



# Mind the Gap

*Is there an equity gap in Norway, and can equity crowdfunding close it?*

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## Abstract

When an entrepreneur starts a new company, accessing funding is essential. However, funding is not always easily accessible due to the lack of internally generated profits, operating history and collateral that could have been used to lower the risk for potential lenders or investors. Companies that introduce new technologies or business models with a large potential for growth will in many cases have larger problems accessing financial capital due to both a larger need for capital, but also a higher risk of failure. These companies are also especially important for the society because they represent a small minority of fast-growth companies that generates a significant proportion of new jobs and economic growth in the economy.

International researchers have identified so-called equity gaps in the financing of this category of fast-growing ventures. This paper explores the phenomenon of equity gaps in existing academic literature and examines whether such gaps exists in the Norwegian market for risk capital. The thesis also evaluates equity crowdfunding's ability to close such gaps. A qualitative design using semi-structured interviews with leading risk capital investors as well as secondary sources were used to answer the research questions set forward. This approach was chosen due to the explorative nature of the paper and the lack of quantitative data.

Overall, the interviews seem to point to the existence of an equity gap in Norway, but not all investors did not agree. The investors did also not agree on the size of the gap measured in the size of the investment. In addition, there were disagreements among the investors on equity crowdfunding's ability to close the equity gap. The data collected from equity crowdfunding platforms did as well show that equity crowdfunding currently does not serve the investment sizes that the majority of investors identified as the equity gap. This paper concluded that there is an equity gap in Norway, but at the current stage equity crowdfunding is not a suitable solution to close or reduce the gap.

This thesis contributes to the limited research on equity gap in Norway, as well as use a novel approach to evaluate equity crowdfunding's ability to close the gap. The research in this thesis can be of interest to market participants, including entrepreneurs, investors and the government, to better understand why young companies fail to attract funding.

## Preface

This study has been conducted as a concluding part of an M.Sc. in Economics and Business Administration at Norwegian School of Economics in Bergen. The thesis consists of 30 credits and is written within the master profile of Strategy and Management.

The process of trying to answer whether there is an equity gap in Norway, and if equity crowdfunding can close it has been a six-month long roller-coaster ride with ups and downs, causing both excitement and frustration. In other words, I could not have asked for a better way to end my time here at NHH.

I would like to thank my supervisor Bram Timmermans who contributed with very useful input and feedback along the way. In addition, I want to thank the investors that contributed with their time and knowledge in this study. Not one single investor declined to be interviewed, leaving me with the impression that this is an industry with people that sincerely want to share their knowledge to help create tomorrow's great companies.

A big thank you also goes to family and friends who have contributed constructive discussions, feedback and proofreading of the assignment.

Bergen, June 16<sup>th</sup>, 2017



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# 1. Introduction

During the last years, Norway has seen the oil price tremble from above \$125 per barrel to below \$30, and then up again to around \$50 (NASDAQ, 2017). The unemployment rate has increased (SSB, 2017) and politicians, business leaders and media are referring to words such as “the green shift” and “restructuring” as a way out of the present situation.

Increased entrepreneurship and innovation has been signalled to be an important political target of the current government (Nærings- og Fiskeridepartementet, 2015). They are also forced to act on the issues by both the private sector and other political parties (Arbeiderpartiet, 2017; NHO, 2017; regjeringen.no, 2016). The government is trying to stimulate innovation and entrepreneurship through several different methods and in the national budget for 2017, they proposed a total of NOK 7.6 billion to help this transition. This is an increase of NOK 2.8 billion (regjeringen.no, 2016) from the previous year, and will be administered by Innovation Norway and the Research Council of Norway

Access to capital is important not only to start a company but to also create a sustainable company that generate profits. There is also a perception that a lack of funding discourages people from starting businesses (Atherton, 2012). For start-ups accessing capital for investments can be a challenge because these companies are most likely not yet making a profit. Consequently, they do not have the opportunity to retain earnings for investments or offer cash dividends for potential investors. In addition, start-ups have few, if any, tangible assets that can be used as collateral to lower the risk for lenders of capital. Start-ups may, consequently, have larger problems accessing capital than established companies (Cassar, 2004; Cumming, 2007; Harrison et al., 2004).

Start-ups can in theory access financial capital in a large array of different ways, but in reality, their options are often more limited. Their choice of sources of capital is often given in advance based on characteristics of the start-up. Some new companies enter well-known industries with a few differentiating factors from the incumbent actors. This could be hairdressers or corner grocery stores. The growth potential of such companies is limited, but in usually so are the risks and the funding needs. Their sources of finance are most often the entrepreneurs themselves or bank loans (Shane, 2008). Other companies introduce new technologies or business models with a large potential for growth. These companies have a larger need for capital, but also a higher risk of failure. For these companies, the “VC-path” is an option i.e.

business angels (BA) followed by venture capital(VC)-funds that offer risk capital to companies with promising growth opportunities. These companies are important to for the society because they represent a small minority of fast-growth companies that generates a significant proportion of new jobs and economic growth in the economy (Mason and Harrison, 1999).

However, international researchers have identified so-called equity gaps in the financing of this category of new fast growing ventures (Harding and Cowling, 2006; Mason and Harrison, 1995; Murray and Lott, 1995). These equity gaps are the main topic of this thesis. There is no clear consensus on the definition of equity gaps, but one could regard it as unduly high difficulties for start-ups to obtain the necessary equity financing for their potential growth. A definition used by Harding and Cowling (2006, p. 117) describes the equity gap as “the venture capital market failure that manifests itself in the paradox of an over-supply of capital alongside an inability of small firms to access appropriate amounts and types of growth finance.”

There has been conducted a substantial amount of research on understanding the reason for why equity gaps arise and where they are located. Gaps have been found to exist both regionally (Mason and Harrison, 1995) and in different stages of the ventures development path (Murray, 1994; Papadimitriou and Mourdoukoutas, 2002). Previous research conducted on the Norwegian market is limited, and it seems not yet to have been established a consensus regarding the existence of an equity gap in the Norwegian market for risk capital (Finansdepartementet, 2014; Grünfeld et al., 2011a).

There are several suggestions in the literature of potential solutions to the equity gap. Some researchers believe that business angels could fill this gap (Aernoudt, 2005; Mason and Harrison, 1995). Others believe that crowdfunding is a more promising source of capital (Mitra, 2013; World Bank, 2013). Crowdfunding as a solution to equity gaps is evaluated in this paper. Governmental grants and other forms of subsidies are a third source of capital that may have potential to fill the equity gap. In Norway, this includes among others Innovation Norway. The effect of the governmental effort has however been questioned (Hvide and Jones, 2016; Tobiassen and Melberg, 2016). These sources of capital are different in numerous ways, and an appropriate solution to the equity gap will need to address both the financial and non-financial aspects of the gap (Stortinget, 2016).

Contrary to equity gaps, equity crowdfunding is a relatively new phenomenon that has been strongly helped by the expansion of the internet and globalisation. While the broad term crowdfunding is used to describe all forms of funding conducted by the “crowd”, equity crowdfunding is based on the investors receiving ownership and a financial return on their investment. Researchers have identified several benefits of equity crowdfunding that can affect its ability to affect the potential equity gap (Agrawal et al., 2014). This include among others, access to reserves of financial capital that are currently invested in other assets than start-ups (Belleflamme et al., 2014). By using the internet, companies in a very early stage of development can now access financial capital from any locations with. (Agrawal et al., 2014).

Several countries as the UK and the US have implemented rules which make it easier for equity crowdfunding platforms to operate without the same licensing requirements needed for other actors that facilitate the buying and selling of ownership in companies. This has not yet happened in Norway, but there has been an increase in the use this possibility of raising capital anyway. A Finish company, Invesdor has as well now acquired the necessary MiFID license to broker ownership stakes in Norwegian market of start-ups. There have only been six Norwegian companies that have used the Invesdor-platform so far, but this may increase if both the investors and entrepreneurs become more aware of this possibility. In addition, the Norwegian government recently proposed tax incentives for investing in start-ups, which might increase regular people’s appetite to invest in start-ups.

The aim of this thesis is to increase the insight into start-up financing in Norway, with a focus on the equity gap and equity crowdfunding as a potential solution to this challenge. By using qualitative research design and semi-structured interviews with some of the leading investors in the Norwegian market for risk capital I hope first to understand how the equity gap is perceived and defined in Norway, before analysing the existence, size and location of such a gap, as well as reasons for why it could arise in Norway. Finally, an evaluation of equity crowdfunding’s potential to close the equity gap will be conducted based on the earlier findings in this thesis.

This study will contribute to the limited research on the potential equity gap in Norway. In addition, there are several actors in the Norwegian market for risk capital that could have a use for the findings from this study. Investors in different phases of start-ups can achieve a larger understanding of the issues that might arise when funding a company and how they may avoid these problems. For the government, the conclusions from this paper could both improve

the way they help entrepreneurs succeed, and ensure a more efficient use of the funds they are spending to make Norway less dependent on oil. Although this paper is not enough to change a policy it could perhaps be a spark as well as inspiration for future policymakers. For the entrepreneurs, a better understanding of what challenges they will face when financing their companies and what kind of investors that are suitable for their situation might increase the chance of developing a successful venture instead of ending up among the significant percentage that fails.

This thesis is structured in 8 sections. In section 2, I will briefly present the research questions in this study and their background. The following section will describe the research design and the methodology used in the thesis. Then the literature review, analysis and findings for the research questions are presented in a series of minor articles constituting section 4-7. There will be one article for each research question, as I believe this will provide the best overview of the topics studied. Finally, some concluding remarks and suggestions for further research will be presented in section 8.

## 2. Research questions

The topic of equity gaps in the market for risk capital has a long history in academia. It was first mentioned by MacMillan (1931) in his report to determine the root causes of the depressed economy of the United Kingdom (Murray and Lingelbach, 2009). Later, it has been identified in several academic articles, and researchers have tried to identify its size, and geographical, or lifecycle location in addition to the reasons for why it arises. However, only a few attempts have been conducted to define the term, and most researchers appear to take it for granted. This could be problematic if the lack of consensus on a definition causes articles and findings to become incomparable. A clarification of the term is needed. To achieve this, I will review definitions from the literature as well as develop an understanding of how the investors in my sample define and use the term.

***RQ1:** What is an equity gap, and how is the term used and defined by investors in the Norwegian market for risk capital?*

Several international researchers have identified equity gaps in the financing of new ventures (Harding and Cowling, 2006; Mason and Harrison, 1995; Murray and Lott, 1995). However, the research is still inconclusive, and the findings differ by what market that is analysed. An examination of the Norwegian market would, therefore, be highly relevant and useful. To the author's knowledge, only a few attempts have been conducted to understand and identify the potential equity gap in the Norwegian market (Fjellheim, 2015; Grünfeld et al., 2011a).

In addition to research on the existence of the equity gap, there have been several attempts on estimating the size of the equity gap(s) (Harding, 2002; Mason & Harrison, 2003; Harding & Cowling, 2006)<sup>1</sup>. Most attempts have been made through qualitative methods, using interviews with players in the industry to estimate the size. To my knowledge, no scientific articles have tried to match the size of the gap with the development path of start-ups, neither internationally nor in Norway. This could give a better understanding of what phase the companies are located in when they meet the potential equity gap, and could also make it easier for researchers to communicate their findings to investors by using the same language. The second research question is, therefore:

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<sup>1</sup> These estimates are discussed in section 5.2

***RQ2:*** *Does there exist an equity gap in the Norwegian market for risk capital, and what is its size location related to investment phases?*

There is also an extensive body of research on how the equity gaps arise (Aernoudt, 2005; Cressy, 2002; Harding, 2002; Harding and Cowling, 2006; Mason and Kwok, 2010; Mason and Harrison, 1995, 2004a; Murray, 1994). The researchers point to reasons such as high and fixed transaction costs, large funds and too high risk that is not rewarded with higher returns. These are in turn caused by other more fundamental reasons such as imperfect information and regulatory failure (Grünfeld et al., 2011a; Murray and Lingelbach, 2009; van der Schans, 2015). An investigation on whether characteristics that have been found to cause equity gaps internationally in earlier research are present in Norway will, therefore, be an important contribution to the existing knowledge.

***RQ3:*** *What reasons are there for an equity gap to arise in Norway?*

When discussing how to close the equity gap, the primary focus for researchers has been on how the government should stimulate the market. However, with the help of modern technology and new regulations, equity crowdfunding stands out as a promising option for start-ups to raise capital. It has the potential to “tap the crowd” for practically unlimited amounts of financial capital. Researchers have also identified several other benefits of using equity crowdfunding for both investors and entrepreneurs (Agrawal et al., 2014). Nevertheless, equity crowdfunding has existed in several countries for years without replacing investors such as business angels and venture capitalists, so it must come with some drawbacks as well. This paper also adds a new perspective on whether equity crowdfunding is suitable for closing the potential equity gap by comparing data on the size of capital raised through this method with the perceived size of the equity gap in the Norwegian market for risk capital and previous findings in the academic literature.

***RQ4:*** *How can equity crowdfunding reduce or close the equity gap in the Norwegian market for risk capital?*

The research questions will be answered through a qualitative study using semi-structured interviews with leading risk capital investors in as well as extensive use of secondary sources. Each research question will have its own section in this paper, and will be divided into sub-questions.

### 3. Methodology

Saunders et al. (2009, p. 5) define research as “something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge”. An effective presentation can have a crucial impact on the readers’ belief that the theoretical arguments proposed are supported (Zhang and Shaw, 2012). This section will, therefore, describe the systematic approach used in this paper to increase the knowledge of the potential equity gap in the Norwegian market for risk capital and equity crowdfunding’s potential to close or reduce this gap. This will first be done by first describing and argue for the research design chosen. Then I will discuss the data used in this paper as well as the data collection process, including the sampling process of candidates to the interviews conducted. Thirdly I will discuss the analysis conducted and how the findings are presented. Finally, this paper’s reliability, validity and ethical challenges will be described and discussed. This way I hope to avoid the common pitfall of researchers of failing to clearly explain what they have done (Zhang and Shaw, 2012).

#### 3.1 Research design

Research design involves creating an overall plan for how the analysis process should take place to answer the research questions. It is common to distinguish between three types of research and survey design; exploratory, descriptive and causal design (Saunders et al., 2006). The appropriate choice of research design depends on the research question set forward. In this paper, the objective is to examine a complex situation, where some issues have been the topic of much previous research, whereas others, such as equity crowdfunding’s ability to close the equity gap, lack research-based knowledge. The aim is to generate new insights and a deeper understanding of this decision. Thus, it is necessary to use an exploratory design.

An exploratory research design is by Saunders et al. (2009, p. 592) defined as “research that aims to seek new insight into phenomena, to ask questions, and to assess the phenomena in a new light”. Descriptive research is on the other hand described as “research for which the purpose is to produce an accurate representation of persons, events or situation”. One could, therefore, argue that a descriptive design also could also have been used in this paper. And due to the structure that was chosen in this master thesis with several distinct parts, I indeed have in some instances used a methodology closer to the descriptive than the exploratory.

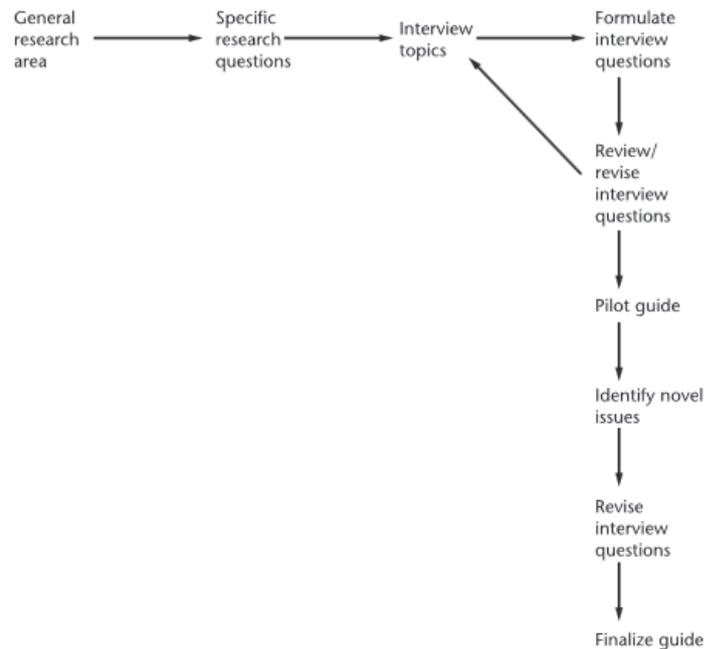
Although not very common, descriptive studies can be a forerunner to an explorative study (Saunders et al., 2009). Nevertheless, the overall aim of this thesis is explorative, and I, therefore, find it more appropriate to describe my overall research as exploratory.

