, however, not suitable for measuring business angel performance in general.

The IRR measure is frequently used to measure PE and VC performance, but the IRR reported by the fund (or the fund's investors) does not correspond to the one used in this study.

For one thing, the VC funds' performance is measured from the perspective of the limited partner (generally the entity investing its money into the fund) and does not reflect the returns gained from investing activities. It is merely the proceeds paid to the investors after deducting management fees, carried interest fees and other cost items related to managing the funds. It can generally be assumed that the funds' portfolio gross returns are higher than it appears in the previously presented performance data. The second thing to be remembered when comparing business angel returns to those generated by VC firms is the way performance is measured amongst private equity funds, including VC funds. VC funds or firms are typically benchmarked against each other on the basis of multiple performance measures, as the total value to paid in capital (TVPI) and distributions to paid in capital (DPI) multiples, for example. The latter measure is widely similar to the realization multiple or return multiple used in this thesis but is not fully comparable for funds that are still operating. The most comparable measure in this case is the real IRR, which measures the real cash flow in and out from the limited partner's (investors) account. This measure is almost never provided in data sets and performance reports. The often-used pooled IRR fund performance measure represents a theoretical return based on calculations using international private equity and venture capital valuation-guidelines, and not on real return paid to the investors. This means that the IRR shown for PE and VC funds is typically calculated on the basis of the entire value of the fund, i.e. not only on the real cash flows paid back to the investors, but also on a calculated value of the assets that remain unrealized in the fund. This diverges significantly from the IRR performance measures calculated for the business angels in the current study. The IRR performance measure calculated for business angels in this study is based on the real, however, gross cash flows from and to the investors. Using real occurring cash flows to calculate the performance is considered to represent the real performance of the investors, hence the real gross IRR will be used as the main performance measure of business angel investments. Mason and Harrison (2002a) recommend using the IRR measure or simple return multiples when comparing formal and informal venture capital performance, since these are often the best available measure typically found for both type of investors. Mason and Harrison (2002a) argue that a deal-by-deal approach is the best alternative to

select when comparing these types of investors, since the approach enables the most accurate results and mitigates the effect of the operational differences and diverging investment methods employed by the different types of investors. However, one should remember the diverging methods of calculating IRR when benchmarking business angel performance against formal venture capital performance, such as VC and PE funds. The only way to accurately benchmark business angels' performance against PE and VC performance (at least in the case of still operating funds), is if business angles started calculating the value of their unrealized portfolio companies using valuation guidelines utilized by their formal counterparties in order to acquire a "market value" for these holdings.

5.2.1. Realization Multiple (Simple Return Multiple)

One of the measures used in this study to calculate performance is the realization multiple. The multiple is simply extracted from the formula below and provides an indicative return measure on a specified investment. When calculating the realization multiple in the current study, the investment size (paid in capital) is based on initial investment plus any follow-up investments made in the same unique target company. The return component includes all dividend payments received from the portfolio company as well as the returned principle together with the received profit. The measure enables investors to compare investment performance superficially and the measure provides some indication of the realized gross return on a specific investment. The realization multiple entails several issues. The time aspect is one of the most predominant. The realization multiple does not take into consideration the time passed between the investment and the realized cumulative or simple return of the investment. This makes the measure obsolete when comparing investments involving various timeframes. The measure does not either take into account when the payments are made (negative and positive cash flows to investor). Since the time factor is generally of great importance for investors comparing investment alternatives and performance, the utilization of the internal rate of return (IRR) measure is strongly recommended.

$$\textit{Realization Multiple} = \frac{\textit{Cumulative Returns}}{\textit{Paid in Capital}}$$

5.2.2. Internal rate of return

The internal rate of return is a widely accepted measure for the return of an investment. The internal rate of return (IRR) is employed in the current study as the main measure of investor and investment performance. The measure is useful when comparing performance of investments comprising different lengths. The internal rate of return is the specific rate for acquiring a net present value of zero when performing a discounted cash flow calculation on a set of cash flows (total investment). Addressing the timeframe is not the only advantage with the measure. IRR ignores the predefined discount rate set by the person performing the present value calculation. This means, in practice, that anyone with access to the information concerning cash flow sizes and point of time these occur, will arrive to the exact same result, i.e. same IRR. This is also the reason why modified internal rate of return is not used in this context. Another important fact, arguing for the use of the measure, is that the IRR is considered to represent one of the standard performance measures of the venture capital industry (Mason and Harrison, 2002a; Kaplan and Schoar, 2005). According to Mason and Harrison (2002b), venture capital fund performance is the most appropriate reference to use when benchmarking the performance of business angels.

Hagemann (1990) defines IRR as the discount rate of an investment project that makes the stream of net returns X_t associated with the specific project equal to a present value of zero. i represents the interest rate (IRR) and θ represents the lifespan of the project in the equation below. The formula has not been derived due to practical reasons.

$$C(0, \theta) = \sum_{t=0}^{\theta} X_t(1 + i)^{-t} = 0$$

Many variants of the IRR approach are used in the private equity industry. The horizontal IRR, for example, expresses the historical performance trend of the industry (aggregated data) during a predefined time horizon, e.g. 3, 5 or 10 years (EVCA, 2013). Another frequently used IRR derivative is the pooled IRR, which is the return on pooled funds in the specified sample (EVCA, 2013). The pooled IRR is calculated as if all the cashflows recorded since inception would have occurred in the same fund, for example. This internal

rate of return variant will be used to measure the aggregated performance in the current study.

The definition of the employed IRR variant diverges among reports on informal and formal venture capital performance, and deductions should therefore be made with caution. A common pitfall is that informal venture capital performance usually is reported as the gross return (gross IRR), when the formal venture capital performance almost exclusively is reported as the net return (net IRR) to the limited partners, i.e. the investors providing the capital to the PE or VC funds.

6. The Methodology

Harrison and Mason (1992) identify four approaches that can be used when faced with the task of collecting data on business angel activity. The first approach is simply to distribute a questionnaire to persons assumed to be business angels. This approach requires a significant workload, since a tremendous number of questionnaires must be distributed. The second approach is to go through the companies that have received business angel funding, and that way figure out the identity of the investors, where after the questionnaire can be sent to these investors. The third approach utilizes the snowball effect, i.e. to ask known business angels to identify other business angels, and that way enable interaction with the persons of interest. The fourth method is to simply to reach out to business angels through business angel networks (Harrison and Mason, 1992). The last mentioned approach was used to distribute the questionnaire and gather the data for the current study.

Månsson and Landström (2006) argue that each of the above-mentioned methods result in outcomes affected by different biases, and that some kind of trade-off between convenience and accuracy typically takes place in these types of ad hoc studies. According to them, one can mitigate the issues arising from the BAN approach by collecting data from members of several BANs operating in the country. These types of diversification measures have been taken by, for example, Månsson and Landström (2006), Wiltbank et al. (2009), Wiltbank and Boeker (2007), etc. Unfortunately, this study only draws upon answers from the members of a single BAN due to the lack of other active BANs besides FiBAN in Finland.

The participants were chosen to the current study by a single criterion, i.e. if they were members of the Finnish Business Angel Network (FiBAN) or not. The twofold questionnaire was sent out to all FiBAN's 582 members 2.6.2017. A reminder was sent via email to all members 10 days later, i.e. (12.6.2017) and again 30.6.2017. Additional phone calls were made to 124 FiBAN members during the data gathering phase (2.6.2017-21.10.2017). These members were targeted since it was known (FiBAN's register) that they had experienced some type of exit (negative or positive), or that they

had already entered the questionnaire without submitting information. The purpose of the phone calls was to encourage the members to fill out the questionnaire and to collect data over the phone, which was then manually entered into the used spreadsheet program. It was noticed that a member's propensity to provide information was significantly higher when calling up the member and asking for the information orally. The phone calls lasted on average about 30-50 minutes, depending on the number of realized investments the interviewee reported (in the cases where the interviewee was willing to provide the information). Text messages and reminder emails were also sent to the persons of interest, in case they had assured to provide answers, but not delivered on the promise. The data collection period was extended with several months, due to limited number of answers received during the predetermined period. Several phone calls had to be made in order to verify or to get answers concerning the questions left unanswered.

The questionnaires were tested carefully before distribution. The process started with multiple rounds of meetings with the project employer (FiBAN) and the master's thesis supervisor at Åbo Akademi University. After the parameters were set for the final questionnaire, the questionnaire was shaped as user-friendly as possible and some redundant questions were removed. The focus was shifted on the return data through the alterations. This was done by forcing the persons of interest to first answer the questionnaire concerning the financial information, where after the person was directed to the subsequent questionnaire containing the more qualitative questions concerning investor profiles. After getting the approval from all parties, 6 FiBAN members were contacted by phone to test the questionnaire and feedback was gathered concerning each individual question. The aim was foremost to test if the members were able to provide information on the questions asked, and to test the appropriateness of the terminology and formulation used in the questionnaire. The questions were then altered based on the feedback.

A short description and example answer format was provided in connection to each question in order to mitigate the rate of invalid or ambiguous answers. The final questionnaires contained a limited number of questions in order to keep the survey short, and to maintain the response rate as high as possible. The questions were simple to their nature and most domains were only addressed or evaluated with a single question.

The issues addressed in the questionnaire were primarily drawn from previous studies on corresponding topics, which all in different ways examined business angel profiles or performance of business angels in either Finland, or in other geographical areas. The observation period concerning the financial data gathered had no time limit, i.e. all business angel investments with an exit were included in the scope of the study.

The data was collected through two subsequent questionnaires. The first questionnaire (IRR questionnaire) gathered information on the investment activities of unique business angel investors as well as characteristics of target companies in which the unique investments were made. The first section of this questionnaire requested the business angels to submit information on the occurred cash flows related to the unique investments. This financial information was used to calculate the gross IRR and realization multiples on a deal-by-deal basis, as advocated by Mason and Harrison (2002a). The approach employed was considered to enable more accurate outcomes compared to having investors directly submitting their overall portfolio return or return on unique investments. This approach was taken due to the following assumptions: 1) Business angels do not in general keep track of their investment performance; 2) Business angels calculate the return on investment using different approaches, of which IRR is not the foremost preferred alternative; 3) Business angels tend to overestimate their investment performance. The non-financial information gathered through the questionnaire was used to test the findings of the current study against other previous studies and examine the preferences of Finnish business angels as well as other properties.

The aggregated data derived from the financial section of the questionnaire was benchmarked against previous findings from studies on informal and formal venture capital portfolio performance, Invest Europe's formal venture capital average performance statistics and other venture capital performance reports mentioned earlier in this thesis. This was done in order to gain a better understanding of the relative profitability (expected return) of these types of investments. The conclusions presented regarding the investors' performance are entirely based on the responses acquired through the questionnaire used in this thesis.

The second and subsequent questionnaire collected information on Finnish business angel profiles, i.e. contained questions concerning demographical properties, preferences,

managerial and entrepreneurial experience, etc. The answers from the second questionnaire was planned to primarily be used to compare the outcome against the findings from previous and corresponding studies conducted in the Nordic countries (Månsson and Landström, 2006; Reitan and Sorheim, 2000; Landström, 1995; Lahti, 2011; Avdeitchikova, 2008), EBAN's aggregates concerning the entire European context and similar studies conducted in the US (e.g. Wiltbank et al., 2009; Wiltbank and Boeker, 2007) and the UK (Mason and Harrison, 2002a; 2002b; Van Osnabrugge, 2000 and others). However, due to the unwillingness of the participants to fill out the second questionnaire after allocating time on submitting answers to the first questionnaire, the findings from this part have been left widely unaddressed and will not play a central role in this thesis. Only a total of 18 answers were submitted for the second questionnaire. A brief summary of the results from the second questionnaire can be found in the appendix of this thesis.

Lahti (2011) noticed in his study conducted in 2006 that Finnish business angels tend to funnel their investments through legal entities due to reasons discussed previously in this thesis. This fact was noted in the current study, but no effort was made to eliminate the investments made using investment companies in this study, i.e. the conclusions are drawn from data containing direct and indirect investments from business angels. As mentioned above, the only criterion for an individual to be included in the data set, was that he or she was registered with FiBAN and that the investments corresponded the nature of venture capital investments. The comprehensive questionnaires can be found in the appendix chapter of this thesis. After presenting the methodological weaknesses of the methodology used in the current study, the properties of the sample will be discussed together with a comparison of other samples used in previous studies.

6.1. Methodological weaknesses

The questionnaire approach was used due to practical reasons and the limited timeframe when collecting data for this study. One important reason was the limited possibility to interact and keep ongoing dialogue with the individuals belonging to FiBAN's network. However, the vast majority of the answers was acquired through the phone calls made to FiBAN members, even though the original purpose was to acquire this information

through the distributed questionnaire. Next some issues concerning the survey method used will be presented.

Using a questionnaire to collect the data exposes the current study to several biases. The same biases were expected to impact the results when collecting data over the phone. The most explicit methodological issues include the survivorship and self-selection biases. The survivorship bias is the one emerging by observations falling out of a sample due to poor performance causing deceptive results. The bias is typically found in performance studies, measuring, for example, fund or firm performance (Carpenter and Lynch, 1999). Carpenter and Lynch (1999) also argue that the survivorship bias tend to result in an upward bias, i.e. indicate more positive results (better performance) than in reality. The survivorship bias does not directly affect the current study, since the investors do not cease to exist due to poor performance, as funds or companies do. Nevertheless, it has been noticed that investors who continuously perform poorly quickly becomes inactive, or even, for example, terminates their BAN membership (FiBAN in this case). This is the main reason for the survivorship bias to be included in this chapter.

The survivorship bias should be noted when examining the findings of this study. All observations have been included in the analysis and the results of this study in order to mitigate the effect of the presumed survivorship bias. Nonetheless, it is assumed that the skewness regarding the performance measures would be even higher if the total population would be examined instead of the current sample, i.e. relatively more zero-return observations would have been recorded.

The self-selection bias is also assumed to affect the results of this study. Self-selection refers to the phenomenon where only people or entities with positive experiences are willing to participate or disclose information on their performance. The self-selection bias is most likely to be the most critical bias affecting the results of the current study, since business angels, per definition, invest their personal assets and suffer the losses as well. This creates a situation where the business angels having more negative than positive experiences are much less willing to share their experiences. The previous assumption is derived from e.g. Tversky and Kahneman's (1992) theory on loss aversion and the prospect theory.

The performance benchmark used in this study is mainly derived from studies and reports targeting formal venture capital investors due to the similarity of the investment practices and exposure to corresponding levels of risk. Thus, we can assume that the performance measures observed in studies aimed at formal venture capital investors, also include upward bias originating from the survivorship bias. Some careful assumptions can be made due to this fact.

Both types of studies suffer from same biases, which causes in both cases the problem with too positive indications of the investors' performance. In turn, self-selection bias is mostly observed when measuring informal investors' performance in Finland, due to obligation for formal venture capital investors to disclose some type of financial information, i.e. they can be included in performance studies even after ceasing to exist. The properties of the sample used in the current study will be presented in the following chapter.

7. The Sample

As mentioned, the data has been collected through a survey sent to Finnish business angels registered with the FiBAN network. The Survey was divided into two separate questionnaires. The first questionnaire contained questions regarding financial information (transaction data), creating the foundation for the performance analysis on a deal-by-deal basis as well as additional questions concerning attributes related to the unique investment, i.e. industry of the target company, due diligence conducted, etc. The second and subsequent questionnaire comprised questions concerning personal information and non-financial information regarding experience, investment strategies and evaluation processes. This part will not be addressed fully in this thesis, since very few answers concerning the second questionnaire were received. It was almost impossible to gain any answers concerning investor profiles, since interviewees resisted allocating further time to the study after participating in the 30-50-minute interviews where the financial information and investment specific data was submitted. This is unfortunate, since the data would have enabled linking the performance figures to the personal attributes of these individual investors. Another reason for not further pursuing these questions was the strict focus set by the employer of this thesis (FiBAN). FiBAN's main goal was to acquire indicative measures on the performance of Finnish business angels in general, and since FiBAN distributes several questionnaires on different topics to its members annually, it was decided not to further disturb the members further.

