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Impact of investor experience on VC-entrepreneur contracts – evidence from Finland

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<p>Venture capital - entrepreneur contracts have received widespread interest from researchers over the past few decades in tandem with the growth of the VC industry. VC contracts have been a unique testing ground for the real-world applicability of economic and management theories thanks to their terms being (semi-)freely negotiable between the VC and entrepreneur. The theory that has been granted most time on the proverbial testing ground is agency theory, and while it has performed well, there are areas where its explanatory-abilities struggle. One such area is the observed differences across contracts related to financing rounds that differ in terms of the characteristics of the lead investor and the geographical location of either the VC or the venture.</p> <p>This study focuses on determining the impact of investor experience on the design of the VC-entrepreneur contract in the Finnish venture environment. This is accomplished by analyzing the contents of 38 VC-entrepreneur contracts sourced from a leading Finnish venture capital fund. Fuzzy-sets qualitative comparative analysis (fsQCA) is applied to quantified contract data to uncover determinants of contract design and shed light on the role experience plays in it all. In addition, this study provides a comprehensive overview of research on the determinants of contract design as well as a review of the relevant theoretical frameworks to the subject.</p> <p>The main result of this study is that investor experience does not have an impact on the design of VC-entrepreneur contracts when the target of financing is a Finnish venture. Rather the most important determinant of contract design is the change in the pre-money valuation of the company which is a signal of company quality and performance. Furthermore, the results provide indications of distinct contracting styles for VCs with different backgrounds, and investment preferences.</p> <p>For academics, this study provides a Finnish perspective to the literature on VC-entrepreneur contract design. It also highlights some areas of further research. For example, a study on entrepreneurs' attitudes towards specific contract terms may yield a more accurate measure of contract harshness which would open new avenues of evaluating the real-world applicability of promising theoretical viewpoints such as procedural justice theory.</p>		
Keywords: venture capital, contracting, contract design		

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<p>Venture capital sijoittajien ja kasvuyrittäjien väliset osakassopimukset ovat herättäneet laajaa akateemista kiinnostusta viimeisten vuosikymmenten aikana samalla kun ala on kasvanut voimakkaasti maailmanlaajuisesti. Sijoittajien ja yrittäjien väliset sopimukset ovat mahdollistaneet erilaisten taloustieteiden teorioiden ennusteiden tarkastelun käytännön sovellutuksissa, johtuen osakassopimusten sopimusehtojen (lähes) täysin vapaasti neuvoteltavasta piirteestä. Etenkin agenttiteoreettiset näkökulmat ovat saaneet laajalti huomiota tähänastisessa tutkimuksessa, ja vaikka ne ovat kestäneet tarkastelua pääasiassa hyvin, esiin on noussut myös alueita, joissa agenttiteorian ennustuskyky on puutteellinen. Eräs tällainen alue on sopimusten ehdoissa havaitut erot silloin kun rahoituskierron sijoittajien ominaisuudet ja sopimusosapuolten maantieteelliset ja kulttuurilliset taustat vaihtelevat.</p> <p>Tämä tutkimus keskittyy selvittämään sijoittajien kokemuksen vaikutusta osakassopimuksen sisältöön suomen markkinalla. Tutkimuksessa analysoidaan 38 osakassopimuksen sisältöä, joiden tiedot saatiin johtavalta suomalaiselta VC-sijoittajalta. Analyysi toteutetaan hyödyntämällä kvalitatiivisen vertailevan analyysin menetelmää (fsQCA), jota sovelletaan kvantifioitun sopimusdatan analysointiin. Kvantitatiivisen analyysin lisäksi tutkimus tarjoaa kattavan kirjallisuuskatsauksen aiempiin VC-yrittäjä sopimuksia tarkastelleisiin tutkimuksiin, sekä laajan analyysin VC-yrittäjä suhteelle relevanteista teoreettisista viitekehyksistä.</p> <p>Tutkimuksen tulokset viittaavat siihen, että sijoittajan kokemuksella ei ole merkittävää vaikutusta osakassopimuksen sisältöön rahoitettavan yrityksen ollessa suomalainen. Sen sijaan tulokset osoittavat, että yrityksen valuaation muutos rahoituskierron välillä on tärkein yksittäinen tekijä tulevan sopimuksen sisältöä ennustettaessa. Lisäksi tulokset osoittavat, että erilaisilla sijoittajilla on omat sijoitustyylinsä, jotka heijastuvat sopimusten sisällöissä.</p> <p>Työ tarjoaa tuoreen suomalaisen näkökulman aiemmin pitkälti Yhdysvaltojen markkinoille keskittyneelle VC osakassopimus kirjallisuudelle. Lisäksi se tarjoaa mielenkiintoisia aiheita tuleville osakassopimustutkimukselle. Esimerkiksi yrittäjien asenteiden kartoitus valittuja sopimustermejä kohtaan auttaisi rakentamaan tarkemman mittarin osakassopimuksen tiukkuudesta. Tämä myös avaisi myös uusia tutkimuspolkuja, joiden avulla voitaisiin arvioida lupaavien teoreettisten viitekehysten, kuten organisatorisen oikeudenmukaisuuden teorian (procedural justice theory) käytännön soveltuvuutta.</p>		
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1. Introduction

1.1 Background

Venture capital funds provide capital to early-stage companies in the hopes that as companies develop, they will realize significant returns on their initial investments. However, investments into early-stage companies are inherently risky. Companies may not yet have generated any revenues, acquired tangible assets or even developed a product to sell. Considering that venture capitalists trust both their own and their limited partners' money in the hands of the untested ventures' management, it comes as no surprise that the industry has developed sophisticated contracting practices to mitigate the risks associated with early-stage equity investments (Sahlman, 1990; Da Rin, Hellmann, & Puri, 2013).

Venture capitalists primarily employ contracts (between themselves and the entrepreneur) to limit the magnitude of potential downside for the investment. Contracts typically include provisions of cash flow rights and control rights which dictate the payoff and allocation of decision-control between the VC and the entrepreneurial team (Kaplan & Strömberg, 2003). To align management incentives and encourage value creation, both cash flow and control rights are often linked to venture outcomes meaning that if the VC is successful entrepreneurs receive a large fraction of profits, and a smaller one if the company does poorly (Kaplan & Strömberg, 2003). Specifically, in the case that the venture fails entrepreneurs may receive little payoff due to the possible seniority of investors' securities in a liquidation event. A unique trait of VC-entrepreneur contracts, however, is that contract terms are freely negotiable (in the sense that they need not follow a legally mandated template) between the contracting parties. Despite VCs often having an upper hand in contract negotiations due to their bargaining power (Hsu, 2004), the inclusion and specific configuration of all contract terms must, at least in principle, be agreed to by both parties. This trait of VC-entrepreneur contracts has enabled researchers to study whether predictions of specifically formulated efficient contracts derived from

economic and management theories (Schmidt, 2003; Casamatta, 2003; Repullo & Suarez, 2004; Aghion, Bolton, & Tirole, 2004; Hellmann, 2006) hold up in the real-world. In short, they do not. At least not consistently. The obvious question is: why?

The question of the optimal venture capital contract has been overwhelmingly dominated by the application of agency theoretical models. Agency theory assumes that entrepreneurs and venture capitalists have differing interests and goals and that therefore the entrepreneur will not manage the VCs money in optimally (Eisenhardt, 1989). From this agency theoretical starting point models tend to result in optimal contract forms that heavily protect the investor from downside risk by tying the entrepreneur's compensation to the ventures success and implementing other measures that offer maximum downside protection to investors. However, such models only recognize certain characteristics of VC-entrepreneur relationships, human behavior and other circumstances resulting in an implication of an optimal contract for all situations. In other words, the degree of contract design variance observed in empirical studies should not exist if investors and entrepreneurs behaved as assumed by agency theoretical models.

What then are these factors that agency theoretical models fail to consider and that result in differences across real-world contracts? Studies have found that variables such as VC/entrepreneur geographic location, legislative environment, contracting habits and VC characteristics, amongst others, all play a role in determining the structure of contracts (Lerner & Schoar, 2005; Kaplan, Martel, & Strömberg, 2007; Bengtsson & Sensoy, 2011).

However, extant empirical research has yet to provide conclusive answers as to how these factors shape contracts. Some studies examining the effects of geographic and VC characteristics for instance provide contradicting results, thus warranting further research. Furthermore, most empirical studies employ the agency lens when building hypotheses and discussing results. Since the predictive and explanatory power of agency theory pertaining to the design of VC-entrepreneur contracts has been questioned on numerous occasions, (Landström, 1992; Arthurs & Busenitz, 2003) the empirical contracting literature stands to benefit from the consideration of additional theoretical perspectives.

1.2 Research objective and questions

This study is motivated in large part by Bengtsson & Sensoy (2011), who focused on one such factor mentioned in the previous chapter that shapes contracts; the abilities of the VC. More specifically, they looked at how the experience of a venture capitalist impacts the level of downside protection in a VC-entrepreneur contract (more downside-protection = harsher contract from the entrepreneurs perspective; downside protection in Bengtsson & Sensoy (2011) refers to the harshness of cash flow provisions but excludes other provisions like control rights). They found that VCs with greater abilities, i.e. more experienced VCs, consistently make use of less downside protections in contracts than their less-experienced colleagues. Their results also held against a battery of controls. Kaplan, Martel & Strömberg (2007) is another key source of motivation. Like Bengtsson & Sensoy (2011) they also study the effect of VC abilities on the design of VC-entrepreneur contracts. Unlike Bengtsson & Sensoy however, KMS find that experienced VCs make use of stricter or harsher contracts, not the other way around, and that these VCs are usually U.S based. A key difference in these studies is the sample they utilize; Bengtsson & Sensoy employ contractual data strictly from the U.S while KMS also include international contracts (the data is still weighted towards the U.S, however). A possible inference could be that when the frame of reference is global, more experienced VCs enact stricter contracts, but when zooming into the U.S environment the relationship flips. The following question then arises: what is the sign of the relationship at the level of individual countries in the rest of the world, and specifically in Finland? This is the primary research question of this study.

1. What is the relationship between VC abilities and contract design in terms of contract harshness, in the Finnish VC environment?

This is an interesting question not only because it provides a view into a previously ignored VC market, but also because the Finnish market is in a stage of rapid development. In the timeframe to which the sample of this study is focused on (2010-2020) the Finnish VC industry has grown significantly; investments in early-stage companies have quadrupled and the influx of foreign capital has increased nearly 15-fold. This implies a drastic maturing and professionalization of the Finnish VC industry (and

Scandinavian in general), something that was not captured by Kaplan et al. (2007), and whose effects on contracting practices is yet to be explored.

VC characteristics, such as ability and experience, are just a part of the whole set of determinants for contract design that have been studied by scholars empirically. Aspects like company and entrepreneur characteristics (Kaplan & Strömberg, 2003), legal and geographical environments (Lerner & Schoar, 2005) and behavioral factors (Bengtsson & Bernhardt, 2014) have also been studied and found to be relevant. To build a holistic understanding of the factors underlying contract design, and to be able to assess the relative importance of VC abilities in this context, an understanding of other influencing factors is needed. Thus, the second research question is:

2. What factors have been empirically found to affect the design of contracts between VCs and entrepreneurs?

The reliance on agency theory to predict and explain contracting outcomes has been called in to question due both to the availability of seemingly better theoretical perspectives and the emergence of empirical results which cannot be explained with agency theory. Specifically, it has been suggested that the purely opportunistic and effort-shirking behavior models assumed by agency theory may only be a small part of the overall picture that drives contract design (Arthurs & Busenitz, 2003). Numerous other theoretical perspectives have been suggested by researchers but empirical research supporting these perspectives have not gained popularity and most studies are conducted through an agency lens. However, for this study, considering alternative theoretical perspectives is prudent. The development of VC financings in Finland, a less individualistic society compared to the U.S for instance, may render agency theory, which assumes individualistic and self-interested behavior, under-equipped to explain contracting outcomes. In addition, it is the ambition of this study to provide a review of alternatives to agency theory simply for the sake of exhaustiveness. Therefore, the third and final research question of this study is the following:

3. Which theoretical perspectives in addition to agency theory may be relevant for the study of how contracts are designed between VCs and entrepreneurs?

1.3 Research design, methodology and scope

This thesis is divided into two main parts; a review of literature and an empirical analysis of contracts. The literature review starts off with an overview of extant empirical literature related to VC-entrepreneur contract design. The aim is to present empirical articles, their theoretical starting point and main findings to identify potential shortcomings of current theory as well as discrepancies between studies. A review of potentially relevant theoretical frameworks follows. The aim of the theoretical review is to present theories which may be relevant to the study of VC-entrepreneur relationships and therefore VC-entrepreneur contracting. Understanding gained from the empirical and theoretical reviews is synthesized to form hypotheses pertaining to the subject of the thesis.

The empirical section utilizes detailed hand-collected contractual data from a leading Finnish early-stage VC fund. Contract data is supplemented with data regarding investor, company, and environmental characteristics, hand-collected from public sources including Crunchbase.com and Pitchbook.com. Due to the relatively small size of the sample, traditional regression models are not applicable to utilize for the analysis. Instead the data will be analyzed using fuzzy-sets qualitative comparative analysis (“fsQCA”). A software called fs/QCA developed by Charles Ragin will be employed to carry out the analysis. fsQCA is a set theoretic quantitative method which is typically used to bridge the gap between small-N case methods and large-N statistical methods (Ragin, 2000). The aim of the empirical section and fsQCA is to answer the 1st research question, while the literature review of both empirical and theoretical studies attempts to provide answers to the 2nd and 3rd research questions.

The scope of this study is limited to the Finnish VC market as the companies that receive financing in the sample are all based in, or have originated from, Finland. However, the sample does provide an international angle since many of the leading VCs are international. This aspect of the sample may be valuable in its own right, as it helps answer which is a more significant determinant of contract design, the country of origin of the VC or the venture? This study focuses strictly on equity financings and does not incorporate debt financings. The reason for this is that similarities between contractual provisions in equity and debt financings are limited, which would then limit the richness of provisions that could be included in the study. Indeed, the richness of contractual

provisions that this study is able to consider, thanks to having first-hand access to executed financing round documents, is a key advantage of this study. Many prior studies are forced to rely on second-hand contractual data which, while enabling larger samples, does so with the cost of losing out on some of the finer details.

2. Literature review

2.1 Background on venture capital contracting

The first venture capital firms were established in the 1940s and 1950s to provide financing to companies who could not get it from any other source due to their high-risk nature and lack of tangible assets against which loans could be secured (Zider, 1998; Gompers & Lerner, 2001). The funding of high-risk companies in the early stages of development continues to be the niche in which venture capitalists operate today. Successfully filling the niche of high-risk financing require venture capitalists to provide sufficient return for their investors (usually large institutional investors like pension funds, insurance companies but also high net-worth individuals and families) and themselves. In short, the challenge is to generate consistently high returns in an inherently risky environment (Zider, 1998).

The venture capital industry has developed sophisticated mechanism to meet this challenge, giving VC financing distinguishing characteristics from other forms of finance (Sahlman, 1990; Zider, 1998). The first of these is structuring investments in a way that enables VCs to maintain control of the venture, and the most potent way of ensuring control is staging investment (Sahlman, 1990). Staging means that VCs do not invest all of the required capital upfront, but rather periodically corresponding to the venture's stage of development. Staging is important for three main reasons. One, it preserves the VCs right to abandon a project whose prospects look to be worsening. This in turn is important because entrepreneurs would likely not discontinue the project as long as they had outside capital to pour into it. Two, staging provides strong incentives for the entrepreneur to use the money conservatively and efficiently. By making the most out of scarce funds, entrepreneurs protect their own wealth since inefficient use of funds would result in larger dilutive financing rounds in the future (Sahlman, 1990). Finally, staging is also important from a resource allocation perspective; periodically evaluating portfolio companies' performances helps ensure that the majority of funds is invested into the most promising startups. Stages of investment can crudely be divided into early and late-stage financings. Early-stage focuses on providing initial seed money to fund product development,

facilitate market-entry and initial growth plans, while late-stage financing aims to provide capital for rapid expansion when the company has established a foothold in its home market. The focus of this study is the former.

Additional mechanisms that VCs use to manage risk include 1) imposing compensation schemes which provide strong incentives to entrepreneurs 2) becoming actively involved in the decision-making of the business, and 3) designing mechanisms by which they can secure a timely exit for the venture (Sahlman, 1990). Incentive-heavy compensation schemes are important because without them entrepreneurs and managers may waste the investors funds into projects that do not add value. Incentivizing managers helps prevent this type of behavior. Becoming actively involved in decision-making is important because sometimes disagreements and conflicts are very likely to arise between the investors and entrepreneur. By engaging in decision-making VCs can better manage such situations. Finally, ensuring flexible exit rights ensures that the VCs can liquidate their holdings at the most opportune moment with minimal interference from the entrepreneurs.

The four mechanisms described in the previous chapter, staging (and other control mechanisms), compensation schemes, active involvement and exit options, cannot be implemented in practice unless formally agreed to between the investors and entrepreneur which is why a formal contract is drafted and executed by the parties. The contents of the contract, i.e. its terms and provisions, guarantee that the investors interests are protected. In practice contracts contain several terms, clauses, and provisions which together ensure that risks are thoroughly covered, and the four (and any additional) mechanisms implemented. Table 1 presents some of these contract terms found in VC-entrepreneur contracts and relates them to the risk-reducing mechanism they help implement. While by no means an exhaustive list, the table includes some of the most common and central contract terms found in venture capital contracts. A more complete list of contract terms and their descriptions is presented later in table 4, chapter 3.

