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Close-ups from afar:
the nature of the informal venture capital market in a spatial context

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Lund, August 2008

Sofia Avdeitchikova

Table of Contents

1. Introduction 1
   1.1 Entrepreneurship, employment and regional development 3
   1.2 Financing of young entrepreneurial ventures 5
      1.2.1 Institutional venture capital 8
      1.2.2 Informal venture capital 9
   1.3 The nature of informal venture capital in a spatial context – issues and problems 11
      1.3.1 The heterogeneity of the informal venture capital market 12
      1.3.2 The scope of the informal venture capital market 13
      1.3.3 The geographical aspects of the informal investing activity 15
   1.4 Overall purpose and summary of contributions 17
   1.5 Methodology 19
      1.5.1 Approach to knowledge creation 19
      1.5.2 The research process 22
      1.5.3 The first phase of data collection 26
      1.5.4 The second phase of data collection 30
      1.5.5 Reflections on methodological choices 32
   1.6 The general outline of the dissertation 35
   References 36

2. Literature review and theoretical framework 43
   2.1 State of the art in the informal venture capital research field 43
      2.1.1 The development of the research area 44
      2.1.2 Understanding the heterogeneity of the informal venture capital market 46
      2.1.3 Estimating the size of the informal venture capital market 49
      2.1.4 Examining the geographical perspectives 52
      2.1.5 Summary 54
   2.2 Development of theoretical framework 57
      2.2.1 The distribution of the informal venture capital investment activity 57
      2.2.2 The role of proximity in informal venture capital investing 62
   References 67

3. What do we mean when we talk about Business Angels? – some reflections on definitions and sampling 73
   Abstract 73
   3.1 Introduction 74
   3.2 Definition considerations 79
      3.2.1 Institutional venture capital investors and business angels 79
      3.2.2 Categories of informal investors 80
      3.2.3 Grey area 1: Requirements on the channelling of the investments 84

3.2.4 Grey area 2: Requirements on the level of investment activity and hands-on contribution 85
3.2.5 Grey area 3: Requirements on the ties between the investor and entrepreneur 87
3.3 Sampling considerations 89
3.3.1 Example 1 – random sample approach 95
3.3.2 Example 2 – multi sample approach 99
3.4 Conclusions 103
3.4.1 Definition considerations 104
3.4.2 Sampling considerations 106
End note 107
References 107

4. On the structure of the informal venture capital market in Sweden: developing investment roles 111
Abstract 111
4.1 Introduction 112
4.2 The definition of informal venture capital investor 115
4.3 Literature review 117
4.3.1 The scope of informal venture capital market 117
4.3.2 Explaining the extent of informal venture capital activity in different contexts 120
4.3.3 Typologies of informal investors 121
4.3.4 Development of categorizational schema 123
4.4 Development of propositions 125
4.4.1 The availability of resources 127
4.4.2 The willingness to contribute resources 128
4.4.3 Resource requirements of the firm 130
4.4.4 Choice of keeping and changing investment roles 132
4.5 Methodology 133
4.5.1 Data collection 133
4.5.2 Non-response analysis 134
4.5.3 Variables used in the study 136
4.6 Empirical results 137
4.6.1 Overview 137
4.6.2 The size of the informal venture capital market in Sweden 139
4.6.3 The categorization of informal investment roles 140
4.7 Discussion and implications 147
4.7.1 Policy implications 150
Acknowledgements 151
Notes 152
References 152
Appendix 1. Variables used in the analysis 157
Appendix 2. Extrapolation of empirical results 159

5. False expectations: Reconsidering the role of informal venture capital in closing the regional equity gap 161
Abstract 161
5.1 Introduction 162
5.2 Definition of informal venture capital investors 167
5.3 Frame of reference 169
5.3.1 The distribution of the institutional venture capital activity 169
5.3.2 The nature of informal venture capital market 171
5.3.3 Development of propositions 173
5.4 The Swedish context 176
5.4.1 Geographical characteristics and the SME sector 176
5.4.2 SME financing 177
5.5 Methodological issues 178
5.5.1 Data gathering 178
5.5.2 Regional division 180
5.5.3 The variables in the regression analysis 183
5.5.4 Choice of the regression method 183
5.5.5 Strengths and weaknesses of the study 184
5.6 Empirical results 185
5.6.1 The geographical distribution of informal venture capital investing 185
5.6.2 Regional economy and informal venture capital investing 188
5.7 Discussion and conclusions 193
5.7.1 The distribution of informal venture capital 194
5.7.2 The drivers of informal investment activity 194
5.7.3 The nature of cross-regional capital flows 196
5.7.4 Policy implications 198
Acknowledgements 198
References 199
Appendix 1. Calculation of the informal venture capital market size 204

6. The role of proximity in informal venture capital investing 205
Abstract 205
6.1 Introduction 205
6.2 Defining informal venture capital investors 209
6.3 Geographical proximity and informal venture capital investing 210
6.4 The multiple dimensions of proximity 213
6.5 The sources of the multiple dimensions of proximity 216
6.5.1 The development of cognitive proximity 217
6.5.2 The development of social proximity 218
6.5.3 The development of institutional proximity 220
6.6 A tentative model for the relationship between different proximity dimensions 221
6.7 Reflections and suggestions for further development 224

6.8 Summary and contributions 228
Acknowledgements 228
References 229

7. Proximity in informal venture capital investing – What does it mean? 235
Abstract 235
7.1 Introduction 236
7.2 Literature review 237
7.3 Theoretical framework 239
7.3.1 Cognitive proximity 242
7.3.2 Social proximity 244
7.3.3 Institutional proximity 246
7.4 Method 247
7.4.1 Data gathering 247
7.4.2 Measures 249
7.4.3 Strengths and weaknesses of the study 250
7.5 Results 251
7.5.1 Test of propositions 251
7.5.2 Qualitative cases of informal investors 253
7.6 Discussion and conclusion 261
Acknowledgements 263
References 263

8. Conclusions and discussion of the results 267
8.1 Summary of the main contributions of the dissertation 267
8.1.1 Broadening the scope of the informal venture capital concept and contributing to definitional clarity 267
8.1.2 Exploring the magnitude and the geographical characteristics of the informal venture capital market 270
8.1.3 Understanding the role of proximity in informal venture capital investing 272
8.2 Implications for the proximity literature 274
8.3 Policy implications 276
8.4 Suggestions for further research 279
References 282

Appendix 1. Questionnaire 285

1. Introduction

The year was 1983 when William Wetzel introduced us to what later came to be known as the single most important source of early stage financing for entrepreneurial ventures – the informal venture capital market. What previously was seen as a number of occasional cases of private individuals investing in young promising entrepreneurial companies, in fact showed to be a huge market, which in several countries many times exceeds all other financial sources available for entrepreneurial ventures in early stages of development (Mason and Harrison 1995, 2000a; Lumme et al., 1998; Sohl, 1999).

So why did informal venture capital become so important? The research in this area has shown that informal venture capital investors tend to invest in those stages of companies' development where firms find it particularly hard to attract external financing. The informal venture capital market constitutes fairly small investments in high risk ventures at early development stages (Gaston, 1989; Landström, 1993a; Mason and Harrison, 1995). Thus, informal investors supply finance to companies who have already run out of capital provided by the entrepreneurs and their families, but are not yet able to receive bank or institutional venture capital financing. Banks are generally reluctant to invest in young high risk ventures that cannot provide collateral (Lumme et al., 1998), while institutional venture capitalists prefer making larger investments to cover extensive transaction and administration costs (Mason and Harrison, 1995). Thereby, there is a shortage of financing from other sources for businesses at early development stages, the so-called financing gap, which informal venture capital investors help to cover with their investments.

The problems that small and new firms experience in seeking external financing were for the first time actualized in the MacMillan Report in the UK in 1931. This financial gap was attributed to the informational asymmetry problems between the firms and the potential financiers, as well as the relatively small size of the required fi-

nancing, which meant that small and young companies had problems in acquiring external capital. Concerns about the absence of appropriate finance, which hinders the birth and development of entrepreneurial small businesses, has been expressed in a number of subsequent reports in the UK (Bolton, 1971; Wilson, 1980; Williams, 1998; HM Treasury and Small Business Service, 2003), the USA (e.g. Sohl, 2003) and in several European countries (e.g. OECD, 1997; Vækstfonden, 2004).

The supply of financing for young entrepreneurial ventures is not only scarce – it is also geographically concentrated to a number of core areas, which means that young firms in the peripheral regions are in relatively short supply of financing opportunities (Thompson, 1989). This is what Mason and Harrison (1995) refer to as the regional equity gap. As access to finance is one of the fundamental conditions for firm growth and economic development (e.g. Harvey, 1982, 1989), the spatially concentrated supply of finance would, in turn, lead to uneven economic development and growth. In this context, the role played by the informal venture capital market becomes even more significant, as it has previously been noted that informal investing activity is expected to be geographically dispersed (Gaston, 1989; Mason and Harrison, 1995, 2002). In this case, the informal venture capital market would not only be an essential source of early stage financing in general but also play an important role in providing capital to economically disadvantaged regions.

The potential significance of informal venture capital for financing entrepreneurship, especially in economically less developed regions, implies that there is a need to increase our understanding of what characterizes the informal venture capital market, how the market operates, and how it can contribute to bridging the financing gap and the regional equity gap for young entrepreneurial ventures.

The rest of this chapter is structured as follows. First, the evidence about the role of entrepreneurship for employment and regional development is presented. Thereafter, the capital gap facing small entrepreneurial firms in early development stages is discussed. The research problems are then formulated, followed by the method-

ological discussion. The chapter ends with the description of the overall outline of the dissertation.

1.1 Entrepreneurship, employment and regional development

The Schumpeterian (1934) theory emphasizes the role of entrepreneurship and innovation for firm growth. According to this theory, new and small firms are expected to grow faster than older and larger ones. The basic reason for this is that they are more innovative and entrepreneurial. Today, there is a great number of studies supporting this view, demonstrating an increasingly crucial role of young entrepreneurial ventures in generating new jobs and economic growth (Johansson, 2004). Furthermore, this seems to be valid both in the USA and across several European countries (Acs and Audretsch, 1990; Eliasson, 1991; Storey, 1994; OECD, 1996; Acs et al., 1999). David Birch, one of the most prominent researchers within this area in the USA, in his seminal study *The Job Generating Process* (1979) concludes that in the late 1970s about 60% of all jobs in the USA were generated by young ventures with 20 or less employees, and about 50% of all jobs were created by independent small firms. In his later study, *Job Creation in America* (1987), Birch determines that young firms with less than 20 employees accounted for 88% of all net jobs created during the period 1981-1985. The studies that Birch conducted and especially the statistical methods he used were not uncontroversial, and many researchers were skeptical about the importance he attributed to small firms in the job creation process. However, a number of replication studies that followed (e.g. Gallagher et al., 1990; Daly et al., 1991) have largely confirmed that small firms indeed contributed considerably to new job creation, even though their importance in this role seemed to vary between countries and in different cycles of economy (Landström, 2005).