The questionnaire was sent out to 582 Finnish business angels. Answers were received from 9 business angels at first. Since the sample was insufficient, actions were taken to improve the size of the sample. Business angels belonging to the FiBAN network were contacted by phone to either gather the information asked in the questionnaire or to encourage the business angels to fill out the questionnaire. In total 125 business angels were contacted by phone. Of these 125 business angels, 95 business angels answered after 1 to 6 attempts. Of these 95 business angels: 1) 18 business angels had not experienced any positive or negative exits yet; 2) 15 business angels were not willing to participate or were bound not to disclose any information concerning their investments due to shareholders' agreements or non-disclosure agreements (NDAs, CUs); 3) 6 business angels claimed that they were only able to provide answers much later than convenient

for this study; 4) 5 business angels invested through such investment vehicles that they could not be included in the current study (investment funds having several independent limited partners), and 5) 11 business angels who ensured to fill out the questionnaire, but never did despite several reminders by phone, text messages and emails. The final sample used in the current study comprised answers from 40 business angels and an aggregate of 126 realized investments (experienced by these business angels). Even though the response rate was rather low (answers acquired from 16 percent of all FiBANs' members), the sample was of meaningful size when taken into account the following aspects: 1) Most of FiBAN's 582 business angel members are considered semi-active, i.e. have either never or very infrequently performed business angel investments; 2) Some of the questions inquired information considered highly sensitive (financial data on personal investments); 3) The questionnaire was not to be filled out anonymously; 4) The questionnaire was explicitly aimed at business angels having experienced at least one exit. The last point (4) was assumed to contract the response rate the most. Considering all the above stated, the final response rate was quite satisfying for the study since, for example, Mason and Harrison (2002b) claim that an unprocessed response rate of 20 percent is normal, due to high privacy concerns among the business angel population.

The earliest transaction recorded in the sample was made in 1987 (inception) and the latest in October 2017. The observation period was therefore 30.8 years (1.1.1987-03.10.2017). Most of the investments (92 percent) and exits (98 percent) had occurred after 1.1.2000. Further on, 44 percent of the investments and 73 percent of the exits had occurred after 1.1.2010. The investments and exits that had occurred before 2000 therefore represent an obvious minority in the sample.

The investors included in the final sample had experienced a median of 2 realized exits (average 3.13). As many as 30 percent of the investors had experienced only 1 exit, which makes the investor portfolio analysis somewhat arbitrary in this study. The total aggregated amount invested (since inception in 1987) was 11.4 million euro. The total aggregated amount of dividends received by the investors was 1.6 million euro, and the total aggregated amount returned at exit was 41.1 million euro.

The distribution of the performance data (deal-by-deal) was highly skewed, as expected. About half of the reported investments resulted in partial or total loss of the invested

capital (44 percent of the investments resulted in total loss of the invested capital and 10 percent in partial loss of the invested capital). Only 4 percent of the investments paid back the same exact nominal amount invested (break-even). The successful investments (return multiple/realization multiple greater or equal to 1x) were distributed as following: 46 percent of the investments resulted in return multiples greater or equal to 1x (including the break-even investments); 19 percent returned multiples between 1x and 5x; 9.5 percent of the investments returned multiples between 5x and 10x and finally; 13.5 percent returned sums equalling return multiples greater than 10x. The return distributions of the current study are presented in Figure 3 and 4 (chapter 8) together with a more comprehensive presentation of the sample properties. In the next chapter a comparison will be made between samples used in previous studies and the sample used in the current study.

7.1. Comparing the sample size and composition with samples in previous studies

Lahti (2011) based his results upon interviews with 53 Finnish business angels. Lahti selected the business angels for his study using several criteria, of which the most central was that they had invested their own money, had made their own investment decisions and that they had invested with the purpose of obtaining a return on the invested capital. Lahti used a 9-page questionnaire to collect the quantitative data. Lahti (2011) collected the data on a deal-by-deal basis but asked mainly questions regarding to the most recent investment conducted by the business angel. The conclusions in Lahti's (2011) study are based upon a combination of quantitative and qualitative data. As mentioned earlier, Lahti's study clearly focused on explaining the investment procedures and activity of Finnish business angels, rather than on the performance of the business angels. Even though Lahti's sample is rather limited, it has taken great effort to compile such sample, and as he explains in his paper, it is an achievement itself to get a sample consisting of answers from more than 50 business angels in a small country as Finland. The above stated argument can be demonstrated by examining the sample used by Lumme et al. (1998). Lumme et al. conducted the pioneering study on business angel activity in Finland. Their sample comprised 39 active business angels and a total of 49 exits. Their sample was considerably smaller than the one used in the current study.

Månsson and Landström (2006) had a quite large sample consisting of 253 identified business angels. Månsson and Landström acquired their final sample by distributing their questionnaire to the members of 12 business angel networks operating in various locations in Sweden. A total of 894 questionnaires were sent out, of which 400 were returned. After further processing the final sample was acquired. They encountered several difficulties when assembling their sample. According to them, sampling of the business angel community caused problems mainly due to the lack of proper registers of business angels and contact details of these business angels.

Månsson and Landström focused in their study on the environmental changes in the business angel scene in Sweden between 2004 (which was the year they carried out their study) and year 1992, when the previous study was conducted by Landström (1992; 1993). As in Lahti's (2011) study, the focus was not on performance measures, but rather on deal flow and other variables of interest when mapping the activity of the business angels. Avdeitchikova (2008) also studied the activity of business angels in Sweden a few years after Månsson and Landström (2006). Avdeitchikova's sample consisted of 278 business angels and an aggregate total of 422 recorded investments.

Lahti's (2011) study conducted in Finland, Reitan and Sorheim's (2000) study conducted in Norway and Månsson and Landström's (2006) study conducted in Sweden provide some insight on business angel activity in the Nordic countries. However, awfully little attention has been given to the performance component in these studies. Next, we examine some samples from studies addressing the performance of business angels. For that, we must seek comparisons from countries with more mature venture capital markets, such as the UK and the US.

The most relevant study to be found on the business angel performance topic is the one conducted by Mason and Harrison (2002a). The study draws upon answers from 127 business angels and an aggregate of 128 realized unique investments, i.e. exits. These 127 business angels who participated in their study invested a total of £4.2 million, about half the capital amount recorded in the current study. As done in the current study, Mason and Harrison gathered the information using a questionnaire approach, inquiring information about the investments on a deal-by-deal basis. They acquired their sample by distributing

over 1 000 questionnaires to business angels registered with different business angel networks in the UK. The total number of business angels that received the questionnaire is unknown. The questionnaire was distributed to members of at least 19 BANs (out of 48 active BANs at that time). When compared to Mason and Harrison's sample, the sample used in the current study seems to be of meaningful size. The sample used by Mason and Harrison diverges in some respects from the one used in the current study. First, they have included business angels in their sample that have not made any investments. These investors make up 12.6 percent or 16 observations in their final sample. Another aspect that should be examined with great care in Mason and Harrison's sample, is the composition of the sample. Mason and Harrison simply state in the abstract of their paper that their final sample consisted of answers from 127 business angels and a total of 128 exited investments. When performing a profound examination of their sample, it can be noticed that their performance analysis and findings are drawn upon data from 51 respondents who have experienced a total of 128 exits. When examining the sample consisting of solely investors who have experienced at least one exit (positive or negative), we see that the size of Mason and Harrison's sample corresponds widely to the one used in the current study. Next, we examine the sample used in Wiltbank and Boeker's (2007) study on US business angel performance. The divergencies in the distribution and the properties of the performance data will be addressed in the next chapter, i.e. the data analysis (chapter 8).

Wiltbank and Boeker's (2007) study on business angel performance in the US is drawn upon exit data from a total of 539 US based business angels and a total of 1 137 realized investments. Wiltbank and Boeker (2007) have been able to compile the most comprehensive sample known to date in their business angel performance study. The majority of exit observations in their sample have been recorded after 2004, which makes the sample somewhat comparable with the one used in the current study. They have utilized the same approach as seen in the current study for collecting data, i.e. contacting business angels through business angel networks (BANs). A total of 276 investor groups were contacted in their study, of which 86 investor groups agreed to participate. Further on, 13 percent of the members of these investor groups filled out the distributed questionnaire (constituting the final sample). The financial data was gathered by asking the business angel to report their investments on a deal-by-deal-basis. The business angels reported the amounts invested (initial and any follow-up investments), the amount

received during the holding period as well as the amount received at exit. Other information gathered was: The type of exit and; The years the individual transactions had occurred. The data was used to calculate the return multiples and internal rate of return of the investments.

The current study contained the same type of questions as seen in Wiltbank and Boeker's (2007) study. One explicit benefit in the current study is that, besides providing the year of each individual transaction, the investor was asked to additionally provide information on which month of the year the transaction had occurred in. This enabled more precise figures to be used when calculating the internal rate of return on the investments and investment portfolios, as well as the holding periods of the investments. The next chapter will focus on a closer analysis of the financial data gathered in this study. All the performance indicators and empirical findings will be compared with previous studies mentioned in this thesis. Mason and Harrison's (2002a) study as well as Wiltbank and Boeker's (2007) study will function as primary benchmarks when examining the distribution of the data, since they are the only ones corresponding to the nature of the current study, i.e. studying the performance of business angels.

8. Performance analysis and benchmarking against previous studies

8.1. Empirical findings

All measures presented in this chapter are based on the findings from the current study. The return measures are expressed as gross returns, i.e. before taxes, fees and other cost items related to the transactions. All dividends reported are included in both the realization multiple measure as well as in the individual and the pooled IRR measures. The following chapter is the most central in this thesis, since the purpose of this thesis, above all, was to provide the reader indicative measures on the performance of Finnish business angels. The key findings will be presented in a logical order starting with a description of the sample's properties. The conclusions drawn upon the data will mainly be discussed in the next chapter (chapter 9). The basic properties of the dataset or sample, and how it was compiled can be found in the previous chapter (chapter 7).

The total aggregated amount invested reached 11 384 461.19 euro in the sample, which of 70.9 percent was invested as initial investments (first investment in the unique portfolio company), and the rest 29.1 percent comprised follow-up investments into the unique portfolio companies. The total amount was invested into 126 unique companies. The aggregated dividends received by the investors during the observation period made up only 4 percent of the total cash returned to the investors (euro, return on investment). The rest of the returns originated from the investments (96 percent) was received in connection to some type of exit (disposal of shares and corresponding transactions). The total amount received by the investors, i.e. the aggregated return of the sample was 42 638 557.6 euro (incl. dividend payments). It shall be noted that only 10.3 percent of the investments paid any kind of dividends to the investors during the holding period of the investment. These dividends amounted to 1 562 517.7 euro.

The median investment size of the unique investments (initial investment plus any follow-up investments into the same unique portfolio company) was 50 000 euro in the current study, while the average investment size was 90 352.87 euro. The median investment size observed in the current study equals almost exactly the figures found in Wiltbank and

Boeker's (2007) study. According to them, the median investment size in their study was US\$ 50 000, and on average US\$ 191 000 per unique portfolio company (including all follow-up investments made in the company). This indicates that the data used by Wiltbank and Boeker contained a relatively higher number of large investments compared to the data in the current study.

The total investment sizes in the current study varied from 2 000 euro (min) up to 650 000 euro (max). The largest portion of the total investments constituted amounts between 10 000 to 50 000 euro (Figure 8.1.1).

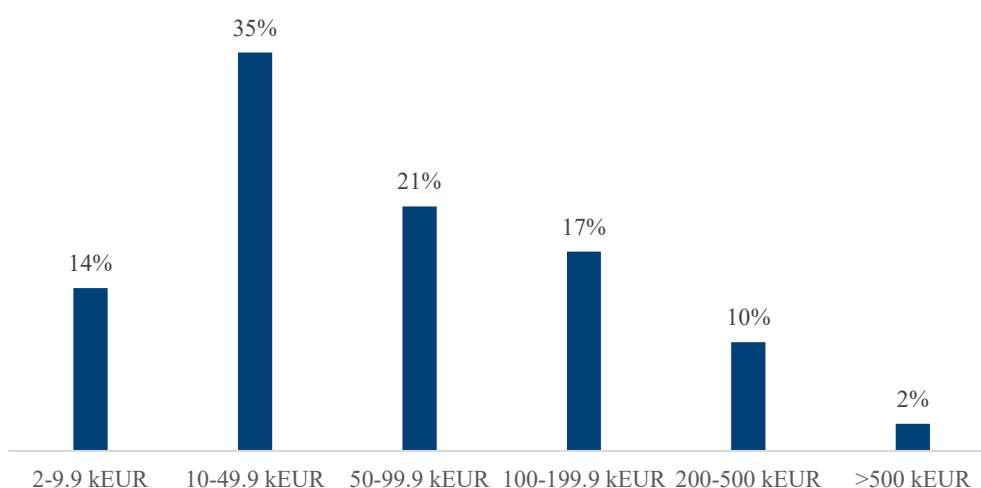


Figure 8.1.1 Distribution of the investment size, total unique investment (incl. follow-up investments)

The median holding period (period between first and last recorded transaction within a unique investment's lifecycle) was 4.75 years for successful investments (average 5.55 years). Similar data regarding unsuccessful investments, i.e. negative exits was impossible to gather, since few of the investors were able to provide sufficient or exact information on when the investment had failed (written-off, etc.). As seen in figure 8.1.2, a significant portion of the investments had holding periods exceeding 7 years. Only a fraction of the investments were realized within 12 months of the initial investment. The holding period corresponds well with previous studies mentioned earlier in this thesis. For example, Mason and Harrison's (2002a) study shows that the median holding period for successful investments was 4 years for UK business angels included in their sample. The average holding period in Wiltbank and Boeker's (2007) study was 3.5 years for successful investments.

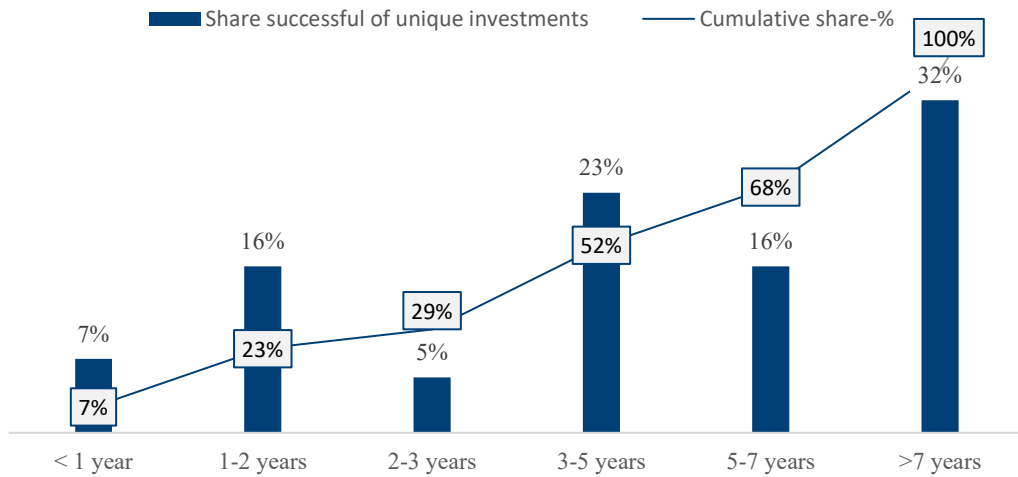


Figure 8.1.2 Distribution of the holding periods of the unique successful investments

The median amount received at exit was 4 500 euro in the current study and the average amount was 326 000.47 euro (all 126 investments included, i.e. also the negative exits providing a return of 0 euro).

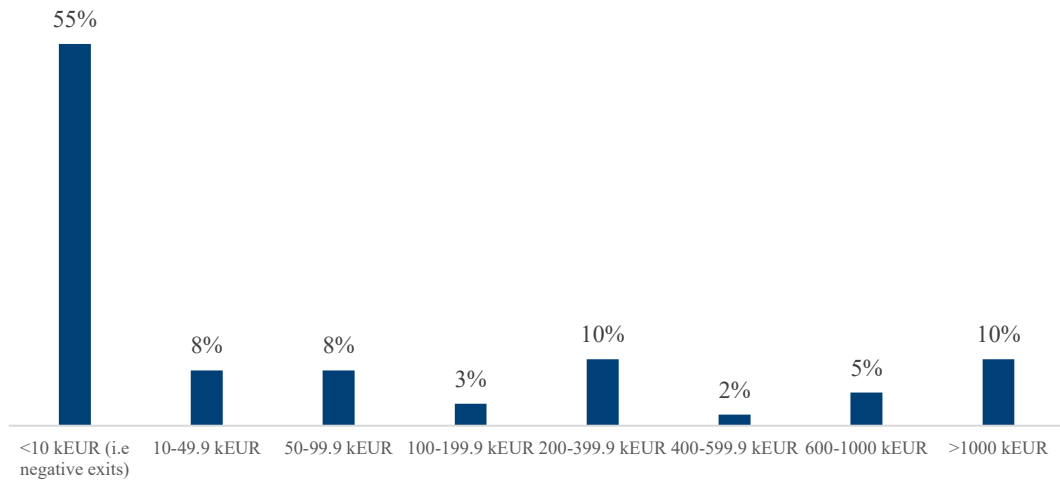


Figure 8.1.3 distribution of amount received at exit (n= 126 unique investments)

As mentioned in a previous chapter, the distribution of the return data was highly skewed. In 44 percent of the investment cases the investor ended up losing the entire capital invested. Around 10 percent of the investments resulted in partial loss of the invested capital ($0 < x < 1$), and 4 percent ended up paying back the original nominal amount invested, i.e. broke-even.