Table 1. Typical contract terms found in VC-entrepreneur contracts and their role in reducing investment risk

Contract term	Risk-reducing mechanism	Rationale
Common stock	Compensation scheme	Maintaining share ownership has a potentially higher payout than annual salary which incentivizes entrepreneurs
Preferred stock	Compensation scheme Exit options	In addition to incentivizing, preferred stock guarantees a payout to investors in case of moderate venture success
Board representation	Active involvement	Board seats guarantee a way for investors to get involved in business and other decisions that relate to the venture
Vesting schedule	Staging & other control mechanisms	Unvested shares control the behavior of entrepreneurs by disincentivizing them to leave early as they would lose all unvested shares
Non-compete clause	Staging & other control mechanisms	Controls entrepreneur behavior by disincentivizing them to leave early as they would be unemployable in a similar industry for 1-2 years
Right of first refusal	Staging & other control mechanisms	Whenever new money is raised existing investors presented with the financing opportunity first, thus always retaining the option to invest or not invest
Tag-along right	Exit options	Investors are guaranteed an exit in the case that entrepreneurs decide to leave the company
Drag-along right	Exit options	Investors are guaranteed an exit in case of a lucrative bid from a buyer by giving them the right to force all shareholders to sell

As is evident from just the terms presented here, contracts can quickly become riddled with terms as investors seek to comprehensively manage the considerable risks they face. However, extant empirical research has uncovered factors which help us better understand the design of VC-entrepreneur contracts and provide clues as to which types of contracts can be expected to be drafted under a given set of circumstances. These factors are explored in the following chapter.

2.2 Empirical research on contracting in venture capital

This chapter reviews extant empirical literature related to contracting in venture capital. Specifically, the focus is on research that studies how contracts between venture capital investors and the entrepreneurs they finance are designed and structured. In addition to providing an in-depth look into the empirical articles that study the relationship between VC abilities and contract design, this chapter will also review literature on other factors which have been found to impact contract design. The aim is to build a solid and holistic foundation of understanding for hypotheses development later in the study.

The review in this chapter will cover research on how contract design is affected by characteristics of the founder and company, geographical distance between VC and company, VC characteristics, VC geographical location, cultural factors, and behavioral and learning factors. The review will document the hypotheses, sample, theoretical lens, main findings, and possible restrictions of the reviewed research to uncover potential discrepancies, gaps, and limitations, which need to be considered when developing the hypotheses of this study. The reviewed articles are presented in table 2.

Table 1. Typical contract terms found in VC-entrepreneur contracts and their role in reducing investment risk

Table 2. Empirical studies on venture capital contract design

Author(s)	Article	Sample description	Timeline	Main findings
Kaplan & Strömberg (2003)	<i>Financial contracting theory meets the real world: An empirical analysis of venture capital contracts</i>	213 VC investments in 119 portfolio companies by 14 VC firms in the U.S.	1992 to 1999	Early-stage companies and first-time founders receive contracts with more performance-sensitive cash flow rights, and cede more control to VCs.
Kaplan & Strömberg (2004)	<i>Characteristics, contracts, and actions: Evidence from venture capitalist analyses</i>	67 companies by 11 VCs in the U.S.	1992 to 1999	Uncertainty regarding founder abilities and the business environment are associated with VC control and pay performance sensitivity. When venture success is reliant on founders, vesting of founder shares is common
Lerner & Schoar (2005)	<i>Does legal enforcement affect financial transactions? The contractual channel in private equity</i>	210 PE transactions (including 49 VC deals) from 28 PE firms in 30 developing countries around the world.	1987 to 2003	Investments in countries with better legal enforcement utilize more sophisticated contracts and securities than investments to civil law countries, where investors rely more on ownership.
Kaplan et al. (2007)	<i>How do legal differences and experience affect financial contracts?</i>	145 VC investments in 107 companies by 70 lead VCs in 23 non-US countries.	1992 to 2001	Non-U.S. contracts are less harsh compared to U.S. contracts. Difference is smaller with experienced VCs and larger in trusting countries. VCs can adapt contract terms to comply with non-U.S. regulation.
Bengtsson & Sensoy (2011)	<i>Investor abilities and financial contracting: Evidence from venture capital</i>	646 private-partnership VCs in 1,266 start-up companies over 1,534 investment rounds, in the U.S.	2004 to 2007	Experienced VCs require less cash flow rights as downside protection and instead join boards more frequently than less experienced VCs.
Bengtsson & Bernhardt (2014)	<i>Different Problem, Same Solution: Contract Specialization in Venture Capital</i>	4,561 VC investments by 804 VCs into 1,783 companies, in the U.S.	2005 to 2009	VCs recycle contract design from their past deals. They learn to use new contract provisions from experience and syndication partners.
Bengtsson & Ravid (2015)	<i>Location Specific Styles and US Venture Capital Contracting</i>	1804 VC investments in 1501 companies by 626 lead VCs in the U.S.	2005 to 2008	Companies in California receive less harsh terms than in other areas of the U.S. Distance between VC and company, and VC concentration also positively related to less harsh contracts.

2.2.1 Impact of founder and company characteristics on contract design

Theoretical research on venture capital contracts make several predictions on the optimal structure of venture capital contracts, but prior to the 2000s there was little evidence on how well theoretical models were able to predict the real-world structure of contracts. Motivated by the lack of empirical testing of financial contracting theories, and the identification of venture capitalists as real-world entities closely approximating the investors of theory (Hart, 2001), two seminal papers by Kaplan & Strömberg (2003; 2004) were amongst the first to provide empirical answers. First, Kaplan & Strömberg (2003) examined the structure of VC-entrepreneur contracts that were executed in 213 investments in 119 companies by 14 US-based VC firms. This was followed by Kaplan & Strömberg (2004) who examined internal investment memoranda, associated with a subset of the same set of 213 investments, which detail the types of risks that venture capitalists expect to face when investing in a company.

Kaplan & Strömberg (2003) find that certain characteristics of the company and founders are tightly linked with how cash flow rights are distributed in the VC-entrepreneur contract. Firstly, companies who are still in the very early stages (pre-revenue) receive cash flow rights whose payoff more heavily depends on performance, whereas more established ventures' cash flow rights are less sensitive. Second, ventures with a repeat entrepreneur as founder also receive less performance-sensitive cash flow rights. Finally, Kaplan & Strömberg (2003) find contracts to be structured so that as time elapses, and the VC-entrepreneur relationship progresses, the sensitivity of cash flow rights decreases. Kaplan & Strömberg (2003) note that these findings support the prediction of principal-agent theories (Holmstrom, 1979); as uncertainties regarding the quality of the founder and venture decrease so do information asymmetries and therefore the need for high-powered incentives. In addition to cash flow rights, Kaplan & Strömberg also study how contracts allocate control rights and make similar findings. Repeat entrepreneurs at the helm of mature ventures retain more control (in the form of board and voting control) than first-time founders of pre-revenue firms, who cede control to VCs. In contrast to cash flow rights however, time since financing is associated with more control rather than less, likely due to larger sums being invested. Again Kaplan & Strömberg (2003) note that the results are in line with theoretical predictions regarding optimal financial contracts (Aghion & Bolton, 1992; Dewatripont & Tirole, 1994).

Similar results are found in Kaplan & Strömberg (2004), who take a different approach in characterizing risks faced by VCs in order provide further support to the findings of Kaplan & Strömberg (2003). Instead of using indirect measures that may be relevant in determining the riskiness of the VC investment (time since investment, company maturity, founder experience etc.), they use direct measures of risks sourced from internal VC analyses of the companies they are considering to finance. This way the researchers are able to gauge exactly what company aspects VCs consider to be important and how these risks relate to contract design. Of particular interest are so called internal risks which relate strongly to founder and company characteristics. More specifically these risks include factors such as company valuation, company past performance, quality of management and experience of the founder team. Kaplan & Strömberg (2004) find that when such risks are identified by VCs in their internal analyses the subsequent contracts consistently include less (i.e. unfavorable) cash flow and control rights provisions for the entrepreneur. Kaplan & Strömberg thus conclude once more that these results support the predictions of agency theories since VC contracts seem to be closely related to the extent of agency problems.

While the results of the two studies seem to provide strong evidence that uncertainty regarding company and founder characteristics leads to more investor-friendly contracts they also contain indications that there may be other effects at play. Kaplan & Strömberg (2003) for instance note that companies in California receive contracts that are significantly more favorable for entrepreneurs than in other parts of the U.S. They postulate that this may be an indication of different “contracting styles” for different VCs and markets. While this discrepancy is not explored further, it strongly suggests that there are other influencing factors in addition to the agency problems signaled by company and founder characteristics, that relate to the environment and process surrounding VC contracting.

2.2.2 Impact of geographic and legal environment on contract design

Venture capital contracts in the U.S generally resemble the optimal contracts suggested by theoretical models (Kaplan & Strömberg, 2003; Kaplan et al., 2007). They make use of convertible preferred securities, allocate control rights based on contingencies and use

other provisions such as anti-dilution and vesting to enhance and complement the effect of the cash flow incentives and control rights (Kaplan & Strömberg, 2003; 2004). However, the state of a country's legal system and its ability to enforce and verify contracts might also play a role also in the design of venture capital contracts. In addition, cultural and social norms, may affect contracts such that they differ in design to those in the U.S.

Following early empirical research on the venture capital contracts several studies have focused on the role of the legal and geographical environment of the VC and the company as factors for explaining the observed variance in contractual design (Lerner & Schoar, 2005; Kaplan et al., 2007). The results of the studies are fairly unanimous; non-U.S contracts differ from U.S-style contracts, specifically in the manner that they are more entrepreneur-friendly i.e. less "harsh" than their U.S. counterparts. For example, while U.S venture capitalists tend to use convertible preferred equity in nearly all financing, this is much less pronounced in other geographical areas such as in Europe (Kaplan et al., 2007) and developing countries (Lerner & Schoar, 2005). Also, the use of additional clauses like liquidation rights, full-ratchet anti-dilution and redemption clauses are employed considerably less frequently in non-U.S financings (Kaplan et al., 2007).

While many papers agree that U.S. and non-U.S type contracts differ in several areas the results and conclusions as to what drives the variance are mixed. Lerner & Schoar (2005) study the contracts of 210 private equity investments from 28 private equity partnerships based in developing countries. They find that the inability of the developing countries' legal systems to enforce contractual provisions forces PE firms to rely on majority common stock equity investments to gain control of the companies, instead of using a U.S. style combination of a minority position of convertible preferred equity, control rights and other contractual protections. They also find suggestive evidence that these types of contracts are not as efficient as U.S style contracts, since PE funds with investments in developing countries experience lower returns. In contrast, Kaplan, Martel & Strömberg (2007) find that venture capital investors were often able to come up with alternative contractual provisions if the ones used in U.S style contracts would have been difficult and/or costly to implement, regardless of the state of the legal system in the target company's country. For instance, redemption rights, anti-dilution rights and convertible preferred stock were implemented using drag-along rights, anti-dilution warrants and a

combination of common stock and straight preferred equity, respectively, to achieve similar levels of investor protection. Furthermore, an analysis of different variables measuring the sophistication of the legal system failed to adequately explain the differences found in U.S and non-U.S style contracts (Kaplan et al., 2007). Bengtsson & Ravid (2015) also conclude that the legal environment is at least not the only determinant of contract design, by showing that differences in culture, VC concentration and distance between the VC and company all played a part in the overall harshness of the contract.

As alluded to by Kaplan & Strömberg (2003), Bengtsson & Ravid (2015) found a persistent “California effect” such that if either the VC or company is from California the VC contract is more favorable to entrepreneurs relative to an average U.S VC contract, and even more favorable if both VC and company are from California. Furthermore, the effect was again even more pronounced if the VC and/or company was based in Silicon Valley, the VC and startup capital of the world. Bengtsson & Ravid (2015) conclude that the most likely explanation for this result is that the cultural environment in California and Silicon Valley fosters a partnership-type VC-entrepreneur relationship as opposed to the banker-loaner relationship and culture found on e.g. the East-Coast. Kaplan et al. (2007) also consider the possibility of cultural reasons as a determinant of VC contracts having determined that characteristics of legal systems fail to adequately explain observed differences. They do this by utilizing a measure of bilateral trust as a proxy for cultural similarity and distance. Their results provide some support to those of Bengtsson & Ravid (2015); VCs from more trusting countries (e.g. Scandinavian countries) are significantly more likely grant entrepreneurs more favorable contracts.

2.2.3 Impact of investor characteristics on contract design

In addition to the study of company and founder characteristics, legal environment, geographical location and culture, some studies have also been conducted on how specific VC characteristics impact the design of contracts. In an often cited article, Bengtsson & Sensoy (2011) study the level of downside protection required by U.S investors by examining a large sample of 3394 investments in 1266 companies 646 venture capital investors. Their central finding is that more experienced VCs require less downside protection, or in other words they are content with *less* investor-friendly contracts. Furthermore, Bengtsson & Sensoy (2011) find evidence that suggests (they lack detailed

data on control rights) that experienced VC investors are more likely to negotiate board seats to increase their ability to monitor and provide value-add services as a substitute for the lack of downside protection. Bengtsson & Sensoy (2011) state that their result is in line with agency theoretical predictions. They argue that more experienced VCs are better at screening and monitoring their portfolio companies and also provide more value to the companies, hence lowering information asymmetries and requiring less downside protection.

The relationship of VC experience and contract design has been recognized earlier as well, however with seemingly opposite results. Kaplan, Martel & Strömberg (2007) find that in addition to lower levels of trust, VC experience is a major factor contributing to the harshness of VC contracts. In other words, they find the opposite result to Bengtsson & Sensoy (2011); more experienced VCs make use of overall more investor-friendly contracts. A possible explanation to this apparent contradiction is the different geographic represented in the samples of the two studies (U.S vs. international, respectively); while it may be true from a wider international perspective that contracts tend towards a relatively harsher design with experience, the trend may reverse when looking more closely at U.S specific data.

Few studies look at the relationship between VC experience and contract design as their main focus, but some do employ measures of VC experience as a controls in their analyses. Bengtsson & Ravid (2015) control for VC experience (using the proxy ‘number of previous investments by a VC’, the same proxy utilized by Bengtsson & Sensoy (2011)) when studying the “California effect”, and find that their result of California-based VC contracts being less investor-friendly holds regardless of VC experience. However, Bengtsson & Sensoy (2011) find that the degree of downside protection negatively correlates with experience even after controlling for location. This is an interesting result since it seems both experience and geographical location (or rather the prevailing cultural and social norms, as postulated by Bengtsson & Ravid) affect contract design significantly. What remains unclear however is the relative importance of these terms on downside protection, both in the U.S and in the rest of the world.

2.2.4 Impact of behavioral factors on contract design

The most recent avenue of research into the determinants of the structure of VC contracts is concerned with behavioral factors such as learning (Bengtsson & Bernhardt, 2014) and conforming to environmental standards (Isaksson, Cornelius, Landström, & Junghagen, 2004). Bengtsson & Bernhardt (2014) study 4,561 venture capital contracts and find that VCs make use of similar contracts in their investments, i.e. they specialize in a certain type of contract configuration by recycling terms they are familiar with. As an illustrative example, Bengtsson & Bernhardt find that in 46% of the most recent contracts VCs reuse the exact same contract design from one of five previous contracts. Their findings strongly imply that VCs are reluctant to experiment with new types of contracts, even though it may be optimal to do so, because experimenting may prove costly if the VC gets it wrong and implements provisions that have a negative impact on the investment. Interestingly, Bengtsson & Bernhardt (2014) also provide evidence that VCs learn to use contract provisions from other investors with whom they syndicate investment rounds. This implies that knowledge and habits regarding contracting are passed on amongst investors in VC networks. This might also mean that knowledge transfer between venture capitalists in geographically segmented networks may act as a positive feedback loop which enforces the application common practices and leads to a certain kind of contracting culture, tying the finding back to previous research (Kaplan & Strömberg, 2003; Kaplan et al., 2007; Bengtsson & Ravid, 2015). Bengtsson & Bernhardt report that their results are robust to a battery of controls accounting for VC, company and environmental characteristics.

Indications of such learning effects taking place were also found earlier by Kaplan et al. (2007). They reported that those European VCs who had had more interactions and common financing rounds with U.S investors typically implemented more U.S-style contracts compared to other European VCs. Furthermore, they observed an overall convergence towards more U.S-style contracts with more experienced VCs, likely because they have been more exposed to the U.S style of investing.

Isaksson et al. (2004) studied the contracting practices of 27 Swedish VC firms by examining how they employ 79 different contractual covenants. They found VC-entrepreneur contracts to largely make use of similar covenants, thus indicating the

emergence of an industry standard. Importantly, where there were differences, they existed between distinct groups in the Swedish venture capital community. Differences were found between early and late-stage investors and between public and private VCs. Isaksson et al. (2004) conclude that these differences arise as a result of a need to conform to a certain contracting culture on the part of the VCs. And since the cultural background from which late stage vs. early stage and public vs. private VCs originate from is different, so are their contracting practices. Isaksson et al. (2004) also examine whether the experience of VCs might have an impact on contracting practices but find little difference between the two groups. However, they observe slightly less homogenous contracts being employed by experienced VCs. Isaksson et al. speculate that while both groups operate and originate from a similar cultural background pressuring them to draft certain types of contracts, experienced VCs are under relatively less pressure (because they are leaders in the group) to conform and thus have learned when and where they can afford to relax the boundaries of the institutionalized rules while still maintaining their legitimacy.

Taken together these results indicate that VCs are not always strictly rational when it comes to designing contracts. Contracts are not customized or optimized to fit particular situations, but rather become standardized through learning, interaction and the need to conform to standards and institutionalized rules set by their peers that limit their range of possibilities.