However, most of the firms are so-called life-style businesses without any significant growth potential, and usually no need for external financing (Landström, 2003; Small Business Service, 2005).

Birch characterized those businesses as "mice" as they learn to survive; they work hard to feed themselves, remain stable in size, are comfortable with their status and are given little recognition (Birch, 1987). Impact of such firms on the economic development can be explained by the large number of firms created, rather than their superior growth potential (Davidsson and Henrekson, 2002). Thus, only a small proportion of the young firms have the potential and the ability for exceptional growth. Birch (1987) identified a group of businesses that demonstrated consistent growth of at least 20% for each of five consecutive years. He labeled these companies "gazelles", reflecting their ability to grow in rapid leaps, upwards and outwards. David Storey (1994) studied the importance of small entrepreneurial firms in job creation and economic development of the UK and to a great extent arrived at the same conclusion as David Birch – it is a small percentage of firms that provides most of the jobs. According to his studies, half of the jobs created by new firms are created in just 4% of them. These are youthful, fast growing, risk-taking companies that are not necessarily high-technological. For example, according to Delmar et al. (2003), entrepreneurial ventures in low-technology industry such as retail and manufacturing, can be as important for employment creation as high-technology firms.

Davidsson and Henreksson (2002) in their study of the Swedish market have been skeptical about the idea of young entrepreneurial ventures having exceptional growth potential. They claim that the Swedish start-ups have only a moderate growth potential and that the number of jobs lost in the small business sector is almost equal to the number of jobs created. This, they argue, is partly a result of governmental policy favoring large companies and public sector and disfavoring new, small and fast-growing firms, but also a result of a lack of entrepreneurial culture in Sweden. However, just a couple of years later, Johansson (2004) found that in the IT sector, small entrepreneurial ventures indeed were the single most important source of job creation in the 1990s in Sweden. Furthermore, the Swedish newspaper "Dagens Industri", each year identifies several hundreds of companies with exceptional growth rates. For example, in 2003, there were almost one thousand young companies in Sweden that had at

least doubled their turnover in three subsequent years, at the same time maintaining a profitable status. The two most important conclusions that can be drawn from looking at the list of the fastest growing firms in Sweden is that they are geographically dispersed and that they can be found in all industry sectors. The most successful "gazelle" in Sweden in 2003 had grown by 2 255% under the period of three years, employed 26 people, was located outside metropolitan regions and was in a low-tech industry.

The development during the most recent years has shown that in Sweden, despite the dominance of large firms, and the relative lack of entrepreneurial culture, the small fast growing firms are becoming increasingly important for economic growth, employment and industrial and regional development. The conditions for young entrepreneurial firms in Sweden are improving significantly, due to, among other things, market deregulations and tax reforms, and this is expected to contribute to their better growth prospects (Davidsson and Henreksson, 2002).

1.2 Financing of young entrepreneurial ventures

Companies that are innovative, and have the potential to create jobs and economic growth are also those that need the most external capital (Landström, 2003). At the same time, these companies usually experience the most problems in obtaining external financing. In general, companies can obtain long-term external finance from a number of sources, the most significant of which are: *banks*, *public sector institutions, institutional venture capital investors* and *informal venture capital investors*. Banks have traditionally played an important role in providing finance to small- and medium-sized companies in Sweden. According to Landström and Winborg (1995) and Berggren et al. (2000), bank loans are the primary source of external finance for 80-85% of small- and medium-sized companies in Sweden. Even though the latest development indicates that the role of bank financing has decreased over the past years (e.g. Berggren et al., 2004), it is

still by far the largest source of external finance in Swedish companies.

Banks, however, are risk-averse and prefer to lend money if the loan can be secured against some kind of collateral (Lumme et al., 1998). At the same time, companies' assets at the early stage of development are scarce, and the traditional forms of collateral can rarely be provided. This problem is even more significant for "knowledge-based young firms with intellectual and experiential assets that are largely intangible and tacit" (Murray, 2007:117), i.e. the ones that also have the most growth potential. Further, even if debt financing is available, it may be inappropriate for the small growing firms to depend on this alone. Making regular payment of principal and interest is a heavy burden for the company, and can lead to undercapitalization, which is a common cause of small business failure (Mason and Harrison, 1995).

In comparison to larger and more established firms, the disadvantages that young entrepreneurial firms suffer in obtaining external financing have been recognized by governments. In Sweden, the governmental financial support to newly established ventures includes different forms of loans, subsidies, specialized venture capital and loan guarantees. Several public foundations have been created especially for providing finance to such firms, of which the most important are: the Swedish Governmental Agency for Innovation Systems, that supports innovation linked to research and development; the Swedish Agency for Economic and Regional Growth, that specializes on providing finance to firms in peripheral regions; ALMI Business Partner, that supplies high interest loans to small and medium-sized firms with growth potential; Innovation Bridge, that focuses on seed financing of technology-based firms; and the Swedish Industrial Development Fund, that mainly provides finance to technology-based companies with international development potential. From an international perspective, Swedish companies rely on public sector finance to a higher degree that their counterparts in other countries, particularly in the USA (Zackrisson, 2003).

What role the public sector should have in financing entrepreneurship has been a subject of debate in policy literature. On the one

hand, it has been argued that companies in early development stages, especially those in high-technology industries, are too risky to receive any other type of financing, and therefore public financing institutions play a vital role in supporting technological development. On the other hand, public sector financing has been criticized for being used more as a political, than as an economical tool, supplying finance to certain regions to increase support for the ruling government (Zackrisson, 2003). Further, many of such governmental interventions have produced mixed results, which has led to questioning the ability of such players to pick viable companies and industries to invest in. Finally, a high level of reliance on public sector financing can be seen as a result of an insufficient availability of other types of finance, rather that public players' superior ability to provide finance to young growing ventures (Murray, 2007).

Arguably, there is a need to promote market-based equity financing for young entrepreneurial firms. Equity financing has some important advantages for small entrepreneurial firms compared to debt. The firm is not required to present collateral, and the investment does not have to be repaid if the business goes bankrupt, while the entrepreneur shares the upside returns with the investor. There are two sources of finance available for companies seeking external equity: public equity and venture capital. Public equity comes from the public stock market, and is only available for established companies that have reached a certain level of maturity, and already secured the initial financing (Mason and Harrison, 1995). The venture capital market, on the other hand, is particularly concerned with financing young promising companies in early development stages. The venture capital market is traditionally divided into institutional venture capital and informal venture capital[1].

1. Some researchers also consider corporate venture capital as a part of the venture capital market. However, established firms buy all or parts of shares in small entrepreneurial ventures as a strategic decision such as expanding into a new market or acquiring a new technology. In this sense, corporate venture capital does not constitute a market in a traditional sense, as it is not available to all companies looking for external finance (Maula, 2001).

1.2.1 Institutional venture capital

Institutional venture capitalists act as intermediaries, raising funds from financial institutions and other investors, such as large companies, foundations and wealthy families, and investing in unquoted companies (Lumme et al., 1998). Wright and Robbie (1998) described institutional venture capital as professional investments of long-term, unquoted, risk equity finance in new firms, where the primary reward is eventual capital gain, supplemented by dividends. The specialist competence of institutional venture capital funds is in the screening and appraisal of ventures that have the potential to develop into significant businesses, structuring the investment and providing support to the businesses in which they invest.

The scope of the institutional venture capital market has expanded considerably during the last two decades. Even in the face of high market volatility, including the major decline at the beginning of the 2000s (Gompers and Lerner, 2001; Cumming et al., 2007), the scope of the institutional venture capital marcet today is still many times greater than in the 1980s and at the beginning of the 1990s. However, despite its significant size, its role in financing young entrepreneurial ventures has become increasingly limited. The investment focus of the venture capital industry has shifted progressively away from early stages and technology-based ventures towards more established companies and management/leveraged buyouts (Mason and Harrison, 2002; Sohl, 2003; SVCA, 2006). This has, in turn, led to a substantial increase in the average size of investments, which today ranges between $5 and $10 million in countries with a developed venture capital market (SVCA, 2006; BVCA, 2006; PWC Moneytree, 2006). Considering that the capital needs of young entrepreneurial firms are usually much smaller (Reynolds, et al. 2003; Sohl, 2003), the institutional venture capital market is losing its significance as a source of venture finance in early stages.

Further, there is a high level of geographical concentration of venture capital activity in core regions, at the expense of peripheral. Empirical evidence from the UK shows that over 60% of all venture capital is invested in London and the surrounding area (BVCA,

2006). Even more significantly, the London-based firms were found to control around 80% of the total national venture finance pool. In the USA, the venture capital funds are primarily located in the traditional financial centres (e.g. New York and Chicago) and established high-technology industrial complexes (e.g. Silicon Valley, California and Route 128 around Boston), that together account for 70% of the venture capital supply (Zook, 2002; Mason, 2007). The same situation can be found in Sweden where 75% of venture capital investments are concentrated to the metropolitan regions, especially Stockholm (SVCA, 2006).

The consequence of this development is the appearance of "gaps" in venture capital supply. Companies that are in the early stages of development are less likely to obtain venture capital financing than those in the later stages. Risky, technology-based ventures are also deprived of venture capital financing. Further, around the world institutional venture capital seems to be concentrated around financial centers and metropolitan regions. This implies that entrepreneurs in the remote regions are disadvantaged in getting otherwise comparable projects funded, which is the reason why the regional equity gaps appear (Mason and Harrison, 1995). There is therefore an evident shortage of relatively small, geographically dispersed investments during the early stages of firms' development. Consequently, a complementary source of financing is needed to support the development of fast growing high-potential entrepreneurial companies.

1.2.2 Informal venture capital

With this background, informal venture capital has gained a major significance for the financing of entrepreneurial start-ups and growth firms. Informal venture capital investors have been commonly defined as "business angels", implying that they are high net worth individuals who invest a portion of their assets in high-risk, high-return entrepreneurial ventures (Freear at al., 1994), and apart from investing money also contribute their commercial skills, experience, business know-how and contacts taking a hands-on role in the company (Mason and Harrison, 1995). We have, however, also seen a number

of other, less restrictive definitions of informal investors. For instance, Mason and Harrison (2000b) define them as all private individuals who invest risk capital directly in unquoted companies to which they have no family connection, while Reynolds et al. (2003) argue that even investments made in businesses owned by the investor's family members should be considered as informal venture capital investments.