### 3.1.1 **Qualitative interview studies**

Due to lack of quantitative data and the explorative design chosen, the paper is based on qualitative data from semi-structured interviews. The purpose of these interviews is to gather descriptions of the life-world of the interviewee with respect to the interpretation of the meaning of the described phenomena (Kvale, 1983). Through semi-structured interviews with a selection of players in the industry representing the supply side in the risk capital market, an understanding will be developed of their perception of the equity gap and the reasons that it might arise.

#### *Semi-structured interviews*

As mentioned, I have chosen to utilise semi-structured interviews for this study; this implies that there is a list of questions and topics that were covered in all interviews. The questions found in the interview guide (Appendix 1) are indicative and varied to some degree depending on the background and answers of the interviewee. The purpose of this procedure is that the researcher can customise questions to obtain as much data as possible (Saunders et al., 2006). The questions for the interview guide was produced in accordance with the guide from Bryman, (2012 p.319) as seen in figure 2. Developing the interview guide is a continuing process and takes time. A test interview was conducted both to revise the interview questions, but also to estimate the time each interview will take.



*Figure 1: Formulating questions for an interview guide from (Bryman, 2012, p. 319)*

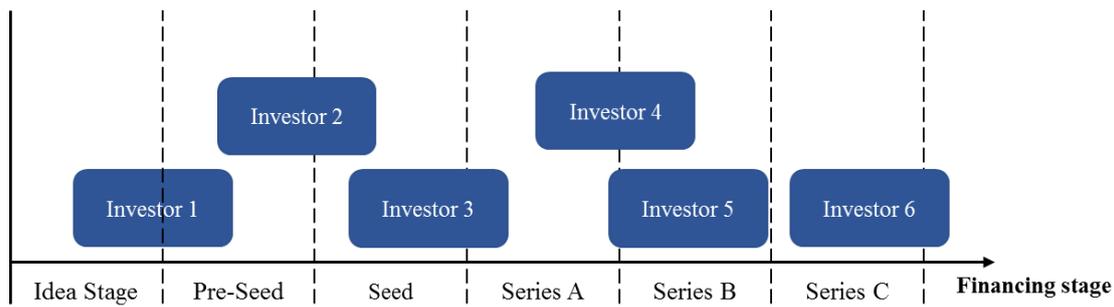
Formulating the questions is a difficult process, and one needs to find a balance between asking too many questions and leaving the interviewee with the time and opportunity to present his or her perceptions and opinions. This is particularly important when conducting an exploratory study because the existing research is not fully developed and new unthought-of theories could add significant contributions to the research.

### *Selection and Sampling*

It is essential to address why a particular sample was chosen (Zhang and Shaw, 2012). The interviewees are all investors, and thus represent the supply side of the market for risk capital. Although their background differs, they all possess a thorough and personal knowledge and experience with the topic of this paper. According to Saunders et al. (2006), it is not necessarily true that you will achieve more comprehensive results from the entire population, compared to a sample representing this population. The goal is thereby not to get as many objects as possible in the survey, but rather concentrate on how the sample should be selected. The supply side was chosen because their knowledge and expertise might be greater and more generalizable than the opinion of individual entrepreneurs representing the demand side. Most entrepreneurs will have one or a few experiences with funding a start-up, whereas many investors, at least the ones used in this paper, will have conducted multiple investments as well as received numerous investment opportunities that they have chosen not to fund.

The process of sampling candidates for interviews was conducted over several levels of sampling. First, the primary focus of the study was the Norwegian market and all interviewees that were chosen consequently had to have the majority of their investment experience from the Norway. Secondly, researchers have suggested that it might exist regional equity gaps (Mason and Harrison, 1995). This is not the focus of this paper and because close geographical proximity to the investor have been shown to increase the likelihood of receiving financial capital (Harrison et al., 2010) all interviewees were conducted in Oslo. Oslo was chosen over other cities because most of the Norwegian risk capital industry is located there. Lastly, interviewees were sampled based on their location in the funding lifecycle. Figure 2 illustrates which phase on the funding path the investors interviewed primarily invest in. This ensures a broad range of experiences and knowledge, and most importantly allow perspectives from investors that are placed both before and after the potential equity gaps. This can result in findings related to the investors' location and relationship with the funding gap.

Although there are a limited number of investors in start-ups in Norway, there were still several to choose between in the distinct phases. "Convenience sampling" was used to decide which individuals in the different phases that were to be interviewees. The advantage is that this is effective, simple, and cost-effective, making it a prime choice for many researchers (Saunders et al., 2006). The disadvantage of this method is that it is prone to "bias" outside the researcher's control because informants are not selected on other than their availability. A personal network, as well as other forms of convenience such as easy access to contact information through the company web page, were decisive. Without being an insider in the risk capital industry, it is hard to know who the most experienced people are. In the study, snowball sampling was also used to collect additional information by being referred to other experienced investors. The advantage of this method is that such references permit researchers to get in touch with informants who are difficult to reach by other methods. The downside is that respondents tend to propose candidates with similarities to themselves. Thus, one might get a low diversified range (Saunders et al., 2006). The ambition has been to collect individuals that represent distinct parts of the supply side.



*Figure 2: Placement of interviewees in different financing stages*

The investors were deliberately sampled based on their primary investment size. This ensured that the findings would represent the perceptions and opinions of investors both before and after the equity gap identified in the previous literature on the subject. This will provide an understanding of why both early and later stage investors do not invest in the perceived equity gap.

The optimal sample size depends on the problem, and the way data are collected. Some scholars argue it should be carried out new interviews until there is no additional information is received (Seidman, I., 2013). During the last two interviews, I experienced that the information I received through the interviews only strengthened the preliminary findings and not added new information. I thereby believe that the sample size of six investors was appropriate.

One weakness of this study is the lack of representatives from equity crowdfunding. Focusing on the Norwegian market where equity crowdfunding is not common, it proved hard to find individuals with extensive experience from this investment type. A more theoretical approach and secondary data have therefore been used to evaluate this potential source of funding. The interviews with investors will also cover this topic and their opinions on the matter.

## 3.2 Conducting the interviews

The interviewees sampled for this study are busy people, with several entrepreneurs requesting their time. To maximise the chance of being granted an interview as well as ensuring that interviewees feel comfortable and secure, the interviews were held at their premises with an extensive set of dates and time slots to choose from. In the request for an interview, the

research was described, but questions were not sent in advance except in one exception. This allowed maximal freedom in the interviewer's follow-up questions as well as ensuring that the interviewees give an honest and immediate answer instead of feeling that they needed to give a "good", "correct" or socially desirable answer prepared in advance.

A part of the goal of creating an interview guide is to create some structure in the interview process. This includes covering the same topics in all interviews. In addition, it is important to minimise external factors that can affect the interviews answers. This can include among others the location of the interviews, at what time a day the interviews are held and the time available for conducting the interview. I believe that the necessary structure related to the interviews were created, but there were some differences that should be mentioned. Some interviews were slightly shorter than ideal. Although all interviewees were made aware that the interview would last between 30 minutes and one hour in the initial request for an interview, several made it clear before the interview started that they did not have the time to a full hour interview due to coming appointments. However, this did not affect the quality of the data collected in the interviews because all topics in the interview guide were covered.

### 3.3 Thematic analysis

For some types of data, multiple possible methods for analysis exist and an important part of creating a high degree of reliability. It is therefore important to describe the method used and choice behind (Zhang and Shaw, 2012). This paper utilises a thematic analysis as normal in studies with data represented by large amounts of text. This text was derived from transcribing the recorded interviews. A thematic analysis was then used to derive findings from the interviews. The research questions were used as a foundation for different themes. However, this was adjusted when the analysis was conducted allowing room for unexpected findings. The interviewees' statements were analysed both by comparing the different investors with each other and considering the existing research presented in the literature review. There has been a rise in the use of computer software as a tool to conduct qualitative analyses. These tools are however most useful when the amount of text needed to be analysed is larger, and the interviews are unstructured and were therefore not used in this study.

The findings from the analysis are presented in the following order. First, the general perception of the informants is described. Subsequently, quotes that are especially describing for the situation are presented. Pratt (2009) describes this as "power quotes" and "proof

quotes”. The analysis is then linked to the existing theory and research presented in the literature review.

### 3.4 Secondary data

This study relies to some extent on secondary data. Information about the start-up eco-system, industry statistics, institutional and academic research reports, and government press releases have provided much insight into parts of this relatively unexplored topic of equity crowdfunding in relation to closing the equity gap. Entrepreneurship and innovation are also a popular subject in the media. However, most of the articles found in online newspapers were mostly used for inspiration for further research and are not directly quoted. For this purpose, the articles were found to be too biased or inaccurate. If possible, all information obtained through secondary sources have been validated by either finding other sources that reach the same conclusion or looking directly at the data the articles bases its conclusion on.

### 3.5 Literature review

There are two main reasons for reviewing academic literature when writing a master thesis. First, the preliminary search for generating and refining research ideas and second, the critical review of literature is used as an integrated part of the research (Saunders et al., 2009). The preliminary search was primarily used to refine the research ideas I had before starting to write the master thesis. This search was conducted by not only by academic articles, but also by using the mainstream business media. The results of these searches resulted in a topic for the paper on the financing of start-ups and the challenges they face when it comes to accessing financial capital. The preliminary literature review was also used to determine the amount of research conducted on different sub-topics. The critical review of the literature presented as distinct sections in chapter 4-7 of this paper was conducted using the Norwegian School of Economics’ access to scientific journals. The main purpose of these reviews was to “develop a god understanding and insight into relevant previous research and the trends that have emerged” (Saunders et al., 2009, p. 61).

It was difficult to determine whether an inductive or deductive approach to the theoretical foundation of this paper was appropriate. The question was whether one should use the literature review to help identify theories and ideas that can be tested later using data

(deductive) or explore collected data and develop theories from them and subsequently relate them to the literature (Saunders et al., 2009). One way of determining the appropriate research approach is to evaluate the level of existing literature. The preliminary searches showed that on the topic of financing of start-ups there exist a large amount of academic research, while on the topic of equity gaps in connection to crowdfunding almost no academic research have been conducted. An inductive approach was therefore chosen. Although using this inductive approach implies not start with predetermined theories or conceptual frameworks, it is still necessary with a competent knowledge of the area of research (Saunders et al., 2009). Therefore, a literature review will be presented at the start of each section.

The critical literature review was primarily conducted by keywords searches in Scopus<sup>2</sup>. The keywords used will be presented in the literature reviews in the different parts of this paper. The list of articles generated was then narrowed down by reading titles and abstract to determine their relevance further. In most cases, there was no need for using a distinct time period in the search terms. There were few enough results when allowing for all publishing years to process all. When this was completed, the “snowball”-technique i.e. analysing the sources of articles already found to be relevant to find other relevant articles was used. In some cases, a slightly different approach was used due to either lack of existing research, or that the literature had large overlaps with other already conducted reviews. In these cases, this will be explained in the appropriate review later in this thesis.

Although using NHHs network gives access to a vast number of peer-reviewed articles, I still had problems accessing a large number of relevant articles. This was often due to articles being gathered into handbooks or other forms of collections. This master thesis does not receive any kind of funding, and it was therefore judged too expensive to buy these articles. The not ideal solution became to find other articles from the same authors and review which arguments they use, believing that these were similar to the articles that I did not have access to.

When a list of relevant articles was produced, a more thorough read-through was conducted resulting in potential adjustments to the keywords used or further use of the “snowball”-technique. This was an iterative process that was repeated several times during the entire time writing the thesis. In the end, the goal of a literature review in a qualitative inductive research

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<sup>2</sup> The largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings (Elsevier, 2017)

design is to understand what is known in theory, and perhaps more importantly what is not known in existing theory. This is necessary to be able to develop new theory and add significant academic value. An attempt was therefore conducted in each of the different literature reviews in this paper to both explain what we know and what we currently do not know from existing research.

In the literature, there were identified several important numbers and estimations that have been used in this paper describing among others the size of the equity gap. Some of these findings are quite old, and it was, therefore, necessary to adjust the numbers for inflation. This was done using the Bank of England's inflation calculator (Bank of England, 2017). The numbers were then converted to dollar to match the rest of the thesis. The original findings will be presented in a parenthesis, while the adjusted number will be outside the parenthesis.

### 3.6 Reliability and validity

In all research, a discussion concerning the study's reliability and validity should be included. This is important both in advance concerning what choices that have been taken to ensure that the findings of the study can be trusted, but also, in the end, discussing whether the steps taken in advance were adequate and correct.

Validity is generally divided into internal and external validity. Saunders et al. (2009, p. 593) define internal validity as "extent to which findings can be attributed to interventions rather than flaws in your design". However, regarding qualitative research more specifically internal validity is better thought of as whether the researcher gained access to participant's knowledge and experience, and is able to infer meaning that the participant intends (Saunders et al., 2009). Bryman (2012, p. 711) defines external validity as "a concern with the question of whether the results of a study can be generalized beyond the specific research context of which it was conducted". However, external validity in connection with qualitative research can be described as: "In qualitative research, a single case or small, nonrandom sample is selected precisely because the researcher wishes to understand the particular in depth, not to find out what is generally true of the many" (Merriam and Merriam, 1998, p. 208). Its generalisability is therefore not the primary concern of this thesis.

The internal validity was enforced by several actions. First, during the interview, several of the interviewees were asked to explain some of their statements if greater detail. During the

interview, I did in some cases explained my understanding of the interviewee's arguments or opinions back to the interviewee to check if I had understood it correctly. Before the thesis was completed, all interviewees were sent an email containing my understanding of their perceptions as well as the quotes from the interview that I wanted to use in my thesis. This gave the interviewees another possibility to correct their statements if I have misunderstood, or they had said something incorrect.

Reliability in relation to qualitative research is described by Saunders et al. (2009) to concern whether other researchers would reach the same conclusion based on the same information. The concern related to the reliability of this research also includes what is often referred to as interviewer and interviewee bias. Interviewer bias is an attempt by the interviewer to introduce bias both during the conduct of the interview and when interpreting the interviewees' answers while interviewee bias is an attempt by the interviewee to construct an account that hides some data or when she or he presents herself or himself in a socially way (Saunders et al., 2009).

As this was a multi-firm study with anonymous participants, there is limited what a participant has to earn by not giving honest answers. This is an important element in consideration of potential interviewee bias in the study. The issues that have been considered to potentially have some risk of interviewee bias is the location of the equity gap as well as equity crowdfunding's ability to close this gap. The equity gap is as described in the introduction often defined as a market failure (Harding and Cowling, 2006). Market failures are in some cases connected to some sort of governmental action to reduce this market failure. This could give the interviewees incentives to identify the location of the gap in a development phase that could benefit them. For investors that require follow-on funding for their investments, an increase in public grants and subsidies in these phases could possibly increase their financial return. However, this issue was not considered to affect the reliability because the interviews showed that none of the investors identified the phase after their primary investment focus, as the location of the equity gap. However, if there is increased governmental subsidies or investments in start-up financing, there are a reason to believe that several of the investors will benefit from this regardless of their position in the investment landscape. It, therefore, could be argued that investors have an incentive to argue that there is an equity gap, but at the same time, the effect would be minimal. In addition, investors would risk crowding-out effects if the government enters as an investor in the same phase as themselves.

A significant part of this paper is to explore whether equity crowdfunding can be an option to close or reduce the potential equity gap in the Norwegian market for risk capital. Equity crowdfunding could potentially be regarded as a competitor to venture capitalists and business angels in supplying capital to promising start-ups. The investors that participated in this study may, therefore, have incentives to give answers that present themselves as a better solution than equity crowdfunding for companies that are trying to raise capital. Although not all participants had a positive attitude towards equity crowdfunding, the majority had, and thereby it is considered not to have affected the reliability of this study.

### 3.7 Ethical challenges

Research ethics relates to questions about how one formulate and clarify the research topic, design the research, gain access, collect data, process and store data, analyse data and present the research findings in a moral and responsible way (Saunders et al., 2009). In this section, I will go through the different challenges I have faced in chronologic order.

The first ethical challenge I believe I encountered was the interviews conducted. This represented a series of challenges concerning how to be granted time for an interview, handle potential sensitive data about individuals and companies and what questions to ask and how to avoid both interviewer- and interviewee bias.

As the sole author of this thesis, the data collected in the interviews were only handled by myself. There were not used any form of external help with the transcribing of interviews which are often done in academic settings. When transcribed, the sound recordings from the interviews were deleted. Some of the interviewees wanted to ensure that they did not say anything wrong, and was granted this request. To ensure a similar process for all interviews all the interviewees was sent an email entailing direct quotes from the interviews I wanted to use in the thesis, as well as my general understanding of their answers including a summary of important numbers they used in the interview. The choice to use this solution instead of a copy of the transcript was taken to save the interviewees time, as well as increasing the reliability of the study by reducing interviewer bias. If the interviewees just confirmed the transcript, the analysis would have a larger risk of interviewer bias, than when my understanding was presented.