2.2.5 Summary of empirical research on venture capital contract design

Starting with the seminal work of Kaplan & Strömberg (2003;2004), many papers have looked at how real-world venture capital contracts are structured and if venture capitalists truly do approximate the investors of theory. The results are mixed. While the securities and contractual clauses that venture capitalists employ in contracts demonstrate that VCs are concerned with agency risks like moral hazard, adverse selection and hold-up problems (Kaplan & Strömberg, 2003), there is also undisputable evidence that they do not implement contracts to the degree of harshness, consistence or homogeneity that extant contracting theory would predict.

Several points speak for the observation that VC investors are influenced by several other factors than the drive for pure value maximization when designing their contracts. Firstly,

VCs seem to be more risk-averse than hypothesized. This is supported by the finding that VCs appear to recycle contract designs from previous contracts instead of adapting them to suit specific investment requirements. Further, the fact that new contractual provisions are adapted more willingly after syndicating deals with peers might suggest that VCs are avoiding risks similarly to that of e.g. stock-pickers who would rather be wrong together than wrong alone. Secondly, the constraining effect of social and cultural norms may hint to a similar motivation. VCs may be afraid of venturing outside the implicit social cultural norms since they do not want to stick out, and are concerned about what departing from those norms may signal to peers and entrepreneurs. Thirdly, the entrepreneur-friendly contracts observed in more trusting countries might indicate that VCs may not always see the need to impose strict contracts even if it would be the rational thing to do. VCs might instead wish to build a trust-based relationship with founders and eschew strict contracts to that end.

The body of empirical literature on the determinants of VC-entrepreneur contracts started with strong evidence from Kaplan & Strömberg (2003; 2004) in support of agency theoretical predictions. Subsequent papers such as the ones reviewed in this chapter however have shown that agency theory may have its limits. Agency theory is undoubtedly still relevant for the VC contracting process but in order to explain the nuanced dynamics that are clearly at play in the contracting process, the contracting field as a whole would benefit from a review of alternative, or rather, supplementary theories.

2.3 Relevant theoretical approaches

This chapter will review theories that may be relevant to describing the VC-entrepreneur relationship and thus also the contracting process. Each of the theories will be introduced briefly, and their relevance to the topic of this study will be discussed. The consideration of different theoretical lenses, together with the review of empirical studies, underpins a strong foundation on which logical hypotheses can be built, and is therefore important. The theories reviewed in this chapter are agency theory, procedural justice theory, institutional theory and stewardship theory.

2.3.1 Agency theory

Agency theory prominently emerged in the 1970s with the seminal work of Jensen & Meckling (1976). They defined an agency relationship as one where a principal delegates work to an agent (such as managing the principals money), who may have different goals and interests than the principal (Eisenhardt, 1989; Jensen & Meckling, 1976). The goal of agency theory is the construction of an optimal contract between the principal and the agent that best aligns the differing interests of the parties. In doing so agency theory makes a range of assumptions concerning the nature of humans, organizations, and information. Humans for instance are assumed to be self-interested (also boundedly rational and risk-averse) meaning that when given the chance they will choose to do what is best for themselves which may or may not be best for the principal. Organizations on the other hand are assumed to foster information asymmetries between the parties, meaning that one party, the agent, is better informed about factors relating to for example the organizations performance and prospects as well as their own actions. Finally, information is assumed to be a purchasable commodity which can be acquired by the principal by expending costly effort into monitoring activities or investing in information systems. Agency theory is focused on providing an answer for how the principal can cost-efficiently ensure that the agent acts in her best interests given the assumptions about humans, organizations, and information. Since the unit of analysis in agency theory is contracts two answers emerge: behavioral-based or outcome-based contracts. (Eisenhardt, 1989)

The rationale for behavior-based contracts is that since the principal essentially contracts the agent to “behave”, i.e. take actions, towards achieving a specific goal it makes intuitive sense to make the agents employment contingent on her taking the actions that are necessary to reach that goal. For example, an employment contract for a cashier in a grocery store states that her job is to mind the cashier and if she does not do her job the contract is terminated. This type of contract works as intended when the desired behavior is easily observable by the principal and/or when a departure from the desired behavior does not pose an unacceptable risk to the principal. However, observations about different principal-agent relationships (for instance VC-entrepreneur relationships) have determined that the principal cannot always observe what actions the agent has taken and if the agent has behaved as agreed. In these relationships also the implications of wrongful

behavior are more severe. For example, the CEO of a company might use her days playing cards with the CFO but there is no reasonable or realistic way for an investor to observe this shirking behavior. She could have also overstated her capabilities as a manager but again there is no way for investors to prove or disprove that beforehand. These examples are cited in the formal literature as *moral hazard* (lack of effort by the agent) and *adverse selection* (agents misrepresentation of her abilities), respectively. In relationships where moral hazard and adverse selection are expected to be prominent, outcome-based contracts that make the existence of the principal-agent relationship contingent on the agent meeting certain performance targets are required, to align the goals of the agent with those of the principal. (Eisenhardt, 1989)

Theorists in the field of financial contracting and specifically in the context of venture capital contracting assume that the behavior of the agent is indeed unobservable to the principal, and agency problems such as moral hazard and adverse selection affect the relationship and could have severe consequences if not addressed. Among the early works in general financial contracting that makes use of this assumption are the seminal works of Holmström (1979) and Lazear (1986). As a solution to the agency problem they propose that highly performance-sensitive compensation schemes are optimal in these types of principal-agent relationships. This is because they incentivize the entrepreneur to work harder to receive a higher payoff thus mitigating moral hazard problems and also because they detract low-performing entrepreneurs as they know they would not be able to meet performance targets, thus mitigating adverse selection problems. These results are at the foundation of much of the VC contracting literature especially when discussing the optimal types of securities, i.e. the key cash flow right component of the contract.

In addition to identifying moral hazard and adverse selection problems, researchers have realized that it may sometimes be useful for the investor to have control over decision-making in a VC-entrepreneur relationship. This is derived from two main assumptions: First, because the incentives of entrepreneurs are not fully aligned with the investors' they are also liable to make business-decisions that are not aligned with what is best for the investors. Secondly, contracts are inherently incomplete, meaning that it is not possible to specify beforehand the action to be taken in all possible scenarios because it is not possible to predict all possible scenarios (Grossman & Hart, 1986; Hart & Moore, 1990). As a result, assigning control rights when drafting the contract becomes a key priority, as

without investor control entrepreneurs could choose to make non-value maximizing decisions in situations that could not be foreseen during contracting negotiations (Hart, 2001). Furthermore, these rights should be kept separate from cash flow rights and they should be contingent on certain indicators of e.g., performance, in order to establish *when* investors should get control (Aghion & Bolton, 1992). Contracts configured this way provide an additional backstop and safety-net for investors if the entrepreneur decides to forego the interests of the investor in their decision-making.

A fourth central agency problem faced by investors is the holdup problem first described in Hart and Moore (1994). The holdup problem describes a situation where the entrepreneur, due to possessing vital human capital, becomes a determining factor for whether the company succeeds and returns the investors investment. In other words, if the entrepreneur were to leave the company after some time, perhaps after having fulfilled her personal pecuniary and/or non-pecuniary goals, it would significantly jeopardize the investors returns which were contingent on the entrepreneur *not* leaving abruptly. Alternatively, the entrepreneur could leverage their position by threatening to leave, thus forcing the investor to make concessions which would not be in line with her interests. A mitigation strategy for the holdup problem is to include vesting provisions in the VC-entrepreneur contract, and possibly also a non-compete clause (Kaplan & Strömberg, 2003). This makes it costly for the entrepreneur to leave the company and thus incentivizes the entrepreneur against doing so (Hart & Moore, 1994).

These four agency problems, moral hazard, adverse selection, need for control and holdup are the key issues which drive the overall agency problems of the VC-entrepreneur relationship. Thus, according to agency theory, any increase in the degree of these problems should be reflected also in the VC-entrepreneur contract as more sensitive entrepreneur compensation, stronger VC control and longer vesting schedules (Kaplan & Strömberg, 2004).

2.3.2 Procedural justice theory

Procedural justice theory (Thibaut & Walker, 1975) originates from the study of legal dispute resolution processes and the effect of how the perceived fairness of the dispute process (originally, in a legal context, the presentation of evidence and decisions made

based on the evidence) affects the attitudes and behavior of those affected by the process (Greenberg, 1987). Since its introduction in the 1970's it has been applied in several organizational contexts (Greenberg, 1987) such as the resolution of labor disputes and appraisal of work performance as well as less formal contexts like reactions to confrontations with police officers, politicians and teachers (Greenberg, 1987). In general, it has found traction in many environments where two parties engage in a process of decision-making whose outcome influences one or both of the parties. It has also been found to be viable for the study of VC-entrepreneur relationship and particularly the contracting process (Sapienza & Korsgaard, 1996; Busenitz, Moesel, Fiet, & Barney, 1997), as contract negotiations have a long term impact on for instance the payoff of each of the parties.

Procedural justice theory posits that perceptions of “just” and “fair” decision-making processes that reflect social and cultural norms of impartiality and respect, increase the commitment, decision acceptance and trust between the affected parties and reduce anti-social and counter-productive behavior (Sapienza, Audrey Korsgaard, Goulet, & Hoogendam, 2000). It has been argued that the aforementioned effects will also increase the performance of the company. Importantly it further implies that parties should strive to deliberately *act* in a “fair” and “just” manner towards one another (De Clercq & Sapienza, 2001). Procedural justice theory therefore provides an interesting theoretical perspective to the study of VC-entrepreneur contracts since it implies that an optimal contract that maximizes company value is not achieved solely by imposing behaviour-constraining provisions that benefit the investor, but should also consider how the fairness of the contract is perceived by entrepreneurs as this will affect their performance and thus company value.

Procedural justice theory thus takes a different approach to interpreting the VC-entrepreneur relationship than agency theory. Where agency theory models agents (entrepreneurs) and principals (investors) as static self-interested opportunists with goal-incongruence (Arthurs & Busenitz, 2003), procedural justice theory assumes that there are interpersonal and relational dynamics at play, which may alter the “static” personal-utility-maximizing relationship assumed by agency theory. For instance, agency theory-based models assume that each of the parties will behave opportunistically whenever profitable. The procedural justice approach in turn predicts that the prevalence of any

opportunistic behavior will depend on the amount of trust in the relationship that has been built up during interactions between the parties in the past (Sapienza et al., 2000). Several examples of opportunistic behaviors exist that may arise due to a lack of trust; If trust between VC and entrepreneur is low the entrepreneur has incentives to e.g. overstate business prospects for the reason that the entrepreneur does not trust the VC to provide additional capital if actual prospects were disclosed. This in turn increases information asymmetries in the relationship which lowers the confidence/trust of the investor towards the entrepreneur. A second example is that entrepreneurs may not trust the VC to stay on committed to the relationship in the long-term because the VC may have incentives to liquidate earlier due to the funds structure. In essence, the amount of agency risks in a VC-entrepreneur relationship can be mitigated by building trust through (cost-efficient) interactions between the parties that are perceived as being fair, as opposed to only through governance mechanism via contracts as advocated by agency theory.

In addition to providing an alternative to control, fairness and the resulting trust may also improve the performance of the company as well as provide unilateral benefits to the entrepreneur and VC (Cable & Shane, 1997; De Clercq & Sapienza, 2001). High levels of trust can encourage highly beneficial exchange of knowledge between the parties, if the VC and entrepreneur possess knowledge that is in part similar and in part specialized (De Clercq & Sapienza, 2001). Such knowledge transfer can enable both parties to access information and capabilities that are not readily available elsewhere thus benefitting their individual needs in addition to those of the company in which they are currently partnered. De Clercq & Sapienza (2011) argue that in agency theoretical relationships these additional benefits are not realized. Parties are primarily concerned with protecting themselves against the others opportunistic behavior and are therefore unwilling to commit to any value-adding activities outside the confines of the contract. Unwillingness to commit in turn signals mistrust and shifts the relationship to one with a more short-term perspective. The necessity for co-operation has been identified also in formal modellings of the VC-entrepreneur relationship (Cable & Shane, 1997). Cable & Shane (1997) employ a game-theoretic model and find that while there may be short-term benefits for acting opportunistically for both parties, long-term welfare is maximized with co-operation. They also find that the probability of successful co-operation is enhanced with increasing levels of communication and is further amplified by transactional characteristics such as generosity (fairness) and trust (Shepherd & Zacharakis, 2001).

2.3.3 Institutional theory

Institutional theory is concerned with how organizations conform to rules and norms in order to ensure survival and legitimize themselves in the institutional environment in which they operate (Bruton, Ahlstrom, & Li, 2010). The institutional environment itself comprises of several “institutions” which encompass both formal and informal sets of rules and norms that shape behavior by exerting conformance pressures on organizations to follow said rules (DiMaggio & Powell, 1983; Bruton et al., 2010). These rules can derive from government-imposed regulation, law, courts and social and cultural practices, amongst other things. In short, institutional theory is concerned with broadening the understanding of organizational behavior beyond purely economic motives by recognizing the role of institutional forces in shaping it.

Papers in different fields (including sociology, organizational theory, political science and economics) have identified the presence of institutional forces (Bruton et al., 2010). A widely-accepted categorization and summarization of the different forces is given by Scott (2013) who groups the forces into regulative, normative and cognitive institutional dimensions. The first dimension, regulative institutions, most closely reflects economics’ viewpoint of institutions. It is concerned with formal institutions like government regulation, law, courts, industry standards and agreements and how their explicitly stated rules control the possible actions of organizations. DiMaggio & Powell (DiMaggio & Powell, 1983) label these types of institutional forces as ‘coercive’ to emphasize their mandatory nature. The second category, normative institutions, recognizes that organizations in part feel a sense of duty to behave according to the expectations of other parties in some social or professional situation (Scott, 2013). Normative systems are upheld by values and norms which impose strong obligations, and thus again limit the possible actions that can be taken by organizations. Finally, cognitive institutions are the most informal of the institutional forces. They represent the shared values, beliefs and assumptions held by all organizations operating in the institutional environment which together constitute a certain culture (Scott, 2013). If regulative institutions guide and limit behavior because organizations “have to” follow them and normative institutions because organizations “ought to” follow them then cognitive institutions are adhered to because organizations “want to” act according to certain values and beliefs.

As a result of these forces, organizations within a certain institutional environment gradually become similar to each other, a process coined institutional isomorphism by DiMaggio & Powell (DiMaggio & Powell, 1983). They either arrive at this independently as a result of being guided to a certain way of behaving by e.g. regulation and social pressure (regulative and normative forces), or by mimicking and embracing the behavior of other organizations (cognitive forces) in the environment. At the heart of why these forces are effective and why institutional isomorphism happens, is the willingness of organizations to survive through legitimizing themselves in their operational environment. In other words, organizations succumb to the forces because a failure to do so would make them appear negligent or irrational and hence compromise their legitimacy. For example, organizations not implementing diversity policies are putting themselves at risk of becoming outcasts due to diversity policies being a norm in many industries. Similarly, organizations that for instance insist on doing some activities ‘their own way’ instead of adopting an accepted best practice, risk looking irrational and incompetent and may thus have trouble convincing important stakeholders of their viability.

The use of institutional theory to explain venture capital contracting theory was first suggested by Suchman (1995). Suchman showed that venture capital contracts employed by U.S VCs became more standardized during 1975-1990. He also showed that contract standardization decreased with distance from the center of VC-activity; Silicon Valley. Suchman (1995) argues that since VCs in the 70s were unsure of how to deal with the new funding process they looked to each other for guidance and norms of contracting were quickly established as investments were syndicated and VC had more exposure to each other. In other words, Suchman (1995) observed conformance to both cognitive and normative institutional forces. Distant VCs who had less contact with Silicon Valley were slower to adopt standardized practices due to a limited amount of exposure to the institutional forces found in the concentrated environment of VCs in Silicon Valley. After Suchman (1995) institutional theory has been found to be relevant in explaining VC contract design in e.g. Sweden (Isaksson et al., 2004), Spain (Ramón-Llorens & Hernández-Cánovas, 2017) and China (Bruton & Ahlstrom, 2003).

Institutional theory also provides a relevant theoretical lens with regards to this study. Firstly, institutional theory may help shed light on the contract designs utilized by

experienced vs. in-experienced VCs. One could argue for instance that due to cognitive and normative forces and under uncertainty (DiMaggio & Powell, 1983) inexperienced VCs would model their contracts similarly to that of experienced VCs resulting in homogenous contract design across all experience levels. However it could also be argued that if inexperienced VCs have limited access to observe the contracting practices of their more experienced counterparts (they are not included in syndicated rounds) then one would expect to observe more variance in contract design at the lower end of the experience spectrum and less at the other. It is also plausible that institutional forces have shaped contracting practices so that little variance is observed regardless of VC characteristics. Furthermore, institutional theory also provides a lens to generally explore how the contracting practices in Finland have developed over the years. Especially the increase in foreign investments would have likely increased the diffusion of more standardized practices into a previously segmented VC environment, according to the prediction of institutional theory (Suchman, 1995).

2.3.4 Stewardship theory

Stewardship theory is in many regards an antithesis to agency theory. This is most evident from the assumptions it makes regarding the factors that maximize the utility of the agent (or 'steward' as they are called in stewardship theory). Stewardship theory, which originates from sociology and psychology, assumes that managers behave pro-organizationally and collectivistically as opposed to selfishly and individualistically, because they derive greater utility from the former type of behavior (Davis, Schoorman, & Donaldson, 1997). Stewardship theory states that even in the light of non-aligning personal interests between the steward and principal the steward will choose to act in a way that will benefit the wealth of the organization, ergo the principal, because the steward's personal needs and sources of motivation are closely related to organizational performance (Davis et al., 1997).