The positive exits ($x > 1$; 46 percent of all cases) were distributed as following: 14 percent of the investments returned sums corresponding to realization multiples between 1x and 2x; 8 percent returned multiples between 2x and 5x; 10 percent between 5x and 10x and finally; around 14 percent of the investments returned multiples exceeding 10x (Figure 8.1.4). The median realization multiple was 0.23x and the average was 7.37x, when calculated on a deal-by-deal basis.

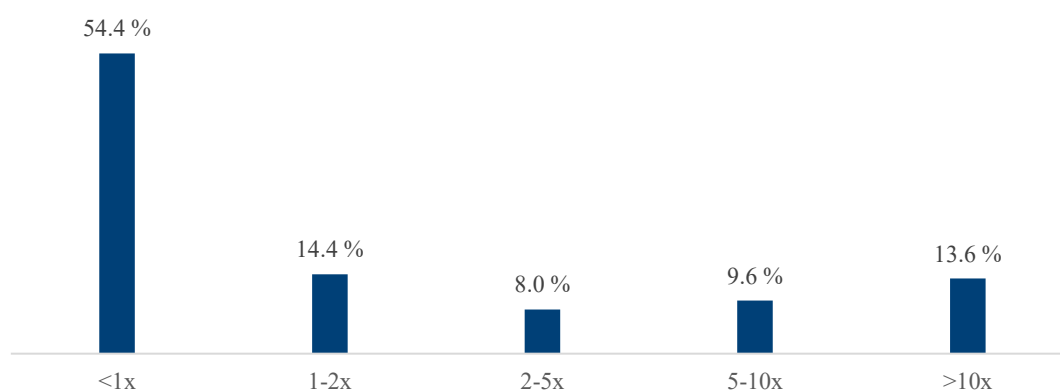


Figure 8.1.4 distribution of returns (simple return multiple or realization multiple), n=126

The overall realization multiple (aggregated returns of the total sample divided by the total aggregate of capital invested) was 3.75x in the sample. When comparing the performance observed in the current study to the findings of Wiltbank and Boeker (2007) in terms of the realization multiple measure, we are able to draw the following conclusions: The return distributions in these studies are highly aligned. Wiltbank and Boeker found that 52 percent of all investments generated negative returns to the investors while 48 percent of the investments achieved a realization multiple equal to, or exceeding 1x. The investments producing a positive return were distributed as following in Wiltbank and Boekers' study: Around 32 percent of the investments returned realization multiples between 1x and 5x (22.4 percent in the current study); Around 7 percent between 5x and 10x (9.6 percent in the current study), and the rest, around 9 percent of the investments returned multiples exceeding 10x (13.6 percent in the current study). The overall realization multiple was 2.6x in Wiltbank and Boeker's study. Wiltbank and Boeker also found that the top 7 percent of the investments accounted for 75 percent of the total

returns. This can be compared to the findings in the current study, which shows that the top 10 percent of the investments accounted for 72 percent of the total capital returns.

Since the time aspect is central both in finance theory and practise, a better indication of the performance can be extracted by employing the internal rate of return-measure (IRR) instead of the simple, as well as a bit arbitrary realization multiple measure. The return distribution (IRR) of the current study is presented in the figure below (Figure 8.1.5).

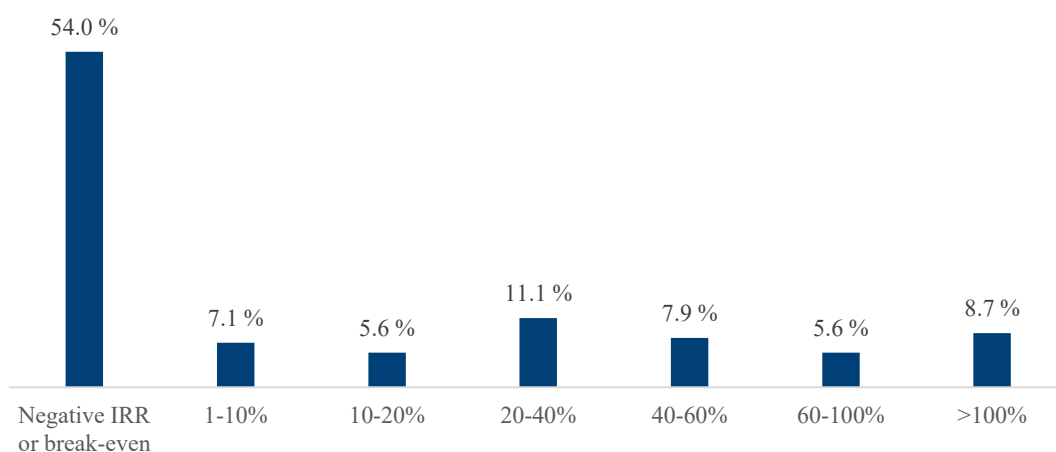


Figure 8.1.5 return distribution of individual investments (IRR), n=126

The calculated IRR-measures for the individual investments are based on the transaction data provided by the investors in the current study. The IRR measure considers each reported transaction (original investment, follow-up investments, dividends and the exit or incremental exits). The explicit advantages related to the IRR-measure can be found in chapter 5.

The calculated IRR-measures enables us to compare the current study against the most significant and comparative benchmark-study used in this thesis, the one conducted by Mason and Harrison (2002a). Mason and Harrison observed in their study that 34 percent of the unique investments resulted in total loss of the invested capital (44 percent in the current study); 13 percent in partial loss of invested capital or break-even (10 percent in the current study); 23 percent of investment cases achieved IRRs of 50 percent or more (21 percent of the investment cases in the current study); and around 10 percent of the investments reached IRRs of more than 100 percent (8.7 percent in the current study).

Dividend payments were not included in Mason and Harrison's study, which may inflict negatively the performance of the investors in their study, at least to some extent.

The first pooled IRR figure calculated was 367 percent for in the current study when measured since inception in 1987. Obviously, this figure does not by any mean reflect the aggregated performance of the investors included in the current sample. The reason for the pooled IRR being so high is due to the compilation of the sample, more exactly the distribution of the cash flows in the sample. Some significant exits took place right after inception in 1987, which was followed by a period without any recorded transactions. Since the IRR measure (which is based on the NPV method) gives lower values to cashflows occurring distant from the inception (by allocating different discount factors to the individual cash flows), it was decided that adjustments had to be made in order to gain an appropriate IRR measure for the study. The problem was solved by reconciling the time variables of the unique investments to acquire a pooled IRR measure that would better reflect the real and comparable outcome.

The reconciliation was done by: 1) Selecting a random point of time (1.1.2010 was used as the reference time in this case); 2) Setting all 126 investments to start at that date and 3) Moving the cash flows horizontally on the time axis, so that unique investments had exactly the same time spans and the cash flows kept the same relative relationship to each other. This way the only thing altered was the absolute aggregated observation period, i.e. from 1987-2017 to 2010-2027². The new adjusted aggregated observation period was equal to the longest holding period observed in the sample (17 years). The pooled IRR for this re-arranged or reconciliated sample was 30.1 percent, which aligns well with the corresponding pooled IRR figure of 27 percent presented by Wiltbank and Boeker (2007). However, the pooled IRR measure was not found in any other study and benchmarking was therefore somewhat difficult. It was also assumed that some of the previous studies had used the CAGR-measure in order to provide a simplified aggregate measure for the returns observed in their sample and expresses it as the pooled IRR for the sample.

² Longest holding period was 17 years and therefore the long computational "observation period", i.e. 2010-2027

The recorded cash flows leading up to a pooled IRR measure of 367 percent are presented in figure 8.1.6 as they were reported. Figure 8.1.7 presents the reconciled cash flows used to calculate the adjusted pooled IRR measure (30.1 percent).

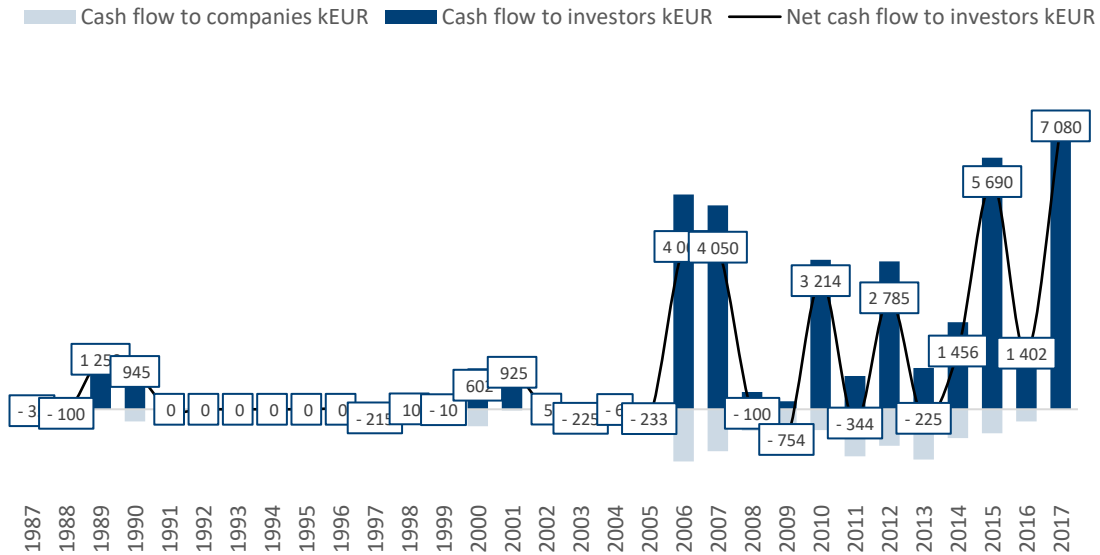


Figure 8.1.6 Cash flows recorded in the sample (leading up to an IRR of 367 percent)

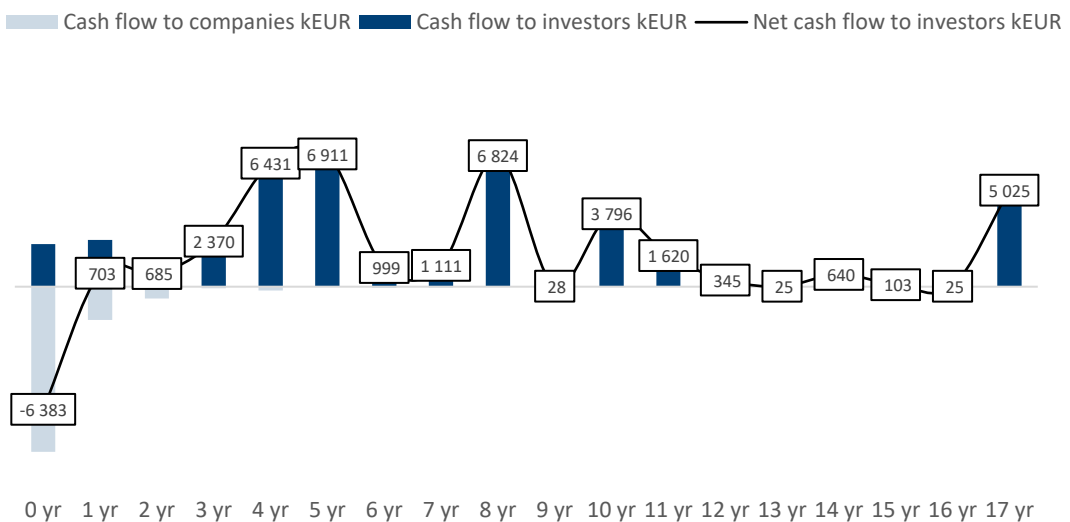


Figure 8.1.7 reconciled cash flows for the adjusted pooled IRR (leading up to the IRR of 30.1 percent)

The pooled IRR measure simply describes the overall return of the sample as if all the included investments (126) had been made by, for example, a single investment fund or similar investment vehicle and that all the investments had been conducted at the same

point of time. The pooled IRR figure is of great interest when determining the overall performance of any sample consisting of investment data. The pooled IRR provides us with the primary measure of interest in this thesis, i.e. an overall indicative measure of Finnish business angel performance and an indication of the expected return of such investments (solely based on the used sample). Next, we examine the portfolio performance of these investors. In this context portfolio only refers to investors' informal venture capital portfolios comprising solely investments in unquoted private companies. As mentioned earlier in this thesis, most of the business angles only have small portion of their entire wealth allocated to the kind of investments discussed in this thesis, and that the investors' entire or overall portfolios are expected to comprise a range of investments in additional and less risky asset classes.

When examining the performance of the investors' portfolios comprising venture capital investments, the distribution changes slightly from the one seen above, where the performance was addressed on the level of unique investments. When purely measured in terms of realization multiples, the advantages of holding a portfolio (more than one investment) improved the normality of the probability function, at least to some extent. The portion of portfolios having a realization multiple less than 1 ($x < 1$) fell to 45 percent (compared to 54 percent for aggregated individual investments), and the share of portfolios returning between 1x and 5x was a bit higher, reaching 37.5 percent (compared to 22.4 percent). The share of portfolios achieving multiples between 5x to 10x and multiples over 10x was, as expected, lower than when measured as an aggregate of the individual investments. The same phenomenon was noticed in Wiltbank and Boeker's (2007) study. The return distributions of the portfolios in the current study can be found in the figure below (figure 8.1.8). The median portfolio realization multiple was 1.56x and the average was 4.1x in the current study. The corresponding figures was for the individual investments 0.23x (median) and 7.37x (average).

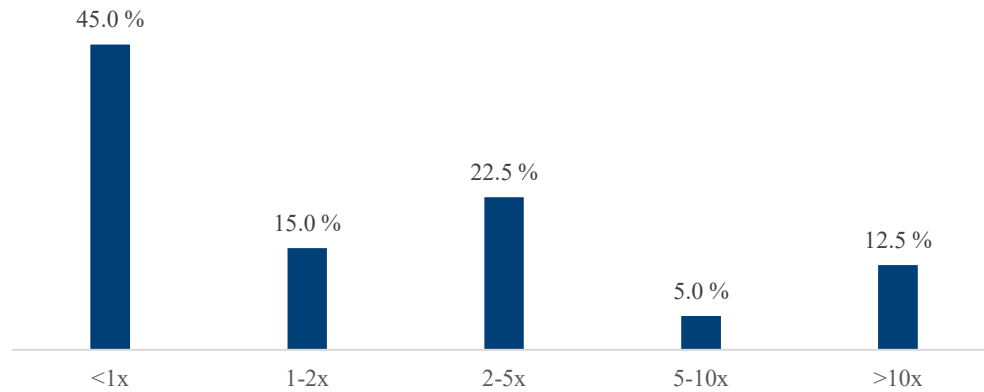


Figure 8.1.8 distribution of portfolio performance (return multiple / realization multiple)

The portfolio returns measured by the IRR measure (figure 8.1.9) also show a cleaner return distribution compared to the one comprising individual investments presented earlier in this chapter. As mentioned earlier in this thesis, several portfolios only included 2-3 realized investments, yet the return distribution is altered significantly when compared to the individual investments. Even though the sample is too small to draw any real conclusions, it seems as portfolio diversification directly impacts the investor's overall exposure to risk (idiosyncratic risk), and it can therefore be argued that business angels, even such with high confidence in being able to pick winners, should pursue portfolio diversification strategies to some extent. This does not necessarily mean that the investor should spread out the investments across multiple industries, but rather that the investor should not place all bets on one horse. However, this largely depends on the risk tolerance of the investor. By simply calculating the expected return (E_r), we find that individual investments have an E_r of 7.37x, when the corresponding E_r of the portfolios were 4.1x in this sample. However, we also see that having more than one investment in the portfolio reduces the share of negative exits from 54 percent to 45 percent, which can be perceived as a significant upside for the investor. The performance of the individual investments and the investment portfolios is presented in Figure 8.1.10. Next in this chapter we examine other aspects related to the investments and provide further analysis on ownership, engagement, preferred industry sectors and investment practises and due diligence processes employed by the Finnish business angels.