### 3.8 Structure of the thesis

As introduced in the introduction, this master thesis will be separated into distinct parts where four parts numbered four to seven aim to answer each of the four research questions presented in part two. Although this choice of structure is not commonly found in master theses, I believe this structure is a better solution to answer the research questions in a clear and concise way. At the start of the writing process, the goal was to use a more standard structure with only one intro, literature review, analysis and conclusion. However, this structure became too complex because the research questions are dependent on each other and the first need to be answered before moving onto the second on so forth.

Although the preliminary search showed findings pointing to an equity gap in the Norwegian market for risk capital, using an ordinary structure would risk not having anything to contribute with if such gap was not identified in the interviews. Using a structure of several distinct parts made it easier to contribute to the science even if no equity gap was identified, although this did not turn out to be a problem.

## 4. What is an equity gap?

### 4.1 Introduction

The term equity gap was first used by MacMillan (1931) in his report to determine the root causes of the depressed economy of the United Kingdom (Murray and Lingelbach, 2009). It has later been the topic of several academic articles and governmental policies, but a preliminary literature review showed indications of a lack of consensus on the definition of the term. Without a common understanding of the term, a fruitful discussion and analysis are impossible. Research conducted on the equity gap without defining it would have a low degree of both internal and external validity due to not being able to know what the researcher is actually measuring or analysing. A clarification of how the term equity gap should be defined is therefore needed.

Knowing how existing research has defined the term equity gap is important, but there can also sometimes be a discrepancy between how researchers and professionals in the way they define certain terms. It would, therefore, strengthen the validity and the practical use of this paper to understand how investors in the Norwegian risk capital market define and use the term equity gap.

This is best approached with one main research question based on two more specific sub-questions.

***RQ1:** What is an equity gap, and how is the term used and defined by investors in the Norwegian market for risk capital?*

***RQ 1.1:** How has existing academic literature defined and used the term “equity gap”?*

***RQ 1.2:** How do investors in the Norwegian risk capital market define and use the term “equity gap”?*

## 4.2 Literature review

Although the topic of equity gaps, has both a long historical presence and is actively being discussed by policymakers, the total number of peer-reviewed articles concerning equity gaps is not overwhelming. The literature search was primarily conducted by using the keywords “equity gap” and “funding gap” in the literature databases accessible through the Norwegian School of Economics network. The term “funding gap” was included because in the early phases of this study it became apparent that the two terms sometimes are used interchangeably. Generally, “funding gap” is used in a broader term, describing all sources of financing, while equity gap primarily concerns equity funding. The search yielded roughly 400 articles of which several were non-relevant. The results were further refined by reading the abstracts of the articles, narrowing down the list to around 50 articles. When this was completed, the number of references combined with at the date of publishing were used to develop a starting point of more thorough reading. Also, the “snowball-technique” i.e. using the sources of relevant articles, was used to understand the topic further.

Through the literature review, a general understanding of the equity gap as a gap in the access to financial capital for start-up companies was developed. However, the term has through the literature been used to describe several distinct characteristics or situations. The review, therefore, resulted in a categorization of four main areas that a definition of the equity gap needs to cover and that have been used in different definitions.

The first area is a broad view of the equity gap. It can be considered as a general problem faced by smaller businesses in accessing equity finance on similar terms and conditions to larger firms (Harrison and Mason, 2000a). This is based on an inability to access public equity markets due to too high costs and regulative issues. The second area in the literature review is based on the development phase the companies are in (Papadimitriou and Mourdoukoutas, 2002). Young companies seem to have more difficulties raising capital than established businesses regardless of their size. A shorter history of operating increases the risk for investors, and reduce the ability to access bank loans. The third category involves specific characteristics of the companies in terms of their resources. For instance, companies focusing on research and development of new technology seem to have more difficulty raising equity finance than less technologically advanced businesses do (Harrison and Mason, 2000a; Lerner, 2002; Lockett et al., 2002; Murray and Lott, 1995). This is due to several factors such as an extended development period and uncertain market potential increasing the risk for investors.

The fourth area where the equity gap is commonly referred to is based on the geographical location of the firm (Harrison and Mason, 2000a; Mason and Harrison, 1995, 2003). Research, primarily from the UK have focused on showing that companies in some geographical regions might have larger problems raising external equity due to investors troubles of assessing the quality of the company without close proximity to the company.

However, these categories are only examples of where the term “equity gap” has been used to describe some perceived difficulty for some companies in accessing external equity. There have been some attempts by researchers to create a more generalised definition of the term equity gap. Harding and Cowling (2006, p. 117) defined the gap as “the venture capital market failure that manifests itself in the paradox of an over-supply of capital alongside an inability of small firms to access appropriate amounts and types of growth finance”. However, Murray and Lingelbach's (2009, p. 7) quote is fitting for describing the issues that arise with defining the equity gap as a market failure:

*“Market failure is what happens when you don’t give me money; and a rational, objective and rigorous economic analysis is what has happened when I don’t give you money.”*

A market failure exists when the price established in the market does not equal the marginal social benefit of a good and thereby results in an undersupply from producers (Murray and Lingelbach, 2009). Murray and Lingelbach (2009) argues that market failures can occur for four main reasons: the abuse of market power resulting in imperfect competition; markets ignoring the impact of economic activity on those outside the market; when markets attempt to provide public goods; and the presence of asymmetric information or uncertainty confounding optimal decisions. These reasons for market failure as well as other literature on reasons for why an equity gap might arise will be discussed in detail in section six.

In a market failure, the equilibrium reached between the supply (investors) and the demand curve (entrepreneurs) for risk capital will not be optimal, and this could have negative consequences for society, investors and entrepreneurs. This will include not only the lack of financial capital but also other forms of non-financial value. There is a substantial body of research that argues that much of the value of investments from venture capital is derived from the fact that business angels and venture capital companies provide more than just finance capital for firms they invest in (Barry et al., 1990; Kannianen and Keuschnigg, 2003). Harding

and Cowling (2006) found four distinct non-financial benefits of any equity investment in their literature review. First the provision of management expertise (Lerner, 1999; Mason and Harrison, 1999, 1995). Second the «tacit» or intangible assets created through business angels of venture capitalist networks and their integral role as part of the wider industrial system (Audretsch and Keilbach, 2004; Zacharakis et al., 2003). Third, the role of venture capital in stimulating new technology-based firms (Audretsch, 2003). Finally, the leveraging effects of equity-type investments in generating second round financing and company growth (Davila et al., 2003). The importance of these non-financial resources is essential for the companies to create a sustainable competitive advantage (Dierickx and Cool, 1989; Barney, 1986, 1991).

However, equity gaps are not only a problem for companies that are unable to attract financial capital. Start-ups, at least the one considered in this paper with high growth potential, in most cases create some sort of innovation. The process of undertaking innovation or the creation of new products often generates wider benefits for other agents in the economy and these spillover effects can be significant (van der Schans, 2015). In a report to the UK Department For Business, Innovation And Skills, Frontier Economics (2014) conclude that private rates of return to R&D investments are around 30%, but social returns, based on spillover benefits from R&D is are typically 2 to 3 times larger than private returns.

#### **4.2.1 Conclusion to the literature review**

The goal of this literature review was to both uncover what we know and we do not know from the existing academic literature on the the definitions of equity gaps. There were early in the review concluded that only a few researchers had attempted to define the equity gap and that no consensus on the definition had been reached. However, the existing knowledge point to the equity gap as a market failure caused by imperfect and asymmetrical information. Nevertheless, most articles found in the literature review referred to the equity gap as a general challenge for start-ups to access financial capital. It is therefore difficult to use findings from these articles because it is difficult to understand what they measured as the equity gap. There are however still questions that remain unanswered. Most importantly, do the Norwegian investors have the same definition for the equity gaps as the researchers, and why is that the case?

### 4.3 Analysis

According to the majority of the investors interviewed, the equity gap is an important topic in their work and is often discussed in the venture capital industry. The general perception among the investors is that the equity gap represents an inability of companies to access investments from investors. However, there are disagreements concerning the definition, which development phase it may be located in, and the existence of the gap itself. The location and existence of a potential equity gap in Norway will be discussed in section five. The thematic analysis revealed three distinct findings related to the definition of the equity gap. Firstly, there seemed to be a fairly strong consensus on the understanding of the gap. The investors all regarded it as companies' inability to receive funding. Secondly, even though the equity gap has an important financial aspect, the investors were all very clear that they add not only financial capital but also other forms of non-financial resources to their investments. Thirdly, the majority regarded the equity gap as a fixed situation located in a specific area in the "venture-path," while one of the investors had a strong perception of the gap as dynamic. These findings will be discussed in turn.

The literature review resulted in a range of different definition of the equity gap. The investors, on the other hand, had a common understanding of the gap to represent companies' inability of getting access to further investments, thereby aligning themselves with Harrison and Mason (2000) and most research on the topic. The investors indicated an understanding that the problem may not only be a supply side problem, in terms of insufficient supply or inefficient allocation of risk capital. The quality (or the lack of it) of the start-ups was also perceived to be a significant part of the gap. Although the investors may have had a common understanding of the equity gap, they lacked a specific definition of the term, and several of the investors defined the equity gap through describing how it arises.

In the literature, the equity gap is described as a market failure, but the investors did not agree on whether this is the case. One investor described the situation as following:

*"It is a bit like the chicken or the egg. You cannot get a clear answer to that in your paper. We who sit on the capital side will argue that there is a lack of good enough projects and good enough teams. Those on the entrepreneur side will argue that investors are stupid and do not understand the concept and that there is not enough money".*

The literature review also showed several indications that venture capital and other forms of early-phase investors add a significant amount of non-financial resources to the companies they invest in. The interviews strongly confirmed this. All interviewees not only confirmed but emphasised on the non-financial contribution. This was true for investors in all investment phases.

*"We find that the entrepreneurs are extremely interested in what is often called smart capital... There have been rounds that were fully subscribed but still chose to bring us in because we add something beyond the financial capital."*

The investors themselves perceive that they create value for the companies they invest in by contributing with other resources than financial capital. They especially focus on their network, experience, and competence in creating successful start-ups as the most crucial elements. This is in line with the resource-based theory where these resources would in many instances have the potential to create a sustainable competitive advantage for the start-up (Dierickx and Cool, 1989; Barney, 1986, 1991).

*"Having worked with this for so many years, we have much experience in doing this and provide experience, networks, and teams to work with the companies."*

However, there was also one investor that argued that the Norwegian venture companies may not have the competence some believed they have:

*"What's perhaps unique to Norway is that the confidence in VC companies is so low that large investors choose to invest directly in the market instead of through VC funds. It means that you get the capital, but you do not get the competence. Had it been like in the United States and the capital had gone through large VC companies, you could to a larger degree combine capital with expertise and networking."*

The interviews also showed a strong consensus on that although the investors believe that they have something to add to the start-up, they are not interested in running the company. This was found in all interviews except one investor early-stage investor that had a different and more involved strategy.

*“We want them to take 99 percent of critical decisions on their own. However, we still think we have a lot to contribute with. Both competence, strategy, network and so on.*

*“We always sit on the board of the company. We contribute as an active governance resource, but try to avoid working operationally on a daily basis with the companies.”*

In short, it seems to be far more to the investment than just the financial capital supplied. Although several researchers have pointed to the fact that investors in young companies often create substantial value, the equity gap is usually treated as a purely financial problem. One could argue that there is a strong need to incorporate the non-financial contribution by the investors in a definition of the equity gap. Many articles on the topic of equity gaps refer to the damaging effect of not receiving financial capital have on start-ups, but one could argue that the non-financial value the investors can add also have a major effect. Positively on the companies that get funded and negatively on the businesses that do not receive funding.

One investor described the equity gap as dynamic. This will be covered in greater detail in section six, but it was *defined as*:

*« the needle eye, or the threshold to fund the next round, is higher than it has been historically.”*

## 4.4 Conclusion

The aim of section four was to answer the research questions presented at the start of the section:

**RQ1:** *“What is an equity gap and how is the term used and defined by investors in the Norwegian market for risk capital?”.*

**RQ 1.1:** *How has existing academic literature defined and used the term “equity gap”?*

**RQ 1.2:** *How do investors in the Norwegian risk capital market define and use the term “equity gap”?*

Starting with RQ 1.1, the literature review found a lack of or unclear definition in most articles read. Most researchers tended to define the equity gap by how or where it arises, but there were also some articles that tried to define the term. These were all slightly different but described the equity gap as a market failure. The literature review was therefore concluded with a somewhat common understanding of the equity gap in the academic literature, but a lack of consensus on the definition of the gap. A large body of literature on the non-financial resources investors could add to the companies they invest in was found, and in some instances mentioned as a negative effect of the equity gap. However, none of the identified definitions of the equity gap included the non-financial aspect of the gap.

During the analysis of interviews, RQ 1.2 was answered. The analysis showed, as in the literature review, a common understanding of the equity gap as a company's inability to access capital, but for the most part a lack of a clear and precise definition of the gap. The investors were also very aware of their non-financial contributions to the companies they invested in, and in many cases, it was also an important part of the investment decision. This source of this non-financial contribution was primarily the investors' knowledge, competence and network created in earlier experiences or investments. An important finding from the interviews was also the theory of "dynamic equity gaps" created by differences in historical returns on investments and a time lag. Another point where the investors differentiated themselves greatly from the existing research was the investors' lack of market failure as a definition of the equity gap.

As a conclusion to RQ 1, there seem to be a general understanding of the equity gap both in the academic literature and among risk capital investors, but few have a specific definition of the gap. Based on the literature review and the conducted interviews a perhaps better definition of the equity gap could be;

*A market failure where a company is unable to access both financial and non-financial resources from external investors due to a market's inability to match risk with expected returns.*

This definition is general, allowing the term equity gap to be used in the same settings it is already in use now, but it at the same time more precise than the general understanding of the equity gap. The risk-return relationship will be discussed further in section six. By using this definition in the rest of this paper, other researchers will have a better understanding of the

findings of this paper, even though they may disagree on the definition. This ensures a high degree of internal validity. Although an understanding and definition of the equity gap are now created, questions remain on the existence, size, and location in the development in companies it might be identified. This will be treated in section five.

However, analysing potential equity gaps and possible solutions is of limited practical and academic use if it does not represent a real problem affecting someone. There are three actors that might experience a problem concerning equity gaps: entrepreneurs, investors and the society in general. The entrepreneurs are as already mentioned potentially affected through not accessing enough resources to create and grow his or her's company. However, all companies will never get funded, and this is only an issue if companies that should have been funded in terms of potential profitability does not receive resources. As noted earlier this is not only concerning financial capital but also other non-financial resources such as knowledge, competence and network. For the investors, the problems of an equity gap are partly based on what development phase the investors primarily invest in. An investor the invest in companies that are very early in the development phase such as pre-seed could be negatively affected by an equity gap by not being able to access follow-up funding for the company invested in. This makes a potentially profitable exit from the investment difficult. For investors that are focused on later development stages, they can be negatively affected by not finding enough high-quality investment opportunities due that too many companies were not funded in the earlier phases.

## 5. Is there an equity gap in Norway and what is its size and location?

### 5.1 Introduction

*Norway has well-functioning capital markets, and Norwegian companies' access to loans and start-up capital is in line with findings for comparable countries. The state also has significant involvement in the risk capital market through seed funds, loan capital, and investment companies. It must, therefore, be assumed that profitable projects in Norway are usually funded (Finansdepartementet, 2014, p. 289 (translated from Norwegian))*

In 2014, the Scheel-committee cited above left little room for an equity gap in the Norwegian market. However, other reports have come to the opposite conclusion arguing that there, in fact, is an equity gap in the Norwegian market for risk capital (Fjellheim, 2015; Grünfeld et al., 2011a). A revisit to the question is therefore necessary in order for this thesis to develop new reliable knowledge.

***RQ2:** Does there exist an equity gap in the Norwegian market for risk capital, and what is its size location related to investment phases?*

***RQ 2.1:** Does there exist an equity gap in the Norwegian market?*

***RQ 2.2.** What is the size and location of the potential equity gap?*

### 5.2 Literature review

The literature review will first present international research on the potential existence, phase, and size of the equity gap before the more limited research conducted on the Norwegian market for risk capital is presented. Before starting on this section, it is worth mentioning that several of the articles found in the literature review in section 4 were also relevant for this part. This section is also divided into sub-questions resulting in the need for a couple of different literature searches.