Proponents of stewardship theory argue that the recognition of a possible steward-relationship, instead of an agency-relationship, between managers and owners can be financially beneficial for owners who wish to maximize their wealth. The rationale is that according to agency theory costs related to monitoring, bonding and incentivizing need to be incurred in order to ensure value-maximizing behavior (Jensen & Meckling, 1976;

Eisenhardt, 1989). However, in a principal-steward relationship such costs are diminished since the manager is assumed to intrinsically want to act according to the best interests of the principal/owner. Fostering a steward-principal relationship to its full potential requires deliberate facilitation by the managers, which again take a quite opposite stance of those suggested by agency theory. Managers should be given high-autonomy to do as they see best by lowering corporate governance structures.

Assuming and facilitating a steward-principal relationship is not something that is always observed. As the owner the principal has the power to “choose” whether or not to assume and trust the manager to behave as a steward of the business instead of herself. Hence the prevalence of a stewardship-relationship is determined by the risk-appetite of the principal. A risk-averse principal is more likely to assume that stewards are in fact self-interested agents and as a result expend resources on establishing measures to monitor and control the behavior of the manager, thus ensuring that their wealth is protected from aberrant behavior. A relevant question is raised by Davis et al. (1997) who ask why then should managers choose to trust in a stewardship relationship and risk aberrant behavior when they could, in essence, “buy insurances” in the form of monitoring and incentivizing that eliminates the risk entirely.

Davis et al. (1997) detail that the ‘choice’ of a principal-steward relationship is influenced by several endogenous and exogenous factors, which affect the likelihood that a principal would choose to engage in such a relationship. Firstly, psychological characteristics of the parties predisposes the individuals to gravitate towards either an agency or stewardship relationships. Factors like source of motivation (monetary vs. experienced meaningfulness), level of identification with the organizations mission, vision and objectives (low vs. high), and the basis of power used to influence others (institutional vs. personal) are found to play a role. Secondly, there are situational factors, which additionally influence the likelihood of a certain type of relationship. Specifically, the management philosophy (control-oriented vs. involvement-oriented) and the environment’s culture (individualistic vs. collectivistic) are key influencers.

VC-entrepreneur relationships could also be characterized as a form of principal-steward relationships, where the entrepreneur acts a steward for the investors (the principal) capital. Many aspects support the use of stewardship theory to analyze VC-entrepreneur

relationships. Firstly, utilizing the typology of Davis et al. (1997), the psychological characteristics of entrepreneurs are likely to make them steward oriented. Entrepreneurs as the founders of the business are likely to identify strongly with the mission, vision and objectives of the business and thus partly derive their self-image from the organization. Hence, their behavior is unlikely to diverge from the goals of the company and its investors, thus forming a solid foundation for a stewardship relationship. Other antecedents of a stewardship-relationship are also likely to be present on the entrepreneur-side: 1) they are likely motivated by intrinsic needs such as meaningfulness instead of monetary compensation 2) as inherent experts in their own business they are likely to influence others through expertise instead of coercion 3) they are likely to think in the long-term as they want to see their business grow and 4) they are likely to have an involvement rather than control-oriented management philosophy due to their key involvement in hiring early employees.

However, as stated earlier, a stewardship relationship requires not only the willingness of the entrepreneur to adopt it but also the investor. Despite the entrepreneur signaling psychological and situational factors indicating reliable stewardship the investor does not necessarily share the antecedents to the same degree or trust the entrepreneur not to betray the relationship. A large fraction of VC motivation is the efficient management of their limited partners' money, after all this is what VCs themselves are contracted to do. Hence, VCs are likely to be less committed to the company's vision, have extrinsic motivations rather than intrinsic, and have a control-based approach to managing the entrepreneur rather than an involvement-based approach. These factors likely predispose VCs to prefer an agency relationship complete with monitoring and incentive systems that insure them against downside risks.

Despite VCs likely being less receptive towards stewardship relationships with entrepreneur, there are endogenous factors that could alter the situation. Studying Belgian startups, Collewaert & Manigart (2016) find that experienced business angels negotiate higher valuations, i.e. a higher price per share, than less experienced angels, even though they could arguably leverage their experience to negotiate a lower valuation. They suspect that this is due to angels wanting to establish a partnership-like relationship with the entrepreneur where they both benefit from the value-add the angel brings. Contrasting results were found by Hue (2004) who studied valuations negotiated by venture

capitalists. Hue (2004) found that high-quality venture capitalists tend to negotiate lower valuations due to the increased bargaining power they have over entrepreneurs. However, it is plausible that venture capitalists coming from a more collectivist-culture and with previous entrepreneur experience would be more empathetic towards budding entrepreneurs and would thus wish to engage in a stewardship relationship.

2.4 Hypotheses development

In this chapter, hypotheses on the impact of venture capitalists' experience on the design of VC-entrepreneur contracts in Finland are developed. The hypotheses are developed based on insights gained from the literature review of both empirical studies and relevant theoretical approaches. The first two hypotheses describe different avenues by which experience could affect the harshness of contracts. The remaining three describe possible scenarios where other factors than VC experience determine the contracting outcome.

The primary concern of agency theory is to find mechanisms with which information asymmetries and goal incongruences between the agent and principal can be reduced or eliminated. One such mechanism is the use of information systems via which the principal can monitor the agent and impose penalties if aberrant behavior is observed. In the context of VC-entrepreneur relationships such information systems are inherent because VCs actively monitor their investments both formally as board members and informally as advisors and mentors to the company and entrepreneurs. Furthermore, because investments are almost always staged, VCs have periodic opportunities to deeply examine the actions taken at the company before making a possible new investment. However, the capabilities that VCs have when it comes to monitoring their portfolio companies are likely to vary. VCs with more experience likely have greater monitoring abilities, or at least more opportunities to use them. Considering then that if contracts are employed to reduce information asymmetries and on the other hand information asymmetries can also be reduced via monitoring, whose effectiveness is positively related to a VCs level of experience, then it follows that more experienced VCs can "afford" to impose less harsh contracts than peers with less experience.

The agency theoretical answer as to why strict contracts can be costly to implement, and why therefore monitoring is preferable, is based on different risk tolerances of the VC

and entrepreneur (Bengtsson & Sensoy, 2011). However, procedural justice theory offers another perspective as to why strict contracts may not be preferred, particularly by experienced VCs. The perspective rests on the assumption that if entrepreneurs perceive that they are treated fairly in the VC-entrepreneur relationship, they are more likely to commit sweat equity into the venture thus maximizing performance and valuation (Arthurs & Busenitz, 2003). Another assumption is that contract negotiations are a pivotal event which have important consequences for the future quality of the VC-entrepreneur relationship. The argument then, is that experienced investors recognize the importance of a working and trusting VC-entrepreneur relationship and are not willing to implement harsh contracts, which carry the risk of jeopardizing the perceived fairness and subsequent trust in the relationship.

Thus, based on results of previous studies (Bengtsson & Sensoy, 2011) and the above arguments, the first hypothesis of this study is as follows:

H1: VC experience is negatively related to contract harshness.

VCS do not only provide funding but provide numerous non-financial value-adding services. These services include access to their network (for example advice, funding, contacts), strategic and operational expertise and professionalization of the firm (Hellmann & Puri, 2002). As with capabilities and abilities for monitoring, the quality of these services, and thus their impact on the value of the venture, is likely to differ based on the experience of the VC providing them. Experienced VCs, perhaps having managed to raise multiple funds and survive through economic cycles, are likely to on average possess greater value-added abilities than less experienced VCs. Bengtsson & Sensoy (2011) argue that when financed by an experienced VC, the potential value-add acts as a deterrent for aberrant behavior by the entrepreneur because by engaging in such behavior the entrepreneur risks losing the non-financial benefits that the VC brings. Furthermore, Bengtsson & Sensoy argue that this mechanism leads to the VC imposing less harsh contract terms because the potential withdrawal acts as a passive monitoring system in itself. However, it is also conceivable that in some cases experienced VCs may leverage their value-added services to improve bargaining power and receive more investor-friendly terms. By doing so, the VC is likely maximizing her own share of the value but

negatively affecting the value of the venture as a whole (Ewens, Gorbenko, & Korteweg, 2019).

Whether experienced VCs want to leverage their bargaining power is likely to be dependent also on the bargaining power of the entrepreneur (Ewens et al., 2019). When dealing with high-quality entrepreneurs and ventures, it is plausible that an experienced VC would prioritize the mode of behavior suggested in the arguments for H1, leading to a more efficient contract and a better working relationship. However, when confronted with a less promising prospect, the VC may choose to enforce stricter terms to maximize her share.

Thus, the second hypothesis of this study is as follows:

H2: Experienced VCs may leverage their bargaining power to receive investor-friendly contracts when confronted with low-quality ventures.

The previous two hypotheses have argued that investor experience has some degree of impact on contracting outcomes. However, it is also possible that the level of experience is not a necessary determinant of contract harshness and sometimes other factors may have more influence on the outcome. The following three hypotheses make the case for determinants, other than experience, that could influence contract harshness.

In the beginning of the VC-entrepreneur relationship information asymmetries and uncertainties regarding the degree goal congruence between the VC and entrepreneur are highest. From an agency theoretical vantage point this means that problems like moral hazard and adverse selection are most likely at this point in the relationship. However, the degree of agency problems is unlikely to be uniform throughout the relationship. As the relationships progresses the VC is likely to gain deeper understanding of the entrepreneur's true goals (likely venture success and therefore largely aligned with the VC) thus leading to a decrease in agency problems and uncertainties (Arthurs & Busenitz, 2003). In a real-world setting this temporal nature of agency problems suggests that agency problems should be most severe in early-stage companies, or during the first rounds of staged financing. The implication is that it should be reflected also in the harshness of contracts that entrepreneurs receive, i.e. early-stage companies receive

harsher contracts than late-stage companies. This was one of the main findings in Kaplan & Strömberg (2003).

However, the company simply existing for a long period may not be sufficient to reduce agency problems and enable more lenient contracts. Instead, signals of poor company performance may aggravate agency problems even if the VC-entrepreneur relationship has persisted for a long time. First, signals of poor performance may be an indication of misrepresentation of abilities on the part of the entrepreneur (adverse selection). The entrepreneur may have presented a business plan with targets in line with the goals of the VC but failed to meet them. Naturally, performance issues could be caused by external market factors outside the sphere of influence of the entrepreneur but as it is hard to verify the exact share of external factors, the VC must assume that the entrepreneur's abilities have contributed, thus aggravating agency problems. Furthermore, even if the VC were able to verify that poor performance was caused entirely by external factors, poor performance can make the entrepreneur more likely to opportunistically defect from the venture, again aggravating agency problems. Kaplan & Strömberg (2004) provide empirical support to this argument. They found that high perceived external risks (market risks outside the control of entrepreneurs) were associated with stricter contracts.

Thus, the third hypothesis of this study is the following:

H3: Early-stage companies, and/or signals of poor performance, are associated with harsher contracts

The VC-entrepreneur relationship, especially in its later stages, can be argued to be based on trust. As the relationship progresses uncertainties about potential opportunistic behavior on the part of either party are alleviated and trust in one another's good intention's is enforced. This is also what gives agency problems its temporal nature, which was discussed in the arguments for H3. However, in the real-world trust does not exist in a vacuum, independent of built-in prejudices, attitudes, and stereotypes that individuals assign to one another. In other words, there likely exists a level of trust in the relationship that cannot be completely "diversified" away by interacting with people over time. A certain "starting-level" of trust before engaging in the VC-entrepreneur relationship likely exists. This type of inherent trust is affected by e.g. culture,

geographical distance, language, and the origin of the legal system (Guiso, Sapienza, & Zingales, 2009). As differences in these factors begin to emerge and grow, the starting level for trust decreases leading to larger agency problems in the relationship. For instance, U.S VCs likely have less trust in Finnish entrepreneurs than Finnish VCs do due to different cultural backgrounds and other dissimilarities. Furthermore, geographical distance, a component of overall trust (Guiso et al., 2009), can have an increasing effect on agency problems also through a more tangible mechanism; active monitoring of the VC, which reduces information asymmetries, is more difficult from a greater distance. A Finnish VC located in the same city as the venture has more opportunities to interact with the entrepreneurs, visit the office and facilities, and participate in all company-related manners, compared to a U.S based VC. Hence, it is easier for the Finnish VC to verify that the actions taken by the entrepreneur are value-enhancing and therefore agency problems are reduced.

Thus, because agency problems should be reflected in contracting outcomes, as per agency theory, and because trust impacts agency problems, the fourth hypothesis of this study is the following:

H4: *The level of trust, from the VCs country of origin for the ventures home country, is negatively related to contract harshness.*

The hypotheses presented thus far have drawn heavily on agency theory and the relationship between agency problems and contract harshness. In doing so an underlying assumption has been that both entrepreneurs and VCs seek to maximize their utility (whether it be financial or non-financial) in a given context. In addition, it is assumed that they can and will alter their behavior when confronted with changing conditions (e.g. poor performance of the venture, or an increase in trust as the VC-entrepreneur relationship develops). Furthermore, the unit of analysis thus far has been the individual agent and no consideration has been given to the nature of the *organization* to which that individual belongs. By shifting the viewpoint more towards organizations and how they affect the decision-making of individuals within, a final mechanism affecting contract design is uncovered.

Institutional theory states that organizations that originate from and operate in the same environment have a shared set of norms, rules, and expectations that they are forced to follow. Forced, because these rules provide legitimacy to the organization. Importantly, the set of rules and norms which are deeply ingrained, i.e. institutionalized, in the organizations and their decision-making, are different for organizations from different backgrounds and environments, but similar for those with similar backgrounds and environments. Such differences in backgrounds and environments exist also in the world of venture capital organizations. VC differ from one another on multiple axes, for instance public vs. corporate vs. private VCs and VC with early vs. late-stage investment preference. Public government-backed VCs for example, may have secondary goals to financial return such as promoting regional development and backing strategically important projects. Corporate VCs on the other hand operate in an environment where they must conform to the external rules and goals given by the parent organization (Souitaris, Zerbinati, & Liu, 2012). Because of their distinct backgrounds and environments in which they operate, VCs in these and other groups are likely to have adopted contracting practices that are distinct from one another, but between themselves rarely departed from.

Evidence of contract specialization across different types of VCs have been reported by multiple studies in several countries, with other studies confirming that VCs within the subgroups rarely depart from a certain type of contract. In addition to academic research, anecdotal evidence like the existence of sites like seriesseed.com, which provide ready-to-use templates of contracting documents, strongly signal that by and large, optimizing contracts for specific situations is not done in the real-world.

Therefore, the fifth and final hypothesis of this study is the following:

H5: Contract harshness is homogenous within VC types and heterogenous across VC types.

3. Sample and methods

3.1 Sample

The sample used in this study is sourced from a leading Finnish VC firm focused on early-stage investments. Data regarding contractual provisions are obtained directly from signed and executed Investment Agreements (henceforth IA) and Shareholders Agreements (henceforth SHA) between the participating investors and the financed companies in each financing round. In total, data regarding 14 contractual provisions was collected from SHA's and IA's. These include both cash flow and control provisions.

Given that the data is sourced from a single VC investor, examining individual financing rounds will likely not allow for valid and reliable inferences to be made about VC contracting practices in general, since the VC in question is significantly over-represented in the sample. Therefore, variance is introduced into the sample by forming pairs from consecutive financing rounds with different (lead) VCs and examining how the 14 contractual provisions evolve and change between the rounds. The follow-up rounds are syndicated, with the data provider a participating but not the lead VC.

Introducing variance by forming pairs of consecutive financing rounds comes at the cost of a smaller sample size. Indeed, sample size is significantly reduced due to the necessity to have a pair of rounds where the following conditions are met. First, rounds must be consecutive (e.g. Series A to Series B, as opposed to Series A to Series C). This is because it is difficult for a new lead investor to negotiate wildly different terms in the next rounds, because the set of possible contract provisions that can be realistically imposed are partly anchored on previous rounds. Therefore, this aspect of real-world contracting dynamics must be considered and respected when selecting samples. The second condition that must be imposed is that consecutive rounds need to have different lead investors, because the study is interested in how VC characteristics affect the design of contracts. Therefore, choosing pairs where the lead investor changes is critical for drawing insights. Finally, IAs, SHAs, and their respective schedules (i.e. appendices) need to be available for all rounds that pass the first and second criteria. This enables the observation of all possible

contractual terms of the financing rounds and thus even small changes in contract design that occur between rounds, which is a key contributing factor to the uniqueness and relevance of this study.

Sampling the initial data using the aforementioned filters, resulted in 21 pairs of VC financing rounds into 17 unique Finland-based early-stage companies by 22 unique venture capital investors. Overall, the data consists of 38 unique venture capital rounds and their respective contractual data. For certain companies there are overlapping rounds across pairs; e.g. Series A → B → C rounds for a company can be used to form 2 pairs but contain only 3 unique rounds, which is why the number of unique rounds is less than 42 (21*2).

Panel A of table 3 provides a detailed overview of the sample by rounds. The sample is quite recent: 84% of the rounds were completed in the last five years i.e. 2016-2020, while the remaining 16% having been completed during 2012-2015. While the financed companies can be characterized as Finnish, the venture capitalists represent various regions. Finland is the most common with 55% percent of the rounds having a Finnish lead VC, 21% of rounds have a lead VC from continental Europe, 18% from the U.S and 5% from the Nordics (Scandinavia + Estonia).

Panel B of table 3 provides summary statistics concerning the rounds and the investors. In the sample the average VC has invested in 83 companies, is 13 years old, has had 30 successful exits and manages an average of 1,424 MEUR in assets. Median round size is 1.8 MEUR (mean = 10.4) with the smallest round being 0.1 MEUR and the largest 108 MEUR. Median pre-money valuation is 4.9 MEUR (mean = 33.3 MEUR), with the smallest valuation being 0.7 MEUR and the largest 400 MEUR. At the time of investment, the median company age is 2.0 years old (mean = 2.1 years).