In general, informal investors were found to undertake investments that institutional venture capitalists find unattractive, due to the high risk and small size of investments. These individuals usually invest smaller amounts of money than institutional investors, which better matches the external capital needs of young entrepreneurial firms (Landström, 1993a). Moreover, informal investors do not commit their entire savings to the unquoted company sector. For instance, according to Mason and Harrison's (1994) study of the UK market, even the most financially active informal investors normally allocate about 5 to 10% of their investment portfolio to unquoted companies. This is consistent with results from Sweden, where the average share of an investment portfolio allocated to the informal venture capital market is around 11% (Månsson and Landström, 2006). This allows informal investors to make more risky investments than their institutional counterparts. Finally, informal venture capital investments are expected to be less geographically concentrated than institutional venture capital, which, if true, means that they are important for providing finance to remote regions and bridging the regional equity gap (Mason and Harrison, 1995).

Studies from around the world have shown that informal venture capital is in fact a significant source of financing for small entrepreneurial ventures. In the USA, the informal venture capital market has been reported to be at least as large as the institutional venture capital market (Sohl, 2003), while in the UK, informal venture capital investors have been found to make eight times as many investments, and invest almost as much capital, as institutional venture capital investors (Mason and Harrison, 2000a). The Global Entrepreneurship Monitor Report has provided extensive empirical sup-

port for the importance of informal venture capital, recognizing it as the single most important source of new venture financing (Reynolds et al., 2003).

Another important factor is that many informal venture capital investments are accompanied by the investor's hands-on involvement in the company. In the seed and start-up stages of company development, the entrepreneurial team often lacks the necessary skills and experience, and the injection of external knowledge might be as important as access to finance (Rasila et al., 2002; Landström, 2003). This means that besides contributing to bridging the capital gap for entrepreneurial ventures in early development stages, informal investors also contribute to filling the knowledge gap that many young firms face.

It is, however, important to note that informal venture capital market is not a substitute for the institutional venture capital financing. Instead, it has been argued that these markets play a complementary role, where informal investors provide financing for ventures in the seed and start-up development stages, and those companies that do show considerable potential for growth can obtain institutional venture capital financing at a later stage (Mason and Harrison, 2000b; Kelly, 2007). This process constitutes a problem in itself. For instance Sohl (2003) argues that, considering the continuously increasing average size of institutional venture capital investments, informal investors are not able to provide financing of sufficient scope so that ventures can secure institutional venture capital at a later stage, or what he refers to as the "second equity gap". This, however, is a subject for a separate enquiry, and is beyond the scope of this dissertation.

1.3 The nature of informal venture capital in a spatial context – issues and problems

Studying informal venture capital in a spatial context provides a basis for a better understanding of the role that informal venture capital plays in providing finance to young entrepreneurial ventures. How-

ever, our knowledge of the structure and functioning of informal venture capital market is still very limited, and the geographical issues related to informal venture capital investing remain largely unexplored. This means that, in order to understand the potential of the informal venture capital market to provide finance to entrepreneurial ventures in early development stages, we need to increase our knowledge of the structure, the functioning and the geographical characteristics of the market.

1.3.1 The heterogeneity of the informal venture capital market

Earlier research has shown that the informal venture capital market is highly heterogeneous and that there are different kinds of investors. This in turn implies that there are considerable differences in, among other things, investment behaviour, motivations, sources of information on potential deals and the characteristics of individual investments conducted by the different types of investors (Gaston, 1989; Coveney and Moore, 1998; Sørheim and Landström, 2001). Despite these observations, current research largely continues to treat informal investors as a homogeneous investor group. In the literature, informal venture capital investors have been largely labeled as "business angels", implying a certain degree of investment activity and active involvement in the companies in which they invest, but still without a clear definition who should and who should not be considered a business angel. This also means that an important group of informal investors is generally ignored, namely those who contribute relatively small amounts of money and do not take any active part in the objects of investment, but nevertheless make a significant contribution to the informal venture capital market (Kelly, 2007).

Researchers have taken several steps towards exploring the heterogeneity of the informal venture capital market by suggesting different typologies of informal investors (e.g. Gaston, 1989; Coveney and Moore, 1998; Sørheim and Landström, 2001). These typologies, however, suffer from two important problems that limit the scope of their applicability. The first problem is methodological and

is related to the way the data on informal investors is collected. The studies are based on the samples of convenience, and there is a bias in the choice of individuals included, which means the representativeness of the samples for the whole population cannot be established. This also implies that the choice of data gathering methodology largely predetermines the outcome of the categorization. The second problem lies in assigning individuals to certain investor types, as it basically presupposes that informal investors exhibit a static investment pattern (Riding, 2005). Individuals are assigned to categories based on some general investment behaviour, without any consideration of the possibility that they might exhibit different investment patterns over time or in different investment contexts. Therefore, the existing categorizations do not capture the dynamic nature of informal venture capital market.

In the light of this, there is a need for enhanced definitional clarity within the field in order to appropriately address the issue of understanding the heterogeneity of the informal venture capital market. This dissertation aims to attend to this issue and develop understanding for the concept of informal venture capital. Further, this dissertation aims to explore the structure of the informal venture capital market by analyzing different types of informal venture capital investment behaviour. In doing this, the following research question (RQ1) will be addressed:

– *How is the informal venture capital market structured?*

1.3.2 The scope of the informal venture capital market

Since the first study of the informal venture capital investors made by Wetzel (1983), the scholars have recognized the importance of quantifying the market for the informal venture capital. This is particularly important in order to understand the role informal venture capital plays in providing finance to young entrepreneurial firms, in relation to other sources of financing available to them, but also to assess the need to promote the informal venture capital investing activity by specific policy measures (Mason and Harrison, 2008).

Some attempts to estimate the size of this market have been made in the USA (Wetzel, 1986; Arum, 1987; Gaston, 1989 and Sohl, 2003), in Canada (Riding and Short, 1987; Riding, 2005) and in the UK (Mason and Harrison, 2000a). These researchers have used different methodologies in trying to quantify the market; they have looked at the demand and the supply side of the informal venture capital, and used both large samples of secondary data, surveys and personal interviews with the market agents. The results provided in these studies have helped to establish the informal venture capital market as a legitimate research field and has drawn a lot of attention from both practitioners and policy-makers.

However, these studies suffer from important methodological shortcomings. Informal venture capital investors value their privacy, and there are no official listings of informal investments. Thus, previous studies have struggled with considerable difficulties to identify and, even more importantly, to derive random samples of informal investors (Mason and Harrison, 2000b) and earlier studies are for the most part based on extrapolating results from rather small, non-representative samples. Thus, there is a need for methodological development to find a reliable technique to measure the size of the informal venture capital market.

Further, the earlier estimations of the size of the informal venture capital market have been conducted in the Anglo-Saxon context, and in markets that are characterized by the stock market-centered financial systems. This means that we can expect that the size of the market will differ substantially in countries that have bank-centered financial systems (Black and Gilson, 1998; Jeng and Wells, 2000). Therefore, it is particularly important to provide some evidence of the scope of the informal venture capital market in countries with the bank-centered financial system.

The estimation of the size of the informal venture capital market in this dissertation is based on a large sample of informal investors, derived from a random sample of the general adult population in Sweden. In this way, this study hopes to overcome some of the deficiencies of previous studies and provide a reliable estimate of the size of the informal venture capital market. With this background, the

second research question (RQ2) that will be addressed in this dissertation is:

– *What is the scope of the informal venture capital market in Sweden?*

1.3.3 The geographical aspects of the informal investing activity

Much of the discussion about the significance of the informal venture capital is based on the belief that it is geographically dispersed and thereby helps to bridge the regional equity capital gap. This belief originates from several studies (e.g. Gaston, 1989; Feeney et al., 1998; Farrell, 1998) that established that informal investors could be found not only in the large cities and regional centers, but also in rural, economically lagging regions, where the institutional venture capital was virtually absent. Although this observation is both interesting and important, it is by no means sufficient to establish the actual distribution of informal investors and the degree of their presence in different regions (e.g. Mason and Harrison, 2000b).

Moreover, it is not the distribution of informal investors *per se* that is of main interest, but the distribution of investment activity. Establishing this connection has also posed problems in earlier research. While many studies provided evidence that informal investors generally invest near their homes (e.g. Gaston, 1989; Landström, 1993b; Mason and Harrison, 1994; Lumme et al., 1998), the relationship between informal investors and the location of their investment activities is not unproblematic. Generally, we can identify three main ways of reasoning about the role that distance plays in the context of informal venture capital investing.

The first way that can be derived from the studies by, among others, Haar et al. (1988), Freear et al. (1992), Landström (1997), Coveney and Moore (1998) and Van Osnabrugge and Robinson (2000) is that geographical proximity between the investor and the firm is relatively unimportant. Being geographically close to the entrepreneur, they show, is much less significant than other decision-making criteria, such as the market potential or the stage of develop-

ment of the firm. This means that even if we were able to establish the location of informal venture capital investors, this would provide few clues on how the investments activity is geographically spread.

The second way of reasoning is that geographical proximity is beneficial, and that, everything else being equal, informal investors will always prefer to invest locally. Still, geographical proximity is not necessary for making a positive investment decision, and if a good opportunity is available at a distant location, investors will consider going beyond the preferred distance threshold (Riding et al., 1993; Mason, 2007), accepting the trade-off between the possibility of higher return and the cost associated with operating over distance.

Finally, the third way of reasoning is that informal investors normally would not invest outside their geographical proximity, not only because of the higher cost associated with it, but also because of the uncertainty that distance implies. As stated by Mason (2007:90), information flows about investment opportunities are subject to "distance decay", so the probability of coming across an investment opportunity is smaller, the greater the distance between the investor and the firm. Even if information about a distant investment opportunity reaches the investor, he or she may be reluctant to pursue it, due to limited ability to evaluate the opportunity (Harrison et al., 2003; Mason, 2007), as well as due to costs and feasibility of exercising control over the investment (Wetzel, 1983; Landström, 1992; Mason, 2007). According to this view, it can be argued that the location of informal investors is a main predictor of the geography of the informal investment activity.

To summarize, the current studies do not provide a clear picture of the geographical distribution of informal venture capital investment activity, and different authors, in the context of their studies, have observed varying, and in some cases even conflicting evidence of what role geographical proximity plays in informal venture capital investing. While some of the inconsistency of findings can probably be attributed to differences in definitions used by the scholars, this does not change the fact that there is a multitude of perceptions of distance in the investment situation. Thus, it is important to bring

some clarity into this issue, and develop an understanding for what role geography plays in informal venture capital investing.