The first search concerned the existence of an equity gap in the Norwegian market for risk capital. The literature review from section 4 had not identified any Norwegian articles, or

articles analysing the Norwegian market. The key words "equity gap" and "Norway" yielded no results in Scopus, so a broader approach was necessary. The same keywords were used in a google scholar search, with some success. One master thesis and one peer-reviewed article were found. The master thesis gave the idea to use the Norwegian translations of the keywords, and instead of equity gap, to use finance gap: "finansieringsgap" and "Norge". There seems to be either lack a good translation of the term equity gap in Norwegian or a general confusion of the difference between the two terms in some of the master theses found. This search yielded several Norwegian master theses on the topic, but due to an apparent misunderstanding of the variables they were measuring, most were judged to have a too low level of internal validity.

The literature search for the location and size of the equity gap was conducted with the keywords "equity gap" and "size", "equity gap" and "location", and "equity gap" and "phase". However, a search with the keywords: "equity gap" and "size" resulted in only three relevant articles were all had been identified in the literature search in section 4. Snowball-search was therefore used as the primary method for finding international research. To increase the focus on the Norwegian market, the process of translating the search terms was repeated in both Scopus and Google Scholar, but this did not result in any new relevant articles. The last solution became to use Google's main search engine itself, resulting one highly relevant report from Grünfeld et al. (2011a).

### 5.2.1 International research

#### *Size and location of the gap*

The Macmillan Report (1931) argued that small British firms seeking sums under \$19,845,000 (£250,000) were discriminated against. HM Treasury/ Small Business Service (2003) claimed that a market failure continues to exist between \$460,645 (£250,000) and \$1,845,000 (£1m) with sums under \$3,685,000 (£2m) being tough to access. The assumption that capital market failures exist for young firms is virtually taken as a given in government policy documents at both national and international levels including the European Commission, the OECD, and the World Bank (Murray and Lingelbach, 2009). Although an overwhelming majority of the literature uncovered in the literature search were convinced that there indeed existed a form of equity gap, there were also found conflicting opinions. Harding, (2002) finds evidence of an equity gap in the UK, but not in Germany, France or Singapore and only a regional gap in the US market. Other researchers that have investigated the funding gap i.e. all forms of

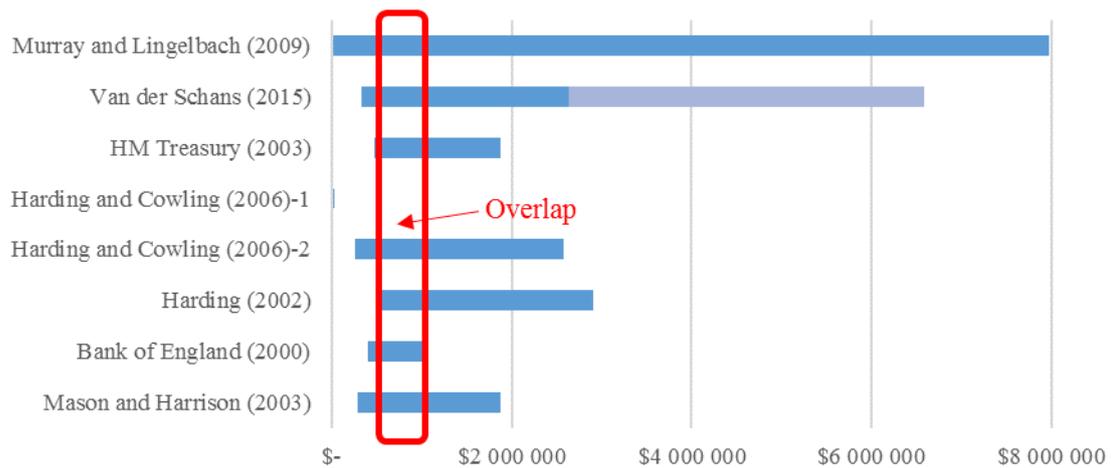
financing for start-ups have also reached conflicting conclusions. Lam (2010) for instance argues that entrepreneurs themselves fill the funding gap by bootstrapping.

The literature review found that there have been several attempts on estimating the size of the equity gap(s). Most attempts have been made through qualitative methods, using interviews with players in the industry to estimate the size, but there have been attempts on quantitative analyses as well. One estimate finds an equity gap of between \$483,600 (£250,000) and \$2,9 million (£1.5m) (Harding, 2002). Mason and Harrison (2003) on the other hand estimates the gap to be between \$282,000 (£150,000) and \$1,9m (£1m) based on a survey of business angels. Harding and Cowling (2006) combined qualitative methods with a quantitative analysis. They argue the difference between the mean and the median investment size is a reliable estimate of the equity gap and found the equity gap to be between \$258,000 (£150,000) and \$2,6m (£1,5m). They also argued that there is an earlier equity gap, as described later in this section.

Others have concluded that there exists a gap covering equity investments between \$330,000 (£250,000) and at least \$2,6m (£2m) but potentially stretching to \$6,6m (£5m) (van der Schans, 2015). This is because very few private sector venture capitalists now invest below £5m. However, the gap may extend up to £15m for sectors requiring complex R&D or significant capital expenditure (van der Schans, 2015). This view is supported by Murray and Lingelbach (2009) who argues that Many VC firms in the membership of the British Venture Capital Association (BVCA), no longer wish to offer applicant investee firms sums of money under a minimum of \$7,9m (£5m). Figure 3 presents the inflation<sup>3</sup> adjusted numbers converted to dollar. As illustrated with the red rectangle in the figure, there is an overlap in the different estimates of the equity gap between \$483,600 and \$1 million.

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<sup>3</sup> The Bank of England's excel inflation calculator was used.



*Figure 3: Overview of some previous estimates of the equity gap. The blue lines represent where the author(s) argue the equity gap is placed.*

There are several issues with the current attempts of measuring the equity gap. First of all, several articles lack, as described earlier, a precise definition of the equity gap causing difficulties in understanding what they were measuring. There are also issues concerning how one should measure an equity gap. All articles found in the literature search showed attempts of measuring it in the size of the investment. This is problematic because start-ups are heterogeneous in nature and estimating the size of the equity gap based on the scale of the investment this is not enough to definitively locate the equity gap. New companies develop through many of the same phases (Ruhnka and Young, 1987), but due to their heterogeneity, their size and speed in the different phases differ. An investment size of \$1m could be substantial for one company, while insignificantly small for another. Murray and Lott (1995) point to the need for some companies to spend large amounts on R&D.

An identification of the location to the perceived equity gap should therefore not only be based on the size of the investments but also characteristics of the companies that receive the investments. The same problems would occur if one tried to estimate the location of the equity gap in a time references. There are significant differences in how long time it takes different companies to achieve certain milestones in their development. Locating the equity gap at a particular time, such as after two years, would perhaps be correct for one specific company, but not correct for another, hence it is not possible to generalise this way.

Using models of relative development paths that are valid for most companies, it is possible to reach more sensible conclusions. However, few authors have used the same system for categorising life-cycle phases for new companies, making the literature review challenging.

The literature review concluded that primarily three locations for the equity gap were proposed. The distinction between these proposed gaps is unclear, and not one single article has referred to all three. The absolute majority of articles refer only to a single equity gap. The first equity gap is sometimes referred to as early equity gap (Aernoudt, 2005; Harding and Cowling, 2006; Papadimitriou and Mourdoukoutas, 2002) and is located at the very start of a new venture's life. This is the phase where many countries have national and regional support programs for entrepreneurs, but Harding and Cowling (2006) still assess this gap to be between \$8,603 (£5000) and \$36,132 (£21,000). The second equity gap identified is by far the most referred to in academic articles. This is believed to be located after the entrepreneur have received investments from friends, family, and fools (FFF) and business angels (BA), but are still not able to access capital from venture capital (VC). The third equity gap identified is often referred to as "the second equity gap" (Aernoudt, 2005). It is difficult to separate between the latter two gaps, but it can be perceived as a development of the traditional equity gap because venture capitalist keeps moving towards larger funds and thereby larger investments, an issue that will be discussed later in this thesis.

### **5.2.2 The Norwegian market**

Although there is limited existing research, there have been found some mentions of an equity gap in studies of the Norwegian market for risk capital. This part of the literature review was challenging because searches through the major databases yielded few results. Nevertheless, there were found three main groups of articles: industry reports from Menon and the Norwegian Venture Capital & Private Equity Association (NVCA), master theses, and peer-reviewed articles. Their topics have varied, but most peer-reviews articles and master theses focused on how the government can solve the problem of the equity gap in the Norwegian market, while the industry reports aimed to describe the market and its value creation.

However, the actual material suggesting an equity gap is not conclusive. On behalf of the Norwegian Ministry of Trade and Industry, Grünfeld et al. (2011a) prepared a report in which they evaluated the access to capital in the early-phase segment in Norway. The report concludes with:

“For the earliest stages (seed stages) there is now a clear and increasing shortage of risk capital for funding projects with a high growth potential. In the more mature segments, later-stage venture and expansion, it is not equally clear that the market is unable to match demand with sufficient amounts of capital supply” (Grünfeld et al., 2011a, p. 2)

Grünfeld et al., (2011a) approached the identification process of the equity gap from two sides. First estimating the demand for early stage risk capital in Norway through a population and deal flow approach. Then they looked at the supply side and the different actors that are investing in start-ups.

However, some years later the Scheel-committee stated that there reason to believe that “...profitable projects in Norway are usually funded”(Finansdepartementet, 2014, p. 289). The vagueness of the Scheel-committee does however not fully exclude a potential existence of an equity gap. The report did as well use the assumption that there is no or little “home bias”, and thus an international free flow of capital including for start-ups:

*"Traditionally, a certain "home bias" is assumed, which means that the investor is more inclined to invest in domestic companies because it is more resource-intensive to develop all relevant knowledge of investment alternatives in other countries. According to some empirical studies, including among others Bekaert and Wang (2009) and Vanpée and De Moor (2012), Norway is among the countries with the lowest degree of "home bias." Other countries with little home bias are the Netherlands, Sweden, Denmark, the United Kingdom and the United States. Norway has well-functioning capital markets, and Norwegian companies' access to loans and start-up capital is in line with a finding for comparable countries. The state also has significant involvement in the risk capital market through seed funds, loan capital, and investment companies. It must, therefore, be assumed that profitable projects in Norway are generally financed. "(Finansdepartementet, 2014, p. 289, translated from Norwegian)*

However, the referred articles from Vanpée and De Moor (2013) and Bekaert and Wang (2009) have used data from stock markets and obligations for estimating home bias. An assumption that this is valid for earlier phases of investments in start-ups would be an

oversimplification due to the different investment processes in stock listed companies and unlisted start-ups. In their research on business angels' non-local investing, Harrison et al. (2010) found that only 24 percent of the investments was made over long-distances. Similar findings show that the formal venture capital markets also tend to be highly concentrated geographically for both the location of the fund managers and the investments (Zook, 2002). Consequently, it is difficult to see how Finansdepartementet (2014) can make a robust conclusion that all profitable early-phase projects are financed based on their assumption.

### **5.2.3 Conclusion to the literature review**

The goal of this literature review was to both uncover what we know, and we do not know from the existing academic literature on the the existence of equity gaps both internationally and in the Norwegian market for risk capital. There were several existing articles on the existence and size of the equity gap. This made it possible to create an overlap of the estimates of the size of the equity gap, although there were some disagreements over the existence of the gap. In the literature on the Norwegian market, there were fewer articles, and as well some disagreement over the existence of the gap. From the literature review, we can therefore not conclude on the existence or size of the equity gap. There is also no consensus on how the equity gap can localized in different development stages.

## **5.3 Phases of development:**

To be able to have a common definition and clear understanding of the location and size of the equity gap it is important to use the same terms related to phases of development for new companies. There seems to be a divide between the academic and more universal way of perceiving the development and the venture industry's more number based terminology.

Ruhnka and Young (1987) presented a highly-used framework in the academic literature. It consists of five stages: the "seed stage," the "start-up" stage, the "second stage," the "third stage," and the "exit stage". Although one can assume that Ruhnka and Young's (1987) framework is still in use, modern risk capital investors will refer to different "series" when describing their investments (Janz, 2016). An overview of the different series and the corresponding usual investment amount, valuation and investor types is shown in figure 3.

	"PRE-SEED"	SEED	SERIES A	SERIES B	SERIES C
<b>Amount</b>	\$200-500k	\$500k-\$2.5M	\$3-12M	\$10-25M	\$20M+
<b>Valuation</b>	\$1-3M	\$2-6M	\$10-40M	\$30-100M	\$80M+
<b>Investors</b>	Friends & Family, Angels	Angels, Micro VCs	VCs	VCs	VCs, PE

Figure 4: Investment phases in venture capital (Janz, 2016)

The advantage of using the venture capital industry’s terminology is that it combines both the size of the investment, the valuation of the company and common attributes of businesses in the different stages. Another common way of presenting the financing lifecycle of companies in the “venture capital path” is shown in figure 4.

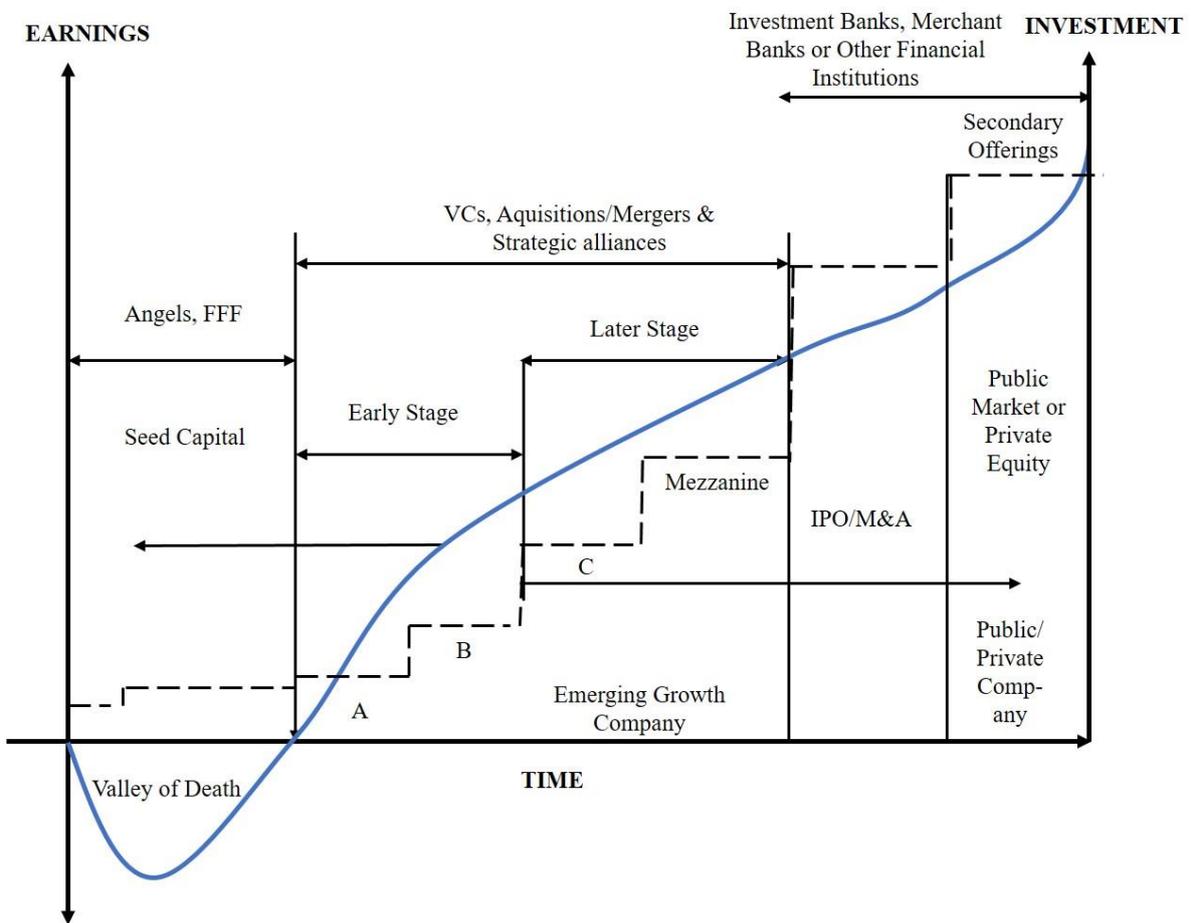


Figure 5: An overview of the financing of a new business in the "venture capital path" (Grünfeld et al., 2011a)

## 5.4 Analysis

This section will describe the thematic analysis conducted on the semi-structured interviews with investors in the Norwegian risk capital industry. It is structured in the following categories relating to RQ2: existence (RQ 2.1), location and size (RQ 2.2).

### 5.4.1 Existence

Most of the studies considered in the literature review concluded that there exists an equity gap in Norway. At the same time, the Capital Taxation in an International Economy report (Finansdepartementet, 2014) argued that there be a reason to believe that all profitable project would be funded. Of the six investors that were interviewed, 4 held a strong belief that there exists an equity gap in the Norwegian market for risk capital. However, as investor quoted below, although they did not provide a clear definition.