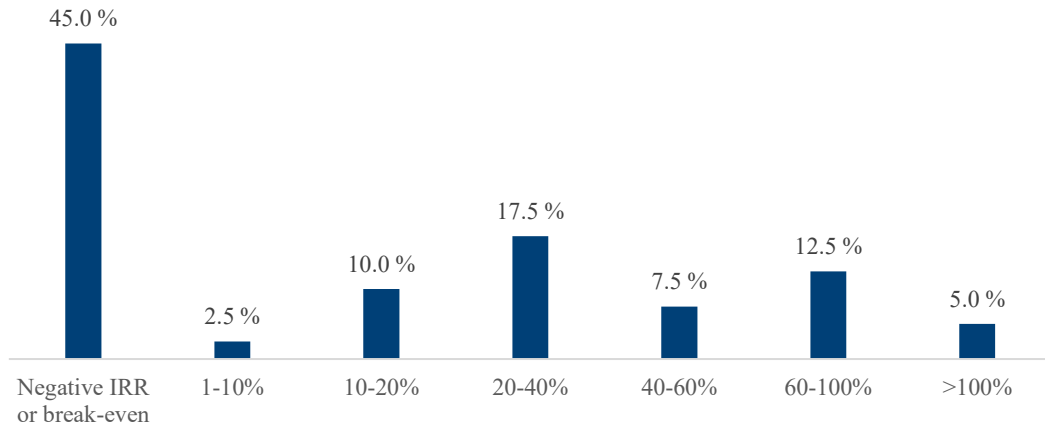
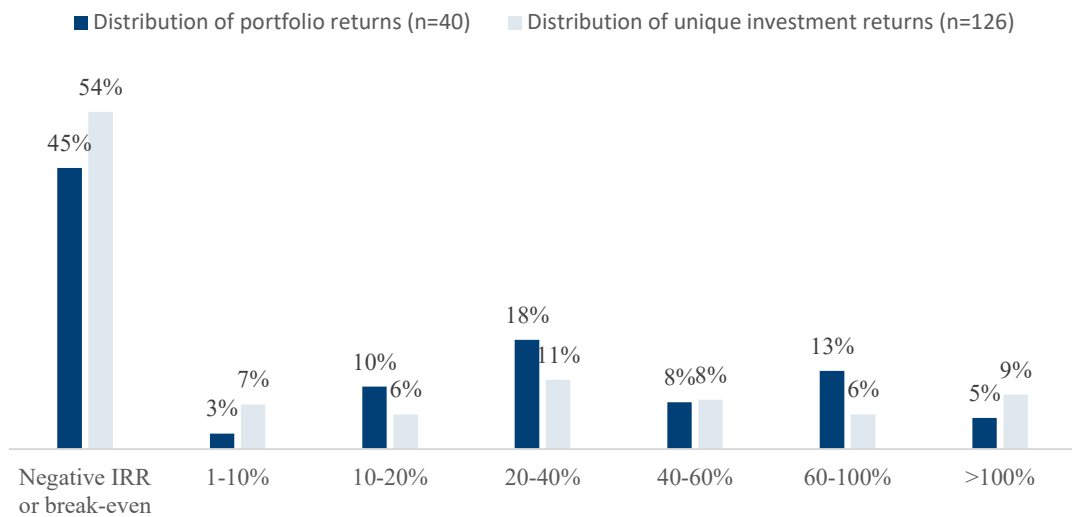


Figure 8.1.9 Distribution of portfolio performance (IRR)



8.1.10 Distribution of portfolio and individual investment returns (IRR)

We start by examining the ownership structure of the companies Finnish business angels invest in. As De Bettignies and Brander (2006) advocate, enough ownership should be left to the entrepreneurs or management of the target company in order to provide sufficient incentives for them to drive the company forward and enhance the value of the investment. The entrepreneurs or the management also require relatively high ownership in early stages of the value creation period (the stage where business angels typically invest) in order to avoid too much ownership dilution during upcoming or subsequent fundraising rounds.

Since start-up companies (pre-revenue or pre-profitability) valuations are very difficult to determine using established cash flow based models or methods, the valuation is typically derived using venture capital valuation methods (e.g. the VC method) as well as negotiations and compromises between the entrepreneurs and the investors as, for example, Miloud (2012) argues.

The median ownership ratio at exit (subsequent all follow-up investments and possible dilutions) was 8.5 percent and the average ownership was 15.0 percent in the current sample. Gathering data on ownership percentages at exit made it possible to derive rough estimates of the equity values of the portfolio companies at exit, since the total amount received at exit was already known. The portfolio companies' equity values were calculated simply as the amount received at exit divided by the ownership percentage at exit (amount received euro/ownership ratio % = equity value = "market value" of the company's outstanding shares. When performing a simple calculation on the valuation of the unique (and successful) investment cases in the sample, the following was observed: Relatively high portion of the exited portfolio companies had valuations below 10 million euro. However, almost 30 percent of the companies exited reached valuations exceeding 10 million euro, which is a quite large figure compared to the median investment size (50 000 euro) and median ownership ratios gained with typical investments seen in the sample (median 8.5 percent). The median equity value of the companies successfully exited was 1.9 million euro and the average equity value was 9.7 million euro.

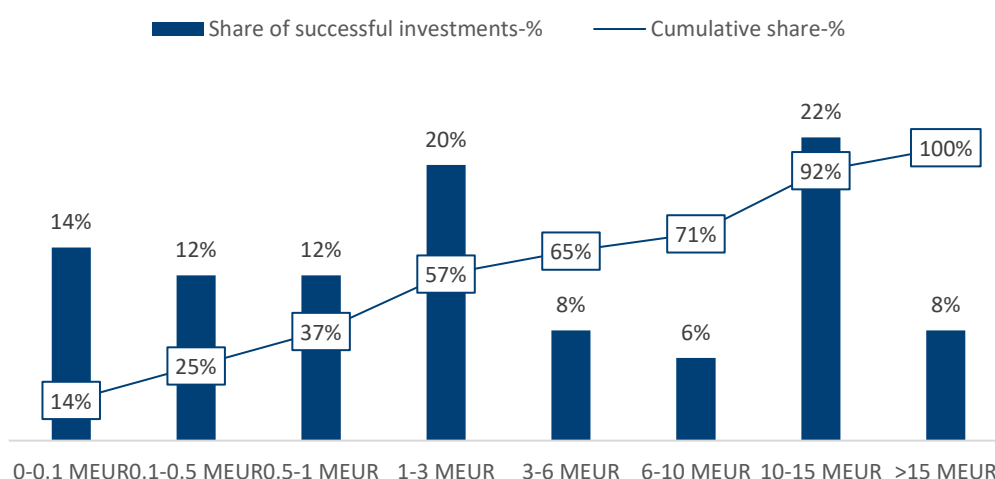


Figure 8.1.11 Distribution of exited portfolio companies' equity values (indicative measure)

When analysing the exit channels and how the exits were divided between the different exit channels, the following could be observed: The vast majority of the successful exits were achieved by selling the company forward to a strategic buyer. This seems about right, since, for example, Mason and Harrison (2002a) found in their study that business angels typically exit their portfolio companies through trade sales (sale to competitor or similar industrial entity equalling a strategic buyer). It was neither a surprise that none of the investments in the current sample were exited through an IPO, since this type of exit channel only account for a fraction of the exits made by business angels (e.g. Mason and Harrison, 2002a). This does not mean that companies going public never received funding from business angels, but rather that IPOs are relevant for relatively larger and more mature companies than those targeted by business angels. Business angels have often exited the portfolio companies before the companies have reached their IPO maturity. The argument provided is, of course, utterly case sensitive. The distribution of types of exit channels used in the current study is presented in Table 8.1.1.

Exit channel	% of investments (no.)
Bankruptcy or voluntary liquidation of the company	43%
Trade sale (sold to strategic buyer)	26%
Sold to existing shareholders	10%
Sold to VC/PE firm	10%
Sold to other investors	5%
MBO	2%
Merger	2%
Other	1%

Table 8.1.1 channels utilized to exit the portfolio company (% of investment cases)

After reviewing the financial aspects and the performance measures of the individual investments as well as the portfolios, we turn to more qualitative measures concerning the investment cases. In this part of the chapter we will analyse the practices and preferences of the Finnish business angels and benchmark the findings against those found by parties that previously have examined this area of interest in other countries, as well as in Finland. We start by looking at the syndication preferences of the business

angels included in the sample where after we analyse the sector preferences of these investors.

Syndication setup	% of investments (no.)
No syndication	21%
With other investor(s)	10%
With business angel(s)	47%
With business angels and VC firm(s)	19%
Solely with VC firm(s)	2%

Table 8.1.2 distribution of syndication setups (no.)

As seen in Table 8.1.2, around 80 percent of all investments were conducted as syndicates. The findings correspond highly to the ones observed by Lahti (2011), FiBAN (2015) and Månsson and Landström (2006) in Sweden. Lahti (2011) found that 70 percent of the investments in his sample were conducted as syndicates. Månsson and Landström (2006) observed a syndication degree of 77 percent. The most typical scenario in the current study was to invest together with another business angel (47 percent of all investments). The syndication degree seems to have increased a bit since Lahti's (2011) study. However, it is difficult to make these types of deductions due to the relatively small sample used in these two studies.

Category	% of investments (no.)	Examples of subcategories
Information technology	38 %	Fintech, telecommunication equipment, wireless network optimisation, etc.
Commercial and Professional Services	24 %	Media, accounting, consulting, education, etc.
Consumer Discretionary	10 %	Automobile industry, smart watches, fashion, etc.
Consumer Staples	5 %	Food services, food business
Real estate	2 %	Real estate business
Industrials	17 %	Construction services, machine workshop, etc.
Utilities	2 %	Cleantech, energy, energy-related activities
Transportation	1 %	Transportation, logistics

Table 8.1.3 Distribution of the unique investments (no.)

The distribution of the investments between the different industry sectors is presented in Table 8.1.3. As noted, the information technology sector receives the largest share of investments from Finnish business angels compared to other industry sectors. The reason for the information technology sector being so interesting for business angel investors was addressed in chapter 3.1.6, i.e. the significant growth potential due to low replication costs and high scalability opportunities (Puri and Zarutskie, 2012) to name a few attributes increasing the attractiveness of this sector. Another reason is the nature of the companies belonging to this industry category. As mentioned earlier in this thesis, many R&D-focused companies have difficulties taking products or services to market without external funding and due to the lack of tangible assets or other guarantees they are not able to get sufficient loans and seek therefore financing from the private equity sector. This is assumed to even increase the portion of IT companies and companies of similar nature observed in business angels' portfolios. The information technology category (presented in table 8.1.3) includes multiple subcategories e.g. Fintech, wireless network optimization, MedTech, IT-security, etc. In the current study, the industry grouping of the portfolio companies is based on the nature of the business conducted by the portfolio company.

Commercial and professional services companies were surprisingly highly preferred in the sample. As much as 24 percent of the investments were allocated to this industry category. One possible reason for the category being highly preferred is due to a flaw occurred during the gathering of the data. Some of the answers submitted by the interviewees can have been recorded into this category, even though they belong in the information technology category, e.g. education services can, and probably actually refer to some digital learning/education platform provided to target segments and is therefore falsely classified in the data presented.

What comes to selecting portfolio companies, Finnish business angels seem to favour industries they are familiar with. Over 60 percent of the investments were made in companies representing such industry the investor had relevant work experience from. As discussed earlier in this thesis, this is assumed to lower the amount of market research and evaluation required from the investor when pursuing an investment opportunity. The

bar to make the decision is also assumed to be lower when dealing with familiar industry sectors. The investing business angel is also assumed to be able to provide more added value to the company by having experience as well as a relevant professional network in such cases.

The Finnish business angels' favour Finnish companies. Around 94 percent of all investments recorded in the sample were directed to companies registered in and operating in Finland. The rest of the investments (6 percent) were steered into Swedish, American and German companies. No further effort was made to examine the geographical properties of the target companies due to the lack of focus on this particular area.

After examining the properties of the portfolio companies, we analyse the risk mitigating measures conducted by the Finnish business angels included in the sample. As discussed in chapter 3.1.7 (investment strategies) and 3.1.8 (risk and evaluation), business angels tend to focus on ex-post risk mitigation when e.g. VC firms put significant effort to evaluate all the aspects of the target companies before making the investment decision. The findings from the current study is presented in figure 8.1.12. The hours allocated on due diligence activities seems to vary significantly. The Finnish business angels in the sample spent a median of 20 hours and average of 37 hours on due diligence activities before investing. Almost 70 percent of the investors allocated a total of less than 40 hours on due diligence activities.

Acquiring comparable and unambiguous answers regarding the due diligence activities was profoundly difficult. Most interviewees had very difficult estimating the time spent on reviewing the companies they had invested in. It is also assumed that all investors did not entirely understand what was meant by "due diligence" in this context, and the answers acquired on this question should therefore be interpreted carefully. Some of the answers can, for example, contain time spent on due diligence plus any time spent before on examining the industry or investment case in general. However, some indication of Finnish business angels' ex-ante investment-related risk mitigation procedures can be extracted from the findings.

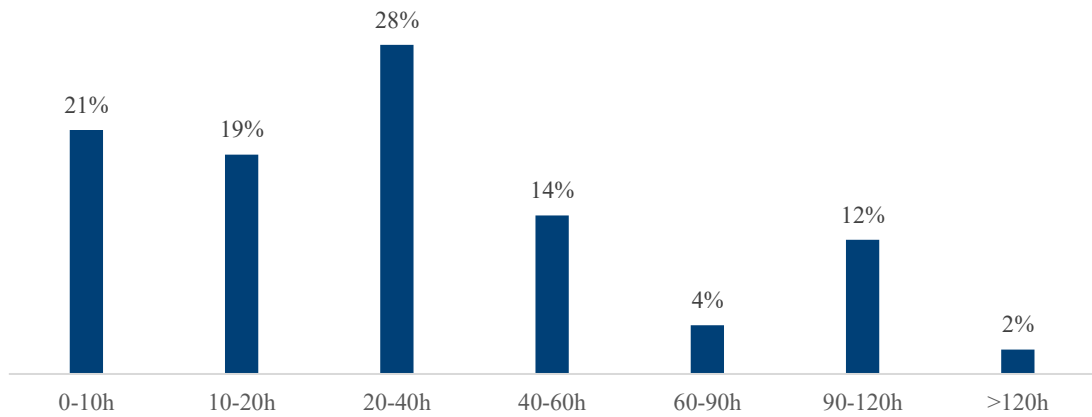


Figure 8.1.12 distribution of hours of due diligence conducted per unique investment before investing

What comes to the ex-post risk mitigation and value creation measures, we see high commitment among the investors included in the current sample. The investors spent on more than 10 hours monthly interacting with the portfolio companies on average in around 60 percent of the investment cases. The time was generally spent helping or consulting the management of the portfolio companies to overcome different obstacles, decision-making, etc. The median time spent on interacting with the portfolio company was 10 hours and average time spent on interacting with the company was 28 hours. Figure 8.1.13 provides some indication of the time spent monthly interacting with the unique portfolio company. The data presented should, once again, be interpreted carefully since the interviewees were only able to provide estimates of the average monthly interaction, and the most frequent additional comment was that the interaction had varied widely over the lifespan of the holding period.

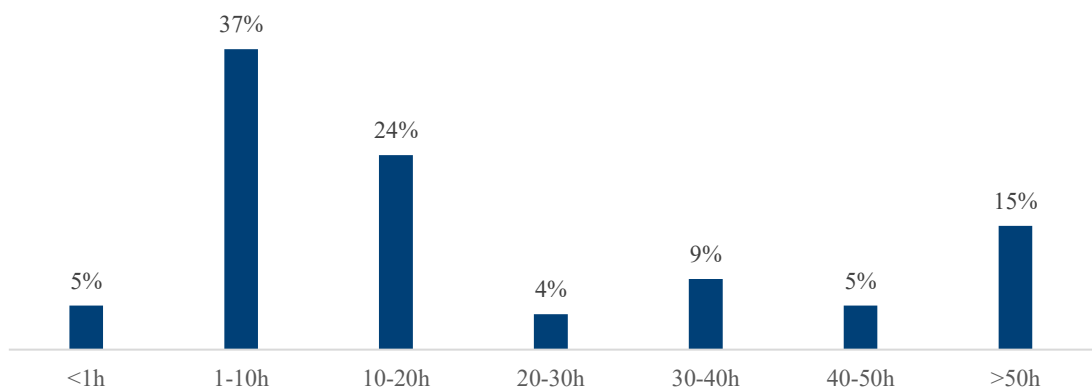


Figure 8.1.13 Average monthly interaction with the portfolio company (hours)

When looking at another engagement parameter, i.e. the role taken in the portfolio company (table 8.1.4) we are able to draw the following conclusions: 1) Most of the Finnish business angels tend to pursue a seat at the board or function as the chairman of the board, alternatively function as advisor to the management (no official role in the company); 2) Very few business angels pursue active roles in the day-to-day operations of the company as members of the executive management, at least according to the interviewees. However, due to small size of these portfolio companies, it is also assumed that the investors assist the management in various tasks.