Table 3. Sample overview and summary statistics

Panel A: Sample overview							
	Pairs of rounds	Unique rounds	Unique companies	Unique VC firms			
	21	38	17	22			
Year of round	2020	2019	2018	2017	2016	Before 2016	
# Rounds	3	7	9	7	6	6	
Percent (%)	8	18	24	18	16	15	
VC location	U. S	Europe	Nordics	Finland			
# Rounds	7	8	2	21			
Percent (%)	18	21	5	55			
Industry group	Financial	Climate Tech	Consumer	Games	Hardware	Health	Software
# Rounds	2	6	4	2	8	2	14
Percent (%)	5.3%	15.8%	10.5%	5.3%	21.1%	5.3%	36.8%
Panel B: Summary statistics							
	Obs.	Mean	Std. dev.	Median	Min.	Max.	
No.funded companies	38	83	68	79	1	400	
VC age	38	13	8	11	0	40	
VC AuM (MEUR)	38	1425	3762	240	1	22000	
VC exits	38	30	46	11	0	240	
Company age (years)	38	2.1	1.7	2	0	6	
Round size (MEUR)	38	10.4	20.1	1.8	0.1	108.5	
Valuation (MEUR)	38	33.3	74.8	4.9	0.7	400	

3.2 Variables

3.2.1 Outcome variable

The contract terms obtained from Investment Agreements and Shareholders Agreements must be quantified to apply fsQCA methods. The quantification aims to determine how “harsh” or “investor-friendly” an individual provision is. The harshness scores of individuals provisions are then aggregated to arrive at an overall metric of contract harshness for a given financing round. The quantification and aggregation method used in this study is analogous to the one used by Bengtsson & Sensoy (2011). First, individual contract terms are given a score of 0-1 (not present vs. present in the contract) or 0-2

(higher values denoting higher degrees of harshness), after which the individual scores are summed together resulting in a metric which denotes the overall level of harshness in the round, labeled as *Aggregate Contract Harshness* (ACH) (Bengtsson & Ravid, 2015). The ACH score is the outcome variable (analogous to the dependent variable in regression analysis) of this study.

Bengtsson & Sensoy (2011) concede that an aggregate score may be inaccurate and that weighing the scores for contract terms based on the actual value they have on e.g. how cash flow is distributed, would better capture the relative strength of the terms and thus yield a more accurate metric for the level of harshness. However, they argue that an accurate weighing of terms would require data about the probabilities of e.g. investors enforcing certain terms, cash flow upon liquidation, raising another round of financing or timing of liquidation events, but as this data is unavailable aggregation is a valid alternative. Furthermore, the sample of this study considers more contract terms than Bengtsson & Sensoy (2011) as it includes detailed data about control rights in addition to cash flow rights. This adds complexity and makes accurate weighing of contract term scores even more difficult. Thus, a more simple and transparent summation method, ACH, is used.

Indeed, the contract terms examined in this study capture a wide range of both cash flow and control rights. This is important since VCs may sometimes give up certain right to make the inclusion of another easier to justify during the negotiations (Bengtsson & Sensoy, 2011). By including as many provisions as possible this study hopes to capture such trade-offs and ensure that no important contract terms are overlooked. Table 4 provides an overview and description of the examined 14 contractual provisions.

Table 4. Contract terms and their descriptions

Liquidation preference

Liquidation preference denotes the multiple of the investors investment value that is paid back in the case of liquidation or sale of the company. Liquidation preference is typically set at 1X, meaning that if the company is liquidated or sold, shares holding said right are paid back their initial value. Liquidation preference is senior to common stock, meaning that in a liquidation event where funds are not sufficient to distribute amongst all shareholders, investors can recoup their investment prior to founders up to the multiple. This applies also if the investors' pro-rata share of the company value would be less than that of their initial investment.

Participation

In the case of liquidation or sale of the company, a *participating stock* receives both the liquidation preference and the pro-rata share of the company value. For instance: Say that an investor had invested 100 MEUR into a company at time T and received 20% of the company in the form of *participating preferred shares* with a liquidation preference of 2X. If the company was sold at time T+1 for 1000 MEUR, the investor would receive $100\text{MEUR} \times 2 = 200\text{MEUR}$ in the form of liquidation preference but also $20\% \times 1000\text{MEUR} = 200\text{MEUR}$ by *participating* in the distribution of proceeds from the liquidation or sale. Typically, stocks are *non-participating*, which means that the investor may either choose to receive the liquidation preference or participate in the distribution of proceeds, but not both.

Anti-dilution

Anti-dilution protection ensures that if new shares are issued at a smaller price per share than in previous rounds (accounting for stock splits etc. i.e. at a lower valuation), then an investor who negotiated anti-dilution protection for their shares will receive a certain number of shares so as to lower their effective paid price per share closer to or to the price per share paid in the "down round". The number of shares issued as compensation is determined either by a "weighted average" method where the effective price per share is lowered close to the down round, or the "full ratchet" method where the price per share is lowered to the same value as the down round. Anti-dilution protections are risky for founders (and investors who don't have them), because when used they dilute the founders' ownership.

Vesting schedule

Vesting describes the time-bound process by which shares, or options are earned by founders and employees. The shares of founders and employees are often subject to a vesting schedule meaning that employees and founders only gain ownership of their shares incrementally as time passes. Shares typically vest over a period of 3 to 4 years

in equal installments. Vesting helps ensure that founders and key employees remain committed to the company for extended periods of time.

Share transfer rights

Share transfer terms describe who has the right to sell or transfer shares, or whose consent is required if a party wishes to sell or transfer their shares. Typically, share transfers require the consent of investors, either in the form of a specifically defined Investor Majority or by the decision of an investor-controlled board of directors. Sometimes however founders and other holders of common shares also need to consent to the transfer of shares giving founders the possibility to stop transfers if such a transfer were to e.g. result in a new investor which the founders are not happy with.

New financing rights

New financing terms determine who has the power to initiate new financing rounds. Investors often have a say in the matter but founders may or may not be able to influence the decision. The power of founders having a say may be important to them since new financing will always dilute their share and likely result in less control of the company.

Drag-along clause

A drag-along clause gives a certain shareholder majority the right to require that the rest of the shareholders join the majority in selling the company to a third party. Drag-along clauses are put in place to prevent any minority shareholders from blocking the sale of the company. It therefore protects large investors. Drag-along clauses may however require the consent of founders, meaning that in such cases founders could block the sale even if their shareholding in the company is small.

Forced exit clause

Forced exit clauses give certain investors or shareholder majorities the right to force the sale, listing or liquidation of the company. Forced exit clauses can typically be applied by the investors or shareholder majority after a specific date.

Board composition

Board composition means who controls the board; the investors, the founders or nobody (50/50 control). Board control is important since the board wields the most power when it comes to making important decisions in the company.

Good leaver / bad leaver provisions

These provisions dictate that when a founder leaves the company, he/she must sell their shares back to the company or its remaining shareholders. The provision

distinguishes between “good” and “bad” leavers to the effect that good leavers will receive a fair market value for their shares whereas bad leavers will need to sell their shares at a heavy discount. A leaver is typically considered “good” if he/she must leave the company due to e.g. retirement, ill health or death. A “bad” leaver is one who leaves the company due to a breach of contract, gross misconduct or any other reasons that results in a fair dismissal.

Non-compete clause

Non-competition clauses prohibit employees and founders from working at competitors and firms operating in the same industry. Typically, such a clause is in place 12 months after the individual leaves the company.

Representations & Warranties

In the process of a financing round founders and the company give certain representation & warranties to investors about the status, prospects and standing of the company. In case of inaccuracy in the representations the company and/or founders warrant to indemnify the investors to cover the damages caused by the inaccurate information (representations). Typically, both the company and founders are severally but not jointly liable. This means that both the company and founders are liable only for their respective obligations. Sometimes however the company and founders are jointly and severally liable, meaning that the entire indemnification amount may fall to the founder if e.g. the company has no money to pay its obligation. Finally, at times only the company is deemed to be liable meaning that founders will not be held financially responsible for any misrepresentation of information.

Milestone-based tranching equity rounds

Milestone-based tranching equity rounds make a part of the funding of a given financing round dependent on the company reaching certain performance targets. Their inclusion gives investors the option to stop investing in the business if it does not perform as expected.

Pre- or post-money option pool

An employee stock option pool (“ESOP”) is a certain number of shares or percentage of the company that is reserved for current and future employees as a means of incentivization. Option pools are typically created alongside funding rounds whereby the investor and founders agree on a post-funding round size for the option pool, e.g. 10%. Whether the pool is created before the investor has invested and received her shares (pre-money option pool) or after (post-money option pool) is significant, however. The founder-friendly manner is the latter. When the pool is created “post-money”, both the investor and founders contribute a certain percentage of their ownership, i.e. are diluted, until the ESOP represents the previously agreed upon percentage, e.g. 10%, of the company. However, if the pool is created “pre-money” it

means that only the founders are diluted as the ESOP is established 'before' the investor has received any shares.

Most contract terms in this study are coded as 0 or 1, which indicates either an absence (0) or presence (1) of the term, or in some cases a more founder-friendly (0) or investor-friendly specification of the term (1). Contract terms coded as 0 or 1 include: liquidation preference, participation, anti-dilution, vesting, share transfer rights, new financing control rights, forced exit rights, Good/bad leaver clauses, milestone-based equity rounds and the configuration of the employee stock option pool.

Liquidation preference was absent in only one of the 38 rounds (2.6%). This instance was coded as 0 and the rest were coded as 1 (97.4%). The round with no liquidation preference was also the only round where common stock was issued. All other rounds were financed with a convertible preferred stock. Furthermore, the size of the liquidation preference, when present, was always 1X.

As with the lack of liquidation preference, also the presence of participation rights in the sample is rare. Participation is present, and thus coded as 1, in only three out of 38 rounds (7.9%) and absent (0) in the rest (92.1%). Taken together, the prevalence of liquidation preference and the absence of participation, indicates that the use of non-participating preferred stock is the security of choice in most Finnish VC-financings.

Anti-dilution provisions were coded as 0 if absent and 1 if present. Unlike some other studies the sample in this study does not contain any instances of full-ratchet anti-dilution so 1 denotes specifically the presence of weighted-average anti-dilution protection. 18 rounds (47.4%) have anti-dilution protection whereas 20 rounds (52.6%) do not.

Some form of time vesting of shares was present in all 38 financing rounds. However, the exact length of time over which shares vested differed. Consequently, time vesting is coded as 0 if vesting happens over 3 years and as 1 if vesting occurs over 4 or more years. Time vesting was coded as 0 in 8 rounds (21.1%) and 1 in 30 rounds (78.9%).

Share transfer rights are coded as 0 if both the investors and founders have a say in whether shares can be transferred or not. They are coded as 1 in those instances where

the right to control share transfers is solely with the investors. In 9 financing rounds (23.7%) both investors and founders had a say in share transfers. Accordingly, these rounds were coded as 0. In the remaining 29 rounds (76.3) transfer rights were controlled by investors and thus coded as 1.

If both investor and founder consent is required to initiate a new round of financing the “new financing” term is coded as 0. If, on the other hand, financing rounds can be initiated on the sole discretion of the investors then the term is coded as 1. Subsequently, 25 rounds (65.8%) were coded as 0 and 13 (34.2%) as 1.

Forced exit clauses are coded as 1 if they are present and 0 if absent. Such clauses are present in 8 out of 38 financing rounds (21.1%) and thus absent in the remaining 30 out of 38 rounds (78.9%).

Good leaver, bad leaver provisions are coded as 1 if found in the financing documents of a round and 0 if they are absent. In the sample there are 25 rounds where such provisions are in place (65.8%) and 13 (34.2%) where they are not present.

Milestone-based future equity rounds are only found in 2 of the 38 financing rounds (5.3%). These are coded as 1. Accordingly, they are absent in the remaining 36 rounds (94.7%) and thus coded as 0.

Finally, ESOPs that are created “pre-money”, or before the investor has received their shares, are coded as 1. These are quite rare in the sample and only appear in 4 of the rounds (10.5%) with the remaining 34 rounds (89.4%) featuring ESOPs that were created post-money. Rounds that did not involve the creation of option pool were also coded as 0.

Four of the total 14 contract terms and clauses examined in this study are coded on a range of 0-2: drag-along clause, non-compete clause, board control/composition and reps & warranties. The logic for coding is similar to those coded 0 and 1. A score of 0 denotes a founder-friendly specification of the clause while a score of 2 represents the most investor-friendly configuration. A score of 1 denotes a neutral configuration where the clause is neither founder nor investor friendly.

Drag-along clauses are coded as 0 when the founders have the sole discretion to activate the clause either through their control of the board or as directly specified in the details of the drag-along clause. However, this is quite rare and only occurs in 2 of the financing rounds (5.3%). The most common configuration is when the founders and investors have an equal say in whether the clause can be activated, i.e. the consent of both parties is required. The rounds with this configuration of the clause are coded as 1 and include 29 rounds (76.3%). Finally, configurations where the investors have sole discretion to activate the clause and can do so without the consent of the founders are coded as 2. This configuration is found in 7 of the 38 rounds (18.4%).

Board control is coded as 0 when the majority of board seats is controlled by the founders. When board seats are distributed equally between founders, investors and independent board members board control is coded as 1. In cases where investors or their appointed directors hold the majority of seats board control is coded as 2. In 18 out of 38 (47.4%) of the rounds the board is controlled by the founders. In 9 rounds (23.7%) control of the board is split evenly between investors and founders, and in the remaining 11 rounds (28.9%) the board is controlled by investors.

If stated in the Investors Agreement that founders are not liable for inaccurate representations & warranties given by the company to the investors, then such mention is coded as 0. If on the other hand founders are liable to indemnify investors, but only up to a respective share of the total amount, then such a specification is coded as 1. Finally, if the founders are together with the company jointly liable for misrepresentations up to the full amount then that is coded as 2. Founders are not at all liable in 7 out of 38 rounds (18.4%). They are liable up to a certain amount in 27 rounds (71.1%) and jointly with the company liable for the full amount in 4 rounds (10.5%).

Non-competition clauses are coded as 0 if they are not present in the Shareholders' Agreement. The most common configuration which prohibits leaving employees from joining competitors or other firms operating in a similar line of business for 12 months is coded as 1. A non-compete period of 12+ months (typically 24 months) is coded as 2. Non-compete clauses were absent entirely in only 3 of the 38 financing rounds (7.9%).

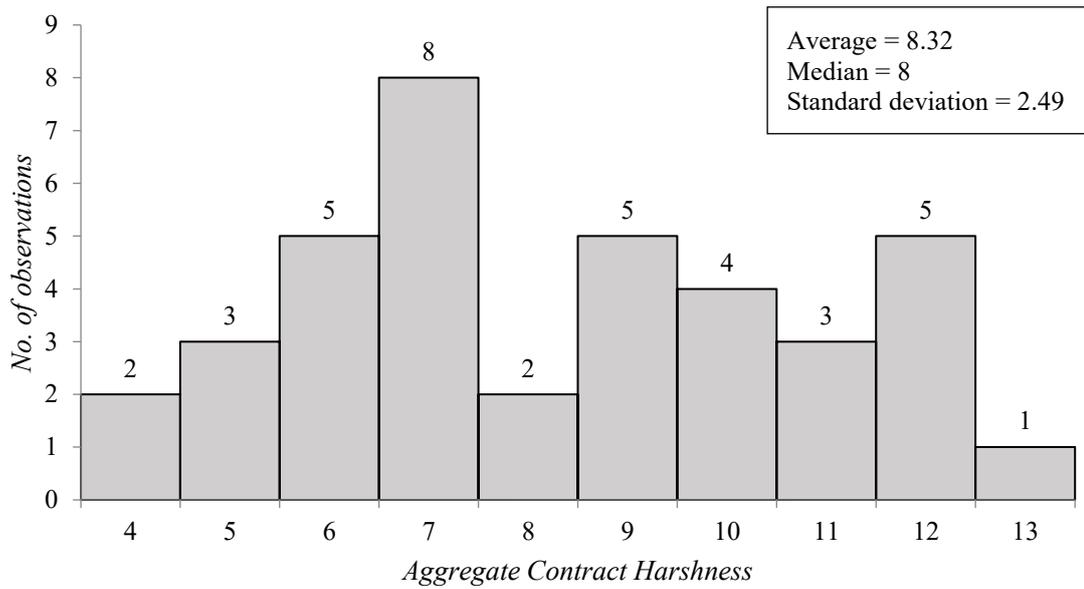
In the rounds that they were present 31 rounds (81.6%) had non-compete periods of 12 months and in only 4 rounds (10.5%) did the periods exceed 12 months.

Table 5 summarizes the scores given to the 14 different contract terms and clauses.

Table 5. Number and share of observations (1 observation = 1 round) of individual contract provisions by “harshness” score

	0	1	2
Liquidation preference	1 (2.6%)	37 (97.4%)	-
Participation	35 (92.1%)	3 (7.9%)	-
Anti-dilution	20 (52.6%)	18 (47.4%)	-
Vesting	8 (21.1%)	30 (78.9)	-
Share transfer rights	9 (23.7%)	29 (76.3%)	-
New financing rights	25 (65.8%)	13 (34.2%)	-
Forced exit	30 (78.9%)	8 (21.1%)	-
Good/bad leaver	13 (34.2%)	25 (65.8%)	-
Equity goals	36 (94.7%)	2 (5.3%)	-
ESOP	34 (89.4%)	4 (10.5%)	-
Drag-along	2 (5.3%)	29 (76.3%)	7 (18.4%)
Board control	18 (47.4%)	9 (23.7%)	11 (28.9%)
Reps & warranties	7 (18.4%)	27 (71.1%)	4 (10.5%)
Non-compete	3 (7.9%)	31 (81.6%)	4 (10.5%)

Once assigned, the scores of the individual provisions in a given round are summed up to arrive at the Aggregate Contract Harshness for that round. Figure 1 presents the distribution and summary statistics of the ACH across the 38 financing rounds. The average ACH of a financing round is 8.32 with a standard deviation of 2.49. The median ACH is 8.