With this background, this dissertation aims to explore the geographical characteristics of the informal venture capital market and, relating to the issue of regional equity gap, to take a step towards explaining why some regions attract more informal venture finance that others. The research questions (RQ 3 and 4) addressed here are:

– *How is informal venture capital distributed geographically?*

– *Why do some regions attract more informal venture capital than other regions?*

To further contribute to the understanding of the spatial patterns of informal venture capital investing, I will turn to the economic geography literature for explanations for the relationship between the location of the informal investors and the location of investments that they undertake. Based on this literature, I will develop a theoretical model on the role of proximity in informal venture capital investments, and test it on the investment data from the large random sample of informal investors in Sweden, complemented by in-depth case studies of informal investment behaviour. The research question (RQ5) addressed here is:

– *Why is geographical proximity less important in some informal venture capital investments than in others?*

1.4 Overall purpose and summary of contributions

Given the brief overview of the informal venture capital literature outlined above, we can conclude that there are a number of aspects that pose problems for enhancing our understanding of the informal venture capital market. First, our knowledge of the informal venture capital phenomenon is limited by the narrow approach that earlier

studies have taken to define informal venture capital market. It can be argued that our current knowledge of the market is for the most part limited to the most visible and active cohort of informal investors, also called "business angels", while the understanding of the variety of the market is limited. Second, the methodological problems associated with identifying and random sampling informal venture capital investing has put limits to our knowledge of the scope and magnitude of the market, and restricted our understanding of the geographical distribution of informal financing. Third, we have observed varying and in many cases conflicting evidence about how geographical proximity affects informal venture capital investing, which constrains our understanding of the role of the informal venture capital market in closing the regional equity gap.

Based on the current state of knowledge within the informal venture capital literature, the overall purpose of this dissertation is *to develop our knowledge of the nature of the informal venture capital market in a spatial context*. Guided by this overall purpose, this dissertation aims to develop the informal venture capital literature in the following ways. First, it aims to contribute to our knowledge of the informal venture capital phenomenon by developing an understanding of other cohorts of the informal venture capital market besides "business angels". Second, it aims to explore the characteristics and the scope of the informal venture capital market in relation to its potential to bridge the financing gap, and particularly the regional equity gap, for young entrepreneurial firms. Third, this dissertation seeks to provide theoretical explanations for why informal venture capital exhibits certain locational patterns, and the role geography plays in informal venture capital investing.

In order to address the research questions presented above, and in line with the overall purpose of the dissertation, five articles have been written. These, and their relation to the specific research questions and the purposes of the dissertation are illustrated in Figure 1.

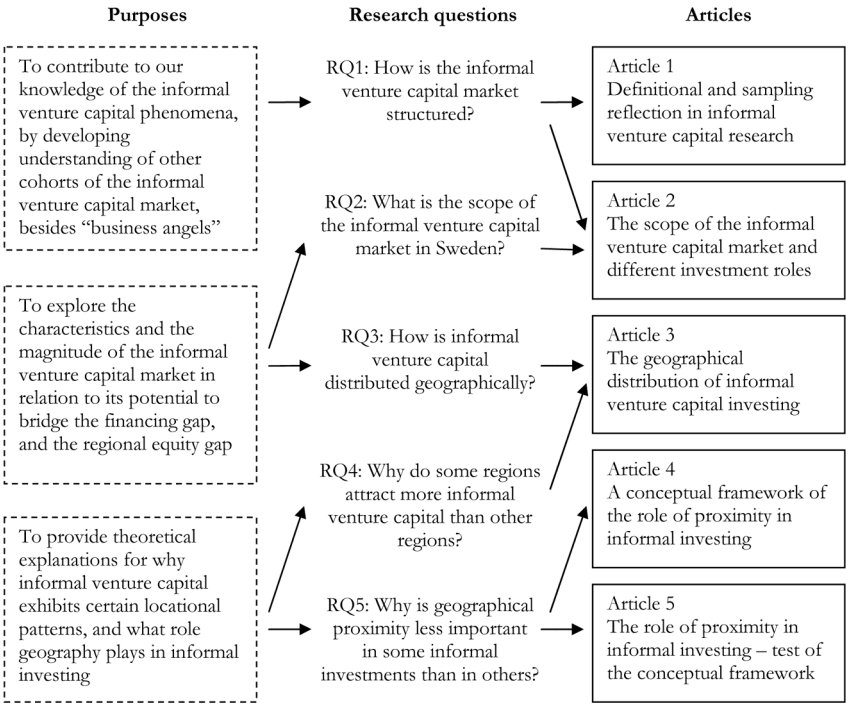

Figure 1 The articles, research questions and purposes of the dissertation

1.5 Methodology

In this section I describe and reflect on the methodological choices that have guided the research work and describe the process of data collection and analysis.

1.5.1 Approach to knowledge creation

The underlying research philosophy of this dissertation borrows from the positivist as well as the interpretative approach to knowledge. Thus, I argue in line with Giddens (1976) that the social reality has both subjective and objective dimensions. On the one hand, I believe that there is a "reality" that is observable, and that by carefully

developing and applying measurement techniques we can achieve a reliable picture of this "reality". On the other hand, the informal venture capital market is by definition a product of human action and human interaction, which I also acknowledge in the course of the dissertation. This means that individual behaviour is driven by a range of rational and subjective factors that together contribute to the way the market is built up. Thus, there is a subjective reality that exists in the minds of individuals that is not fully observable for an outsider.

As argued by Silverman (1998) and Weber (2004), there is no real conflict in acknowledging both the objective and the subjective nature of the social world. Even though the social reality is a product of individuals' behaviour, the sum of this behaviour can build patterns that are both observable and let themselves be explained by theories. More than that, even if social reality is subjectively created, it can be objectified in social intercourse (Ahrens, 2008). This in consistent with Chua (1986:613), who argues that:

> …in everyday life actions do not take place in a vacuum of private, subjective meanings. While human beings are continuously ordering and classifying ongoing experiences according to interpretative schemes, these schemes are essentially social and intersubjective. We not only interpret our own actions but also those of others with whom we interact, and vice versa. Through this process of continuous social interaction, meanings and norms become objectively (intersubjectively) real.

The attention given to the subjective nature of the social world varies in the different articles that constitute this dissertation and depends on what type of research questions the particular article aims to address. In the discussion about the definitional issues in informal venture capital research and the heterogeneity of the informal venture capital market, I take a step towards clarifying the concept of informal venture capital. As stated in the paper, the aim is not to establish a single definition of informal venture capital, but to enhance consciousness about different definitions, grey zones, and consequences of aligning with a certain definition. In this way I, on the one hand, question the nature of the informal venture capital concept as given,

and instead argue that it is a product of the researcher's choice and standpoint. In other words, we choose to define informal venture capital in a certain way, because it serves our purposes as researchers. On the other hand, I attempt to remove some of the ambiguity from the definition of informal venture capital, which facilitates for researchers to assign a specific meaning to the concept used, that the research community can adequately comprehend, given the suggested framework. This can be related to a positivistic approach of striving towards objectivity in the use of language.

In the later part of the dissertation, where I aim to explore the scope and the geographical distribution of the informal venture capital market, I attempt to distance myself from the discussion about the subjective nature of individual behaviour, and turn my attention towards exploring the general patterns that this behaviour renders on the overall market level. In using precise definitions and rigourous measurement techniques, I objectify the informal venture capital phenomena as existing "out there", thereby accepting the positivistic view of the social world.

Finally, in articles 4 and 5, I combine the positivistic and the interpretative approaches. On the one hand, I argue that informal venture capital investors' behaviour follows distinct rules and patterns that can be, at least in part, captured by a theoretical model of relations between variables. Relying on the quantitative data material, I test the developed theoretical model and discuss variables that are significant in explaining certain outcomes. At the same time, I stress that the variety of individual behavioural drivers makes it impossible to describe informal investment behaviour with a set of relationships between variables. I particularly emphasize that there is a variety of perceptions and meanings that individuals assign to the variables of interest, and illustrate the argument with qualitative interview material.

In general, this dissertation can be characterized by acknowledging the subjective nature of the social world and its consequences for our ability to study and understand the informal venture capital investment behaviour, but with certain attempts to distance ourselves

from the ambiguity of the phenomena by focusing on the outcomes of the social interaction, rather than the nature of social action.

1.5.2 The research process

My work on this research project started on April 1, 2004, when I joined the research team led by Professor Hans Landström, who became my supervisor. The reason for my joining the research team was a commission received from the Swedish Agency for Economic and Regional Growth (NUTEK) and the Swedish Foundation for Small Business Research (FSF) to study the Swedish market for informal venture capital.

The nature of the project has implied that I have been partially restricted in terms of my methodological choices. First, according to the agreement with the Swedish Agency for Economic and Regional Growth and the Swedish Foundation for Small Business Research, the study was supposed to be based on a large quantitative sample of informal investors, and the order to deliver a preliminary database of informal investors was already placed at a market research agency (RUAB, today SIFO Research International). Second, the population of interest for the study was already defined as all individuals who within the last five years have invested money in unquoted companies that do not belong to themselves or to a member of their family.

The first thing I did when I started working on the project was write an application to be accepted as a doctoral student at the Department of Business Administration at Lund University. As a lead in the application process, I needed to present a description of the project and my suggestion on how the study should be carried out. To do that, I conducted a comprehensive literature review of the field of informal venture capital research, both in Sweden and internationally. After conducting the literature review, I realized that the current knowledge of informal venture capital was fragmented, and the field faced considerable difficulties regarding theoretical applications, the use of methodological techniques, as well as the definition of the population being studied. For that reason, I decided that there was a need to contribute to a general understanding of the informal ven-

ture capital phenomenon, before undertaking a more theoretically informed analysis.

Research design

The study started out with an investigation of the informal venture capital market, based on the current gaps in the understanding of its structure and characteristics. This investigation resulted in some new insights about the empirical nature of the phenomena, as well as a number of questions which called for theoretical explanations. Thus, the theoretical studies were conducted after the first phase of the data collection. The choice of theoretical framework led to the formulation of the theoretically informed research questions, which in turn required complementary data gathering. This means that the degree of theoretical sophistication is enhanced throughout the course of the dissertation. While the first three articles set out to develop a general understanding of the informal venture capital phenomenon, the subsequent two articles are mainly theoretically driven.