*"There is definitively a funding gap. As we have defined it at least. "*

One investor was doubtful but open to the existence of such a gap for companies with high levels of research and development (R&D). The last investor did not believe that such gap existed and that Norwegian start-ups that needed and deserved funding were able to attract investors or governmental grants. If companies were struggling with raising capital, there were other reasons than an equity gap, arguing that only around 20 percent of the start-ups in Silicon Valley receive funding. One of the investors described the doubt as an equation:

*"I doubt there are many examples of cases with a great team, an excellent business model, a significant potential within a reasonable timeline and a fair valuation that are unable to raise capital. However, if you change one of the elements in mentioned equation, things get rough. From my experience, it's often the first or last mentioned that's the issue."*

Overall, the interviewed investors seemed to match the literature well. Most articles found on the topic did not question that there existed an equity gap, while a few questioned its existence. It is, therefore, difficult to make a robust conclusion on whether there exists an equity gap in Norway based on the data collected through the interviewees. However, investors in start-ups tend to be quite specialised regarding what kind of companies they invest in. A prominent finding from the interviews was that which companies they invest in is often based on their

experience and competence. Because of the specialisation, not experiencing an equity gap as an investor, does not necessarily mean that it is non-existent. Another important observation from the interviews was that there were investors located in the earliest phases that were least likely to believe in the existence of an equity gap. Nevertheless, there is a reason to believe that, as the majority of the investors agree, there exists an equity gap in the Norwegian market for risk capital.

#### 5.4.2 Location and size

In the analysis of the location of the perceived equity gap, the system of classifying investments into series will be used because the interviewed investors used this. Although the majority of investors believed that there exists an equity gap in Norway, there was no clear consensus of the location of this gap.

One of the investors believed that the gap is located in the pre-seed and seed phase drawing parallels to the so-called “valley of death”.

*“It is the valley of death. The equity gap is pre-seed and seed. Moreover, everything from commercialization and R&D. You can have promising research that technically looks very exciting, but where no commercialization has begun, i.e. the pre-commercialization phase.”*

The “valley of death” is illustrated in figure 4, but the definitions of this valley differ. In a follow-up email, the investor explained that his understanding of the “valley of death” was “the period between the creation of a company until it achieves a commercial breakthrough and/or raises capital from professional investors that ensure the further survival of the company”.

One investor argued that the equity gap is located in the seed phase. This would equal an investment of approximately \$500k - \$2.5m. (Janz, 2016). This is in line with the majority of identified research if adjusted for inflation (Bank of England, 2000; Harding, 2002; Harrison and Mason, 2000b).

*“For example, if you want to raise a million dollars which is a regular seed round. ... Then it is extremely difficult to find that capital in Norway. You have to work hard to make it.”*

Another argued that the equity gap was rather located in series A and due to dynamic equity gaps had moved there from series B. This would represent a size of the equity gap of \$3-12m (Janz, 2016). There has not been identified research that agrees with this exact size of the gap, but one could argue that fits well with the upper boundaries of van der Schans (2015) estimate of the gap.

*“Two to three years ago, it was typically a series of B crunch, so it was very demanding to raise capital once you had got a bit on the road. There was very little capital in that phase, at least in compared to what was found of investment opportunities. Now it has moved, and now you talk more about a series A-crunch.”*

A third investor claimed that the equity gap was located in series B. This would represent a \$10m - \$25m investment.

*“I believe that Norway has a relatively well-functioning system in the very early stages. But when you start to be around 10-15 employees, start thinking about scaling outside Norway, and you start getting into senior seed and maybe series a. Then the company is worth 50 to 100 million NOK and perhaps more. You then need 20-100 million NOK in capital, but in that phase, there has been little available capital in Norway.”*

A purely series B (\$10m - \$25m) gap is not found in international research, but some researchers have suggested that the upper boundary for research intensive start-ups might reach these levels (Murray and Lingelbach, 2009). A letter to the editor in a Norwegian business newspaper also hold the same perception of the size of the equity gap (Jensen, 2017).

The interviews did not offer a definitive result on where the equity gap may be located, defined by investment size, in the Norwegian market. Not one single investor agreed completely on where the gap is located. This somewhat contrasts the findings in the literature review. Although, the research presented show a somewhat disagreement of the exact size of the equity gap, the researchers are far more aligned than the investors in their perception of the location of the equity gap. The investors' perceptions of the location could, however, fall into the three locations based on development phases identified in the literature review. However, these

inconclusive results of the equity gaps location could weaken the argument that there exists an equity gap in Norway.

As found in the literature review, the investors also disagree on the location of the equity gap, both regarding which phase the gap is in and thereby the size of the gap. It seems to exist good arguments both from the literature and the investors that there indeed exist an equity gap in the Norwegian market for risk capital. However, the large difference between the investors' perception of phase and size of the gap is difficult to understand, but the disagreement is an interesting finding in itself. One could argue that the findings may indicate that the gap is more of a perceived problem for entrepreneurs and investors in individual cases, rather than an actual structural issue concerning the entire risk capital industry.

## 5.5 Conclusion

Before the start of section five, this paper had examined different definitions and uses of the term equity gap of academic researchers and professional investors. The question of whether such a gap existed in the Norwegian market for capital and its potential size and location were still unanswered. Section five, therefore, have the aim of answering following research questions:

***RQ2:** Does there exist an equity gap in the Norwegian market for risk capital, and what is its size location related to investment phases?*

***RQ 2.1:** Does there exist an equity gap in the Norwegian market?*

***RQ 2.2.** What is the size and location of the potential equity gap?*

RQ 2.1 was a difficult question to answer, and from the literature review, it became clear that existing research, both international and Norwegian, did not have an agreed upon method to determine the existence of such gap. This paper approached the question from two angles: existing research on the Norwegian market and semi-structured interviews with leading risk capital investors. Although the existing research seemed to all point the existence of an equity gap, there were very few of the reports or articles that actually did a thorough analysis of the existence of the gap. The majority pointed to international research that had found gaps internationally, arguing that there probably exist equity gaps in Norway as well. Grünfeld et al. (2011a) were the only identified article that thoroughly analysed the existence of an equity

gap in Norway. However, the authors had access to a dataset that was not available to this paper. From the existing research, it consequently seems to exist an equity gap in Norwegian market for risk capital. As pointed out in section four, the lack of a common definition of the equity gap makes it difficult to compare research, which may reduce the validity of the conclusion.

The interviews with investors also showed a clear consensus on the belief that there indeed exist an equity gap in Norway. However, two investors did disagree. An interesting finding was that these investors primarily operated in very early phases of a company's development, and their perception could be affected by this. It can therefore still exist an equity gap, but it may not be in the early phases. As an overall conclusion to RQ 2.1, the existing research and findings from the conducted interviews provide strong evidence to believe that there indeed exists an equity gap in the Norwegian market for risk capital.

RQ 2.2. gave the possibility to give a more detailed answer than a yes or no answer as in RQ 2.1. This is important for both understanding the equity gap, but also to create government policies that try to stimulate the growth of new fast-growing companies. RQ 2.2 was approached in the same way as RQ 2.1, but the results were far more scattered. The first issue that arises where how one should measure and locate an equity gap. The literature review showed that this primarily was done by analysing what investment sizes that were difficult to raise by companies. One weakness of this approach is however that it does not say how big the problem is, just when a company will face the problem. This could be an area of future research, but the paper chose to use the same method i.e. as most research conducted because it was not yet conducted on the Norwegian market. However, this paper introduced a novel connection between the investment size measured in existing research and the interviews with the terminology and classification used by venture capitalists in describing their investments. This allowed for comparing both investment sizes, development, valuation and general characteristics of the companies. There were also not found any correlation between the main investment phase of the investors and the perceived location of the equity gap.

The overall conclusion to RQ 2 is that there seems to be an equity gap in the Norwegian market. However, its location and size are not possible to conclude on based on the conducted interviews. There is consequently either several different equity gaps, or it could also be that it might be a more of a perceived situation for some companies rather than a structural issue concerning the entire start-up funding in Norway.

## 6. Why could there be an equity gap in Norway?

### 6.1 Introduction

The overall aim of this paper is to uncover whether there exists an equity gap in the Norwegian market and if equity crowdfunding can close or reduce the gap. So far, this paper has concluded that there indeed exists an equity gap in the Norwegian market for risk capital, but its size and location in the development path of new companies has proved difficult to determine. However, it is difficult to evaluate equity crowdfunding's ability to close or reduce the gap without a thorough understanding of why equity gaps might arise. This question has been approached from three angles. First, the paper looks at what international research had shown to be reasons for why equity gaps might arise. Second, it tries to uncover what previous research on the Norwegian market has identified as potential reasons for equity gaps. And third, it evaluates the answers of investors in Norwegian start-ups asked about the reasons for potential equity gaps.

**RQ3:** What reasons are there for an equity gap to arise in Norway?

*RQ3.1: What have international research identified to be reasons for why equity gaps arise?*

*RQ3.2: What have research on the Norwegian risk capital market have identified as potential reasons for equity gaps?*

*RQ3.3: What do investors in the Norwegian risk capital market believe to be the reasons behind the perceived equity gaps?*

### 6.2 Literature review and theoretical background

The aim of this literature review is to uncover what researchers have identified to reasons for why equity gaps arise in both international markets and the Norwegian market for risk capital. However, it is equally important to understand what we so far do not know from the literature on equity gaps. The literature review will be structured with international findings first, then findings from Norway, ending with an overview of what is still not known in the existing research.

### 6.2.1 International research

Through the literature review in the previous sections, a large number of relevant articles had been uncovered. Having already processed all articles in Scopus with the keyword “equity gap” the main method of literature search in this section were the snowball technique. Although there have been relatively few attempts in the literature on defining equity gaps, there is an extensive body of research on how the gaps arise. Most of the article identified had some explanation of the equity gaps, but the literature review uncovered that there were not only a large number of different reasons behind the equity gap but also a set of different “levels” one could analyse the problem. Some authors focused on the visible reasons behind equity gaps such as high and fixed search, control and monitoring costs (Harding and Cowling, 2006; Mason and Harrison, 2004b) and a clear trend for venture capital funds to shift to large investments in later stages (Mason and Harrison, 2002, 2003; Murray, 1999). However, other researchers presented reasons on a more fundamental level such as information asymmetry between the investor and the entrepreneur (van der Schans, 2015). There were, nevertheless, not identified any articles in the literature review which explicitly referred to this separation.

According to Harding (2002), the equity gap arises from two principal sources: the finance gap and the knowledge gap. The finance gap is defined as “This is where the risk of making lower end investments are regarded as too high relative to the rate of return from the investment within a reasonable timescale.”, while the knowledge gap is defined as “This is where investors and investees are unsure about the potential benefits of making smaller scale investments because an institutional failure that prevents them from communicating effectively”(Harding and Cowling, 2006, p. 117). Both these two sources to the equity gap can be explained by asymmetric information. i.e. when a part of a transaction has a higher knowledge of the future value than the counterpart. This is one of the four reasons for market failures that Murray and Lingelbach (2009) have identified, which was described in section four. The three others were the abuse of market power resulting in imperfect competition, markets ignoring the impact of economic activity on those outside the market, and when markets attempt to provide public goods. On the other hand, Van der Schans (2015) have identified five main types of market failures affecting the SME finance market: imperfect information, market power, externalities, coordination failure and regulatory failure. There are several overlapping arguments between Murray and Lingelbach (2009) and Van der Schans (2015), but Van der Schans (2015) argue that it is imperfect information, which is a broader term that includes asymmetrical information, that causes the equity gap.

Both authors argue that due to asymmetric information between the investor and the business on the likely viability and profitability of the business it is difficult to evaluate and assess the quality of the start-ups and the risks associated with investing. This leads to significant transactions costs related to the due diligence. Van der Schans (2015, p. 15) also argue that “It is not just asymmetric information that is a market failure in VC markets, but the complete absence of information on the likelihood of success for seed and early stage investments making equity valuation very difficult.”. Both asymmetric and imperfect information could, therefore, result in a structural gap in the equity markets (van der Schans, 2015).

Although imperfect and asymmetrical information is the foundation on which an equity gap might arise, they are difficult to observe directly. Nevertheless, they can be observed through other effects that several researchers have pointed to in literature. These reasons will be presented in the next paragraphs.

### *Fixed search and control costs*

For the investors to overcome information asymmetries, investments are made first after a rigorous examination of the company has been conducted. This examination is a form of transaction costs that Dahlman (1979) described as search and information costs. These evaluation and due diligence costs are largely fixed regardless of the size of the investment and can, therefore, make smaller investments uneconomic (Mason and Harrison, 2004b). This is also a part of what Harding and Cowling (2006) defines as “the finance gap”, claiming that the rate of return is too low for VC-funds due to large transaction costs. Mason and Harrison (1995) conclude that it would be uneconomic for funds to make investments of less than about \$560,000 (£250,000) due to the high fixed costs. They referred to Batchelor (1993) that suggested that initial accountancy and legal fees, for example, are unlikely to be less than \$120,000-\$165,000 (£50,000 - £70,000), irrespective of the size of the prospective investment. However, this numbers seems to have been slightly reduced because BIS (2009) finds that typical due diligence costs are between \$31,450 and \$78,600 78 (£20,000-£50,000) for VC deals. However, it can be up to around \$110,000-\$125,800 (£70-80k) for technically complex businesses.

### *Fixed monitoring costs*

Asymmetrical information can lead to agency costs i.e. cost related to the investors not controlling the company. However, in start-ups, the issue is rather that investors need to be able to provide non-financial resources. As mentioned in section four, the investor's

contributions are essential to the progress and the value of the start-up. The cost of supplying these resources in addition to regular monitoring of the company are not proportional to the investment size but largely fixed (Mason and Harrison, 2004b). BIS (2009) finds that typical ongoing monitoring cost for VC-companies in the UK is \$16k-\$19k p.a. (£10-12k). As with fixed search and control costs, fixed monitoring costs for investments in earlier phases will represent a larger proportional part of the investment than for larger investments at a later stage. Some researchers argue that the potentially higher returns on investments in earlier phases are not enough to offset the added costs (Aernoudt, 2005; Harding and Cowling, 2006).

### *High risk and little experience*

Although incomplete information is an issue in all investments, the risk is perceived to be higher for seed, start-up and early growth stage businesses because the start-up team is inexperienced, and the product and its market may be unproved (Aernoudt, 2005). Uncertainties may be even greater if the firm is based on innovative technology (Lockett et al., 2002; Murray and Lott, 1995). This is in line with the definition of a knowledge gap presented by (Harding and Cowling, 2006, p. 117) i.e. “investors and investees are unsure about the potential benefits of making smaller scale investments because of an institutional failure that prevents them from communicating effectively”. Institutional failure is in this occurrence used to describe a situation where the flow of information between potential investors and investees is not satisfactory (Harding, 2002).

Aernoudt (2005) also argues that demand and supply for risk capital change through the life cycle of new ventures partly based on the information about the market potential and financial returns become less imperfect. The entrepreneur's interest and need for risk capital are far larger in the seed and start-up phases than the later phases. The opposite applies to the investors. Their supply of risk capital increases as the venture matures.

### *Uncertain exit-options*

Investing in start-ups is in many instances a long term investment with limited options of exiting due to low liquidity in the sales of shares. Uncertainty about potential exit options may, therefore, act as a deterrent as it likely increases investor's risk without increasing the expected return due to incomplete information (Aernoudt, 2005). The lack of exit possibilities might not just reduce the ability to attract financial capital in an early stage of a start-up, but also in later stages because the early investors are not capable of supplying follow-in capital in the later rounds where the risk is still too high for VC-funds (Aernoudt, 2005).

### *Larger funds land higher returns attract investors to later stages*

Van der Schans (2015) argue that the structural gap in the equity market created by asymmetric and imperfect information cause investors and risk capital fund managers to focus on fewer, larger investments in more established, lower risk, businesses at the expense of early stage VC investments. Mason and Harrison (2003) used data from investments in the UK from 1995 to 2001 showing a steady number of investments, but a treble in the invested amount. This shows that the average investment size has increased significantly.

In the UK across Europe, the highest returns have been generated by funds specialising in later stage investments, and management buyouts, in particular, making it much harder for early stage funds to raise finance from financial institutions (Murray, 1999). This view is also supported by Mason and Harrison (2002b) who found that the distribution of returns from informal investors' investments is highly skewed, with 34% of exits at a total loss, 13% at a partial loss or break-even, but with 23% showing an IRR of 50% or above. They also reported that large investments, large deal sizes involving multiple co-investors, and management buyouts (MBOs) were most likely to be high-performing investments. This is in line with the findings of Aernoudt (2005) and what he defines as a "perverse risk-return relationship", claiming that later stages are more attracting to VC-firms due to a better risk/reward-ratio. Mason and Harrison (1995) describes a historical situation where the investment focus of venture capital funds has gradually moved towards larger deals and later stages in the development of new businesses. Harding and Cowling (2006, p. 117) defines the situation as a finance gap: "where the risk of making lower end investment are regarded as too high relative to the rate of return from the investment within a reasonable timescale".