Figure 1. Distribution of Aggregate Contract Harshness

3.2.2 Causal conditions

The fsQCA algorithm employed in this study will make use of four causal conditions (analogous to independent variables in regression analysis): 1) a measure of the lead investors experience 2) a measure of the lead investors trust towards the financed company 3) pre-money valuation of the company in question and 4) a measure of the strength of the investor's network. These four causal conditions were chosen to a) best capture different aspects that may, according to prior empirical research, impact the contract design during rounds of financing and b) provide a way to test the hypotheses. Ideally the number of causal conditions included in the fsQCA algorithm would be higher, but due to the sample size being relatively small ($n=21$) only four causal conditions can be used. The four chosen measures act as proxies to many investor, company, and environmental characteristics.

Several proxies for measuring VC experience are used: Number of unique companies invested in, age of VC, total assets under management and number of successful exits. These proxies are often used in literature (Kaplan et al., 2007; Bengtsson & Sensoy, 2011) and therefore allow the comparison of results based on this study with others of the same topic. Data for the proxies has been sourced primarily from the VCs' websites and supplemented with data from Crunchbase and Pitchbook when needed. Crunchbase and

Pitchbook are well-known and widely used databases for VC, company, and deal related information. It should be noted that the values of the variables are ‘as at April 2020’ and not ‘as at time of financing round’. However, considering that a) all VC funds are still in operation and actively investing and b) that the sample is relatively recent, the use of current as opposed to at-time-of-financing values is not likely to result in significant errors when determining the relative experience of VCs compared to one another. The reason that four proxies were chosen is to test whether the results from the fsQCA hold for different measures of investor experience, as single measures may be biased for certain types of investors. For instance, VCs who focus on small early-stage investments may rank highly on the measure of number of companies funded, compared to late-stage VCs who invests in fewer companies but commit more capital.

A trust measure is used to capture several aspects of the contracting environment that arise due to the differences in e.g. culture, geographic distance and legal system origin between the VC and the company. As with experience measures, these factors have been found to be relevant to contract design in the literature (Lerner & Schoar, 2005; Kaplan et al., 2007; Bengtsson & Ravid, 2015). Again, these factors would ideally be included separately into the fsQCA algorithm to ensure the validity of the measure, and to enable a more fine-grained analysis of which specific factors contribute most to contract design. In place of separate proxies, this study uses the level of trust that citizens of the VCs country of origin have for the citizens of the company’s country. This variable is sourced from Guiso et al. (2009) who studied how trust levels between citizens impact economic exchange between the countries of those citizens. Guiso et al. (2009) find that aspects like geographic distance, differences in legal origin and cultural differences arising e.g. from differences in language, all have a negative and statistically significant effect on trust. Therefore, despite being a compromise to individual measures, “trust” is employed as proxy for environmental factors.

As a proxy for company characteristics the study uses the proxy of pre-money valuation. Pre-money valuation is the valuation with which new investors invest into the company and is calculated by multiplying price per share with the number of shares outstanding prior to the completion of the round. Pre-money valuation acts an indication of whether the company is early-stage or late-stage. This has been recognized as an important predictor for contract harshness with the argument being that early-stage companies are

inherently more risky, exhibit more agency problems and therefore require stricter contracts (Kaplan & Strömberg, 2003). Importantly, pre-money valuation can also be regarded as an indication of company quality, simply because high-quality companies are typically valued highly than low-quality companies. Furthermore, as this study more specifically examines the change in pre-money valuations between back-to-back financing rounds, valuation also captures aspects of “momentum” or “hype” surrounding the company; companies with strong momentum and perceived prospects are likely to raise more money on the following financing round. However as with the other metrics there may be some aspects of company characteristics that are missed by the pre-money valuation proxy and would be better served by other measures. For instance, using an absolute measure, as is done here, may be biased towards companies that operate in industries with greater capital needs. This bias could be eliminated with the use of a relative measure that calculates the change in valuation in percentages. This change however would result in losing the indication of company maturity that is achieved with taking the absolute change in dollars/euros (companies in the early-stages are more likely to have lower absolute increases in valuation between back-to-back financing rounds than late-stage companies). Considering this and other inevitable trade-offs, and which proxies have been used and deemed relevant in prior studies, the absolute change in pre-money valuation is chosen.

Finally, the number of total historical syndication partners (or co-investors) for the lead VC is used as a proxy for the strength of their investor network. Network strength is likely to be related to the quality of the VC, as reported by Hochberg et al. (2007) who found that better-networked VCs have better investment performance. The strength of syndication networks is also related to diffusion of contracting practices among investors, in that VCs with more exposure to other investors adopt contracting practices from them and these practices may begin to converge (Suchman, 1995; Bengtsson & Bernhardt, 2014). This provides an interesting dynamic to the study of contract design, and in tandem with “trust” helps account for, and also shed light on, different contracting practices in different geographical and cultural areas.

3.3 Methods

In this study, fuzzy-set qualitative comparative analysis (henceforth fsQCA) is utilized to determine which combinations of the causal conditions lead to the desired outcome. fsQCA is a set-theoretic analysis technique that is used to analyze which configurations and combinations of causal conditions (analogous to independent variables in regression analysis) lead to a certain outcome (analogous to the dependent variable in regression analysis). fsQCA has its roots in social science where it has formalized the process of qualitative analysis for those research situations where the number cases is too large to grant sufficient qualitative intensity to cases, but too low to utilize traditional variable-oriented quantitative methods (Ragin, 2000).

fsQCA consists of three main steps: 1) data calibration 2) truth table analysis and 3) interpreting the final solution (Ragin, Strand, & Rubinson, 2008; Ragin, 2009). The first step, calibration, consists of assigning a fuzzy membership score ranging from 0 to 1 for each causal and outcome variable, denoting its degree of membership in a fuzzy set. This is done by first qualitatively assigning three threshold points which correspond to full membership (fuzzy-score = 0.95), full non-membership (fuzzy-score = 0.05) and crossover-point (0.5) in a given fuzzy set. These thresholds assigned by the researcher are then utilized by the fs/QCA-software to run the calibration algorithm which transforms the original values of the raw data into fuzzy membership scores ranging from 0 to 1.

In the second stage of truth table analysis, all possible combinations of the causal conditions are tested to see which ones result in the outcome. This means that the number of possible causal condition combinations is 2^k where k = number of causal conditions, because a causal condition can be either present (=1) or absent (=0) in the outcome. Thus, in a truth table each row is one of 2^k possible combinations of causal conditions, also known as causal recipes. Each possible causal recipe is then assigned an output value based on the fuzzy membership scores of the actual cases which share that particular combination of input values (that combination of scores on the causal conditions). Table 6 represents a hypothetical truth table with three causal conditions.

Table 6. Hypothetical truth table with three causal conditions

<i>Condition 1</i>	<i>Condition 2</i>	<i>Condition 3</i>	<i>Outcome</i>	<i>Number of instances</i>
0	0	0	0	9
1	0	0	1	2
0	1	0	1	6
0	0	1	0	2
1	1	0	1	7
1	0	1	1	3
0	1	1	1	1
1	1	1	1	4

After the truth table has been constructed several intermediate steps are required before it can be analyzed by the fs/QCA-software to yield interpretable results. First the researcher must establish which rows, i.e. causal recipes, are relevant and which are irrelevant for the study. This is done by setting a cutoff value for the frequency of cases exhibiting a certain combination of causal conditions, represented in the *Number of instances* column in table 6. The rows which do not meet the threshold consistency (recommended by (Ragin, 2009) to be 1-2 with small-N samples) are removed from the truth table. Secondly, the researcher must also determine a cutoff value for the *consistency* of a given combinations of causal conditions. Consistency is a key metric in fsQCA. It defines the degree to which cases sharing the same combination of causal conditions “agree” on what the outcome should be (given the shared causal recipe) (Ragin, 2006). For example, if all cases with the same configuration of causal conditions exhibit the same outcome then the consistency for that configuration is 1. Ragin (2009) states that a consistency of less than 0.75 indicates significant *inconsistency* and therefore a consistency threshold of at least 0.75-0.80 should be used. Consequently, the researcher must remove the rows (recipes) which do not meet the selected consistency threshold.

After constructing and configuring the truth table the fs/QCA-software runs an algorithm based on Boolean Algebra (Ragins fs/QCA-software uses the Quine-McCluskey algorithm), reducing the rows of the truth table to more simplified causal combinations (Fiss, 2011). The resulting and simplified causal combinations are the solutions of the fsQCA analysis. More specifically, the algorithm produces three solutions: the parsimonious, complex, and intermediate solutions. The solutions differ on the degree to which they simplify solutions. The parsimonious solution is the most simplified solution,

wherein the Boolean algorithm has removed “redundant” causal conditions that are not necessarily needed for the desired outcome to occur. In other words, the parsimonious solution makes assumptions regarding the necessity of certain causal conditions for the outcome and removes those that are not necessary (Fiss, 2011). While the parsimonious solution may not capture maximum variance due to the simplifying assumptions, it is regarded as the most important solution as removing redundant conditions highlights those that are causally the most relevant to achieving the desired outcome (Baumgartner, 2015). The complex solution, as the name suggests, is the most complex. It does not make any simplifying assumptions regarding the necessity of causal conditions for the outcome. This sometimes results in highly complex solutions which are difficult to interpret and from which causal relationships are difficult to draw (Fiss, 2011). The intermediate solution lies in between the parsimonious and complex solutions in terms of complexity. The intermediate solution makes use of manual input from the researcher when making simplifying assumptions. For example, the researcher may have theoretical knowledge that certain causal conditions need to be present for the outcome to come true. In such instances the researcher can specify that such causal conditions should not be removed in the solution even if the algorithm were to regard them as redundant. If no input is given by the researcher the intermediate solution is identical to the complex solution (Ragin et al., 2008).

The resulting solutions allows the researcher to categorize causal conditions into core and peripheral conditions. Core conditions are those that are present in both parsimonious and intermediate/complex solutions. Peripheral condition on the other hand are those that are eliminated in the parsimonious solution and only appear in the intermediate/complex solution (Ragin et al., 2008). Solutions are typically summarized in a solution table for ease of interpretation (Ragin & Fiss, 2008). Table 7 provides an example of such a table.

Table 7. Example of an fsQCA solution table

Configuration	Solution	
	1	2
Condition 1	-	-
Condition 2	●	⊗
Condition 3	⊗	●
Condition 4	⊗	●
Consistency	[number]	[number]
Raw coverage	[number]	[number]
Unique coverage	[number]	[number]
Cases with greater than 0.5 membership in the solution	X,Y	Z
Overall solution consistency		[number]
Overall solution coverage		[number]

Black circles in a solution indicate the presence of the condition on the corresponding row, and white circles with a cross inside indicate the absence of a condition. Large circles are core conditions whereas small circles are peripheral conditions. Blank spaces signify that the corresponding condition was redundant and therefore removed from the solution. Furthermore, the table reports the consistency, raw coverage and unique coverage of each of the solutions as well as the overall consistency and coverage of all the solutions.

Coverage, in addition to consistency, is another key metric in fs/QCA analysis. Coverage assesses the degree to which a cause or causal combination “accounts for” instances of an outcome (Ragin, 2006). In other words, it refers to the percentage of cases that share a specific causal recipe to arrive at a given outcome. Therefore, coverage is a clear indicator of the empirical importance of a causal combination (Ragin, 2006). Coverage and consistency are often trade-offs; high consistency is often coupled with low coverage and vice versa. High consistency is typically achieved when multiple sets intersect to produce a highly complex causal recipe. However, this means that there are likely very

few cases which take the same highly complex path to the outcome, resulting in low coverage.

4. Results

This chapter presents the results of the study. Univariate results from the studied financing rounds will be presented first to gain a deeper understanding of the rounds in questions and make initial inferences. In the second part of the chapter fsQCA is utilized to test the hypotheses. The fsQCA will introduce four causal conditions and test how different configurations of these variables affect the outcome, contract harshness.

4.1 Univariate results

Table 8 presents statistics regarding the ACH scores of each contract provision at the level of individual financing rounds. The mean ACH score for an individual financing round in the sample is 8.32 with 13 being the maximum and 4 being the minimum

Table 8. ACH score statistics for individual financing rounds

Variable	Min	Max	Mean	n
Liquidation preference	0	1	0.97	38
Participation	0	1	0.08	38
Anti-dilution	0	1	0.45	38
Time vesting	0	1	0.79	38
Transfer of shares	0	1	0.76	38
New financing	0	1	0.34	38
Forced exit clause	0	1	0.21	38
Drag-along	0	2	1.13	38
Bad/Good leaver provisions	0	1	0.66	38
Non-compete clauses	0	2	1.03	38
Board control	0	2	0.82	38
Reps & Warranties	0	2	0.92	38
Equity goals for future financing	0	1	0.05	38
ESOP	0	1	0.11	38
Aggregate Contract Harshness (ACH)	4	13	8.32	38

Table 9 presents data on the changes in ACH scores between consecutive financing rounds i.e. pairs of financing rounds.

Table 9. Changes in ACH scores between consecutive financing rounds

Variable	Min	Max	Mean	Count of changes	n
Liquidation preference	0	1	0.05	1	21
Participation	-1	1	0.00	2	21
Anti-dilution	-1	1	0.29	8	21
Time vesting	-1	1	0.00	4	21
Transfer of shares	-1	1	0.10	4	21
New financing	0	1	0.29	6	21
Forced exit clause	0	1	0.38	8	21
Drag-along	-1	1	0.29	8	21
Bad/Good leaver provisions	-1	1	0.10	4	21
Non-compete clauses	0	1	0.10	2	21
Board control	-1	2	0.67	13	21
Reps & Warranties	-2	2	0.00	4	21
Equity goals for future financing	-1	1	0.05	3	21
ESOP	0	1	0.05	1	21
Aggregate Contract Harshness (ACH)	-3	8	2.33	17	21

The most amount of negative change in ACH between consecutive financing rounds is -3 with the maximum in the positive direction being 8 and the average change in ACH being an increase of 2.33. The average change in ACH is non-negative for each of the contract provisions in the sample. More specifically, only three provisions (participation, time-vesting, and reps & warranties) have an average change of 0 in ACH with the rest of the provisions having strictly positive mean changes. In other words, for the sample in this study, contract provisions tend to get harsher as the company seeks additional financing. This could indicate that investors (and entrepreneurs) rarely see the need to relax terms already negotiated by previous lead investors or start on a clean slate, but rather use the existing contract as the starting point to which more terms are added. Another interesting observation relates to the count of changes, i.e. the number of times any change in either direction was observed for the variables between financing rounds. Many of the provisions changed only a few times during financing rounds, as was the case with for example liquidation preference, ESOP and participation. This could be an indication that a certain standard configuration for these provisions has been established and few investors wish (or dare) to depart from these norms. However, provisions like board control, drag-along rights, anti-dilution rights and forced exit rights are relatively often adjusted between financing rounds and more often than not in a direction favorable

to investors. Excluding anti-dilution, these provisions grant control rights to investors with drag-along rights and forced exit rights being tightly linked with controlling when the company can be sold or listed. This could indicate that investors in later rounds may be more concerned with being able to control the timing of exits than trying to protect against downside risk.

4.2 Fuzzy-set qualitative comparative analysis

4.2.1 Assigning set membership scores for causal conditions and the outcome

The fsQCA algorithm is most useful when causal conditions are calibrated to conform to an external scale. The algorithm can be run with un-calibrated measures, but this is inferior to using calibrated measures according to Ragin (2008). Without calibration measures like investor experience or ACH (the outcome variable) are only compared against the values present within the data set; we can say if the increase in ACH between a pair of rounds is higher than another pairs but we can't say whether or not that pair of rounds belongs in the set of round-pairs where the ACH increased. For that reason, it is useful to specify the cross-over point at which an observation switches from being more in or out of a set as well as two additional points which help determine the boundaries for when an observation is considered fully out or fully in a set.

This study is interested in examining how *changes* in causal conditions impact the amount of change that happens in the ACH of back-to-back financing rounds. As such the study is interested in determining the degree of membership of the variables in the set that could be described by the statement “[*name of variable*] *increases in the following financing round*”. Consequently, the natural cross-over point for many of the variables is 0. When change is 0, the variable stays the same and its membership in the above-mentioned set is most ambiguous; it is neither in nor out of the set. A value below 0 means that the variable is definitely more out than in the, but due to other observations of the variable possibly having larger negative change its membership is not necessarily 0. The same applies for instances where the variables value is greater than 0. The point at which value a variable is fully-out is determined by the additional boundary conditions i.e. the threshold for *full membership* and the threshold for *full non-membership*. These

thresholds were set as the maximum and minimum points of the observation values for all the variables after manually removing outliers which could have skewed the scoring.

Two of the causal conditions saw changes in only the positive and negative direction (or remained unchanged): pre-money valuation and trust, respectively. In the case of valuation this is due to all companies receiving a higher valuation in the follow-up financing round. In the case of trust, negative values are due to a Finnish VC nearly always being the 1st round investor in which case trust can only decrease or remain stable (Finns receive the highest trust from Finns). As a result, the cross-over point for these causal conditions is set at the mean, after removing outliers. Like with the other variables the thresholds for full and non-membership are set at maximum and minimum points after removing outliers.