The approach that I have chosen for this dissertation, i.e. going from an explorative study of informal investors' characteristics and behaviour to framing concrete theoretically driven research questions, has implied certain advantages. First, the relative richness of the data obtained in the exploratory stage has resulted in a number of interesting topics for further inquiry that were relevant for the field and anchored in the empirical phenomena. Also, in the conversations with my respondents during the telephone interviews, I have had a chance to discuss different topics that I considered interesting for further study, and quite soon was able to define my theoretical interest. Based on the understanding that the empirical material provided, I was further able to frame the second stage of empirical data gathering in a more precise way, relevant for the specific research questions that were formulated.

One limitation of such emergent design of the dissertation work was that large parts of the empirical material that was gathered in the first, exploratory stage could not be used further on in the theoretically driven part of the dissertation, because they were not relevant

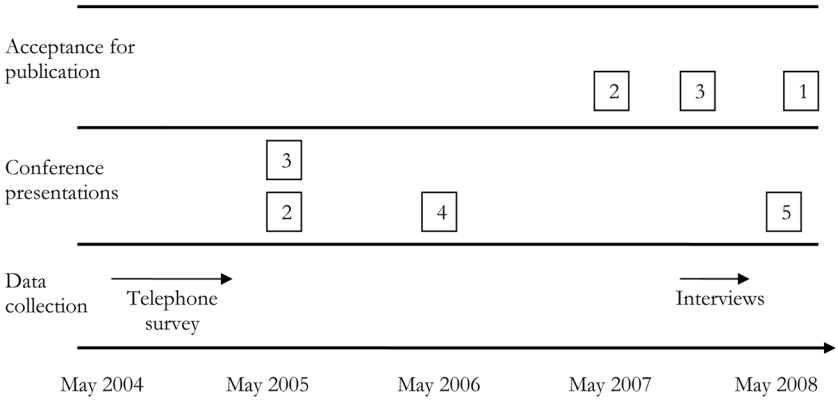

Figure 2 The research process

for the research questions that were chosen. For the same reason, some of the quantitative data that was relevant for the research questions lacked the necessary rigour, which has meant that measures constructed to test the theoretical framework are rather weak. In more mature research fields, researchers can benefit from insights from earlier studies to frame research questions more focused already in the early stages of the research process. Here, however, the theoretical interest emerged in the course of the dissertation, and was not given from the beginning.

This dissertation is written as a collection of articles, which provided the possibility to publish and present the study in separate parts at research conferences.[2] In Figure 2, I describe the research process and the time plan of the dissertation work, and outline at which point in time the data was collected and the different articles were presented at conferences and accepted for publication in peer reviewed journals.

2. Articles are presented as reprints of the original versions. This means that I have kept the original names and numbering of tables and figures as well as the format of the references. The chapters and sections are, however, numbered to follow the structure of the dissertation.

Data collection

The empirical data in this dissertation was collected in two stages. In the first stage, the data was collected through a telephone survey. This data collection process was initiated in June 2004 and completed in February 2005. In the second stage, the data was collected through in-depth personal interviews, complemented by telephone interviews. This data collection process was initiated in December 2007 and completed in March 2008. The arrows in Figure 2 illustrate the time of initiation and completion of each stage of the empirical data gathering process.

Conference presentations

Four of the five articles in the dissertation were accepted for presentation at various international research conferences. Article 2 was presented at the 50th International Council of Small Business conferences in Washington DC, June 2005. It was also included in the conference proceedings. The conference version of this paper was written by me alone. Article 3 was presented at the 25th Babson Kaufmann Entrepreneurship Research Conference in Boston, June 2005. The conference version of this paper was co-authored with Hans Landström, and we both contributed equally to this paper. Article 4 was presented at the 14th Nordic Conference on Small Business Research in Stockholm, May 2006. This article was written by me alone. Article 5 was presented at the 28th Babson Entrepreneurship Research Conference in Chapel Hill, June 2008. This article was written by me alone.

Publications

Three of the five articles in this dissertation are either published or accepted for publication in international peer reviewed research journals. Article 2 has undergone major revision after the presentation at the 50th International Council of Small Business conferences in Washington DC in June 2005 and was submitted to *Venture Capital* in September 2006 with me as the single author. The article was accepted for publication in May 2007 after one round of revision. Ar-

ticle 3 has undergone major revision as well after the presentation at the 25th Babson Kaufmann Entrepreneurship Research Conference in Boston in June 2005, whereby the content of the paper was changed considerably and the argument reframed. The revised version of this article was submitted to *Entrepreneurship and Regional Development* in February 2007 with me as the single author. The article was accepted for publication in January 2008, after one round of revision. Article 1 was written upon invitation for a special issue of *Venture Capital*. The article was co-authored with Hans Landström and Nils Månsson, and all the authors have contributed equally to it. The confirmation of inclusion of the article in the special issue was received in July 2008.

1.5.3 The first phase of data collection

The most important methodological challenge in this study was to develop a reliable methodological approach to gathering data about informal venture capital investors. In the review of Mason and Harrison (2000b) it was concluded that the single most important methodological problem in undertaking research on the informal venture capital market arises from the great difficulty in identifying informal investors. The issue of representativeness has been widely discussed in earlier studies and several researchers have argued that it is not possible to find a representative sample of informal venture capital investors (Wetzel, 1983; Harrison and Mason, 1992; Mason and Harrison, 2002). Most of the studies on informal investors are therefore based on either snowball survey techniques or samples of convenience. The consequences are that the results are not representative and the characteristics of the population of informal investors remain largely unknown (Farrell et al., 2008).

In this study, an attempt was made to overcome the methodological shortcomings of previous studies. The data on individuals' investment propensity was therefore gathered from a large random sample of the adult population in Sweden. The study started with a random survey of 40 320 private individuals between 18 and 79 years of age to determine the number of informal venture capital investors

in this group. The survey was carried out by an external market research agency as a part of an omnibus study of households' consumption and investment behaviour in Sweden. The main purpose of this stage was to identify active informal investors in the population for further study, and the respondents were asked the following question: "Have you, within the last five years, invested money in unquoted companies that do not belong to yourself or to a member of your family?". Those individuals who gave a positive answer, were then asked if they were willing to participate in the second stage of the study. In addition, they were asked two questions about the level of their investment activity. For the purpose of conducting a non-respondent analysis later on, some background data on the respondents was obtained from the market research agency.

The response rate of the survey was 59.9% with 24 166 interviews completed. To eliminate the effect of non-response bias, individuals were assigned weights on a post-hoc basis to compensate for differences from the original sample with respect to a number of background variables – gender, age and geographical location. After the preliminary survey, some 861 persons were identified who claimed to have made investments in unquoted ventures to which they did not have any family connection. For those 548 individuals who agreed to participate in the second phase of the study, their social security number was obtained from the tax authorities in order to be able to keep up-to-date records of their contact information. Further, they were contacted by telephone to get detailed information about their investments. Out of these, it was possible to establish contact with 401 individuals (73.2% response rate). From this group, 123 did not fulfill the criteria for informal investors. Some of them had never made investments in unquoted companies; others had made investments through intermediaries (such as investment banks and insurance companies) or invested money in a family member's company. Thus, 278 were found to qualify as informal venture capital investors, which resulted in an effective response rate of 50.7%. The sample development process is reported in greater detail in article 1 in the dissertation.

The data from the final sample of 278 informal investors was gathered by telephone, using structured questionnaires. In the telephone interviews, which lasted about 20 minutes, the respondents were asked about their investment history and personal background. In the investment history section, the respondents provided general information about their investment activity and detailed information on three most recent investments, including the year of investment, the amount invested, the industry in question and the geographical location of the investment. The personal background section included questions about the respondent's wealth, income, entrepreneurial experience and civil status. The questionnaire was developed on the basis of those previously used by, among others, Harrison and Mason (1992), Landström (1993a) and Månsson and Landström (2006). Some adjustments were, however, made considering that the population of the study has been given a broader definition than in earlier research. Specifically, questions with fixed answer options were replaced by open-ended questions to capture the variations in the respondents' answers. The questionnaire was also generally simplified, and the number of questions reduced. Overall, the data gathering methodology relied on experience from previous studies with respect to the information that is valuable for describing and understanding individuals' investment behaviour, at the same time as it was not restricted to a certain view of informal investors. The questionnaire is presented in Appendix 1.

Non-response issues

At this stage of the data gathering process, I have striven to achieve as high response rate as possible in order to minimize non-response bias. The persons were considered non-respondents only if they explicitly refused to participate or if contact was not established after five subsequent attempts. The social security number was obtained for each individual, and if the individuals in the sample moved or changed telephone numbers, the new contact details were obtained from the tax authorities. Yet, considering the invisible nature of the

informal venture capital market, this dissertation has not escaped the non-response problem.

The test for non-respondent bias was conducted in two stages. First, individuals who agreed to participate in the second round of the data gathering process (548) were compared with those who refused to participate (313). Secondly, individuals who were contacted in the second round of the data gathering process (401) were compared with those who were not interviewed due to failure to establish contact (147). The variables used for the non-respondent analysis were age, level of education and gender on the one hand, and initially stated investment activity (number of investments made and amount invested) on the other hand. The independent sample t-test was used to establish differences between groups.

Some differences were found between the individuals who agreed to participate in the second round of the study and those who refused. The t-test showed significant differences in terms of gender and education, while no differences were found with respect to age and the initially reported investment activity. As non-response bias arises when there are differences between respondents and non-respondents with respect to variables that are of significance for the study, it is certainly important that no difference was found in the reported investment activity between groups, which implies that individuals who are investors among the non-respondents are not different from the respondents in their investment activity. However, we do know from previous studies (e.g. Gaston, 1989; Landström, 1993a; Lumme et al., 1998) that informal investors are predominantly male and highly educated. As the non-respondent analysis shows that non-respondents are more often female and in general have a lower education than the respondents, it can be suggested that the percentage of non-investors is higher among non-respondents.

To establish the actual number of investors among the non-respondents, a predictive model was developed based on the background data on investors and non-investors from the group of respondents. A binary logistic model was developed using the data from the respondents and applied on the group non-respondents, resulting in the probability scores of individuals being investors based

on their background profile. The identified investors were then compared with the existing sample of investors and no statistical differences were found.

The comparison of individuals that were contacted in the second round of the data gathering process (401) and those who were not interviewed because of failure to establish contact (147) showed that there are no significant differences between groups. The results of the non-response analysis are reported in greater detail in article 2.