#### **6.2.2 Norwegian research**

The literature search resulted in only one relevant article. There literature search uncovered several other Norwegian articles that looked to be relevant but was inaccessible through NHH's network.

Grünfeld et al. (2011a) argue that there are four main reasons for access to private capital to the earliest stages is highly limited in Norway: asymmetric information, knowledge externalities, risk aversion and recessions and flight to safety. This matches in many ways the reasons presented from Van der Schans (2015) and Murray and Lingelbach (2009). All three are illustrated in table 1.

<b>Grünfeld et al. (2011a)</b>	<b>van der Schans (2015)</b>	<b>Murray and Lingelbach (2009)</b>
<ul style="list-style-type: none"> <li>• Asymmetric information,</li> <li>• Knowledge externalities,</li> <li>• Risk aversion</li> <li>• Recessions and flight to safety</li> </ul>	<ul style="list-style-type: none"> <li>• Imperfect information</li> <li>• Market power</li> <li>• Externalities</li> <li>• Coordination failure</li> <li>• Regulatory failure</li> </ul>	<ul style="list-style-type: none"> <li>• Asymmetrical information</li> <li>• market power resulting in imperfect competition</li> <li>• markets ignoring the impact of economic activity on those outside the market;</li> <li>• when markets attempt to provide public goods</li> </ul>

*Table 1: An overview of presented reasons for the equity gap*

There are however some significant differences between the arguments of the Norwegian and the international research. First of all Grünfeld et al. (2011a) argues that private investors are risk averse causing profitable companies not to get funding. However, the increased risk associated with investing in start-ups stems from especially imperfect information related to for instance the market potential of a new technology. Recession and flight to safety which is the second point where Grünfeld et al. (2011a) differentiate themselves, could be attributed the economic situation around the date of publishing.

### 6.2.3 Conclusion to the literature review

The goal of this literature review was to both uncover what we know and do we not know from the existing academic literature on the reason behind equity gaps, both internationally and in Norway. As with the rest of the literature on the topic, the literature review resulted in some agreement between the researchers, but a lack of definitions and preciseness in their articles make it difficult to compare their arguments. Nevertheless, it seems clear that although there are several different sources for market failures in the risk capital market, it is primarily imperfect information, including asymmetrical information, that are the main reasons behind the equity gaps. It was difficult to access research on the Norwegian market, but the one article described was largely aligned with the international research.

There are however still questions that remain unanswered. Most importantly, do the Norwegian investors have the same opinions on the reasons behind the equity gaps as the researchers, and why is that the case?

## 6.3 Analysis

The thematic analysis of the semi-structured interviews uncovered that the investors believed in several of the same reasons found in the literature review. There were several mentions of the funds becoming larger leading to larger investment investments. This is related to fixed search, control and monitoring costs. Some investors focused on a high risk in the early phases, while others focused on regulative issues associated with running a VC-fund. The theory of dynamic equity gaps could also explain the existence of such gaps by the shifting profitability and time-lag. Nevertheless, the investors showed an understanding that this was a complex problem where different people could have different opinions and perceptions:

*“It is a bit like the chicken or the egg. You cannot get a clear answer to that in your paper. We who sit on the capital side will argue that there is a lack of good enough projects and good enough teams. Those on the entrepreneur side will argue that investors are stupid and do not understand the concept and that there is not enough money”.*

### 6.3.1 Larger funds lead to larger investments

The investors are also aware of this and point to this as a potential reason for the equity gap:

*“It is a dynamic effect that, as they (fund managers) get more money, they are drawn to larger and larger investments. In addition, there has not been a single new VC capital company in Norway for the last five to ten years. And because it is usually the new ones starting a little further down this results in a shortcoming of capital.”*

However, they also partly blame the government and its regulations for why there have been few new VC-companies in Norway the last years.

*“The reason why it has not been established new VC-companies is complex, but regulations are a significant challenge. It is quite tough to start a venture capital environment in Norway.”*

*“The obligations associated with the license are so expensive that, for a small fund, they eat up so much of the fund's economy that it simply does not go around.”*

*“It has become disproportionately expensive in relation to regulatory authorities. If we were to start XX<sup>4</sup> today, I could not afford it.”*

The regulations the investors are referring to are among others the requirements for fund managers that want to bring in non-accredited external investors. Several of the investors referred to the EUVECA-regulations that are implemented in the EU, but not in Norway. The government is, however, planning to implement new tax regulations, incentivising investors to invest more in start-ups based on the British Seed Enterprise Investment Scheme (Finansdepartementet, 2017). This could help reduce this problem by attracting more investors to the fund managers due to the probably increased returns on their investments.

Newer figures from the Norwegian market show that the tendency of larger funds also is the case in Norway (NVCA, 2015). Figure 6 indicates that both the amount invested and the number of deals in the venture and seed segments have fallen from 2007 to 2015. There is as well a significant increase in the buyout segment, further illustrating the shift from the risky seed and venture market to the less risky and more stable buyout-market. In comparison to data from Mason and Harrison (2003), the Norwegian market experienced a drastic reduction in the number of investments in the seed and venture phase. Considering both the amount invested and the number of investments, the venture phase has seen the most dramatic reduction with a 64% and 71% decrease in the respective graphs. This could indicate that the gap is moving further upwards.

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<sup>4</sup> Removed due to anonymity

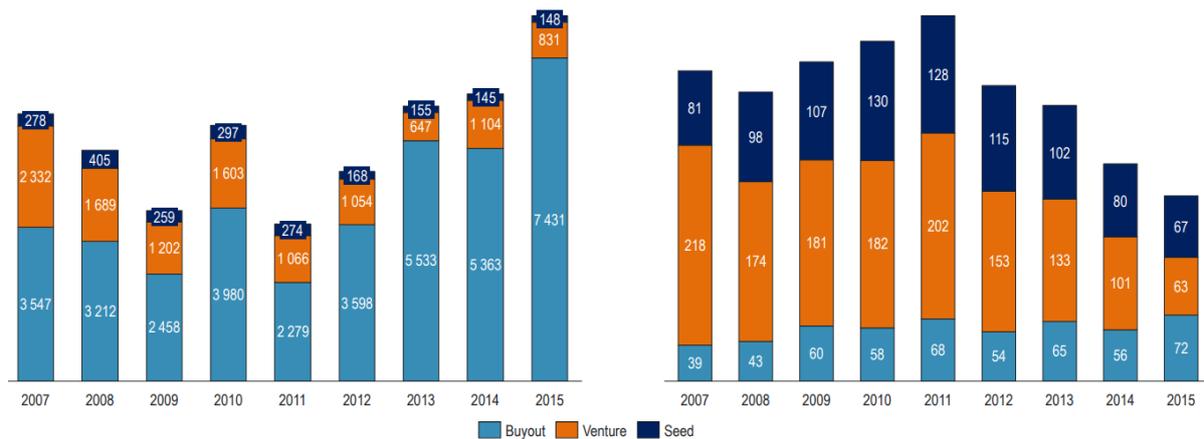


Figure 6: Development in the Norwegian risk capital market (NVCA, 2015). The LHS graph illustrates amount invested by phase in (million NOK), while RHS illustrates the number of investments by phase.

### 6.3.2 Early dilution of entrepreneurs

The equity gap can be viewed as both a supply and demand problem. A supply side problem would be too little financial capital available or too risk-averse investors, causing profitable companies not to be funded. A demand problem is centred around the entrepreneurs and their characteristics. Several investors referred to issues with the companies demanding financial capital. The most prominent reason mentioned for why companies that otherwise might have received investments were not invested in were an early dilution of the entrepreneurs. This was not identified as a specific reason in the literature review but can relate to the investors' perception that they invest in the founding team and not only the idea. If the founders only have ownership to a small part of the company, the probability of them leaving the company are higher.

*"Too many of the traditionally-minded investors in Norway are destroying tech companies in the early stages. They go in with one to two million NOK or something like that, and then they are completely wrong on how such companies needs to be rigged for further growth. They take around 50 percent ownership of the company. If such a company comes to us and is going to raise 10 million NOK, they can just turn around. There is no chance. This is because the entrepreneur or founding team is too diluted from the start."*

The early dilution problem is linked to the issue of uncertain exit-options. If an investor enters a company that already has sold most of its shares to outside investors, it may be hard to complete future financing rounds where early investors can secure gains.

### 6.3.3 Too high risk

Several researchers have argued that the equity gap is based on too high risk compared with the returns the investors expect. This was identified in the interviews as a potential reason for why there might exist a market failure.

*“As investors, we will try to enter when the risk is somewhat reduced. When some risk variables that are sky-high have been reduced. That could improve our ability to understand it. However, the entrepreneur may often need capital before the risk variables are at a level that makes the investor feel comfortable. The entrepreneur will have more information and greater faith in his project than what a sceptical investor has.”*

Although not specified, this is a typical case of imperfect information and information asymmetries. This can have several consequences. It can either stop the investor from investing, or it can cause the investor to demand such a high risk premium that the entrepreneur is not willing to accept the offer. The high risk will also lead to high search, control and monitoring costs to understand and reduce the risk as explained by Aernoudt (2005) and Harding and Cowling (2006).

### 6.3.4 Dynamic equity gaps

Most of the investors considered the equity gap as fixed to a certain phase, in line with Grünfeld et al. (2011b) and Murray (1994), although they differed in which phase they placed the gap. Nevertheless, through the interviews, an interesting perspective of a dynamic equity gap was uncovered. One investor defined the equity gap as:

*« the needle eye, or the threshold to fund the next round, is higher than it has been historically.”*

By using this definition, an equity gap needs to be a change from the historical normal. This is a view that was not found in existing research. However, a significant number of authors point to the equity gap shifting to the right because of larger and larger funds. This could fit

into the perspective of the gap being dynamic, but there is still a question of why the gap moves. The investor describes it as a global process with a time-lag effect:

*“It usually starts in the US; then you see it coming to Europe, and finally it reaches Norway. Moreover, it is generally a time-lag of two to three years.”*

The idea is that historical high profitability in some investment phase make the investors invest their capital in that phase, resulting in a negative pressure on the return on the investments due to higher competition among the investors. The equity gaps are created by a large number of investors flocking to one phase leaving another unserved. This could have been a short-lasting situation had it not been for the time lag in investing in start-ups. There is in most cases several years to the first potential exit opportunity resulting in that a venture fund needs to raise more money before they can invest in the equity gap. This gap is estimated by the investor to be around two or three years.

*“We clearly see that this is a dynamic gap that constantly changes correlated to how much funding that has been accessible for the last two to three years.”*

One important implication of this theory is that investments in the equity gap should have a high potential for becoming profitable due to the low level of competition from other investors. This contradicts earlier research that argues that investments in the equity gap are unprofitable (Aernoudt, 2005). One potential explanation that can combine both the arguments of researchers who argue that there are structural issues causing investments in the equity gap to become unprofitable, with the view of the investors, is the existence of more than one equity gap. This will be discussed further in section five.

## 6.4 Conclusion

The goal of this section of the thesis was to understand and explore reasons for why an equity gap to might arise in Norwegian market for risk capital.

**RQ3:** What reasons are there for an equity gap to arise in Norway?

***RQ3.1:** What have international research identified to be reasons for why equity gaps arise?*

***RQ3.2:** What have research on the Norwegian risk capital market have identified as potential reasons for equity gaps?*

***RQ3.3:** What do investors in the Norwegian risk capital market believe to be the reasons behind the perceived equity gaps?*

When trying to answer RQ3.1, there was a fairly large number of existing research available, but this research had certain shortcomings. It became clear through the literature review that although many researchers had overlapping reasons for why equity gaps arise, there lacked a thorough review of the reasons different authors had proposed as well as how the different reasons affected each other. The literature review resulted in two categories of reasons for why the equity gap arise. The first category was reasons that are difficult to observe and could be regarded as fundamental reasons to which the other proposed reasons stem from. It was difficult to conclude on which reasons that were to be included in which category, but imperfect information, asymmetrical information and regulatory issues were categorised as fundamental reasons. A range of other reasons includes among others fixed search, control and monitoring costs, and high risks combined with too low returns were classified in the observable category.

RQ3.2 was difficult to conclude on due to low levels of accessible existing research. There was one prominent report (Grünfeld et al., 2011a) that did evaluate the Norwegian market for early phase risk capital, but unfortunately, all other articles identified, which were primarily master theses, only referred to this article without conducting further research. There were found a number of other articles that looked relevant but were not accessible through NHH. Nevertheless, the limited existing research did show large alignments with the international particularly regarding the fundamental reasons. Table 1 summarised the claims made by three different articles on the underlying causes of market failures. There were large overlaps between the Norwegian report and the international research. There was, however, a claim that market failures in the access to funding for Norwegian were partly caused by recessions and flight to safety, but this was believed to stem from the period the report was published.

In attempting answering RQ3.3, this paper did contribute to new findings through uncovering potential reasons that were previously not found in the existing literature and to confirm that some reasons proposed in the existing literature were, in fact, present in Norway. There were presented both evidence that increasingly larger funds lead to larger investments. This was

also confirmed by statistics from the Norwegian Venture Capital & Private Equity Association (NVCA, 2015). Unfavourable regulations resulting in disproportionately high costs of creating small funds resulted in larger funds and thereby larger investments. In addition, investors argued they were interested in investing only after the risk had been somewhat reduced, but this could often be after the entrepreneur needs the investment, thereby creating a gap.

There were, however, as mentioned, also found potential reasons for equity gaps that were not identified in the existing literature. The first was an early dilution of entrepreneurs. If the companies that entrepreneurs that were seeking funding, had already sold large parts of their ownership to another earlier investor, this was regarded as a “deal-breaker” for the investors. This was true even if the company itself could be a promising investment case, causing an equity gap. The second reason was the theory of dynamic equity gaps, where the gaps are created by changing profitability for investors in different phases of a start-up, and a time-lag due to both reduced exit possibilities and the time-consuming process of raising a new venture capital fund.

The investors did not mention all the reasons found in the literature review, and here a weakness in this paper can be found. The investors should have been asked about the other potential explanations for the equity gap after they had first expressed their beliefs. This way it would have been possible to determine if the investors agree or disagree with all the findings from the literature review

Overall, this section gave several potential answers to RQ3. However, due to this paper’s exploratory design, it is up to future research to determine the causality and importance of the different reasons proposed. However, there is a significant contribution to the existing research having proposed new reasons for the equity gap in the Norwegian market for risk capital. Unfortunately, an identification of the equity gap and the reasons behind do not help companies struggling to raise capital. For this paper to have a noteworthy impact on the issue of equity gaps in the Norwegian market it needs to evaluate and propose a potential solution to the problem. This will be the topic of section seven, where the potential of equity crowdfunding to reduce or remove the problem will be assessed.

## 7. How can equity crowdfunding affect the equity gap?

### 7.1 Introduction

This thesis has so far defined the equity gap, identified a high likelihood of the existence of a gap in the Norwegian market for risk capital, and identified possible reasons for why it arises. However, although this knowledge is a contribution to the existing knowledge, a complete evaluation includes potential solutions for closing or reducing the equity gap. From the previous sections, it seems to be at least a perceived equity gap in Norway, meaning that both the private investors and government programs are not adequately fulfilling their role in backing potentially profitable companies in their early development stages. This may lead to difficulties for new and fast growing businesses to implement their ideas and become active and successful companies.

Equity crowdfunding is a relatively new source of financing that can be a suitable source of funds for many start-ups. It has also received an increasing academic and public attention. Therefore, the aim of this section is to evaluate whether and how equity crowdfunding can reduce the equity gap. To increase the precisiveness of the paper, the main research question will have three sub-questions.