Table 10 provides a summary of the calibration thresholds for both the causal conditions and the outcome.

Table 10. Set-membership thresholds for causal conditions and the outcome

Variable (change between consecutive rounds)	Full non-membership	Cross-over point	Full membership
Causal conditions			
<i>Funded companies</i>	-78	0	62
<i>VC age (years)</i>	-12	0	17
<i>AuM (MEUR)</i>	-1850	0	2860
<i>Successful exits</i>	-83	0	80
<i>Trust</i>	-0.98	-0.36	0
<i>Number of syndicate partners</i>	-144	0	214
<i>Pre-money valuation (MEUR)</i>	0	16	60
Outcome			
ACH	-3	0	8

After assigning membership thresholds, the fs/QCA software rescales the variables so that their values range from 0 to 1. This completes the calibration process, and the dataset can now be analyzed by the fs/QCA software.

4.2.2 Truth-table analysis – full sample

Table 11 shows the result of the fuzzy-set analysis of the increase in Aggregate Contract Harshness. The notation for the solution table is borrowed from Ragin & Fiss (2008), according to which black circles indicate the presence of a condition, and crossed-out white circles represent its absence. Furthermore, big circles represent a core conditions whereas small circles represent peripheral conditions. Blank spaces indicate that the causal condition can be either present or absent, i.e. the outcome is not affected by the presence or absence of that condition.

Outcome: Increase in Aggregate Contract Harshness

The solution that is presented has as its experience measure the number of funded companies. The fs/QCA algorithm was run separately with all the different measures of experience and they yielded similar results. As a result, the solutions found with the different experience variables are not reported. The solutions presented in the table are grouped into solution categories (1, 2, 3) which reflect shared core conditions.

Table 11. Configurations leading to an increased ACH in a following financing round

Configuration	Solution				
	1a	1b	1c	2	3
VC experience <i>Number of companies funded</i>	-	⊗	-	⊗	●
Geographical & cultural dist. <i>Trust</i>	-	-	●	⊗	●
VC network strength <i>Number of co-investors</i>	●	-	-	⊗	⊗
Company maturity <i>Pre-money valuation</i>	⊗	⊗	⊗	-	-
Consistency	0.96	0.84	0.84	0.87	0.97
Raw coverage	0.44	0.43	0.43	0.26	0.22
Unique coverage	0.15	0.02	0.02	0.05	0.04
Cases with greater than 0.5 membership in the solution	H, E, L, P, A	O, K, P, U, C, D, G, J	O, K, G, C, L, J	I, U, D	T
Overall solution consistency			0.87		
Overall solution coverage			0.82		

Solutions 1a, 1b and 1c indicate that a lack of company maturity is sufficient for an increase in ACH in the following round. In other words, whether due to (still) being an early-stage company, or not having developed as expected so as to sufficiently increase its valuation, a company seeking a new injection of cash is likely to be met with more investor-friendly contract terms in that financing round. This finding holds regardless of VC characteristics or environmental factors (given the three different paths with alternating peripheral conditions). The peripheral conditions indicate that there are alternative avenues by which contract harshness could increase when coupled with a lack of maturity. Specifically, solution 1b is of interest to this study. It states that an absence of investor experience in the following round, i.e. a less experienced new lead investor, is a secondary condition to an increase in ACH. It indicates that if pre-money valuation has increased only moderately, inexperienced VCs seek to exert more harsh contract terms on the founders. While it is not surprising that mediocre performance between rounds is met with strict contracts it is noteworthy that the inclusion of *experienced* investors is not associated with increased ACH in such situations. Experienced investors may not see the need for stricter provisions but instead attempt to aid the company in other ways, whereas inexperienced VCs seek to protect themselves via more concrete mechanisms against a possible, and perhaps more likely, downside scenario.

Solution 2 indicates that increasing cultural and geographical distance (i.e. a notably greater decrease in trust) coupled with a decrease in the network strength of the lead VC lead to an increase in contract harshness. This result signifies that more distant VCs and ones whose contracting practices have not been as influenced by interacting with other investors impose stricter contracts regardless of company characteristics like pre-money valuation. The more limited interaction with other VCs could indicate that the VC market in the VCs home country is not as developed. This interpretation is supported by a closer examination of the cases that have >0.5 membership in the 2nd solution; the cases have VCs from Portugal, Switzerland, and Luxembourg as lead investors in the second-round. The VC market in these countries is relatively underdeveloped compared to e.g. the U.S or U.K., both of which are prevalent in the sample. Furthermore, the lead VCs in cases I, U, D are all venture capital arms of corporations, or CVCs. Such corporations may be subject to greater degrees of coercive pressure (DiMaggio & Powell, 1983) from their parent corporation in the sense that CVC arms may have to align with the external norms and goals of the parent corporation (Souitaris et al., 2012). These norms could

conceivably include e.g. a reduced appetite for financial risk (compared to the norms present in the independent-VC industry) leading to the need for more downside protection and therefore stricter and harsher contracts.

The 3rd, and final, solution indicates that an increase in experience, and a decrease in network strength of the subsequent lead investor leads to an increase in contract harshness, as per the core conditions. This is supplemented by the peripheral condition of a relatively minor change in geographical and cultural distance between the investors towards the company. The result suggests that some investors, when bringing in more experience relative to those already in the company, may leverage this position to gain more investor-friendly terms in the contract. Furthermore the causal recipe requires that these investors have weaker syndication networks which likely hints that the new investors are under less stress to adhere to some normative forces requiring them to provide friendlier terms to the entrepreneurs, thus providing them with the “psychological” freedom to act opportunistically. The peripheral condition of relatively little decrease in trust also makes sense under this interpretation. Less geographical and cultural barriers mean that the VC is likely able to provide value-added services more readily meaning that the deterrent for the founder created by the possibility of refusal to provide the value-added services, is larger and therefore plays into the hands of the investor. However, a more practical alternative interpretation for the solution can be made when examining case T (the only one with >0.5 membership in the solution) more closely. The company in case T is raising considerable financing at 400€ million in a Series C round. When the composition of the ACH score is examined, we observe that the only provision whose score increased was the force exit clause (from absent in the previous round to present in the following). Hence, an alternative explanation could be that as the company is already raising substantial Series C financing and may be preparing for a large exit in the near future, the lead investor wished to gain control of a clause that permits her to force the exit if the original exit schedule is not met (motivation to ensure an exit by a specific date could be e.g. the funds structure and commitments that the fund has made to its LPs regarding the payback schedule).

To gauge the relative empirical relevance of the three solutions an examination of both their consistencies and coverages is useful. The consistencies of all the solutions are at an acceptable level and do not constitute significant inconsistencies. Especially solutions 1a

and 3 have near-perfect consistencies. Since consistencies are at an acceptable level and the solutions are consistent subsets of the outcome, the coverage scores can be assessed (Ragin, 2006). The unique coverages of all but solution 1a are very small. Solutions 1b, 1c, 2 and 3 have a total unique coverage of only 0.13, or in other words, only 13% of all the instances of the outcome are explained by these solutions signifying little empirical relevance. Solution 1a has a unique coverage of 0.15, meaning that it alone accounts for more instances of the outcome than the remaining four solutions combined. Such low unique coverages, including solution 1a indicate that the solution may be overly complex, and the solutions are likely subsets of a larger set of solutions. In an unreported analysis of the most parsimonious solution (the one presented in table 11 is the intermediate solution) we observe that solutions 1a, 1b, 1c are in fact subsets of the same solution where the sole condition is the absence of a relatively sufficient increase in pre-money valuation between rounds. The unique coverage of this solution is 0.42 and the others' (same as in table 11) have a combined unique coverage of 0.11. This is strong indication that it is the absence of pre-money valuation between rounds that is empirically most relevant for an increase in ACH.

The results of the first fsQCA thus provide the most support to the third hypothesis. The results also partially support the fifth hypothesis which despite its low coverage groups together all of the CVCs in the sample and thus provides evidence of distinct contracting styles between different VCs.

Outcome: decrease in Aggregate Contract Harshness

The fsQCA reported in table 11 analyzed causal recipes which lead to the outcome of an increase in Aggregate Contract Harshness. However, of equal importance and interest are the paths that lead to a *decrease* in ACH. To configure the fs/QCA software for the analysis of a decrease in ACH, the only modification that is required is to the outcome variable, which simply becomes $[ach_decrease] = 1 - [ach_increase]$. The results of this analysis are presented in Table 12.

Table 12. Configurations leading to a decrease in ACH in a following financing round

Configuration	Solution	
	1	2
VC experience <i>Number of companies funded</i>	-	-
Geographical & cultural dist. <i>Trust</i>	●	⊗
VC network strength <i>Number of co-investors</i>	⊗	●
Company maturity <i>Pre-money valuation</i>	●	●
Consistency	0.82	0.77
Raw coverage	0.44	0.34
Unique coverage	0.25	0.15
Cases with greater than 0.5 membership in the solution	S, T, F	Q, N
Overall solution consistency		0.75
Overall solution coverage		0.59

By substituting the outcome to be a decrease in ACH, a different solution emerges. What is immediately clear is that the amount of solutions has reduced from five to two, or from three to two when grouping solutions by core conditions. This suggests that there are fewer causal paths available that lead to a decrease in contract harshness as opposed to an increase. Also, the fact that both solutions contain only core conditions is further indication that very specific causal conditions must prevail. Furthermore, the coverage and consistency for both the individual solutions and the overall solution are noticeably smaller than for the previous analysis. Especially consistency is on the cusp of demonstrating significant inconsistency whose limit is 0.75 or even 0.8 according to Ragin (2008). Taken at a glance then, the solution supports and builds on to what was already found in the univariate analysis; contract harshness more often increases rather than decreases, and very specific conditions need to be in place for a decrease in ACH to occur.

The first solution indicates that ACH can decrease when the company being funded has reached a level of maturity or performed as expected, when the level of trust towards the Finnish company only decreases moderately, and when the new lead VC has a weaker syndication network. Given the results of the first fsQCA iteration the first condition in

solution 1 is expected. Companies who have matured and/or performed as expected have signaled to the investors that there is little need for an increase of harshness of contract terms. In other words, investors are assured that entrepreneurs and the management are competent and can be trusted to do their job in accordance with the interests of the VC. The second condition, a relatively moderate decrease in trust, is also intuitive. Smaller cultural and geographical distances between the VCs is likely to facilitate better cooperation and enable better monitoring by the VC, which again leads to a reduced need for contract harshness. The third term of network is not immediately intuitive since an absence of network strength was found to be a core condition of an increase in ACH in the previous iteration. However once again a closer examination of the case yields further insight. In cases S and F, the new lead investor is a government-backed public institution, who are likely to be less active in other than their own local VC markets and therefore exhibit a low score for syndication networks. Public institutions' motives are also not as one-dimensionally focused on financial return as their private counterparts'. In addition to financial return they may be motivated by the need to support local businesses, prop up regional development, or back ventures which may have strategic value to the state. Hence, it stands to reason that public-funds are not as concerned with downside protection. Similar results were found by Isaksson et al. (2004) in the Swedish VC market.

An alternative causal path to decreased ACH is given by the second solution. It states that the presence of both company maturity and a lead VC with a stronger syndication network coupled with a relatively large decrease in trust is sufficient for the emergence of a more entrepreneur-friendly contract. Cases Q and N, whose memberships in the solution are greater than 0.5, do not seem to share many traits upon initial examination. However, the new lead investors in both cases are both younger and more focused on early-stage investments than the previous rounds' leads. Both also operate in more active VC markets and thus likely have more syndication partners despite not being otherwise as experienced. This would cautiously suggest that VCs who focus on early versus late-stage investment have varying contractual strategies. This was likewise identified by Isaksson et al. (2004).

However, as with the model for increasing ACH, the strongest causal determinant for decreasing ACH is pre-money valuation. Specifically, a relatively strong increase in it. This can again be assessed based on the coverage scores configurations of the two

solutions. Based on the unique coverages and the overall solution coverage we can calculate that the shared coverage, i.e. overlap between the solutions is 0.19. Furthermore, as the only shared condition between the solutions is a strong increase in valuation, we can conclude that this single condition is once again empirically the most relevant. The unique coverage of 0.25 for solution 1 however is by no means insignificant. It provides empirically relevant evidence that publicly funded VCs impose less-harsh contract terms than their peers. Even the 0.15 unique coverage score of the second solution is not to be dismissed entirely as it is not significantly smaller than either the shared coverage or the unique coverage of solution 1. However, any empirically relevant inferences at least as it relates to the hypothesis of this study, are difficult to make. While the closer examination of cases Q and N shows that they share similar traits (both could be classified as early-stage) there are also other cases with lead VCs that share the same investor profile as the investors in cases Q, N, but do not feature in the solution. Thus, given the absence of any other similarities between the cases and the low coverage score I am unable to draw any empirically relevant insights from solution 2.

The second run of fsQCA thus provided further backing for the third hypothesis. Likewise it affirmed the fifth hypothesis by showing that the government-backed organizations present in the study followed the same causal path to a decrease in contract harshness.

4.2.3 Truth-table analysis – sub-sample

The Aggregated Contract Harshness scores are highly dependent on which provisions are chosen to be incorporated in the aggregation. ACH is also dependent on the chosen *method* of aggregation and how the provisions are weighted relative to each other (note: they are weighed 1:1 – rationale for this is provided in chapter 4.2.1). For these reasons, this chapters will attempt to mitigate effects of selection issues regarding the choice of provisions and issues in their scoring.

This chapter will apply fsQCA so that the outcome, ACH, is calculated not based on the whole set of 14 contract provisions, but a sub-set of 9 provisions. The removed provisions are liquidation preference, new financing rights, forced exit rights, non-compete clauses and pre-money employee stock option pool. The rationale for removing these provisions is that their presence or harshness in the sample solely increases between consecutive

financing rounds. While this might simply be a consequence of the small sample size, it may also be an indication that these provisions and their positive development between rounds has become a norm in VC contracting. Hence, including them may skew the results because the presence or absence of any company, VC or environmental characteristics will not constrain the development of these provisions. Thus the nine remaining provisions who exhibit both increases and decreases from round to round, may better capture the constraining effects of the causal conditions and thus yield more granular insights about contracting dynamics. The fs/QCA analysis for an increase in ACH as the outcome with provisions that exhibit only monotonous development is presented in table 13.

Table 13. Configurations leading to an increase in ACH in a following financing (monotonously developing provisions removed)

Configuration	Solution				
	1a	1b	1c	2	3
VC experience <i>Number of companies funded</i>	-	⊗	-	⊗	●
Geographical & cultural dist. <i>Trust</i>	-	-	●	⊗	●
VC network strength <i>Number of co-investors</i>	●	-	-	⊗	⊗
Company maturity <i>Pre-money valuation</i>	⊗	⊗	⊗	-	-
Consistency	0.97	0.83	0.82	0.84	0.94
Raw coverage	0.46	0.51	0.45	0.26	0.23
Unique coverage	0.16	0.01	0.02	0.04	0.04
Cases with greater than 0.5 membership in the solution	H, E, L, P, A	O, K, P, U, C, D, G, J	O, K, G, C, L, J	I, U, D	T
Overall solution consistency			0.84		
Overall solution coverage			0.84		

The solutions of the analysis are virtually identical to those of the original fs/QCA iteration. Only the consistency and coverage measures have been very slightly modified but the configurations of the solutions and their relative importance remain unchanged. The results indicate that the results from the previous iteration utilizing the full sample (table 11) were not skewed by a selection issue of including provisions whose harshness only increases between financing rounds. This in turn indicates that the set of provisions

that exhibit both negative and positive variance between the financing rounds are also driven by the same mechanics. Hence, the results and discussion from the previous iteration hold; an increase in contract harshness is mainly driven by the lack of development and performance from the previous financing round.

The same exclusions of provisions is also applied to the analysis of a decrease in ACH. The results are presented in table 14 below.

Table 14. Configurations leading to a decrease in ACH in a following financing round (monotonously developing provisions removed)

Configuration	Solution	
	1a	1b
VC experience <i>Number of companies funded</i>	-	●
Geographical & cultural dist. <i>Trust</i>	●	●
VC network strength <i>Number of co-investors</i>	⊗	-
Company maturity <i>Pre-money valuation</i>	●	●
Consistency	0.85	0.80
Raw coverage	0.41	0.47
Unique coverage	0.14	0.20
Cases with greater than 0.5 membership in the solution	S, T, F	B, T, R, M
Overall solution consistency		0.80
Overall solution coverage		0.61

Unlike in the case of an increase in ACH the causal recipes leading to a decrease in contract harshness are not identical to the analysis which included all contractual provisions. The new solutions emphasize the need for trust and pre-money valuation, while neglecting the need for strong syndication networks or a lack of them as core conditions. This could be an indication that the inclusion of the now removed contractual provisions overstated the importance of some cases which resulted in trust and pre-money valuation maturity as core conditions being overshadowed by alternative causal recipes. Namely, the second solution of the previous iteration (table 12).

Solution 1a of this new table is the same solution as the solution 1 from table 12 with the same cases S, T and F just with the absence of network strength being reduced from a core to a peripheral condition, and therefore the discussion and conclusions made in the previous chapter apply here as well. Solution 1b is similar to solution 1a in that it shares the same core conditions but requires the presence of a more experienced lead VC as an additional peripheral condition. Of the cases with greater than 0.5 membership in solution 1b, cases B, R and M are cases that did not feature in the previous iteration. The VCs in these cases are private-VCs with perhaps more of a focus towards late-stage investments and are, as per the peripheral condition, indeed highly experienced.