1.5.4 The second phase of data collection

The second stage of the study involved theoretical sampling of informal venture capital investors from the database developed in the previous stage. The purpose of the qualitative data gathering was mainly to illustrate and provide examples for the patterns that emerged in the test of the quantitative data. In choosing the respondents for the interviews, the aspiration was to capture the widest possible variety of the investment behaviour. The respondents were also selected on the basis of how well they represented the overall patterns that were observed in the analysis of the quantitative data material. Based on these considerations, four investors were chosen for further interviews, where criteria were developed to capture individuals with various investment activities, location and attitudes to geographical distance in the investment situation.

With respect to investment activity, the selection of respondents included informal investors who were highly active and who became personally involved in the ventures that they invested in, those who exhibited low investment activity and were passive in their investments, and those who varied their behaviour in different situations. With respect to location, the selection of respondents included informal investors who lived in economic core regions, defined as metropolitan regions and university cities (see article 3 for elaboration on this definition) and had lived there all their lives; those who lived in peripheral regions (all other regions except economic core regions) and had lived there all their lives; and those who had lived in various types of regions in different stages of their lives. Finally, respondents

were chosen based on their relation to geographical distance in the investment situation, in accordance with the research questions raised in articles 4 and 5, and respondents selected for further study were those who tended to invest predominantly in their geographical proximity; predominantly outside their geographical proximity; and those who invested both in and outside their geographical proximity. The summary of the four cases based on personal interviews with these investors is presented in article 5 in this dissertation.

Two interviews were conducted with each of the respondents: a 90-minute-long personal interview, followed by a 30-minute-long follow-up telephone interview. The interviews were semi-structured, where the respondents were informed at the beginning of the interview that the focus of the research was on the geographical factors related to their informal investments, and in particularly on the role that geographical distance played in their investments. A check-list was used in order to capture the main variables in the theoretical model that is developed in article 4. The respondents were first encouraged to describe in their own words the informal investments they had undertaken, and then discuss each of the concepts included in the theoretical model, but without any specifically formulated questions. All the personal interviews were tape-recorded and transcribed afterwards.

I use the term "case" to describe the qualitative data material that I have gathered on each of the four investors and define it as a rich, illustrative empirical material collected from respondents' own words and related to their context. In this definition, I follow Yin (2003) who describes case study research as investigating phenomena within its real-life context. At the same time, it is important to note that I use the material in a different way from the ones suggested by Yin (2003), who has strong claims about the scientific value of the findings of case study research, or by Eisenhardt (1989), who argues that the most important role of case studies is to develop theory. Methodologically, however, I am inspired by Eisenhardt (1989:537) in my selection of cases, where I strive to maximize variation and "provide examples of polar types". Yet, I do not aspire to reach the level of richness and detail in the material that Eisenhardt (1989) argues for,

and neither do I strictly follow the data collection protocol suggested by her. Most importantly, I do not use cases to build theory. Rather, the main purpose of this qualitative analysis of the contextualized interview data is to illustrate, provide examples, add depth and open up for the further discussion.

There are several software tools available to analyze qualitative data. Using computer-based software programs is often considered beneficial, as it facilitates dividing large text materials into smaller parts, and storing them in a systematic way for different analyses (Weitzman and Miles, 1995). However, using such software programs also leads to a risk of overinterpretation of the qualitative data, especially if the number of respondents is low. Therefore, the transcripts were analyzed manually, and parts of the text material were used to illustrate, discuss and add depth to the results from the quantitative analysis.

1.5.5 Reflections on methodological choices

The methodological tradition in the research field

The informal venture capital research field is characterized by a long tradition of empirical research that is mainly explorative in character. Two main reasons for this development can be identified. First, many policy organizations in different countries have noted the potential of informal venture capital to contribute to bridging the financing gap for young entrepreneurial ventures. This has meant that these organizations offered a number of research grants to study the informal venture capital market in areas concerned with the practical side of informal investing: How large is the informal venture capital market? How do informal venture capitalists invest? What are informal investors' attitudes towards policy interventions? This interest that policy organizations have expressed in the informal venture capital has also led to most of the research focusing on the "business angel" part of the market, because these are the most active investors who also have the greatest financial impact.

The second reason for the empirical and explorative nature of the research in the informal venture capital area is the considerable

difficulties associated with identifying informal investors. Considering the fact that informal investment activity is to a considerable degree invisible, and that there are no registered records of informal investments, researchers have been focusing their attention on the part of the population that was easy to identify and who were also more likely to respond to surveys and participate in different studies. These are mainly investors who are part of Business Angel Networks, those who participated in various business angel events, and generally wealthy individuals who were expected to engage in informal investment behaviour (see Farrell et al., 2008, and article 1 in this dissertation for a review of the most common sources for identifying informal investors in earlier research). As Kelly (2007) notices in his recent review of the state of the art in the research field, relying on convenience samples drawn from sources like these is just that, convenient.

This reluctance to invest time and money to derive larger, more representative samples of informal investors from a general population of the country, instead of from sources where informal investors are most likely to be found, has meant that our knowledge of the object of interest is based on small, non-representative samples of the informal investor population. This has hindered the theoretical development of the field, because researchers were disinclined to generalize their findings to a higher level, given the ambiguity of the underlying empirical material (cf. interview with William Wetzel in Landström, 2007). In general, the methodological development in this dissertation has a potential to contribute to a higher theoretical sophistication in the field, and render possible some interesting theoretical explanations of the nature of the informal venture capital phenomena.

The strengths and weaknesses of the methodology in the study

Applying the methodology suggested in this study is advantageous in more than one way. First and foremost, if applied correctly, it allows for creating an unbiased sample of informal venture capital investors,

which is representative of the whole population. This means that data can be used to explore the market in a way that was not possible before, such as reliably measuring the size of the market, and studying the regional differences in the supply of informal venture capital. Further, the random sample approach allows the researcher to be consistent about the definition that is used, as every individual in the sample is selected according to the same, predetermined selection criteria. Moreover, the fact that data gathering was conducted in two stages – the first one by the marketing research agency, and the second by the researcher herself, results in a high precision of the final database, because individuals are verified twice for compliance with the selection criteria. Finally, the information obtained from the marketing research agency includes the name and contact details of respondents (provided that they agreed to participate in the next stage of the study), which gives potential to make longitudinal studies of individuals' investment behaviour.

However, the method is not without its limitations. The first is that it can be costly to replicate in countries with expected high regional variations in the supply of informal venture capital, such as the UK and the USA. In order to reach a satisfactory coverage of the market, a critical mass of respondents needs to be achieved not only on the national level, but also on the regional level. Thus, the size of the initial sample needs to be even larger than the one used in this study; otherwise the results will not render the required precision.

The second limitation of the method applied here is that, even if a large sample is taken initially, it is very heterogeneous, leading to two consequences. First, while the sample can be expected to give a reasonably good picture of the broader population of informal venture capital investors, it is unlikely that the method will generate enough business angels to study. Even more significantly, due to the high level of heterogeneity of the sample, many business angels are likely to be excluded from the analysis, because most statistical programs would label them as "outliers". Meanwhile, Mason and Harrison (2008) especially point out that it is of great importance not to exclude what they refer to as "super-angels", or highly active investors, as it may lead to dramatic underestimations of the market size.

Second, the heterogeneity creates problems when developing questionnaires, because they have to be adjusted to the respondents, which results in choosing the "lowest common denominator". Thus, for the group of business angels, this method does not use the full potential of accessing data.

1.6 The general outline of the dissertation

This book is constructed as a composite dissertation consisting of an introductory chapter, a literature review, five papers that constitute the "body" of the dissertation, and finally conclusions and discussion of the results. The study starts with an introduction to the research field, a brief background of the context of the study, and formulation of the research questions (Chapter 1). The study continues with a review of the current state of knowledge in the area of informal venture capital research to give a background to the present research and to make explicit the current knowledge gaps that constitute a reason for undertaking this study. Further, the theories that are used in the analysis of the subject of interest are presented and discussed (Chapter 2). The research questions are dealt with in Chapters 3 to 7, which are independent papers connected with the overall purpose of the dissertation. The papers are aimed to answer one or more research questions and are arranged in chronological order. This means that the focus moves from methodological aspects of defining and demarcating the object of the study, to empirical investigations of the phenomenon, and further to more advanced theoretical discussions. This also means that some of the questions raised in the papers as suggestions for future research are dealt with in the papers that follow. The final chapter – Chapter 8 – summarizes the contributions of the papers and provides the general discussion of the results of each paper in relation to the research questions and the overall purpose driving this dissertation.

In the next chapter, the state of the art in the research on informal venture capital is presented and the theoretical framework that is a basis for this study is developed.

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2. Literature review and theoretical framework

This chapter starts with a review of the informal venture capital research as a lead in identifying the research gaps that this dissertation aims to cover. Further, the theoretical framework is developed that is used for analyzing the geographical aspects of the informal venture capital market in the course of the dissertation.

2.1 State of the art in the informal venture capital research field

Private individuals' tendency to invest money in young entrepreneurial ventures is not by any means a new phenomenon. Many examples of such investments are known in history, where such companies as Ford Motors, Apple, Sun Microsystems and The Body Shop were started with the support of external equity investments by private individuals. However, private individuals as a potential source of financing for young ventures started receiving attention from policy-makers first in the middle of the twentieth century. For example, in the late 1950s the Federal Reserve in the USA performed a couple of investigations regarding the initial financing of new technology-based firms – studies that preceded the Small Business Investment Act in 1958 (Landström, 2007). The growing interest in early financing of technology-based firms turned attention to the informal venture capital market as a source of external finance for these ventures, and we can find a number of early research contributions during the 1960s and 1970s (e.g. Rubenstein, 1958; Baty, 1964; Hoffman, 1972; Brophy, 1974; Charles River Associates, 1976).

The academic interest in informal venture capital phenomena, however, began to develop just a couple of decades ago, starting with

the pioneering work by Professor William Wetzel at the University of New Hampshire in the USA in 1983. Wetzel's (1983) study stressed the problem that young, and especially technology-based ventures, had in attracting finance in their early development stages, and provided anecdotal evidence of the significance of informal venture capital in solving this problem.

2.1.1 The development of the research area

In the last two decades, the interest for informal venture capitalists has risen considerably among policy-makers and practitioners in various countries. At the same time, this area has attracted an increasing amount of research. The pioneering work by William Wetzel in 1983 was soon followed by a number of studies in the USA (Arum, 1987; Haar et al., 1988; Gaston and Bell, 1988). Informal investors started attracting international attention in the late 1980s and the beginning of the 1990s, and research surveys were carried out in Canada (Short and Riding, 1989), the UK (Mason et al., 1991), Sweden (Landström, 1993a), Finland (Lumme et al., 1998), Australia (Hindle and Wenban, 1999), Japan (Tashiro, 1999), Norway (Reitan and Sørheim, 2000), Denmark (Lindgaard Christensen et al., 1998; Vaekstfonden, 2002), Singapore (Hindle and Lee, 2002) and Germany (Brettel, 2003). The nature of these studies was mainly explorative; they aimed to describe what informal venture capitalists looked like and were mainly concerned with the "business angel" type of investors. As a part of this first, exploratory phase, some early attempts have been made to measure the size of the informal venture capital market (e.g. Wetzel, 1986; Gaston, 1989) and some international comparisons have been made of the characteristics of "business angels" in different countries (Harrison and Mason, 1992; Landström, 1993a).