Role taken	% of investment cases
Member of the board	34%
Chairman of the board	24%
Advisor	20%
None	16%
Executive management	5%

Table 8.1.4 role taken in the portfolio companies (% of investment cases)

The central findings of the current study have been presented in this chapter. The purpose of this chapter has been to summarize and benchmark the results of the analysis derived from the answers from the 40 Finnish business angels participating in the current study. The results have been presented in a largely informative way, leaving out much of the discussion related to the figures presented, and also without tying the results to the theory presented in the beginning of this thesis. An effort will therefore be made in chapter 9 to fill this gap and provide some discussion around each of the central topics in the theory chapter.

9. Discussion and conclusions

The aim of the discussion is to answer research questions set for this thesis in a comprehensive manner as well as to provide the interested parties with an updated view of the informal venture capital climate in Finland. The chapter will begin with a discussion around the features of Finnish business angels, business angel investments, performance and practices observed in the current study.

This chapter will address each central topic presented in the theory section of this thesis in order to provide some insight on how the findings of the current study are positioned in relation to the previous findings in the field of informal venture capital and see if the results of the analysis are comparable to the ones found in literature examining related topics. The discussion will be accompanied with comments regarding divergencies in the findings of the current study. The aim is to keep the focus on the things of interest to the primary target reader of this thesis, and the scope will therefore mainly include a discussion around the key deliverables of this thesis. The chapter will start from the first subjects addressed in the theory section, the evolution of the Finnish informal venture capital industry.

The Finnish informal venture capital industry has taken a significant leap since the early 1990's. As described earlier in this thesis, capital resources are being steered into this industry at an accelerating pace, making it easier for small and growth-minded companies to acquire sufficient funding in order to survive, thrive and achieve desired growth figures and expand to new geographical regions and markets. At the same time the Finnish business angel community has been gaining more exposure in the eye of the public, the deal flow and investment opportunities reaching the business angels have increased and the investment practices have undoubtedly enhanced. The above-mentioned changes are assumed to spur each other, creating an upward swing in the field of private equity investments where the ultimate winner is the given country experiencing such advancements. It should be remembered that some of the credit should also be steered to the Finnish and cross-border non-profit organizations, governmental entities and lawmakers enabling the above-mentioned changes.

As discussed in the beginning of this thesis, we know very little about the activities of the Nordic and Finnish business angels. However, there are several reasons for this being the case. The concept of angel investments has not changed significantly, but the significance of such investments has increased rapidly in Finland during the last couple of decades. The awareness and the interest towards this category of investors is due to increase over time. As there are studies from the 1980's addressing venture capital and business angel activity in the US, we are also bound to know increasingly more about the business angle scene in Finland over the coming years. The reason for the literature being so narrow until now is arguably due to the short period of time these kinds of "professional" business angel investments have been conducted in this part of the world. The greater impact this category of investors poses, the more emphasis will undoubtedly be allocated to understand the activities and performance of these investors.

However, there are a few important aspects arguably determining the direction of the informal venture capital industry development in Finland. Next, a brief recap will be given of the things discussed above in this thesis.

First, it is of great importance to nurture the environment for business angels. As discussed earlier, taxation policy is the one single thing having the greatest impact on business angels' propensity to perform investments. This is something several studies have addressed and confirmed. A favourable taxation environment for equity investments (taxation on capital gains) is a key driver for such investments. The taxation can generally be dissected into the general tax rates (-%) as well as deduction policies. When the effective tax rate increases, so does the investor's required return in order to achieve a balance between the expected risk and return. At least as long there are other attractive investment alternatives for these investors to pursue.

As discussed in a previous chapter, the geographical boundaries of venture capital investments have started slowly to erode. This phenomenon increases the emphasis of the domestic factors impacting the attractiveness of the target country in terms of taxation, bureaucracy, creativity and innovation, and attitudes towards entrepreneurship (Baygan and Freudenberg, 2000). The environment created for business angel investors does not only affect domestic actors and their propensity to make such investments, but the entire

equilibrium of in and outflow of capital resources to a specific country in terms of direct and indirect investments from domestic and foreign investors.

Another obvious aspect affecting the business angel environment is the underlying market, the market activity and risk acceptance amongst players forming the exits channels for the current investors. As almost all traditional private equity investors have a predetermined goal to realize the investment at some point of time, so does the business angels. A market open for exits, i.e. enough vertically and horizontally operating entities willing to buy the asset from the current investor is of great importance. As seen in the results of the current study, most of the exits were conducted through trade sales or sales to other investors, including VC/PE investors. High activity amongst these actors is assumed to create increased momentum for the business angel community, since these often function as middle-men or intermediates, taking the premature venture to a stage where, for example, a VC firm is interested in becoming a shareholder of the company and taking the company to a new level before exiting the investment. The same thing applies to the IPO market. Even though business angels seldom exit their portfolio companies in connection to an IPO, a market open for IPOs is assumed to create a pulling force, resulting in higher valuation levels and quicker turnover and liquidity in the market for business angels. As described earlier in this thesis, business angels do not operate in silos, but are rather an essential component of a larger chain of supporting entities, enabling capital intensive, growth-minded and innovative ventures surviving the path from establishment to fully mature and stable institutions. We now turn to examine and discuss the key takeaways from the results of the current study.

When first started to analyse the data gathered for this study, two rather unexpected things became clear: 1) The subjective preconception of business angel investments performing worse than other investments in assets with corresponding risk profiles was quickly revoked and overruled. The aforementioned preconception was also one of the “null-hypotheses” set for the current study, as it was for Mason and Harrison (2002a); 2) The results gained from the current study were unexpectedly aligned with the ones found in previous studies used as guidance and comparison when executing the study. The latter finding is of great interest and will be further addressed later in this chapter.

Even though most of us hear about angel investors becoming exceedingly wealthy through well-placed bets in unquoted companies, the reality and deal specifics of such cases often remain rather fuzzy. The high degree of scepticism is therefore understandable when examining these kind of success stories and performance reports published by lobbying entities. It was therefore surprising how well the business angles included in this sample performed overall. However, one should remember that the investors included in this sample is assumed to make up the most active and experienced category amongst Finnish business angels and do not necessarily represent the entire business angel population in Finland. This is also assumed to be true in previous studies addressing business angel returns in other regions.

The second significant and the more important insight gained when analysing the results of the current study is the alignment of the results when compared to previous studies.

If we were to generalize and describe a typical business angel based on the observations from the current sample as well as from the other studies mentioned in this thesis, we would find that the business angel is a: 1) Male (95 percent in the current study) in his 50's 2); Highly educated (university degree) and 3) An entrepreneur or a person with significant work experience from managerial tasks. Most business angels also seem to have started more than one company, and a large portion of them can be considered serial entrepreneurs. It can be assumed that a significant portion of the capital invested by these investors into new start-ups originate from previous exits, i.e. the money is put back into "circulation", enabling funding for new growth-companies and accumulating wealth to these investors.

The findings regarding demographical and general attributes amongst the investors included in the current sample are well in line with findings from previous studies. It was highly interesting to see that all the studies found in the field point in the same direction and provides us with an answer to the question: who are these individuals conducting the informal venture capital investments? However, it would have been highly interesting to acquire more answers to the questions in the second questionnaire and pair the results from the questionnaire to the performance data acquired in the first and successful questionnaire. This would have opened a new dimension of analysis to be conducted on the activities and preferences of the Finnish business angels.

The industry preferences of the business angels are also rather unbiased, and as previous studies show, the most preferred industry to invest in is the IT or ICT sector. As much as 38 percent of all the investments were steered into this sector in the current study. The information technology category included 27 subcategories, i.e. the variation within the information technology category was significant. Most of the investments in the IT category was made in software companies (e.g. e-commerce, IT security, IT analytics, mobile applications, etc.), but investment were also observed in the IT hardware companies.

The investments in the commercial and professional services category accounted for 24 percent and included investments into e.g. accounting services, consulting, media, etc. Consumer discretionary category accounted for 10 percent and included investments in e.g. retail businesses, different kind of durable goods, fashion, etc.

It was interesting to see that as much as 17 percent of the investments were made into companies belonging to the industrials category. This included everything from OEM measuring devices manufacturers to traditional machining subcontractors. Together, these 3 categories accounted for around 90 percent of all investments, and can be considered to rather well describe the types of companies Finnish business angels generally prefer to invest in.

What comes to investment strategies, we find some indication on that Finnish business angels included in the sample tend to lean towards specialization strategies. As Landström (1995) explains, investors opting for the specialization strategy often invest in companies positioned in a certain development stage or specific industry. This could somewhat be observed in the current study. Based on the analysis drawn upon the answers from the business angels, as many as 60 percent of the unique investments were made into companies operating in an industry familiar to the investor. The portfolios of the investors having done (exited) more than one investment were also on average very dense, i.e. held a large portion of companies operating in the same or similar industries. Further analysis showed that as many as 72 percent of the investments in the investors' portfolios were made into the same industries on average (median 71 percent). The industry refers in this context to the umbrella industries, i.e. information technology, business services, etc. As explained before, this does not indicate that the investors in the sample did not exercise

diversification practices, but rather that they prefer some industries over others due to their experience within the industry sector or that they simply are fond of these industries. However, it should be noted that the ICT sector alone causes some skewness to the distribution since it was the most preferred industry to invest in compared to the others in the sample.

Another dimension of investment strategies was also mentioned earlier in this thesis, the ones presented by Wiltbank et al. (2009), the predictive strategies and non-predictive control strategies. Investors preferring predictive strategies aim to control the fallout of a given investment through employment of logical prediction practices, consisting of market research, financial and operational modelling, due diligence activities, etc. These applications equip investors with concrete and measurable indicators (Wiltbank et al., 2009) of potential returns and probabilities (risk) to achieve the desired outcome. Non-predictive control strategies pursue to achieve desired outcome by changing the probabilities of events influencing the success of the venture, thus the performance of the investor (Wiltbank et al., 2009). The investors in the current sample seem to employ both above-mentioned investment strategies. However, some indication was found that these investors in the current sample prefer non-predictive control strategies, since the investors in around 70 percent of the investment cases allocated less than 40 hours on due diligence activities before executing the investment. The interaction with the portfolio company, however, was rather high. The investors spent on average more than 10 hours monthly interacting with the portfolio companies in around 60 percent of the investment cases. One conclusion to be drawn from this analysis is that the investors in many cases tend to value ex-post risk mitigation and value creation (non-predictive approach) instead of ex-ante evaluation procedures (predictive approaches). The observations concerning business angels' investment strategies are well in line with findings in previous studies.

Another topic related to the risk is the degree of syndication preferred by the business angels. As seen in the previous chapter, business angels in the current study preferred to invest in syndicates. As much as around 80 percent of the investment were made as syndicate investments. The most preferred investment partner to go along with was other business angels (47 percent of the investment cases). This underlines the importance of BANs, since these entities increases the investors' probability to find suitable partners who are interested to co-invest and participate in investment rounds with other business

angels. Syndication generally means increased capacity to tackle obstacles, a wider professional network to utilize when searching for key assets and other vital resources, increased human capital and expertise as well as better referrals and channels when searching for future funding. This can be compared to the “certification value” discussed earlier in this thesis. Syndication also enable the target companies to acquire a sufficient amount of funding without the need of individual investors to allocate too much of their wealth or assets in one target company. The aforementioned is one of the most prominent reasons for establishing syndicates.

Another interesting finding was that in 19 percent of the cases the investment was performed together with other business angles as well as at least one venture capital firm. It is rather interesting that the both types of venture capital investors have taken an interest in the same investment opportunities. The finding strengthens the argument that business angles not only interact with each other on a vertical level but also compete and partner up in some cases on a horizontal level, i.e. the niche markets overlap.

What it comes to ownership ratio, we see that the Finnish angels’ median ownership was 8.5 percent and the average ownership was 15 percent at the point of exit. This indicates that the Finnish business angels are satisfied with rather low ownership ratios. The ownership exceeded 50 percent in only 5 percent of the cases, which clearly demonstrates that business angles prefer minority investments and do not seek control over the portfolio companies. As discussed earlier in this thesis, investors’ ownership should be considerable enough to provide incentives for the investor to allocate time on support activities, and that investors often become rather passive if the upside potential regarding the investment is insufficient. However, this mainly concerns business angles with portfolios comprising a large number of companies and, of course, formal venture capital investors. It is assumed that even smaller stakes, thus smaller upside potential creates enough incentive for business angels, who enjoy the undiluted return fully themselves without having to be concerned over operational expenses related to managing professional investment funds with (e.g. formal venture capital firms).

Finally, we end this chapter by discussing the returns gained by the Finnish business angels. First, we can conclude that most of the returns are harvested in connection to an exit (disposal of some or all shares in the portfolio company). A very small portion (10

percent) of the companies held in the portfolios paid any dividends during the entire holding period, and these dividend payments were only a fraction of the total returns gained by the investors. The median cumulative dividend for investments paying dividends was 50 000 euro and the average was 120 194 euro, indicating that there was a small number of portfolio companies paying generous dividends. The small portion of companies paying dividends can be explained by several reasons, of which the most obvious is presumed to be the lack of free cash flow from operations generated by these portfolio companies. Also, it is rather difficult to understand why these typically capital intensive and growth-minded companies would return these vital capital resources back to their owners as dividends at that maturity stage.

Most of the return was paid to investors in connection to an exit. Most of the investments were exited at once, i.e. all shares and holdings sold at once. However, there were also investments that included multiple incremental exits, e.g. in investment cases involving contingent considerations i.e. earnout-mechanisms. The number of incremental exits for unique investments ranged between 1 and 7, however, around 90 percent of the reported cases were exited at once.

Another thing of interest was that there was no significant correlation between the amount invested and the performance of the investment, e.g. smaller amounts invested do not convert into relatively higher return on the investment. However, the sample was too small to make any significant deductions from it.

The overall performance of the Finnish business angels included in the sample, was highly satisfying when compared to previous studies conducted on the topic. The overall adjusted pooled IRR was 30.1 percent and the overall return or realization multiple was 3.75x. The figure was higher than observed in any other study conducted in any other region. However, there were only one other study presenting such highly comparable performance measure at the point of time when this study was conducted. This was the one conducted by Wiltbank & Boeker (2007). The overall return recorded in the current study exceeds even the return requirements set by later stage private equity actors targeting more mature and stable, thus less risky assets. That should, of course, also be the case since, as shown in the current study, more than 50 percent of the investments

were considered failures. This demonstrates the significant level of risk associated with typical business angel investments.

The obvious benefit of diversification could also be observed in the study. The portfolio returns were better aligned with the normal distribution compared to individual investments, lowering the portion of failed investments (portfolio performance) from 54 percent to 45 percent and simultaneously reducing the relative amount reaching plus 100 percent IRR returns. This is considered a positive thing, since business angels frequently making investments assumedly seek to perform well on a long-term basis and do not expect to acquire all profit from a single homerun.

When comparing the performance measures observed in this study to the ones reported by European VC funds (EIF fund performance), we find that the Finnish business angels, at least the ones included in our relatively small sample, outperform these funds by far. Not even the upper quartile of the funds that EIF had invested in seemed to outperform the business angels included in the current sample. However, due to fact that it is nearly impossible to accurately compare funds' performance to business angels', one should not draw any significant conclusions from the benchmarking presented in this thesis. Still, it is very interesting to acquire some performance indications and be able to broadly position business angel performance in relation to the performance of other types of actors in the private equity genre.

When solely looking at the return distribution of the Finnish business angels' investment portfolios included in the sample, we see that around half of the portfolios generated a return (IRR) exceeding the around 8–12 percent expected for venture capital funds (at least European VC funds).

The investment portfolio performance in the sample was rather bifold due to the low number of realized investments recorded per investor portfolio, i.e. 45 percent of the portfolios generated negative returns and the rest performed rather well. This is one of the main reasons for making the benchmarking profoundly difficult if not impossible.

One must remember that the main reason for venture capital firms showing rather modest return figures in general (from the LPs point of view) is that these funds typically have a

rather large and diversified portfolio consisting of investments in multiple companies within one or multiple industries. Venture capital firms are also often obligated or required to hold a rather diluted portfolio and cannot, for example, only invest in two to three companies. This phenomenon is bound to alter the return distribution, i.e. it would be more comparable to benchmark one of the venture capital funds against the entire sample used in this thesis, as if all investments were made by only one entity. This would better represent the return distribution found within venture capital funds. Another issue making benchmarking difficult is the aforementioned problem with diverging methods of calculating the return (IRR in this case). This means in practise that only fully realized funds would be comparable to the performance shown for business angels, and not even then fully comparable, since we would be forced to some way add back the management fees and carried interest fees in order to obtain the real gross portfolio performance achieved by these venture capital firms. Nevertheless, angels included in the sample performed very well and the expected return for such investments (based on the small sample) exceeds by far other investment opportunities. Even if we have presented proof in this study that not only superior returns can be achieved through these types of investments, but that the expected return is also rather high, we must remember that the sample consisted of investments made by presumably active and experienced business angels in their 50s who have accumulated human capital and experience as well as professional and personal networks over decades and are assumed to be in a much more beneficial position to conduct these types of investments than many others possessing the capital resources to do so.