***RQ4:** How can equity crowdfunding reduce or close the equity gap in the Norwegian market for risk capital?*

***RQ4.1:** How does international research claim that equity crowdfunding can help close or reduce the equity gap?*

***RQ4.2:** What are Norwegian early-phase investors' perceptions and beliefs regarding equity crowdfunding?*

***RQ4.3:** Does equity crowdfunding currently serve companies facing the equity gap identified by investors?*

In an attempt to answer these research questions in the best way possible, a somewhat different approach will be used than in the rest of the thesis. First, the crowdfunding concept including equity crowdfunding will be explained. Second, the situation concerning equity crowdfunding

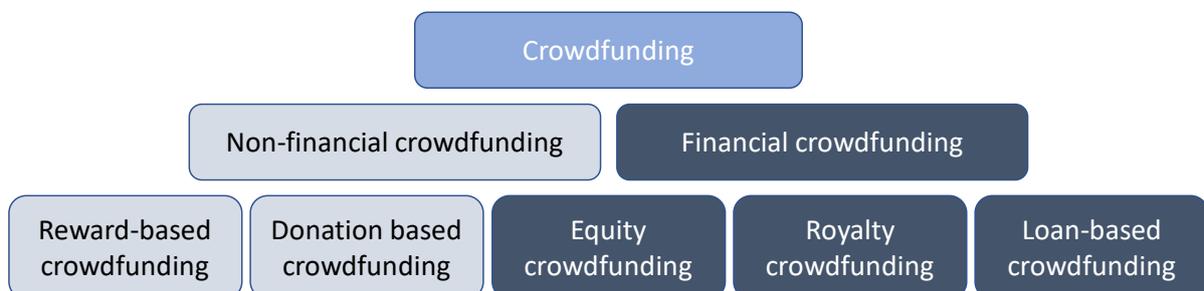
in Norway will be described. Third, a literature review will be conducted, and finally, the analysis of findings from the interview with investors will be performed. However, the analysis will in addition to the interviews also use secondary sources. This will be web scraped information from some of the crowdfunding platforms used in Norway.

## 7.2 The crowdfunding concept

Crowdfunding, as an emerging source of capital, differs from traditional venture capital investments in a number of aspects (Ley and Weaven, 2011). Mollick (2014, p.1) describes crowdfunding as "a novel method for funding a variety of new ventures, allowing individual founders of for-profit, cultural, or social projects to request funding from many individuals, often in return for future products or equity".

Crowdfunding is most commonly conducted by entrepreneurs signing up on a web platform to promote a product, idea, or service to web platform's users, with the purpose of getting them to support the project with financial capital. A network platform serves as a link in the financial market between the demand side, represented by the entrepreneurs, and the supply side represented by investors - also known as "the crowd". Unlike other forms of funding, crowdfunding campaigns are often associated with a social value - such as market validation of product, contact network or media attention (Mollick, 2014).

There are primarily five different methods for crowdfunding that are divided into two main groups; Non-financial crowdfunding and financial crowdfunding (Mollick, 2014). What distinguishes the groups is what the investor receives in return for his financial contribution. The five main crowdfunding types and their categorisation is illustrated in figure 7 below.



*Figure 7 The different types of crowdfunding. Based on Mollick (2014)*

Within non-financial crowdfunding, we find the methods donation-based and reward-based crowdfunding. In the second main group, financial crowdfunding, the methods include loan-

based, royalty-based and equity crowdfunding. The two most common and well-known methods are reward-based and equity crowdfunding. Reward-based crowdfunding means that the investor will receive a reward that often depends on the amount of the contribution. In many cases, it is a sample of the new product that is being produced. Thus, this is a form of pre-sale. Reward-based crowdfunding is often used by contractors who wish to launch a new product targeting the consumer market (Massolution, 2015).

Ahlers et al. (2015, p. 1) define equity crowdfunding as "... a form of financing in which entrepreneurs make an open call to sell a specified amount of equity or bond-like shares in a company on the Internet, hoping to attract a large group of investors". In other words, investors receive ownership interests, i.e. they become shareholders, as compensation for the capital they contribute to the enterprise through the crowdfunding platform. Hence, equity crowdfunding is an alternative source of the traditional form of equity capital (Borello et al., 2015). Deffains-Crapsky and Sudolska (2014) and Wilson and Testoni (2014) argue that it is a suitable alternative funding source for smaller businesses in the seed as well as start-up stage.

There are several large equity crowdfunding platforms internationally, but it is challenging to rank them by size. Some measure their size in the number of companies funded, while others measure the total financial capital that is raised. Their way of operating also differ in several aspects. Some companies such as AngelList will not let investors invest directly in a company, but syndicates them to avoid regulations, but also the minimise the problems with the cap table (AngelList, 2017). Other platforms let you get a direct ownership in the companies. One of this category of platforms is Invesdor. A finish company that in 2016 became the first licensed equity crowdfunding platform in Norway. They have raised \$40m and completed 82 successful rounds (Invesdor, 2017).

### 7.3 Crowdfunding in Norway

In Norway, there has been a strong growth in the use of the term Crowdfunding and the Norwegian translation "folkefinansiering", illustrated in the figure below. From 2011, the annual growth in the use of these terms in media has been 90%. Equity crowdfunding is still almost not mentioned.

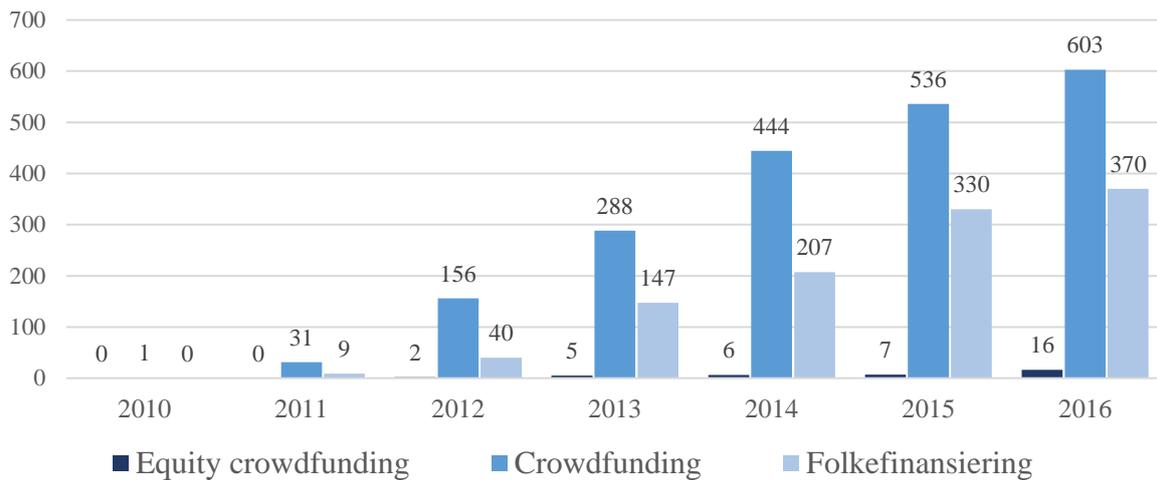


Figure 8: Mentions of crowdfunding in Norwegian media<sup>5</sup>

The literature on the Norwegian market for equity crowdfunding is limited, but according to a master thesis (Langgård and Mostad, 2015), it is mainly the equity crowdfunding platforms Fundedbyme and Newjelly that have attracted the attention of Norwegian entrepreneurs. These companies avoided the license requirement by not offering binding offers or acceptance of offers through their website another master thesis argued (Hermansen, 2014). There is now, however, at least one company that now have this license; the finish platform Invesdor (Invesdor, 2017). This company have so far either completed or are currently managing an equity crowdfunding campaigns for six Norwegian companies (Invesdor, 2017).

## 7.4 Literature review

The literature review was conducted by using the keywords “equity gap”, “funding gap” and “crowdfunding” in the major literature databases accessible through the Norwegian School of Economics network. Although the primary interest was equity crowdfunding, this was not specified in the literature search due to several mechanisms being general for all types of crowdfunding. However, only four relevant articles were identified through this method. The literature review was therefore broadened by eliminating the direct association with the equity gap, and rather focus on mechanisms that might be relevant for discussing equity crowdfunding’s ability to close the equity gap. By using “Equity crowdfunding” as the only keyword on Scopus, 83 articles were found, and roughly 33 were regarded to be relevant for

<sup>5</sup> Data from Atekst, a digital solution for searching through all Norwegian media, both print and online.

this paper. However, the literature search was expanded by further examining relevant sources in the articles identified by the broad literature search.

The following sub-sections will review the main findings from the literature search. First literature regarding the reduction of geographical constraints will be reviewed, then incentives and disincentives for both entrepreneurs and investors will be described, and finally an evaluation of possible characteristics of equity crowdfunding that could lead to some types of market failure, which is a potential disadvantage with equity crowdfunding.

#### **7.4.1 Reduction of geographical constraints**

Equity crowdfunding is perceived to reduce the geographical constraints of VC investing that has frequently been noted in the literature, by for example Cumming and Dai (2010) and Kolympiris et al. (2015) whom both found that the likelihood of investing in a venture decrease with geographic distance. Harrison et al. (2010) confirmed that this also is an issue for business angels: “This is generally explained by the personal and localised networks used to identify potential investments, the hands-on involvement of the investor and the desire to minimise risk”.

In crowdfunding, however, equal or close to zero cost access to portals should facilitate exposure, increase familiarity, and improve access to information about entrepreneurial projects for investors thereby also reduce “home bias” (Guenter et al., 2017). In an early study, Agrawal et al. (2011, p. 19) found that “... investment patterns over time are independent of geographic distance between entrepreneur and investor” and “...our result suggests that online mechanisms can reduce economic frictions associated with investing in early-stage projects over long distances”.

#### **7.4.2 Incentives for entrepreneurs**

Agrawal et al. (2014) argue that entrepreneurs may choose to raise capital through crowdfunding rather than a traditional channel due to two primary incentives: 1) a lower cost of capital and 2) access to more information.

There are several reasons for why a company can achieve a lower cost of capital through a crowdfunding campaign than through regular sources of financial capital such as FFF, business angels and VC. First, a crowdfunding campaign may attract far more investors than other forms of capital and could, therefore, lead to better matches between investor and

entrepreneur, consequently increasing the willingness to pay (Agrawal et al., 2014). The increased number of investors comes from the removal of geographical barriers, and that the low individual investment allows far more people to invest. Second, some equity crowdfunding platforms allow bundling between financial equity and rewards typically found in reward-based crowdfunding. In the case of the Scottish brewery Brewdog which have conducted several rounds of equity crowdfunding (Crunchbase, 2017), an investment yields several other benefits beyond the financial return. Among others, a share in the company will give the investor a free beer every birthday, discounts both online and in bars, and invitations to beer tastings and other events (Brewdog, 2015). Third, Agrawal et al. (2014) argued that information accessed through a crowdfunding campaign could lower the cost of capital because a significant interest in the campaign could act as proof that there is a market for the company thereby reducing some of the risk associated with the investment. This could, however, also go the other way because a lack of interest could increase the cost of capital. Agrawal et al. (2011) find that the funding is highly skewed, leading a majority of campaigns not to raise any money, while a few raise a lot. They also found evidence of herding in campaigns that had already proved successful.

Access to information is also a strong incentive for entrepreneurs to consider equity crowdfunding. Several authors have argued that VC-investors and business angels add significant non-financial value through their expertise, experience, and network (Drover et al., 2017; Harding and Cowling, 2006; Kanninen and Keuschnigg, 2003), but both successful and unsuccessful equity crowdfunding campaigns will yield a strong signal of whether the product or service the company offers is in demand. This is an especially strong signal for companies that are not yet established. This information is difficult to achieve through market research and could prove valuable for later funding rounds.

### **7.4.3 Incentives for investors**

It is not only the entrepreneurs that have incentives to use equity crowdfunding as a marketplace for financial capital. Both professional and amateur investors could reap benefits of equity crowdfunding. However, the advantages appear strongest for small and non-professional investors due to the lower individual investments and better access to information

Generally, it is difficult for most people to invest in start-ups due to high minimum investments, high risks and a fairly closed and secretive market for investment opportunities.

By using equity crowdfunding platforms, these people can invest a much smaller amount, thereby allowing a diversification of their start-up investments. Several platforms also operate with pre-qualification before the companies are allowed to present their offer at the platforms (SeedInvest, 2017a). This could reduce the risk for inexperienced investors. One of the aims for crowdfunding platforms is to access an as large number of potential investors to increase the chance of a successful funding round. This gives everyone an opportunity to invest in companies at a stage where it is usually challenging to invest in companies. Most companies first allow such investors after they enter a stock exchange through an IPO.

Another advantage for investors is connected to the most used source of financial capital for start-ups, FFF-investors. Steier (2003, p. 606) describes the FFF-investors as "...as a series of agency contracts lying on a continuum between "familial altruism" and "formal venture capitalist" rationalities". Noble (2001) argues that in general, FFF has no grounded perception of liquidity and return. This could represent a problem because most entrepreneurs do not write contracts, particularly at early stages of a new venture (Kotha and George, 2012). Equity Crowdfunding could minimalize this problem with the formalisation of contracts through the platform.

#### **7.4.4 Disincentives for entrepreneurs**

There are also several drawbacks for entrepreneurs in using equity crowdfunding. Agrawal et al. (2014) argue that the greatest of these is the disclosure requirement inherent in equity crowdfunding. For the "crowd" to consider to invest in an idea, they need to be able to evaluate it. This is one of the advantages of the investors, but a drawback of the entrepreneur. Other forms of start-up funding such as BA and VC will often allow the entrepreneur to keep their innovations a secret to the public through the use of non disclosure agreements (NDAs). Agrawal et al. (2014) argue that the problem is perceived to be largest for companies with a long period between the funding round and product launch.

As mentioned several times through this thesis another major challenge for entrepreneurs is the ability to access "smart"-capital and their non-financial resources. Agrawal et al. (2014) claim that non-professional crowdfunders are less likely to bring these benefits. Furthermore, in the case of equity crowdfunding, entrepreneurs may find it difficult to raise follow-on

financing with an “unorthodox cap table” that includes a large number of dispersed small investors (Agrawal et al., 2014).

#### 7.4.5 Market Failure

In this paper, equity gaps are defined as market failures, and in sections six, it was concluded that these market failures could take different forms and have different underlying causes. For an equity crowdfunding to be a suitable solution that can close or reduce the equity gap it needs to address these causes. The primary causes identified in the Norwegian market was imperfect information, and especially the situation of asymmetrical information. In all forms of investing there will be some uncertainty related to the return of investment. The online form of equity crowdfunding might make it more challenging for an investor to assess the actual ability of the entrepreneur or the underlying quality of the project or venture (Agrawal et al., 2014). Ibrahim (2015) argues the equity crowdfunding can become a market of lemons if the companies are not able to signal quality in an efficient way. This would imply that only the companies that cannot attract BA or VC-funding will attempt equity crowdfunding. Agrawal et al. (2016) find that investors are less willing to invest when they find it hard to assess the quality of an equity crowdfunding campaign. However, Moritz et al. (2015) find that increased focus on investor communication could help reduce the information asymmetry between the entrepreneur and the investor. Signalling in equity crowdfunding has become an area with a relatively high amount of conducted research (Ahlers et al., 2015; Vismara, 2016). The information asymmetry between the investor and the entrepreneur in relation to the problems of signalling quality can put investors at risk of being lured into a fraud (Agrawal et al., 2014). Baucus and Mitteness (2016) argues that it is easy for dishonest entrepreneurs to create ponzi ventures.

Regulatory failures were by van der Schans (2015) claimed to be a cause for market failure for SMEs. A Norwegian master thesis concluded that as the regulations concerning equity crowdfunding in Norway stands today, they contribute to equity crowdfunding not being able to utilise its potential as an alternative source of finance (Hermansen, 2014, p. 50 (Translated from Norwegian)). Several countries as the UK and the US have implemented rules that make it easier for equity crowdfunding platforms to operate without the same licensing requirements needed for other actors that facilitate the buying and selling of ownership in companies. This has not yet happened in Norway, but there has been an increase in the use of this possibility of raising capital anyway.

#### 7.4.6 Conclusion to the literature review

The goal of this literature review was to both uncover what we know and do we not know from the existing academic literature on how equity crowdfunding can reduce or close the equity gap. From the literature review, an understanding of potential benefits and disadvantages of equity crowdfunding were created. There are however still questions that remain unanswered. First of all, the literature review did not answer whether or not equity crowdfunding is suitable for closing or reducing the equity gap. This can be done through both interviews with investors, but also analysis of secondary data concerning the existing equity crowdfunding activity in Norway.

### 7.5 Analysis

The opinion among the investors was mixed concerning equity crowdfunding. Some were strongly negative and other strongly positive. As this is an exploratory study, the focus in the interviews was not to confirm or reject a hypothesis, but rather increase knowledge on how investors perceive equity crowdfunding. The thematic analysis resulted in three main themes: early dilution of ownership, a lack of competence and knowledge of the crowdfunding investors, and increased access to financial capital and competition.