After researchers had developed some basic awareness of who informal investors are, they turned their attention to understanding how the informal venture capital market operates. We have seen a number of studies concerned with the informal venture capital process (Riding et al., 1993; Mason and Rogers, 1997), a stronger focus

on policy issues (Mason and Harrison, 1995; Wetzel and Freear, 1996), and we have also seen an introduction of theoretical approaches in the research such as the portfolio management theory (Norton, 1990; Harrison and Mason, 1991), the decision-making theory (Landström, 1995; Feeney et al., 1999), the agency theory (Landström, 1993b; Fiet, 1995; van Osnabrugge, 2000), the signaling theory (Prasad et al., 2000) and the social capital theory (Sætre, 2003; Sørheim, 2003). Similar to the first studies on the informal venture capital market, these studies have also been largely focused on the most active and visible part of the market – business angels.

The late 1990s and early 2000s were characterized by a broadening of the interest for the informal venture capital phenomenon. Several studies have attempted to move beyond the traditional definition of informal investors as business angels who exhibit a high investment activity and along with financial contribution also contribute knowledge, contacts and management competence, taking a hands-on role in their investments (Mason and Harrison, 1995). Some studies have illustrated that informal investing in fact might be a much broader phenomenon, among them Coveney and Moore (1998), Sørheim and Landström (2001), Rasila et al. (2002) and Harrison et al. (2004), who brought forward the variations in the financial activity level between the investors, and in their propensity to provide hands-on involvement to the companies. Even though business angels were shown to represent the largest part of the market in terms of invested money, the other, less active or less involved investors were found to be much more numerous. Another step in the same direction was made in the GEM-report presented in 2003 (Reynolds et al., 2003), which defined all individuals who had invested money in a company not belonging to themselves as "informal venture capital investors".

This section proceeds with a more detailed review of the specific areas of knowledge that are of particular interest in the light of the research questions raised in this dissertation: the concept of informal venture capital and the heterogeneity of the informal venture capital market; the approaches to measuring the size of the informal venture

capital market; and the current knowledge of the geographical aspects of informal venture capital investment activity.

2.1.2 Understanding the heterogeneity of the informal venture capital market

The issue of the heterogeneity of the informal venture capital market was brought forward already in one of the early studies, by Gaston (1989). He suggested that informal investors can be divided into different categories based on such factors as the investors' personal characteristics, market activity, investments portfolios and investment goals. Based on this, Gaston (1989) identified ten distinct categories of informal investors: "Devils" – informal investors who acquire the majority stock in the company; "Godfathers" – successful, semi-retired consultants or mentors; "Peers" – active business owners helping new entrepreneurs, with particular interest in the market, industry, or individual entrepreneur; "Cousin Randy" – informal investors who only make family-related investments; "Dr Kildare" – professionals such as medical doctors, accountants, lawyers and others; "Corporate Achievers" – business professionals with some success in large corporate organizations and who want to be more entrepreneurial; "Daddy Warbucks" – informal investors with very considerable wealth; "High-Tech Angels" – investors who invest only in high technology firms; "The Stockholder" – informal investors who do not participate in the firm's operations; and "Very Hungry Angels" – informal investors with a considerable amount of capital available for investments, and who are actively searching for new investment deals.

Several years later, Coveney and Moore (1998) suggested a categorization of the informal venture capital market of their own, using investment activity, in terms of the number of investments and total funds invested, and the investor's financial and business background as primary criteria to distinguish between the four active types of investors. These are: "Wealth Maximizing Angels" – rich individuals and experienced business professionals who invest in several businesses for capital gain; "Entrepreneur Angels" – very rich, very active

entrepreneurial individuals who invest in young entrepreneurial companies for the potential capital gain, as well as for the fun associated with investing; "Income Seeking Angels" – less wealthy individuals who invest some funds in a business to generate an income or even a job for themselves; and "Corporate Angels" who refer to firms that devote part of their funds to investing in unquoted ventures. In addition, they suggested another two types of informal investors who were not active – "Virgin Angels" and "Latent Angels" – those that either never have made investments in unquoted companies, or that currently are not making investments. Coveney and Moore (1998) created detailed profiles of different types of informal investors, allowing for entrepreneurs seeking funds to identify the most appropriate investor.

The most recent effort to segment the informal venture capital market was made by Sørheim and Landström (2001). These authors identified four types of informal investors by categorizing them according to their investment activity and competence: "Lotto Investors" – informal investors with a low competence level and low investment activity; "Traders" – informal investors with a low competence level, but high investment activity; "Competent Investors" – informal investors with a high level of competence but low activity level; and "Business Angels" – informal investors with a high level of competence and a high investment activity level. The investment activity level here is measured as the number of investments made and the funds invested, including both former and planned investments, while the competence is measured as education and professional and entrepreneurial experience. The empirical findings show that there are considerable differences between the four identified groups of informal investors regarding, among other things, the information sources used in the decision process, the level of involvement in the investment, investment horizons etc.

In addition, there were a number of other studies in the 1990s that have looked at the variety of informal venture capital investors from different perspectives. One of these contributions was the study by Landström (1992), who divided the informal venture capital market according to the level of investment activity, with respect to the

number of investments that individuals made, and the average size of these investments. Another contribution was the study by Freear et al. (1994), who looked at "angels" and "non-angels", or, in other words, investors who are active and those who yet had to make their first investment.

The studies described above have all shown that the informal venture capital market is highly heterogeneous and that there are several different kinds of informal investors. However, these ways of exploring the heterogeneity of the informal venture capital market create certain problems. First, it is for the most part unclear on which criteria authors choose to make the categorizations. Both Gaston (1989) and Coveney and Moore (1998) have chosen criteria that both reflect the type of behaviour that the investor exhibits and investors' motivations, to distinguish between different types of investors. Further, Gaston (1989), Coveney and Moore (1998) and Sørheim and Landström (2001) use criteria that describe both investor characteristics and investment behaviour in their categorizations. This is problematic as it becomes unclear whether the categorizations reflect a certain type of investor or a type of investment behaviour, and whether there are implicit assumptions about the casual relations between these factors in the categorizations.

The second issue related to categorizing informal investors in the way suggested by earlier studies is how the data on informal investors is gathered. Gaston (1989) has identified informal investors from the businesses that they have invested in, which in turn was derived from a random sample of 240 000 businesses in the USA; Coveney and Moore (1998) have identified informal investors in their study from the nation-wide Business Introduction Services in the UK; while Sørheim and Landström (2001) identified informal investors from three different sources (Norwegian Share Investment Association, Norwegian Investors' Forum and Fortunia AS network), complemented with some "snowball" sampling. Questions that arise are – how does this affect the outcome of the categorizations? Are authors looking at comparable samples of informal investors? The methodological inconsistencies between studies do not allow us to answer these ques-

tions, but it will probably be a well-justified argument to say that the results of these studies are not quite comparable.

The third issue that Riding (2005) and Riding et al. (2007) have drawn attention to recently is that assigning individuals to certain categories can in itself be considered misleading. Irrespective of whether this categorization is done according to the individuals' characteristics, behaviour, motivations or other related dimensions, such factors have a tendency to change. This means that over time, or in different investments situations, individuals can exhibit different investment behaviour, which the existing ways of describing the market do not accurately capture, as they are built on the assumption of a static investment behaviour.

To summarize, there is a need for developing our understanding of the structure of the informal venture capital market, both in the ways we define informal investors and how we understand different types of investor characteristics and investment behaviour. To handle the problem of the static categorizations, it would be advantageous to go from investor as a level of analysis to looking at the individual investments they perform. In this way, we will have a possibility to capture investors changing their characteristics and behaviour. Finally, by relying on a rigourous random sample of informal investors, instead of samples of convenience derived from various sources, we can contribute to the understanding of the informal venture capital phenomena.

2.1.3 Estimating the size of the informal venture capital market

The first attempt to estimate the size of the informal venture capital market was made by Wetzel (1986) with USA data. Wetzel used what came to be called the *market-based approach*. He founded his estimation on two assumptions. First, he estimated the proportion of start-up companies that needed external financing to be 5%, and the amount raised by those companies to be $200 000 each. Second, he estimated the proportion of informal investors in the population by looking at the Forbes 400 Richest People in America. He further as-

sumed that those investors would make one investment every two years, and that the average amount invested would be $50 000. This gave a total number of 100 000 investors who invested $5 billion. Wetzel (1986) himself acknowledged that these calculations were crude and based on extrapolation of fragmentary data. However, these estimates played an important role in establishing informal venture capital as a legitimate field of study, and drew much attention from policymakers (Mason and Harrison, 2000a).

Arum (1987) and Gaston (1989) tried a different approach to quantifying the informal venture capital market, called the *firm-based approach* (Mason and Harrison, 2000a). A random sample of SMEs in the USA was taken to identify those that had raised capital from informal investors. The percentage share of firms raising informal venture capital was extrapolated to the total number of firms in the USA and then multiplied by the total number of investors per firm. The annual amount invested was then calculated using the average size of the investment from the initial sample, and divided by the investment holding period. The final estimation of the number of informal investors in the USA was 720 000, and the annual flow of informal venture financing was estimated to be $32.7 billion (Gaston, 1989).

A third approach to estimating the size of informal venture capital market is the *capture-recapture approach* used by Riding and Short (1987). The method is based on measuring the number of times each investor in the sample is mentioned by other investors. The number of informal investors in the studied region (Ottawa-Carleton) was estimated to be 87. However, this is a very problematic approach for several reasons. Owing to the regional nature of the informal venture capital market, the results cannot be extrapolated to the national level. Further, the approach does not provide information on the number of investments made or the funds invested by the identified population of informal investors (Mason and Harrison, 2000a). Finally, the results depend on the willingness of investors to give the names of other investors known to them (Lumme et al., 1998).