A positive and rather satisfying finding is that the performance figures from the current study resonate well with those presented by both Mason and Harrison (2002a) as well as Wiltbank and Boeker (2007). Together with the observation that also the investment practises and general properties of the investors corresponds to previous studies on the topic strengthens the findings of the current study.

The primary purpose of this thesis was to answer the following research questions set for the study: 1) How do the Finnish business angels perform in general and 2) how are Finnish business angels performing in terms of return on investment when compared to formal private equity peers?; 3) Are Finnish business angels employing similar strategies, processes and reasoning for decision-making purposes as observed in previous studies

targeting venture capital firms and informal venture capital peers and 4) How have the informal venture capital environment, activities and methods of the investors changed in Finland during the last decades?.

although we only scratched the surface of many topics discussed in thesis, it hopefully provides some insight on the most critical questions concerning the activity and performance of Finnish business angels.

10. Further research

A larger sample would have opened numerous possibilities to further analyse the performance, activities and properties of Finnish business angels in general. Much of the analysis initially planned for this thesis was not included due to the relatively low number of submitted answers and the almost total absence of data that should have been collected through the second questionnaire (investor attributes). Combining the investor profile data with the deal-specific performance data would have provided a deeper insight into the world of business angel activity in Finland. However, this had to be left outside the scope of the thesis due to insufficient data acquired.

Another matter of interest would have been to perform a deeper analysis on the decision-making of Finnish business angels and the technical execution of such investments (i.e. deal structuring, incentive arrangements, SPA and SHA structuring as well as other relevant topics). However, this would have required a totally different approach when gathering data to this study.

To further refine the knowledge of Finnish business angel performance, a comprehensive study including a larger sample of Finnish business angels would be of great interest, especially if combined with the above-mentioned angel properties, but also data on the performance and historical development of the target companies receiving funding from these business angels. Although the scope of the current study was broader than what would have been optimal, much of the topics concerning Finnish business angel activity and performance remained untouched. As stated in the introduction of this thesis, these investors have a great impact on the development of small and innovative companies, thus, the general economic growth and long-term prospects of any given country. It would therefore be of great importance to steer more focus into examining this category of investors and learn more about the properties and activities of them in order to improve and nurture the operating environment for these actors in the right way, i.e. employing the right types of incentive schemes and making informed decisions impacting the development of the informal venture capital industry in Finland.

11. Bibliography

- Angel Resource Institute (2015). HALO Report, 2015 Annual Report. URL: <https://angelresourceinstitute.org/reports/halo-report-full-version-ye-2015.pdf> (read 8.3.2017)
- Avdeitchikova, S. (2008). On the structure of the informal venture capital market in Sweden: developing investment roles. *Venture Capital*, 10(1), 55-85.
- Bain & Company, Inc. (2018). Global Private Equity Report 2018. URL: https://go.bain.com/rs/545-OFW-044/images/BAIN_REPORT_2018_Private_Equity_Report.pdf?aliId=19700840 (viewed 29.9.2018)
- Bain & Company (2015). Global Private Equity Report 2015. URL: http://www.bain.com/Images/BaIn_rePort_Global_Private_equity_report_2015.pdf (read 1.4.2017)
- Bernile, G., Cumming, D., & Lyandres, E. (2007). The size of venture capital and private equity fund portfolios. *Journal of Corporate Finance*, 13(4), 564-590.
- Black, B. S., & Gilson, R. J. (1998). Venture capital and the structure of capital markets: banks versus stock markets. *Journal of financial economics*, 47(3), 243-277.
- Brunsson, N. (1985). *The irrational organization: Irrationality as a basis for organizational action and change*. John Wiley & Sons.
- Bygrave, W. D., Lange, J., Kotha, R. R., & Stock, W. (2001). Venture capital investments and the growth of revolutionary new industries. In *Frontiers of Entrepreneurship Research. Proceedings of the Babson Kauffman Conference on Entrepreneurship Research (Wellesley, MA: Babson College)* (pp. 523-535).

Cambridge Associates (March 31, 2018). Us Venture Capital Index and Selected Benchmark Statistics

Carpenter, Jennifer N., and Anthony W. Lynch. "Survivorship bias and attrition effects in measures of performance persistence." *Journal of financial economics* 54.3 (1999): 337-374.

Dal Cin, P. (1991). *Decision-making by Canadian informal investors: empirical findings regarding the impact of experience*. Working Paper, School of Business, Carleton University, Ottawa.

De Bettignies, J. E., & Brander, J. A. (2007). Financing entrepreneurship: Bank finance versus venture capital. *Journal of Business Venturing*, 22(6), 808-832.

Engel, D., & Keilbach, M. (2007). Firm-level implications of early stage venture capital investment—An empirical investigation. *Journal of Empirical Finance*, 14(2), 150-167.

European Investment Fund (2017). European Investment Fund Venture Capital Portfolio Performance – EIF own resources, Vintage and Team Location As at 30/06/17.

EVCA (2013). 2013 Pan-European Private Equity Performance Benchmarks Study. URL: <https://www.investeurope.eu/media/199202/2013-pan-european-private-equity-performance-benchmarks-study-evca-thomson-reuters-final-version.pdf> (read 10.4.2017)

Finnish Business Angel Network (FiBAN, 2017a). URL: <https://www.fiban.org> (read 24.1.2017)

Finnish Business Angel Network, FiBAN (2015). 2015 Angel Activity. URL: <https://www.fiban.org/news/finnish-business-angel-activity-2015> (read 10.3.2017)

Finnish Venture Capital Association (FVCA, 2017). URL: <http://www.fvca.fi> (read 24.1.2017)

Finnish Venture Capital Association, FVCA (2016). Venture Capital Suomessa 2016. URL: http://www.fvca.fi/files/1291/VC_Suomessa_2016.pdf

Finnvera (2017). URL: <https://www.finnvera.fi> (read 25.2.2017)

Florin, J. (2005). Is venture capital worth it? Effects on firm performance and founder returns. *Journal of Business Venturing*, 20(1), 113-135.

Harrison, R. T., & Mason, C. M. (1992). International perspectives on the supply of informal venture capital. *Journal of Business Venturing*, 7(6), 459-475.

Government proposal (2012). HE 177/2012. URL: <http://www.finlex.fi/sv/esitykset/he/2012/20120177.pdf> (read 6.3.2017)

Government proposal (1999). HE 132/1999. URL: <http://www.finlex.fi/fi/esitykset/he/1999/19990132> (read 17.3.2017)

Guiso, L., Haliassos, M., & Jappelli, T. (2002). *Household portfolios*. MIT press. Cambridge, Massachusetts. London, England.

Hagemann, H. (1990). Internal rate of return. *Capital Theory*, 195-199.

Hellmann, T., & Puri, M. (2002). Venture capital and the professionalization of start-up firms: Empirical evidence. *The journal of finance*, 57(1), 169-197.

Hsu, D. H. (2004). What do entrepreneurs pay for venture capital affiliation? *The Journal of Finance*, 59(4), 1805-1844.

Hyytinen, A., & Väänänen, L. (2002). *Government funding of small and medium-sized enterprises in Finland* (No. 832). ETLA Discussion Papers, The Research Institute of the Finnish Economy (ETLA).

Income Tax Act (1992). Tuloverolaki 30.12.1992/1535. URL:
<http://www.finlex.fi/fi/laki/ajantasa/1992/19921535> (read 8.3.2017)

Investeurope (2016). European Private Equity Activity Data 2007-2015. URL:
<https://www.investeurope.eu/research/invest-europe-publications/#i> (read 1.4.2017)

Jones-Evans, D., & Thompson, P. (2009). The spatial dispersion of informal investment at a regional level: Evidence from the UK. *European Planning Studies*, 17(5), 659-675.

Kaplan, S. N., & Schoar, A. (2005). Private equity performance: Returns, persistence, and capital flows. *The Journal of Finance*, 60(4), 1791-1823.

Lahti, T. (2011). Angel investing: an examination of the evolution of the Finnish market. *Venture Capital*, 13(2), 147-173.

Landstrom, H. (1995). A pilot study on the investment decision-making behaviour of informal investors in Sweden. *Journal of Small Business Management*, 33(3), 67.

Landström, H. (1993). Informal risk capital in Sweden and some international comparisons. *Journal of Business Venturing*, 8(6), 525-540.

Lumme, A., Mason, C., & Suomi, M. (2013). *Informal venture capital: Investors, investments and policy issues in Finland*. Springer Science & Business Media.

Lumme, Annareetta, Colin Mason, and Markku Suomi (1998) *Informal Venture Capital: Investors, Investments and Policy Issues in Finland*. Boston/Dordrecht/London: Kluwer Academic Publishers.

Magni, C. A. (2010). Average internal rate of return and investment decisions: a new perspective. *The Engineering Economist*, 55(2), 150-180.

Mason, C. M., & Harrison, R. T. (2002a). Is it worth it? The rates of return from informal venture capital investments. *Journal of Business Venturing*, 17(3), 211-236.

Mason, C. M., & Harrison, R. T. (2002b). Barriers to investment in the informal venture capital sector. *Entrepreneurship & Regional Development*, 14(3), 271-287.

Mason, C. M., & Harrison, R. T. (1994). Informal venture capital in the UK.

Maula, M. (2007). TAX INCENTIVES IN CATALYZING INFORMAL VENTURE CAPITAL INVESTMENTS. Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos. The Research Institute of the Finnish Economy, 2007, 40 p. (Keskusteluaiheita, Discussion Papers ISSN 0781-6847; No. 1068).

Maula, M., Autio, E., & Arenius, P. (2005). What drives micro-angel investments? *Small Business Economics*, 25(5), 459-475.

Maula, M. V., Ahlström, J., Haahkola, K., Heikintalo, M., Lindström, T. S., Ojanperä, H., & Tiainen, A. T. (2006). The Prospects for Successful Early-Stage Venture Capital in Finland. *Sitra Reports*, 70, 2006.

Merton, R. C. (1973). An intertemporal capital asset pricing model. *Econometrica: Journal of the Econometric Society*, 867-887.

Månsson, N., & Landström, H. (2006). Business angels in a changing economy: The case of Sweden. *Venture Capital*, 8(4), 281-301.

Nasdaq (2017). URL:

<http://www.nasdaqomxnordic.com/tietoaporrssista/firstnorth?languageId=4> (read 22.4.2017)

Paglia, J. K., & Harjoto, M. A. (2014). The effects of private equity and venture capital on sales and employment growth in small and medium-sized businesses. *Journal of Banking & Finance*, 47, 177-197.

Pitchbook (2017). Global PE & VC Fund Performance Report (2Q/2017)

Pitchbook (2016). Global PE & VC Fund Performance Report (3Q/2016)

Prowse, S. (1998). Angel investors and the market for angel investments. *Journal of Banking & Finance*, 22(6), 785-792.

Reitan, B., & Sorheim, R. (2000). The informal venture capital market in Norway? Investor characteristics, behaviour and investment preferences. *Venture Capital: An international journal of entrepreneurial finance*, 2(2), 129-141.

Reynolds, P. D., Camp, S. M., Bygrave, W. D., Autio, E., & Hay, M. (2002). Global entrepreneurship monitor gem 2001 summary report. *London Business School and Babson College*.

Savaneviciene, A., Venckuviene, V., & Girdauskiene, L. (2015). Venture Capital a Catalyst for Start-Ups to Overcome the “Valley of Death”: Lithuanian Case. *Procedia Economics and Finance*, 26, 1052-1059.

Statistics Finland (2016). URL: http://www.stat.fi/til/plv/2015/12/plv_2015_12_2016-03-15_kat_001_fi.html (read 5.4.2017)

The Finnish Innovation Fund Sitra (Sitra, 2017). URL: <https://www.sitra.fi> (read 24.2.2017)

The Federation of Finnish Enterprises (2016). Yrittäjäkysely 2016 – Suomen Yrittäjät. URL: https://www.yrittajat.fi/sites/default/files/sy_yksinyrittajakysely_2016.pdf (read 7.3.2017)

The European Trade Association for Business Angels, Seed Funds, and other Early Market Players, EBAN (2014). Statistics Compendium. URL: <http://www.eban.org/wp-content/uploads/2014/09/13.-Statistics-Compendium-2014.pdf> (read 10.3.2017)

The Act on Income from Professional Activities (1968). Laki elinkeinotulon verottamisesta 24.6.1969/360. URL: <http://www.finlex.fi/fi/laki/ajantasa/1968/19680360> (read 8.3.2017)

The European Trade Association for Business Angels, Seed Funds, and other Early Stage Market Players, EBAN (2015). European Early Stage Market Statistics 2015. URL: <http://www.eban.org/wp-content/uploads/2016/06/Early-Stage-Market-Statistics-2015.pdf> (read 30.3.2017)

The Federation of Finnish Technology Industries (2015). Year book 2015. URL: http://teknologiateollisuus.fi/sites/default/files/file_attachments/vuosikirja_2015.pdf (read 6.2.2017)

Tversky, Amos, and Daniel Kahneman. "Advances in prospect theory: Cumulative representation of uncertainty." *Journal of Risk and uncertainty* 5.4 (1992): 297-323.

Van Osnabrugge, M. S. (1998). *The financing of entrepreneurial firms in the UK: a comparison of business angel and venture capitalist investment procedures* (Doctoral dissertation, University of Oxford).

Van Osnabrugge, M. (2000). A comparison of business angel and venture capitalist investment procedures: an agency theory-based analysis. *Venture Capital: An international journal of entrepreneurial finance*, 2(2), 91-109.

Wetzel, W. E. (1983). Angels and informal risk capital. *Sloan management review*, 24(4), 23-34.

Wiltbank, R., Dew, N., & Read, S. (2015). Investment and returns in successful entrepreneurial sell-outs. *Journal of Business Venturing Insights*, 3, 16-23.

Wiltbank, R., Read, S., Dew, N., & Sarasvathy, S. D. (2009). Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24(2), 116-133.

Wiltbank, R., & Boeker, W. (2007). Returns to angel investors in groups.