The views were quite polarised on equity crowdfunding. One investor said:

*“I'm familiar with it, and we are very sceptical about it. That's natural because one can argue that it's a competitor to us, but it's not about that.”*

Another investor, however, held the opposite perspective:

*“I am very familiar with it, and consider it as unconditionally positive. It is in our joint interest to have several different alternatives for raising capital in the early stages.”*

When trying to understand why these perspectives were held the first issue that was uncovered was the number of owners and the size of their ownership. Crowdfunding in its nature is based on a shared ownership among a large number of people. This can make the process of raising more money from VC-firms difficult. In the venture capital industry, the term “cap-table” is a

term used for describing the ownership in a company<sup>6</sup>. This is one of the factors that are used to decide whether to invest in a company. One investor claimed that equity crowdfunding was a big problem if the company were to seek venture capital at a later stage:

*“You have a cap-table and valuation that is unacceptable. You have in essence said no thanks to bringing in an investor at a later stage.”*

This was mainly explained by coordination issues with the other owners of the company:

*“Having to relate to a large shareholder base is almost impossible in relation to all the things you have to seek shareholder support for along the way. Particularly in an exit process, it is very clumsy. There are mechanisms where you can organise this, but it's still not an investor that adds value.”*

This is in line with the finding in the literature (Agrawal et al., 2014). The question remains, however, whether the existing solutions minimising the problem are adequate. The above investor states that it is still an issue, and combined with other factors equity crowdfunding is a problem if a company want to raise money from a VC-firm later. One could, however, argue that the phenomenon of equity crowdfunding is so rare in Norway that the investors do not have the experience to evaluate this form of financing. At the same time, all investors used in this part of the survey indicated a thorough understanding of the concept.

Another, element found in the interviews that strongly relates to the earlier findings in this article is the importance of non-financial contributions of the investors. Equity crowdfunding was perceived to be a promising source of financial capital, but a problem because the funders in such campaign would not add non-financial resources. There was also concerns about the competence of the investors regarding their ability to evaluate the risk involved in investing in start-ups:

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<sup>6</sup> Short for capitalization table. A table that shows ownerships stakes in a company. This can include equity shares, preferred shares, options and the prices the shareholders have paid for these securities(Investopedia, 2012).

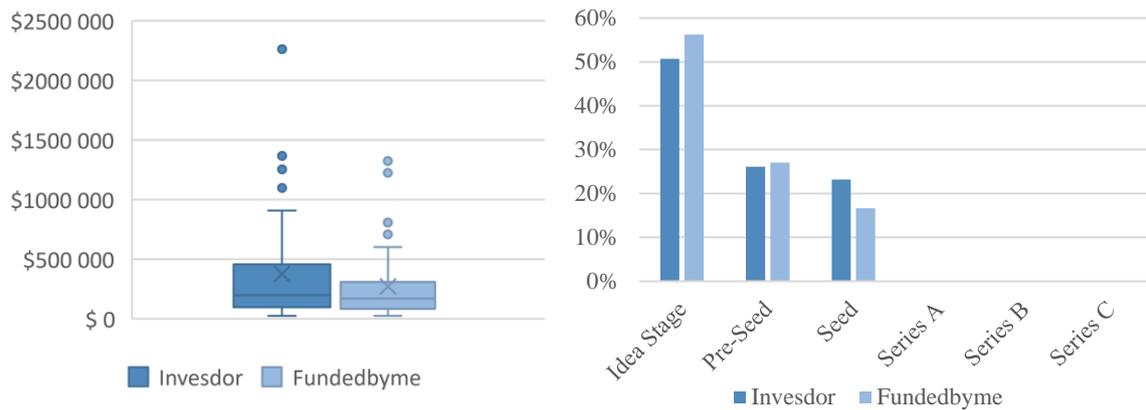
*“I’m skeptical about it too because it’s not competent investors who really know what they are doing. People invest more by the heart and an illusion where they do not see the real risk.”*

### 7.5.1 Data from secondary sources

The investors interviewed did not represent the most common user group of equity crowdfunding, and for a better understanding of whether equity crowdfunding has the potential to close the equity gap, a use of secondary sources is appropriate. Different sources of finance are used by companies to raise different amounts at different stages. If equity crowdfunding is going to close or reduce the identified equity gap, it has to be an appropriate mechanism for raising the amount that equals the size of the equity gap identified in section 5. According to a recent master thesis, Newjelly and Fundedbyme are the most used equity crowdfunding platforms in Norway, with Invesdor as a new player in the market at the date of publishing (Langgård and Mostad, 2015). Newjelly is now no longer in operation, but Invesdor and Fundedbyme are still active. By using web scraping<sup>7</sup> on Invesdor and Fundedbyme’s website, data were collected. The web scraping of Invesdor resulted in 75 investment offers that had closed. Five of these were excluded because they did not meet their minimum required investment. The remaining sample included among other five Norwegian companies. Web scraping Fundedbyme’s platform resulted in 48 companies with successful funding rounds. This sample also included five Norwegian companies. The number of Norwegian companies was evaluated to be a too low sample to draw reliable conclusions, and the entire sample available on the platforms were therefore used.

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<sup>7</sup> “The extraction and copying of data from a website into a structured format using a computer program” (Dictionary.com, 2017)



*Figure 9 Size of invested amount per deal on Invesdor and Fundedbyme*

The data collected from web scraping is illustrated in figure 9 where the illustration the left is a box and whisker plot showing, mean, median and quartile investments. The histogram to the right shows the percentage of the different investments in the different investment phases. The numbers show a clear similarity between the two crowdfunding platforms, but with lower investments done through Fundedbyme than Invesdor. Invesdor had an average investment of \$374,907 while Funded by me had an average investment of \$272,152. The difference in median investments is far lower with \$199,278.49 for Invesdor and \$168,482.38 for Fundedbyme. Although the sample of only Norwegian companies was deemed too small for reliable results, they were fairly similar to the overall findings at with an average at Invesdor of \$271,423 and \$105,170 at Fundedbyme.

From part 5 of this thesis, it was concluded that based on the interviews with investors was an equity gap in Norway, but there were disagreements of the exact location in the different investment phases. Nevertheless, the histogram in figure 9 shows a clear tendency of equity crowdfunding primarily being used to raise small amounts in the idea, pre-seed and seed phase. The ide-stage represent investments between \$0 and \$200,000. As seen in the histogram, around 75 percent of the investments were done in the idea and pre-seed phase. A phase that only one investor believed to be the location of the equity gap. There are however significant variations in the investments, shown in the box-whisker plot. This could indicate that there is a possibility for companies in later phases to seek funding through equity crowdfunding as well. It could however also be a result of what Agrawal et al. (2011) described as herding of successful campaigns.

As equity crowdfunding becomes more used by both investors and entrepreneurs, there could be a shift or expansion towards larger investments as well. It was difficult to access data from most international equity crowdfunding platforms, but the US based equity crowdfunding platform SeedInvest reports that their average investment per company is \$500,000 (SeedInvest, 2017b). This is slightly higher than Invesdor and Fundedbyme, but still only in the pre-seed stage. One reason why this number is not higher could be that in the US, there is now a \$1 million limitation to how much a company can raise through equity crowdfunding platforms in 12 months. However, there are discussions that this limit should be increased to \$5 million. (U.S. Security and Exchange Commission, 2015)

## 7.6 Conclusion

The goal of this section of the thesis was to understand and explore reasons for how equity crowdfunding can reduce or close the equity gap in the Norwegian market for risk capital.

***RQ4:** How can equity crowdfunding reduce or close the equity gap in the Norwegian market for risk capital?*

***RQ4.1:** How does international research claim that equity crowdfunding can close or reduce the equity gap?*

***RQ4.2:** What are Norwegian early-phase investors' perceptions and beliefs regarding equity crowdfunding?*

***RQ4.3:** Does equity crowdfunding currently serve companies facing the equity gap identified by investors?*

The literature review related to RQ4.1 resulted in several articles related to crowdfunding, some related to equity crowdfunding and very few related to equity crowdfunding's ability to close or reduce the equity gap. The focus was therefore on presenting findings from articles that could affect the reasons behind equity gaps, as presented in part 6 of this paper. This showed that although there are several promising advantages for both investors and entrepreneurs using equity crowdfunding, there are as well some disadvantages. The advantages also seemed to be larger for inexperienced investors than professional investors due to better access to both investment opportunities and information, and more standardised contracts.

Equity crowdfunding is a new topic of research and a new investment/financing form in Norway. The investors interviewed did not represent the most common user group of this kind of fundraising, but their experiences and opinions are to a large extent aligned with the findings presented in the literature review. However, there was a minority of the investors that was critical of this method of financing start-ups, but there were not found a correlation between the phase the investors were located in, and their perceptions towards equity crowdfunding. In addition, there were concerns regarding equity crowdfunding creating cap tables with too many inexperienced owners, thereby making RQ4.2 difficult to conclude on.

By using data collected from web scraping, this article offered a novel perspective on whether equity crowdfunding is a suitable source for raising capital in the perceived equity gap. The findings showed that around 75% of the investments through these platforms were in the idea or pre-seed phase relating to RQ4.3. Although there were not reached a consensus by the investors on which investment phases where the equity gap was located in section five, the majority believed it to higher than pre-seed. It can, therefore, be argued that at the current moment equity crowdfunding is not suitable to close or reduce the equity gap in the Norwegian market for risk capital.

The overall conclusion to whether equity crowdfunding can close or reduce the equity gap in Norway depends therefore on the definition used for an equity gap. If the equity gap is defined as a market failure where a company is unable to access both financial and non-financial resources from external investors due to a market's inability to match risk with expected returns, crowdfunding's ability to close the equity gap could be assessed on how it deals with market failure and how it supplies both financial and non-financial resources. Indirectly, it could, however, have an effect through increasing the competition among the suppliers of capital i.e. the investors. This could, in turn, push some investors to other phases such as seed and series A in according to the perception of a dynamic equity gap. However, this effect would be difficult to measure, and the equity crowdfunding activity is still minimal in Norway. Equity crowdfunding could have a more direct effect if Norwegian start-ups perceived this form of financing suitable for later stages as well. The conclusion to research question 4 is therefore that although equity crowdfunding potentially could positively affect the equity gap, its activity and size today is far too limited to be a good solution.

## 8. Conclusion

This thesis' objective was to conduct an exploratory study of a phenomenon that is not well researched in Norway. It deals with several different aspects of the "equity gap" from the definition to a potential solution to the problem. An unorthodox structure was chosen for this thesis in order to present the arguments and findings in a way that the reader would find easy to understand. This was necessary due to several findings and arguments being dependent on each other. This way of using these components as building blocks allows for a more thorough understanding and answer to the research questions proposed.

The findings from the interviews and secondary sources confirm several of the findings international researchers have presented through the years. Although the interviewees showed several conflicting opinions, the findings from the interviews along with the literature indicate that there exists an equity gap in the Norwegian market for risk capital. The investors also seem to partly agree on the reasons for why this gap arises, but at the same time they are not agreeing on in which development-phase companies are experiencing the gap. The main reasons seem to be an unacceptable high risk, regulatory issues and a tendency of larger funds leading investing in later phases. There is also presented a theory of dynamic equity gaps that arise due to different and changing profitability, and time-lag in the different investment phases.

The final objective of this thesis was to evaluate equity crowdfunding's potential to close or reduce the equity gap. The investors disagreed on its usefulness, but international research has found several benefits and disadvantages with equity crowdfunding as a source of capital. It can supply entrepreneurs with financial capital that either would not be accessible or at a lower price than the alternative and can also give both entrepreneurs and investors information about the market potential that would have been difficult to accumulate in other ways. The major downsides are a need to disclose information, and that based on the secondary data gathered it seems equity crowdfunding is at the current stage not addressing the equity gap identified. As a conclusion equity crowdfunding was evaluated to not be a good solution for the equity gap at this moment.

This being a master thesis, it is limited due to both available time as well as funding. With more resources and time available a more thorough analysis could have been conducted,

highlighting the problem not only from the investors perspective, but the entrepreneurs and the government as well.

This thesis adds knowledge to the existing research by its meticulously way of addressing a problem all the way from its definition to a potential solution. This has not been done before on the topic of equity gaps in relation to equity crowdfunding. The exploratory design of this thesis is however only enough to suggest and propose, and not conclude definitively on the results. There is, therefore, a large amount of potential future research that should be conducted. First of all, there need to be a created a common understanding of how one could or should measure the equity gap. Locating it as which investment size it perceived to be located in is fairly straight forward, but only give policy makers a direction of their policies and not the strength that should be applied. Second, this thesis has based itself on interviews with six investors that, although knowledgeable, represent only a small part of the start-up ecosystem. The thesis should be replicated by using the demand side i.e. the entrepreneurs as a source of information. Third, several investors pointed to uncertainty regarding the international flow of investment in early phase companies. Could international financial capital and competence be a solution to the perceived equity gap in Norway?

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## 10. Appendixes

### 10.1 Appendix 1: Interview Guide

#### 10.1.1 Introductory information

*Theme:*

The theme of the interview will be the financing of start-ups, and potential problems young companies face when obtaining financial capital.

*Background:*

Researchers argue that many start-ups face challenges in obtaining the necessary financial capital for developing and growing their ventures. They have identified so-called “equity gaps” in new ventures’ development path. Although there is no single agreed upon definition, this gap is regarded as a difficulty in obtaining financial capital that only affects young ventures.

Where in the lifecycle such an equity gap appears, and the sheer size of this gap has been difficult to estimate. Researchers even suggest that there exist multiple gaps spread out in different stages of the early life cycle of new ventures.

Equity gaps are problematic for several reasons. First, these gaps lead to underinvestment in innovation and entrepreneurship thereby directly influencing innovation start-up activities. Perhaps most damaging is that the equity gaps are particularly affecting fast-growing and technology-driven companies.

However, there has been suggested several potential solutions for closing this gap. Increased governmental support for business angels has been suggested implemented in other countries. Others have proposed that the relatively new funding source, equity crowdfunding, might be a solution to this problem.

*Purpose:*

Through in-depth interviews with various players in the risk capital industry, I hope first to uncover whether there exists an equity gap in the Norwegian market for investments in start-ups. With the help of interviews, I will also try to estimate the size and location of the potential gaps.

Thereby I hope to understand what kind of equity gap companies might experience. Researchers have identified several distinct types, and the definitions differ. I am therefore hopeful that the paper will be able to provide a description of the potential gap in Norway. There is also particularly interesting to understand what kind of companies that are affected and to what degree they are affected by a potential gap.

The third purpose of this study is to suggest a solution that may contribute to closing or reduce the gap. This part will focus on the ability of equity crowdfunding to be part of such solution.

### *Anonymity and confidentiality:*

The interview process will be anonymized, and as the sole author of this paper, I will be the only person with access to the collected data. The study itself will be published as a master thesis through the Norwegian School of Economics (NHH) when completed.

### *The interview process:*

The interview is estimated to last between 30-60 minutes. For practical reasons, I will ask for consent to record the interview on tape to be able to transcribe the conversation. The recordings will be deleted after the transcription is complete. The interview can be conducted in either Norwegian or English based on the preference of the interviewee. If carried out in Norwegian, I will translate the certain quotes I would like to have in the paper to English.

## **Main Questions**

### **Existing investment activity:**

1. Could you give me a brief overview of the company/your history and experience with investing in general?
2. What kind of companies/start-ups/industries do you or your company invest in?

### **Value creation:**

3. Does your investment in a company create value for the companies you invest in?
  - How?
  - Is there a difference depending on what phase the companies are in?
4. In your opinion, do entrepreneurs value or acknowledge your non-financial contribution?
  - Is there a difference in the different phases?
5. How does your ability to create value affect your decision whether to invest in a company?

6. Entrepreneurs face a choice between retaining ownership and control and giving up part of the ownership in exchange for external financial capital.
  - Can you describe how you deal with this dilemma?
  - Do you feel this tension in some of the companies in your portfolio?
  - Are there certain phases or situations where the conflicts or negotiations between entrepreneurs and investors are more difficult than others?

### **Equity gap and the Norwegian market**

7. Are you familiar with the term equity gap and is this a term you have encountered as an investor?
8. Based on your experience, do you believe that there are certain phases where new or young companies experience particular difficulties of attracting financial capital?
9. Why, in your opinion, might such gaps might arise?
10. If you were to estimate the size of such gap(s), what would your best estimate be?
11. Are there any companies that you believe struggle more than others in attracting financial capital?
  - Low vs. high-tech companies?
  - Low growth vs. high growth?
  - Others?

### **Potential investment activity**

12. Why do you not invest in companies that are earlier in the development phase?
  - What would be needed if you were to consider doing this?
13. Why do you not invest in companies that are later in the development phase?
  - What would be needed if you were to consider doing this?

### **Crowdfunding**

14. Are you familiar with crowdfunding and in particular equity crowdfunding?
15. If equity crowdfunding would increase its use in Norway, would that affect you or your company?
  - a. How would you react?
  - b. Would this be a threat to your profitability or would it be an opportunity to assess the market in a better way than before?
  - c. Could you be interested in using this either before or afterwards of your investment
    - i. As a screener
    - ii. Alternatively, access to growth capital?
16. Why should entrepreneurs seek to fund from you and not from equity crowdfunding?
17. Do you believe that this might influence potential equity gap(s)?

### **Concluding remarks**

18. What question would you like to have asked yourself that I have not asked you yet?
19. Are there other people you think I should contact that would provide me with valuable insights?