Examining the coverage scores reveal that the solutions 1a and 1b have more overlap than they do individual explanatory power; their shared coverage is 0.25 (calculated by subtracting the unique coverage of the solutions from the overall coverage) while unique coverage is 0.20 and 0.14, respectively. This indicates that the outcome is mainly driven by the shared core conditions and that the relative importance of the peripheral conditions is not as significant. However, the unique coverage of especially solution 1b is not insignificant and is explained by the addition investor experience as a causal condition. This lends partial support to the first hypothesis and is one of the first indicators in this study that investor experience is indeed related with a decrease in contract harshness. However, experience alone is not sufficient for a decrease in contract harshness to occur. It must be accompanied by trust and positive company performance. Therefore, while providing partial support for the negative relationship between investor experience and contract harshness (the first hypothesis) the result is by no means conclusive.

In general, the results of this chapter should be approached with caution. It is entirely possible that the terms excluded in this study were excluded on the wrong basis and therefore the result is not valid. In other words, the observed monotonous development may simply be due to the small size of the sample which coincidentally did not include any negative development of some conditions, and not an indication of them becoming the norm.

4.2.4 Truth-table analysis – board representation

Motivated by the finding by Bengtsson & Sensoy (2011) that experienced VCs acquire board representation as a substitute for more harsh contract provisions, I investigate the causal conditions for acquiring more board control relative to the previous round. The solutions are presented in table 15.

Table 15. Configurations leading to an increase in board control in following financing round

Configuration	Solution	
	1	2
VC experience <i>Number of successful exits</i>	●	-
Geographical & cultural dist. <i>Trust</i>	-	-
VC network strength <i>Number of co-investors</i>	-	●
Company maturity <i>Pre-money valuation</i>	⊗	⊗
Consistency	0.96	0.97
Raw coverage	0.55	0.43
Unique coverage	0.15	0.03
Cases with greater than 0.5 membership in the solution	G, E, H, L, A, J	H, E, L, P, A
Overall solution consistency	0.96	
Overall solution coverage	0.59	

The fsQCA algorithm results in two paths to increased board control in a following financing round. The first solution states that if the new lead VC is more experienced and the company has not reached a high pre-money valuation then this is almost always met with an increase in board control (as evidenced by the high consistency value). This provides support to the finding by Bengtsson & Sensoy (2011) that experienced investors care especially about board control. The first solution suggests however that this needs to be complemented by the absence of high pre-money valuation which could be interpreted either as lack of sufficient development or still being an early-stage company. Looking at the cases whose membership in the solution is >0.5 reveals additional insight. In four out of the six cases the companies' valuation from the previous financing round had

multiplied notably less than the mean of the whole sample, with the remaining two having valuation increases of just above the mean. This indicates that in addition to the companies still being in their relatively early-stages (low absolute pre-money valuation) they also have not performed particularly well between the financing rounds to warrant a considerably higher valuation. VCs with experience may recognize the need to step-in to aid the management and get the company back on the right track. In addition, experienced VCs may have more trust in their own abilities (whether actually superior or not) to be able to make effective use of the increased control, compared to less experienced VCs, and thus are more eager to seize control in adverse situations.

The second solution also requires that the companies are in their early-stages. The cases with greater than 0.5 membership in the solution have also for the most part failed to multiply their valuation between rounds. The second causal condition for this path is the presence of a new lead VC with a stronger syndication network. Well syndicated VCs or at least VCs with relatively more partners than the previous ones, may have learned the importance of taking board control from their syndication partners even though the lead VC themselves is not as experienced. It is once again useful to examine the cases in more detail. Specifically, case P which is unique to the second solution. The lead VC in case P is based in the U.S and is focused on a specific sector. And while less experienced in absolute terms than the former lead investor they have participated in multiple financings in a relatively short period of time leading to wide exposure to the most recent contracting practices in the U.S, which seem to favor the inclusion of board control (Bengtsson & Sensoy, 2011).

Assessing the relative empirical importance of the solutions however reveals that the main causal condition for more board control is neither the strength of syndication networks nor experience, but again a relatively small increase in pre-money valuation i.e. a relatively poor performance between financing rounds. This is again based on the individual coverages of the solutions and the overall coverage of the combined solution. While the solutions substantial raw coverage their unique coverages are relatively small. This means that of the overall coverage of 0.59, 0.41 is common to both solutions. Thus, as the common causal condition of the solutions is modest development of pre-money valuation it can be deemed as empirically the most relevant. Increases experience is also at least partly relevant since the unique coverage of solution 1 (the solution with

experience as a core condition) is 0.15, or 25% of the overall coverage (0.15/0.59). The empirical relevance of the second solution and the presence of strong syndication networks is questionable, however, as the unique coverage of the solution is a mere 0.03 or 5% of the overall coverage.

Summing up, the results from analyzing the causal determinants of increased board control tell a tale similar to previous analyses. Company performance proxied by pre-money valuation is the main causal determinant of board control. However, there is evidence for investor experience, proxied here by the number of successful exits, being a key causal condition as well. This finding tentatively supports the findings made by Bengtsson & Sensoy (2011) in that it shows that experienced investors pursue board control. Despite this, it does not truly support the first hypothesis. This is because in this study board control is considered to be an equal contributor to contract harshness as opposed to being a less harsh alternative to cash flow rights, which it was in Bengtsson & Sensoy (2011). Thus, under the assumptions of this study, for board control to have lent support to the first hypothesis further analysis would have been required to show that experienced investors substitute cash flow rights for board control. This seems unlikely as the previous iterations of fsQCA showed little empirical relationship between a decrease in ACH and investor experience.

4.3 Summary of results

The first hypothesis and the one of primary interest in the context of this study is not supported by the findings in the study. The iterations that evaluated causal recipes leading to an increase or decrease in ACH found in fact a positive relationship between contract harshness and experience, contrary to expectations. Further fsQCA iterations using subsets of the data likewise failed to provide support for the hypothesis. Either experience was not part of the recipe at all, it had the opposite relationship with ACH than expected, or its empirical relevance was minor. The only instance where the first hypothesis was slightly supported was when examining recipes leading to a decrease in ACH for a subset of contract terms. But even here experience was only a peripheral condition with trust and pre-money valuation as the core conditions.

The second hypothesis which states that the relationship between experience and ACH should flip to positive when confronted with low-quality ventures is also not supported by the analysis. If the hypothesis were to hold, we would expect to observe instances where experience would be coupled with an absence of the pre-money valuation condition. However, such recipes were not widely observed. The single instance (out of the total 16 solutions produced by the different fsQCA's) where this was observed was with board control. However, as board control is only one of multiple contract terms it does not lend sufficient support to the hypothesis.

The third hypothesis is most strongly supported. In all of the iterations and solutions of the fsQCA, company performance, measured by the change in its pre-money valuation between rounds, was consistently associated with a change in ACH as expected; companies that increased valuations had a path that led them to received less harsh contracts whereas the opposite was true for companies that did not increase their pre-money valuations sufficiently. Not only was pre-money valuation actively present in the solutions in the expected way but the solutions featuring pre-money valuation were clearly the most empirically relevant compared to other solutions with different conditions featured.

The fourth hypothesis is partially supported. The “trust” condition was consistently present in causal recipes where the outcome was a decrease in ACH and consistently absent from recipes that led to an increase in ACH, as expected. However, despite consistency with regards to the direction of the trust-ACH relationship, the fourth hypothesis is only partially supported because of the relatively minor empirical relevance of the solutions where trust featured as a condition.

Finally, the fifth hypothesis is supported. Examinations of individual cases pertaining to specific solutions revealed that investors with specific investment preferences or investing styles took the same causal path to a specific outcome, which also crucially excluded all other types of VCs. Corporate venture capitalists and government-backed organizations were amongst those identified as having distinct causal paths to outcomes, with some indication of differences between early and late-stage investors as well.

The results are summarized in table 16.

Table 16. Summary of hypothesis results

No.	Hypothesis	Result
H1	VC experience is negatively related to contract harshness.	<i>Not supported</i>
H2	Experienced VCs contracting with low-quality ventures can result in harsher contracts.	<i>Not supported</i>
H3	Early-stage companies, and/or signals of poor performance, are associated with harsher contracts	<i>Supported</i>
H4	The level of trust, from the VCs country of origin for the ventures home country, is negatively related to contract harshness	<i>Partially supported</i>
H5	Contract harshness is homogenous within VC types and heterogenous across VC types.	<i>Supported</i>

5. Discussion and conclusions

5.1 Discussion of results

The aim of this study was to gain insight into the factors that affect the design of contracts between VC investors and entrepreneurs. Of specific interest was the effect of VC experience on contract design, which was motivated by inconclusive results on the topic in prior research. This was the primary research question of the study. The study also aimed to present alternative theoretical lenses through which VC-entrepreneur relationships could be understood, since current research is dominated by the application of agency theory. Finally, because the design of real-world contracts has been found to vary, the study aimed to provide a comprehensive review of the drivers behind the variance. The reviews of alternative theories and factors affecting contract design are the second and third research questions of the study.

The first section of the study set out to answer the second and third research questions as well as provide a strong basis for constructing hypotheses for the first research question. This was accomplished by conducting a literature review of relevant empirical and theoretical articles. In the review of empirical articles, it was found that studies have uncovered numerous factors that can impact the design of VC-entrepreneur contracts. These factors include company and founder characteristics, geographical location, legal system strength and origin, investor characteristics and behavioral factors. The abundance of impacting factors and variance in real-world contracts suggested that there are aspects of the VC-entrepreneur relationship, and the motivations of VCs and entrepreneurs, which may not be captured solely by agency theoretical explanations.

The second part of the literature review examined theoretical perspectives that may be relevant to understanding the VC-entrepreneur relationship. The reviewed theories included agency theory, procedural justice theory (PJT), institutional theory, and stewardship theory. The theories were found to make different assumptions regarding the motivations of the parties and thus the dynamics of their relationships. The gloomiest picture is painted by agency theory which assumes that both parties, but more importantly

the entrepreneur, are driven by self-interest and necessarily have different goals which results in sub-optimal behavior by the entrepreneur. Stewardship theory provides a more positive perspective by assuming that entrepreneurs eschew their personal goals in favor of actions that promote the well-being of the organization, and thus the VC. PJT, in turn, provides a more dynamic description of the relationship by stating that whether the entrepreneur engages in favorable or un-favorable behavior depends on the degree of trust in the relationship, which is built up over procedurally fair interactions between the VC and entrepreneur. Finally, institutional theory assumes that VCs' and entrepreneurs' decision-making is primarily driven by norms, expectations and pressures which limit the set of actions available to them.

The empirical section aimed to answer the first, and primary, research question and test the hypotheses which were constructed based on the knowledge gained from the literature review. The method chosen for analyzing the data was fsQCA. Based on the analysis the following conclusion can be made: contract design, when measured by the degree of harshness, is most impacted by how the company has performed between financing rounds. A relatively small increase in pre-money valuation was found to be most strongly associated with an increase in contract harshness. Conversely, a relatively strong increase in valuation was found to be associated with a decrease in contract harshness (although the former relationship is more pronounced). The analysis also suggested that there exist differences in contracting practices between different types of investors. Publicly funded institutions seemed to constitute one causal path which leads to a decrease in contract harshness while corporate venture capitalists (CVCs) were found to be associated with an increase in contract harshness. Trust between the VC and entrepreneur also seems to play a key role.

As for the role of VC experience in contract design, it seems as though it is not a key condition in either direction of harshness. In most solutions of the fsQCA runs, investor experience was found to be neither a core nor peripheral condition and, in the solutions where it was present, it, for the most part, lacked empirical relevance. Thus, the answer to the first and primary research question is that VC experience is not a significant factor when it comes to designing contracts in the Finnish market.

5.2 Reliability and validity

The quality of results and limitations of this study are assessed in terms of internal validity, external validity, and reliability. Internal validity refers to the extent to which causal relationships are valid, i.e. if the variance of the dependent variable (outcome, in fsQCA) is indeed caused by the variance of the independent variables (causal conditions). External validity refers to whether results can be generalized to other contexts. Finally, reliability is concerned with the reproducibility of the study and its results. (Grafton, Lillis, Ihantola, & Kihn, 2011)

The main concerns in terms of internal validity arise due to 1) the chosen four causal conditions omitting factors that have been deemed to be impactful for contract design in previous studies, and 2) potential failure of the four causal conditions to accurately reflect such factors. Possible omitted factors that are not necessarily reflected by the conditions include certain founder and industry characteristics. Repeat founders and founders with multiple successful ventures, for instance, have been found to receive more favorable terms (Kaplan & Strömberg, 2003), and industry characteristics have been routinely employed as control variables in studies.

Accurate reflection of impactful factors is the second point of concern for the chosen conditions. For instance, the measure of bilateral trust was chosen to reflect geographical, cultural, and legal distance between the VC and entrepreneur's country of origin, and while there is evidence that it does reflect these factors (Guiso et al., 2009), it is likely to reflect also other components making the measure noisy. These problems, omitted factors and inaccuracy of reflection, arise from the relatively small sample size and the restrictions it imposes on the number of causal conditions that can be used in the fsQCA. Thus, given the small sample size and choice of fsQCA as the method, it is likely that at least one of the identified problems would persist regardless of the choice of conditions. For example, if accuracy of reflection is prioritized by disaggregating measures (e.g. disaggregating the single measure of trust into three separate measures for geographical, cultural and legal distance) the problem of omitted variables is exacerbated, and vice versa, since the maximum number of causal conditions is limited (Ragin, 2008). Still, despite the chosen causal conditions being chosen based on them being identified as important in previous studies, and the inherent restriction caused by the sample size,

internal validity could still have been improved. Causal conditions could have been substituted for others (like those describing founder or industry characteristics) in some iterations of the fsQCA algorithm resulting in potentially different inferences and a better understanding of the most valid conditions.

The overall degree of external validity can be assessed by determining the population, time, and environmental validity of the study (Grafton et al., 2011). First, population validity refers to whether the sample accurately reflects the entire population from which it is drawn. It should be noted that the “population” or the context for which this study aims to provide generalizable results is the Finnish VC financing market, not the global VC environment. Population validity thus refers to whether the sample accurately represents the population of Finnish VC deals. By incorporating multiple industries, investor types (public and private VCs) and both domestic and international lead VCs, population validity is indeed largely ensured. However, as a result of the data providers investment preference, the sample is focused mostly on early-stage funding (seed, series A), which may compromise the generalizability of the results for the population of late-stage investments. Second, time validity refers to the extent to which results can be generalized to other time periods (Grafton et al., 2011). As most deals in the sample are focused on the past few years, time validity is questionable. VC contracting practices may be different in different periods. Specifically, events like the financial crisis of 2007-08 may have had an effect on the contracting practices of VCs who lived (and survived) through that particular period (Kaplan et al., 2007). Finally, environmental validity refers to whether results can be generalized across different settings. As stated previously, this study is concerned with providing a Finnish perspective to the larger pool of literature about VC-entrepreneur contracting. As such, generalizability across different settings and geographies is not a priority and therefore is low. However, it is likely that similar results may be observed in the VC markets of countries with similar cultural and legal backgrounds, such as the Nordic countries.

The application of the quantitative and systemic fuzzy-sets qualitative comparative analysis method was carried out transparently. The key steps in the application of fsQCA, calibration of data, cutoff points in the truth table and reporting of truth table statistics as well as how the outcome and causal variables were coded is explained in detail in chapters

3 and 4. In conclusion, the results can be considered reliable for the Finnish venture capital financing market.

5.3 Limitations and directions for further research

Given the above discussion about internal and external validity, it is evident that this study is not without its limitations. Firstly, the sample is focused on VC financings into Finnish companies, meaning that the results are not necessarily applicable to other regions. It is possible and even likely that results would differ if the method were applied to other regions. Furthermore, the focus is more on early-stage investments rather than late-stage meaning that contracting dynamics in play during deals nearing an IPO, for instance, are largely missed.

Secondly, the sample size is small. Limited sample size led to compromises in applying analysis methods which in turn led to only moderate validity. Furthermore, the sample may have biases which remained despite the effort to introduce variance by forming pairs from consecutive financing rounds. One such bias could arise if venture capitalists are indeed strongly constrained by the contractual provisions introduced in the preceding round. If this is the case, then because the vast majority of the first round financings were led by the data provider, the set of possible of provisions and their configurations that are realistically available to the new lead investor in the follow-up round are limited and thus unrealistically similar across cases.

Finally, while this study introduces and derives varying mechanisms that can affect the design of contract design from multiple theoretical perspectives, it only tests whether the resulting outcome is true or not. In other words, the study can neither confirm nor deny the mechanism via which the hypothesized outcome is realized. For instance, the first hypothesis builds on both agency theory and procedural justice theory when predicting that experience is associated with more lenient contracts. If the analysis were to support this it is difficult to say whether this is due to investors trusting their monitoring skills (the agency theoretical branch of argument) or wanting to establish a better working relationship with the entrepreneurs (the PJT argument).

These limitations give rise to further research on the subject. It would be interesting to see whether similar results would be obtained also in other regions, and if results would differ significantly in a sample weighed more heavily towards late-stage investments. Furthermore, an expansion and diversification of the sample would allow for the incorporation of more accurate measures of factors that have been found to be determinants of contract design.

Research assessing the empirical relevance of different theoretical perspectives could also be useful for building a better understanding of the decision-making process of real-world VCs and entrepreneurs and the nature of their relationship. One possibly enlightening avenue of research has to do with how entrepreneurs perceive contracts and the harshness of individual provisions, and which provisions VCs consider to be necessary in contracts and which one's negotiable. Such research could shed new light on the weight both parties give to fairness in the relationship, which provisions cause friction and how much thought is given to contracting matters in the first place.

6. References

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