World Economic Forum (2014). Global Information Technology Report 2014. URL:
<http://reports.weforum.org/global-information-technology-report-2014/> (read 1.4.2017)

12. Appendix

12.1. Questionnaire 1

Transaction data, n = 126 answers acquired

Question	Motivation	Preliminary purpose
Your name	Primary key, used for identification	Primary key to compile investor portfolios
How many of your unique investments will you report? (Report only investments with an exit, i.e. realized profit or loss)	Determine the number of unique investments reported	Needed in order to generate appropriate number of extra tabs in the program used for submitting data
Initial investment size and point of time when the investment was made (MM/YYYY)	Collect data on the initial investments	Enable an accurate internal rate of return to be calculated on the unique investments and investment portfolios
Size of follow-up investment(s) made and point of time (MM/YYYY)	Collect data on any follow-up investments made in the target company	Enable an accurate internal rate of return to be calculated on the unique investments and investment portfolios
Amount and time of dividend payments	Collect data on any dividend payments received by the investor	Enable an accurate internal rate of return to be calculated on the unique investments and investment portfolios
Amount received at exit(s) and point of time (MM/YYYY)	Collect data on returns at exit	Enable an accurate internal rate of return to be calculated on the unique investments and investment portfolios
Your portion of ownership at exit	Collect data on ownership ratios at exit	Enable a directional valuation (equity value) of the company at exit to be calculated
Co-investment with other business angels or venture capital firms	Collect data on syndication and syndication preferences	Needed to produce aggregate data on the syndication preferences
Industry of the target company	Collect data on the industry preferences, group into umbrella categories	Needed to produce aggregate data on the industry preferences
Own work experience from that industry (entrepreneurial or employee)	Collect data on investors experience from the industry of the target company	Needed to analyse and determine the different investment strategy preferences of the investors
Nationality of the company	Collect data on the nationality of the target companies	Needed to determine nationality preferences of the investors

Hours of due diligence performed before investing (including due diligence performed by other parties)	Collect data on due diligence performed before investing	Needed to analyse and determine the different investment strategy preferences of the investors
Average monthly interaction with the company	Collect data on the involvement of the business angle concerning the unique investment	Needed to analyse and determine the different investment strategy preferences of the investors
Role taken in the company (e.g. board member, chairman, adviser)	Collect data on the role taken in the target company during the holding period	Needed in order to determine the involvement and activity of the investors
Type of exit (e.g. sold to VC, PE or competitor, bankruptcy, IPO, etc.)	Collect data on how the investment was exited in the end of the holding period	Needed to produce aggregate data on the exit channels

12.2. Questionnaire 2

Investor profiles, n = 18 answers acquired (not used in the thesis due to the insufficient number of answers)

Question	Motivation	Preliminary purpose
Your name	Primary key, used for identification	Primary key to compile investor portfolios
Gender	Determine the gender split amongst the investors in the sample	Compare against previous studies from Finland and other regions
Age	Determine the age of the investor	Compare against previous studies from Finland and other regions
Activity level	Determine how large share of the investors considers themselves full-time, part-time or hobby-level business angels	Determine basic properties within the sample
Years of business angel experience (from the initial investment conducted until the current date)	Determine the experience of the investors included in the sample	Determine basic properties within the sample, compare against previous studies from Finland and other regions
Highest degree of education (predetermined choices to select from ranging from basic to doctoral degree education level)	Determine the educational level of Finnish business angels included in the sample	Compare against previous domestic and foreign studies
Field of study (International Standard Classification of Education, ISCED used)	Determine the investor's field of study	Acquire better knowledge on the basic properties and industry knowledge of the investors
Highest prior managerial experience from non-founded company	Determine the managerial experience possessed by the investors in the sample	Compare against previous domestic and foreign studies
Industry where professional experience gained (Industrial Classification TOL 2008 used)	Determine the primary industry of the investor	Acquire better knowledge on the basic properties and industry knowledge of the investors
Current region	Determine in which geographical region the investor operates	Test and compare activity in different regions and determine where the investors are located
Number of companies founded or co-founded	Determine the number of companies the investor has founded or co-founded	Acquire better insight on the activity and experience of the Finnish business angels
Business angel investments out of total investment portfolio	Determine how much of the investor's wealth is allocated to rather risky informal venture capital investments	Compare against previous domestic and foreign studies

Use of investment company or other legal entities for performing informal venture capital investments	Determine the use of personal investment vehicles	Acquire knowledge of the use of investment vehicles amongst Finnish business angels
Use of temporary incitement tax law (2013-2015), including 3 sub questions regarding the topic of tax incentives	Determine how large share of the Finnish business angels had utilized the temporary incitement tax law	Test against findings in previous studies looking at the effect of taxes and tax incentives in the context of business angel investments
What would increase your tendency to perform business angel investments in general?	Determine which of the provided statements would have the most positive effect on the investor's investment activity	Test if findings from previous studies converges with the ones in the current study
Use of external experts in due diligence processes	Determine how often the investors use external subject matter experts, legal advisers, consultants for evaluating investment opportunities (ex-ante investment) or executing the investment processes (agreements, etc.)	Test the preferences amongst the investors in the sample
Which of the listed investment strategies describes your own profile the most?	Determine investment strategy employed (that describes the investor the most), multiple choice question, alternatives extracted from Wiltbank et al. (2009) ³ and Landström's (1995) ⁴ studies	Acquire knowledge on the investment strategies employed by the investors
Average time spent on due diligence per unique target company (ex-ante investment)	Determine the estimated average time spent on due diligence per company invested in (hours)	Map the current situation, test against portfolio performance and other attributes (e.g. investment strategy)
Cumulative sum of all business angel investments made from inception up to current date	Determine the total portfolio sizes consisting of typical informal venture capital investments and total wealth allocated to such investments	Acquire knowledge on the portfolio sizes (unrealized investments) and total amount invested in venture capital investments
Number of companies currently held in portfolio	Determine the total portfolio sizes	Acquire knowledge on the portfolio sizes (no.)
Total number of companies invested in	Determine the activity of Finnish business angels	Test against findings from previous studies, compare against previous samples

³ Wiltbank, R., Read, S., Dew, N., & Sarasvathy, S. D. (2009). Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24(2), 116-133.

⁴ Landstrom, H. (1995). A pilot study on the investment decision-making behavior of informal investors in Sweden. *Journal of Small Business Management*, 33(3), 67.

12.3. Summary of data acquired from questionnaire 2

It was decided that the data acquired from questionnaire 2 would not play a central role in the thesis and attention to the results from the second questionnaire should be left to a minimum. However, this appendix chapter will provide a brief summary of the answers from the 18 business angels who were willing to take part of questionnaire 2.

We see that the overall results from this questionnaire highly correspond to the ones discussed in this thesis and many of the characteristics observed among the business angel population in previous studies can also be observed in the data submitted through the second questionnaire, i.e. the results from questionnaire 2 only strengthens the assumptions and arguments provided in chapter 9.

The findings will be presented in a chronological order as they were asked in the questionnaire (questionnaire 2) which can be found above. We will start by looking at the basic features of the investors.

As seen in Table 12.3.1, most of the business angels were men, in their 50s (Figure 12.3.2). The median age of the participants was 56.5 years and the average 54.8 years.

Gender	% of participants
Male	94%
Female	6%
Total	100%

Table 12.3.1 Gender split amongst participants

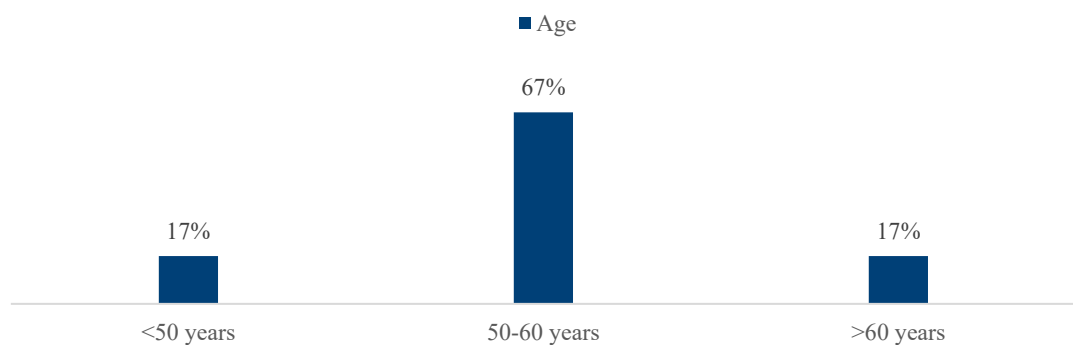


Figure 12.3.1 Age of the participants

What comes to the activity of the business angels, most were part-time business angels, i.e. investing in venture capital investments was not their principal occupation (Figure 12.3.2)

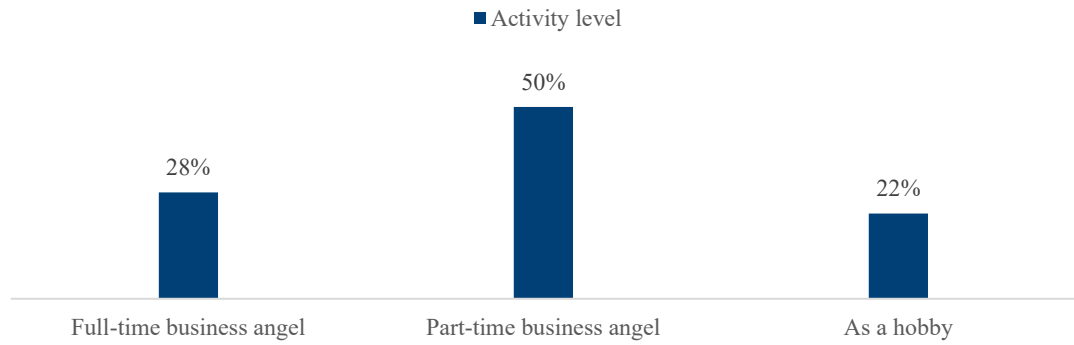


Figure 12.3.2 Activity level of the participants

The angels who took part in the second questionnaire were highly experienced business angels who had made several business angel investments and had a median of 8.5 years of experience from business angels investing (time passed since the first investment conducted) and on average 10.2 years of experience (Figure 12.1.3).

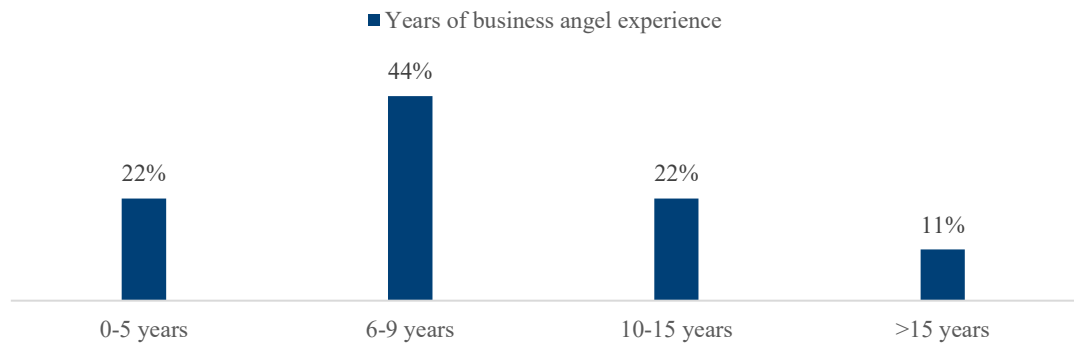


Figure 12.1.3 Distribution of participants' years of business angel experience

What comes to the education of the business angel investors in the small sample, we see that the business angels possessed high educational degrees (Figure 12.1.4), which was also seen in all other reference studies presented in this thesis. We see that business angels in the sample were in general much more educated compared to the overall Finnish population. Another interesting finding was that almost all had engineering or business-related backgrounds (89 percent, Figure 12.1.5).

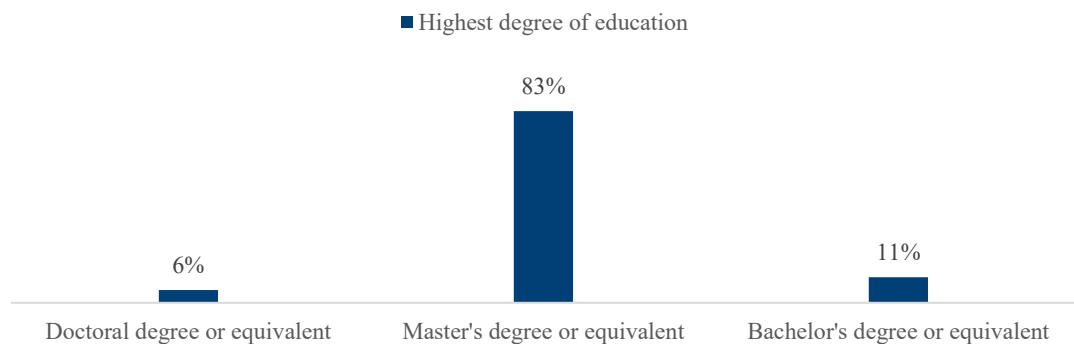


Figure 12.1.4 Educational level of the participants

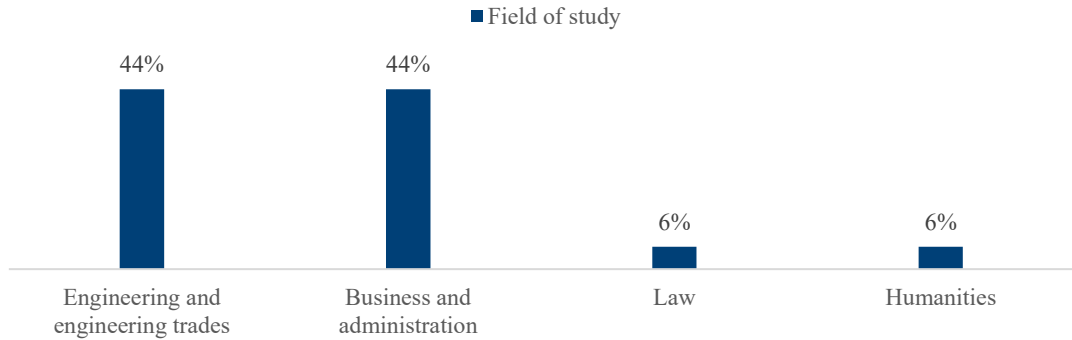


Figure 12.1.5 Field of study of participants

The business angels had also on average significant managerial experience from non-owned companies (Figure 12.1.6). This figure highly correlates with findings from previous studies mentioned earlier in this thesis. We also see that most of the participants had gained their experience from the ICT sector (Figure 12.1.7).

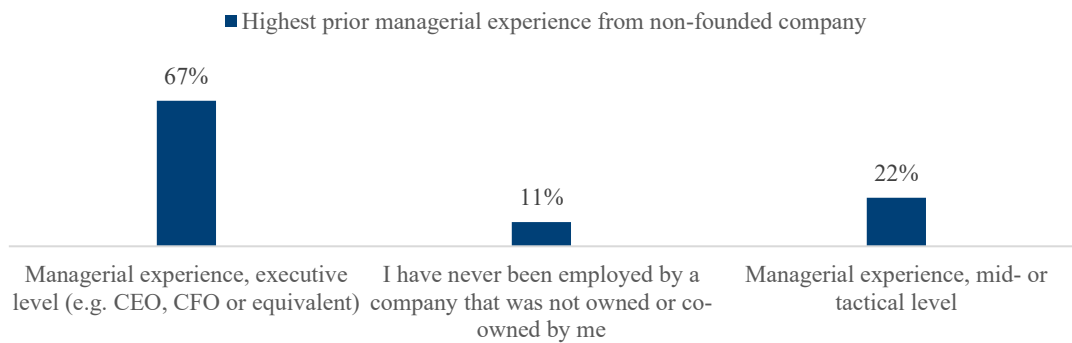


Figure 12.1.6 Managerial experience from non-owned company

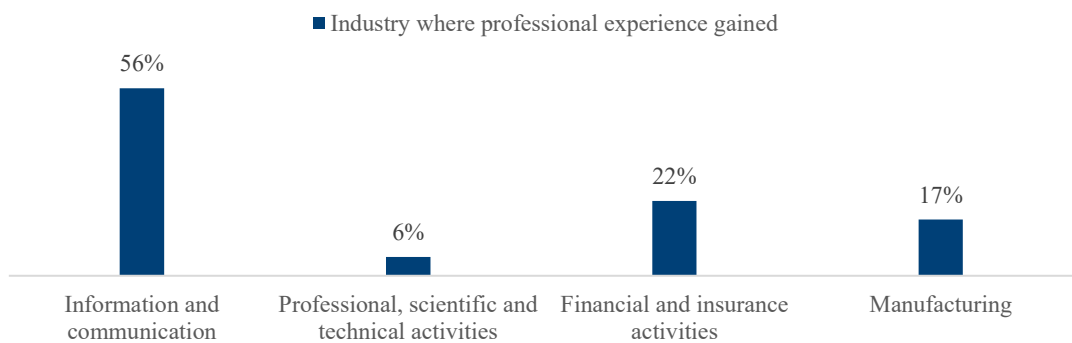


Figure 12.1.7 Industry where professional experience gained

When looking at the current location of the business angels in the sample, we find that most of the angels were located in the metropolitan area, which, of course, was no surprise (Figure 12.1.8).

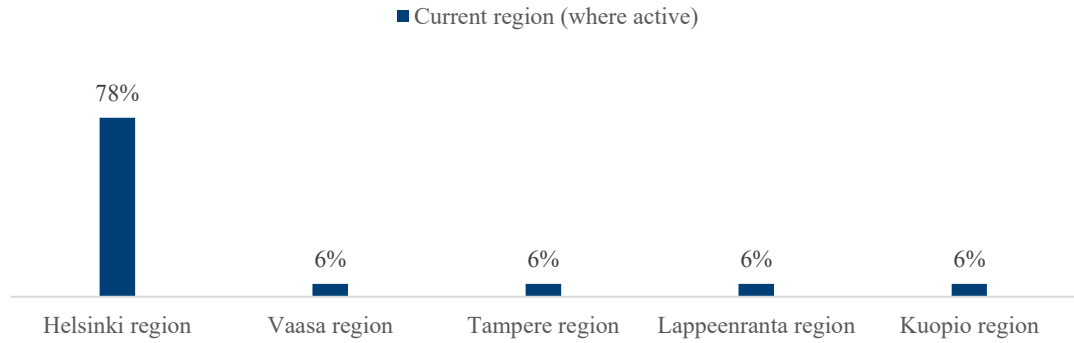


Figure 12.1.8 Location of the business angel

As noted in other studies, most of the business angels have entrepreneurial backgrounds. This was also obvious for the business angels in the sample. The participants had founded or co-founded a median of 1 company (average 3.6 companies, Figure 12.1.9).

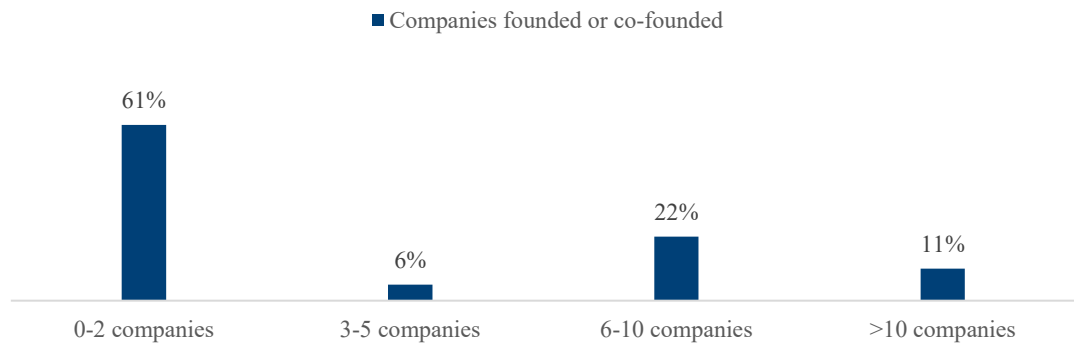


Figure 12.1.9 Number of companies founded or co-founded

The angels' wealth allocated to business angel investments was also on a reasonable level in general. Most of the angels had allocated less than 20 percent of their total wealth to business angel investments (Figure 12.1.10), which highly corresponds figures from previous studies targeting angels in other regions. The median share was 18 percent and the average share was 22 percent. These figures are assumed to represent only estimations of the allocation levels, since it was assumed that the participants had not conducted any real calculations on their allocations and that the provided figures were merely guesstimates.

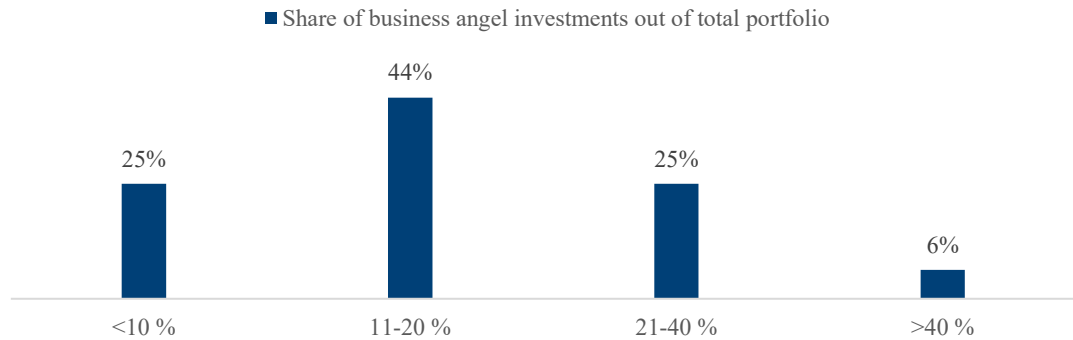


Figure 12.1.10 Share of business angel investments out of total wealth

We also see that many of the business angels use investment vehicles when conducting the investments (Figure 12.1.11), as also noticed by Lahti (2011). The reason is assumed to be the high taxation on capital gains in Finland.

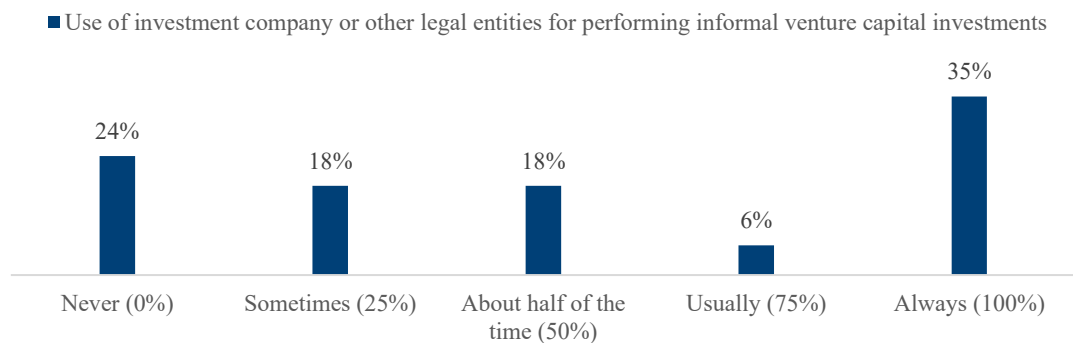


Figure 12.1.11 Use of investment vehicle

In connection to the taxation, the utilization of the temporary incitement tax law between 2013 – 2015 was studied. The purpose of including questions regarding the utilization and attitudes towards this incitement was derived from the general assumption that the single thing most affecting the propensity to conduct such investments was the tax aspect. However, it did not seem to be that important for the few angels taking part of the second questionnaire. Based on the results, we see that both the utilization rate of the temporary incitement tax was rather low and that the investors also value other things beside favourable taxation environments (Figure 12.1.12, Figure 12.1.13).

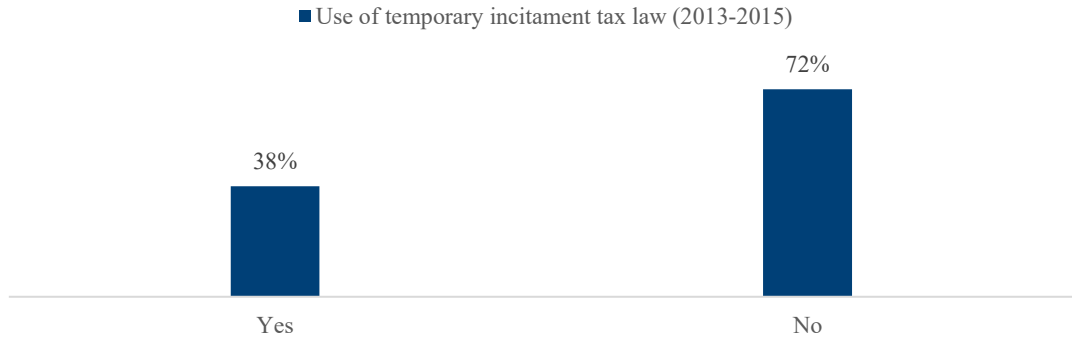


Figure 12.1.12 Use of temporary incitement tax law

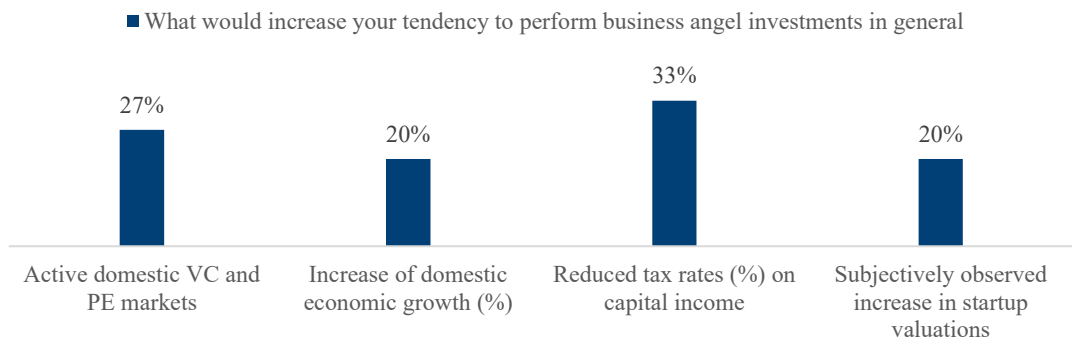


Figure 12.1.13 Things affecting propensity to conduct business angel investments

What comes to the use of external and professional help when conducting due diligence activities when examining investment opportunities, surprisingly high figures were observed (Figure 12.1.14). Most of the investors, at least sometimes used professional help when conducting due diligence. Figure 12.1.15 presents the average time spend on due diligence activities.

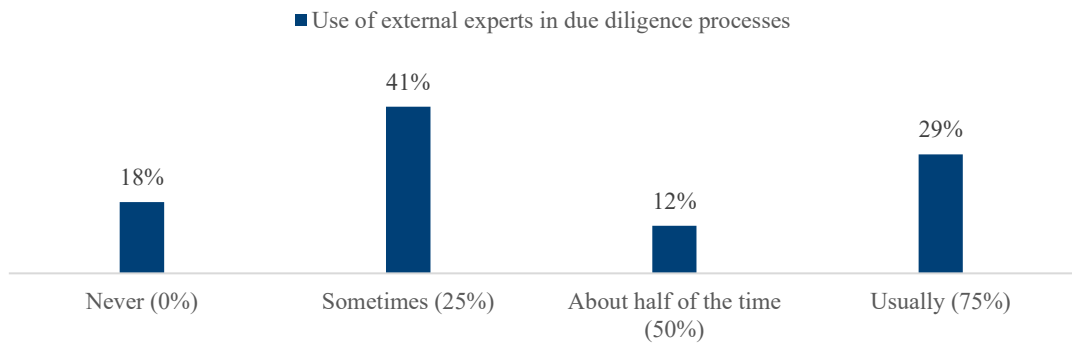


Figure 12.1.14 Use of external experts in due diligence processes

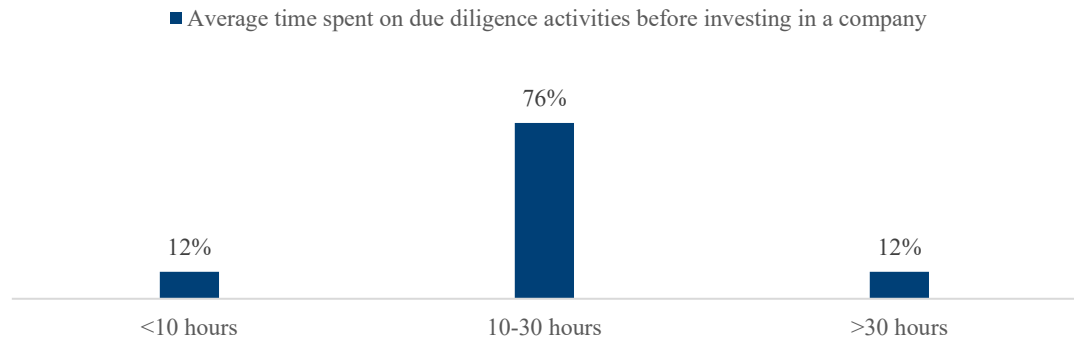


Figure 12.1.15 Average time spent on due diligence activities

The second questionnaire enabled us to acquire a glimpse of what kind of investment strategies the business angels in the sample prefer. The questionnaire included a rather comprehensive description of the two main investment strategy philosophies presented in this thesis, i.e. the one by Wiltbank et al. (2009), and the one by Landström (1995). Based on the description, the participants were asked to describe their investment strategies by using the provided alternatives, i.e. which of the investment strategies mentioned described their practises the most. Surprisingly enough, a large share (50 percent) of the investors opted for the non-predictive specialization strategy, which is highly advocated by e.g. Wiltbank et al. (2009). The distribution is presented in Figure 12.1.16.

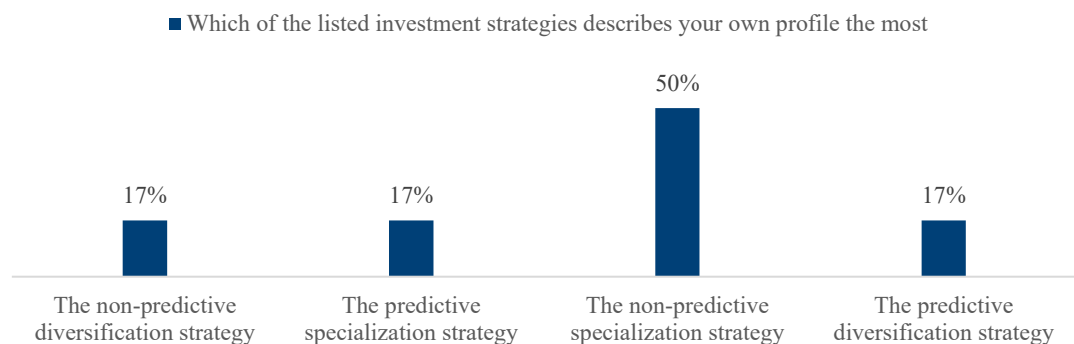


Figure 12.1.16 Fundamental investment strategy employed

When examining the amount invested in business angel investments in total, we see that the investors taking part in the questionnaire have invested significant amounts into their portfolio companies. The median cumulative amount invested in business angel investments was 300 000 euro and the average cumulative amount was 1 007 088 euro (Figure 12.1.17). The investors included in the sample had invested a total of 17 120 500 euro in business angel investments.

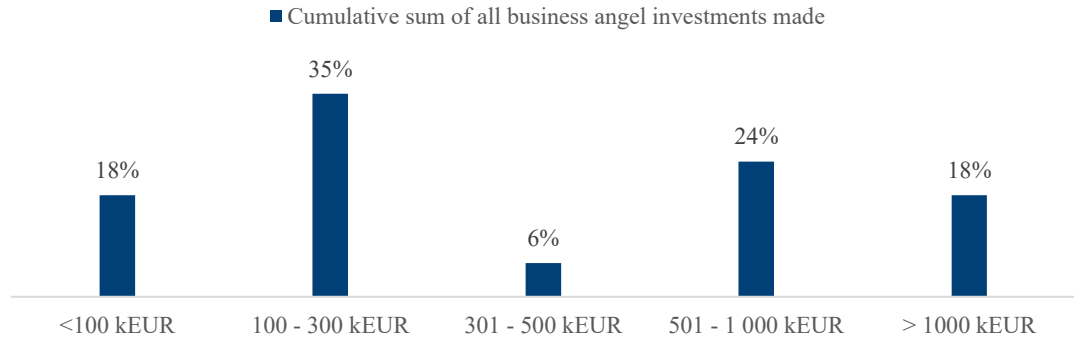


Figure 12.1.17 Cumulative amount invested in business angel investments

We also see that the investors had total current business angel investment portfolios comprising 6.8 portfolio companies on average and a median of 5 companies in their portfolio (Figure 12.1.18). The aggregated number of current portfolio companies was 123.

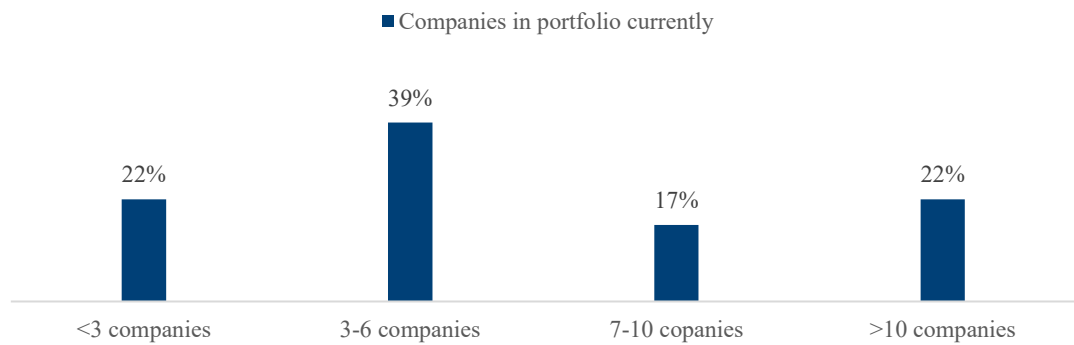


Figure 12.1.18 Size of current portfolios comprising business angel investments

Finally, we see that the total number of companies invested in by these investors (as of 2017) was 260, with a few investors having conducted over 50 investments caused high skewness in the findings. The total number of business angel investments performed by these investors is presented in Figure 12.1.19. The median number of total investments was 8 (average 14.4).

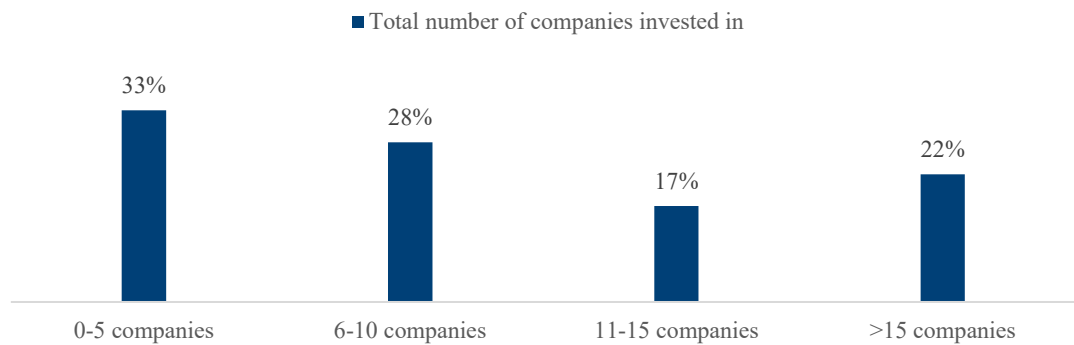


Figure 12.1.19 Total number of business angel investments