Mason and Harrison (2000a) introduced a different approach to measuring the scope of informal venture capital market that can be

described as a *visible market approach*. They looked at the "visible part" of informal investors – those registered in the business angels networks. After calculating the registered number of investors (5651 in 1999–2000), they made an adjustment for over- and undercounting, and estimated the percentage share of all informal investors who are members in the business angels network. The assumptions made in those adjustments are, however, crucial for the results. Depending on the estimated proportion of registered investors, the results varied between 20 000 informal investors who invested £500 million, and 80 000 informal investors who invested £2 billion.

Finally, Riding (2005) estimated the size of the informal venture capital market in Canada by drawing a random sample from the population of owners of small and medium sized companies. First, Riding established the percentage of business owners who had invested money in someone else's business, not including publicly traded shares, mutual fund and stocks (10.8%), and the average size of investment made ($111 840). Further, he grouped the investors according to whether the money was provided to a friend or family member, or at arm's length. Finally, he distinguished between investors who acted as operators of the businesses they invested in, and those who were passive in their investments. Because of the methodological limitations of the study, it was not possible to establish whether individuals who contributed money at arm's length and acted as operators in the companies that they invested in were informal venture capital investors or serial entrepreneurs. Therefore, only the group of individuals who invested at arm's length and did not act as operators of the businesses that they invested in were labeled as informal investors. After accounting for the share of informal investors who were not business owners, the market size was estimated to be $3.5 billion per year.

Summarizing the results of previous studies, it can be stated that the size of the informal venture capital market is considerable in the countries from which the data is available. At the same time, these studies only give a crude estimation of the actual size of the informal venture capital market and the results are sometimes inconsistent. In this context, two questions arise. The first is – what should be meas-

ured? In other words, how do we define the appropriate population to be quantified? Without a clear definition of the object of the study, researchers will not be able to proceed to develop methodological approaches to appropriately capture the population of informal investors.

The second question is – what is the appropriate measurement technique? Considering the importance of understanding the scope of the informal venture capital market that was discussed earlier, I argue that future studies need to approach the issue of measuring the size of the informal venture capital market with greater rigour, and it would be advantageous to derive a sufficiently large random sample of the general country population to reliably assess the scope of the market. Even though the Global Entrepreneurship Monitor study (Reynolds et al., 2003) has provided us with some understanding of the scope of the market based on random samples of the populations of countries, utilization of a much larger sample is needed to a achieve a reasonable degree of accuracy.

2.1.4 Examining the geographical perspectives

As pointed out in the introduction, the institutional venture capital market both in the USA and in Europe is characterized by a high level of geographical concentration. Institutional venture capital seems to be localized in financial centers and high-technology clusters, leading to the appearance of regional equity gaps. This implies that entrepreneurs in the remote regions are disadvantaged in getting otherwise comparable projects funded. Mason and Harrison (2000b) and Mason (2007) argue that informal venture capital plays an important role in closing the regional equity gap because informal investments are more geographically dispersed.

The notion that informal venture capital is geographically dispersed is largely based on two observations. Firstly, as indicated by Gaston (1989), who studied the most active part of informal venture capital market in the USA, informal investors seem to be found practically everywhere. This has been supported by a number of other studies, such as, for instance, Feeney et al. (1998) and Farrell (1998)

who have documented the presence of informal venture capital investors in less developed regions where institutional venture capital was virtually absent. Secondly, informal venture capitalists are expected to invest in the geographical proximity of their homes. This was initially suggested by Gaston (1989) and later repeatedly confirmed in several European countries (e.g. Mason and Harrison, 1994; Landström, 1998; Lumme et al., 1998) and in the USA (Sohl, 1999). For instance, Landström (1998) has shown that 60% of investments take place within a radius of 80 kilometres from the investor's home. Lumme et al. (1998) provide very similar figures where 60% of investments were made within 100 kilometres from the investor's home or workplace, while according to Mason and Harrison (2002), three-quarters of investors would not invest in companies further away than a two-hour journey. There are several explanations for this pattern, including the local nature of information on potential deals (Wetzel, 1983; Sørheim, 2003) and the post-investment hands-on involvement in the companies (Landström, 1992), reflecting both value-added contribution in terms of business expertise (Mason and Harrison, 1996) and the need to monitor due to the agency risk (Landström, 1992; Mason, 2007).

At the same time, Mason and Harrison (2000b) note that we can expect significant spatial variations in the density and activity of informal investors, which can be explained from both supply and demand perspective. Looking at the supply side, informal investors have been found to have entrepreneurial backgrounds (e.g. Gaston, 1989; Landström, 1998; Lumme et al., 1998), which means that they can be expected to be concentrated in regions with a large SME sector and a high proportion of fast-growing firms. Moreover, as informal investing requires some disposable funds available for investment, the informal venture capital investors are likely to be the most numerous in regions with a concentration of wealth and income (Bardhan et al., 2000; Mason, 2007). The demand for informal venture capital is also likely to be spatially focused, as the most suitable investment opportunities are disproportionally concentrated to economic core regions that have the highest volume of new firms (Keeble and Walker, 1994; SCB, 2007), the largest share of fast-growing

firms (Mason, 1985; DI, 2005) and the largest concentration of technology-based companies (Keeble, 1994; NUTEK, 2004) compared to peripheral regions, which are often dominated by the manufacturing industry (Mason and Harrison, 2002). Assuming the local nature of informal venture capital investments, this would mean that informal venture capital would be localized in economic core regions.

Thus, current knowledge does not provide a clear picture of the distribution of informal investing activity, as according to one line of argumentation it is expected to be geographically dispersed, while according to another it is supposed to be geographically concentrated. Meanwhile, depending on the degree of concentration and dispersion, the informal investing activity will have different implications for the economic development and bridging of the regional equity gap. However, despite the 25-year-long history of research in informal venture capital, starting with the seminal study by Wetzel (1983), our knowledge of the actual distribution of informal venture capital investing is still very limited (Mason and Harrison, 2000b; Mason, 2007). The current discussion about the spatial aspects of informal investing is based on a number of assumptions about the location of informal investors rather than empirical evidence. Due to the acknowledged importance of capital in general, and informal venture capital in particular, for the regional economic development, there is a need for more robust, methodologically reliable enquiry into the geographical aspects of informal venture capital investing.

2.1.5 Summary

In general, the research conducted in the area of informal venture capital has provided us with useful insights about the characteristics and functioning of the informal venture capital market. However, there are a number of factors that have been and remain important obstacles for the development of the research field.

The informal venture capital concept and definitional inconsistency

The first factor that has hindered the knowledge accumulation within this research area is the inconsistent use of definitions, as different scholars have used multiple ways of defining and demarcating the object of the study (Riding et al., 2007). For example, researchers have often associated informal venture capital investors with "business angels", who are described as highly active, financially sophisticated investors who invest considerable amounts of money in unquoted ventures, and apart from that also contribute their competences and skills, taking a hands-on role in the company (Freear et al., 1994; Mason and Harrison, 1995). It has not, however, been clear whether the concepts of "informal venture capital investors" and "business angels" are in fact distinct from each other, or synonymous (Landström, 2007). Some researchers have used the concepts interchangeably (Wetzel, 1983; Gaston, 1989; Freear et al., 1994), while others have argued that informal venture capital investors is a much broader concept than "business angels", and also includes private individuals with a lower investment activity and those who remain passive in the investments they make (e.g. Mason and Harrison, 2000b; Sørheim and Landström, 2001). The problem becomes increasingly important as some authors also choose to include family-related investments in the scope of the informal venture capital market (e.g. Reynolds et al., 2003), arguing that a large part of the financing of young entrepreneurial companies is provided by the members of the entrepreneur's family. The lack of definitional clarity within the informal venture capital literature has hindered development and application of theoretical frameworks and has meant that there is a low level of comparability between different studies.

Methodological shortcomings and reliance of samples of convenience

Another factor that has affected the development of the research field is problems related to identifying informal venture capital investors. Already in the early years, it was noted that informal venture capital

market was hard to study, as there were no public records of informal venture capital investing activity, and there still are none. Therefore, most of the studies have been conducted on small, non-representative samples of informal investors, and with a strong focus on "business angels" types of investors, because they generally have higher profiles and are easier to identify. This has meant that our understanding of the informal venture capital phenomena has been constrained by methodological deficiencies of the prior research and limited to a small part of the informal investor population. An implication of this is that, in a way, the field has not yet moved beyond the first generation studies, as researchers are still not able to reliably answer such questions as what the scope of the informal venture capital market is and how the informal venture capital market contributes to bridging the regional equity gap for young entrepreneurial firms.

Strong empirical orientation of informal venture capital research

Finally, and related to the previous two points, the research on informal venture capital still remains rather empirical in nature. Many of the studies are concerned with exploring the attitudes, behaviour and characteristics of informal venture capital investors, and we have only seen a few examples of researchers striving to go beyond the surface of informal investment behaviour, creating a deeper understanding of such questions as why individuals assume a certain investment behaviour, what drives the individuals' decisions to invest in a certain way, and what consequences this behaviour has for the overall characteristics of the informal venture capital market. This means that, if the research field is to advance, gain legitimacy, and reach a higher level of theoretical sophistication, there is a need to move away from explorative, empirical research, to studying more interesting theoretical problems, and to do so on a basis of conscious definitional choices and rigourous methodological approaches.

In the next section, I will present and discuss the theoretical framework that is used in the course of this dissertation to explain the

spatial patterns of informal venture capital investing and the role played by geographical proximity.

2.2 Development of theoretical framework

This section sets out to describe the theoretical foundations for explaining the distribution of informal venture capital activity. The framework is built up both from a macro perspective, looking at the regional determinants for the location of informal investments, and from the individual perspective, focusing on the drivers of location decision in the context of individual investments.

2.2.1 The distribution of the informal venture capital investment activity

Two different perspectives have been suggested to understand the geography of the informal venture capital market (Mason and Harrison, 1999; Mason, 2007). The first one is the supply side perspective that implies that certain regional characteristics will lead to more individuals choosing to become informal venture capital investors at some locations that at others. The second one is the demand side perspective that predicts that certain regions will attract more informal venture capital investments than other regions, irrespective of where the investors reside. These perspectives are described below.

The supply side perspective on the distribution of informal venture capital

The supply side perspective of the location of informal venture capital investing represents the view that certain regions will foster more informal investors than others, based on some institutional characteristics of these regions. Many informal venture capital investors are known to have previous entrepreneurial experience, therefore Mason and Harrison (1999), for example, argue that regions with a high level of entrepreneurial activity will also be the ones where informal venture capital investors are likely to be found. Another factor that is

expected to be related to the location of informal investors is the relative level of wealth and income in the region. Making informal investments implies a commitment of financial resources; therefore the concentration of informal investors can be expected to be higher in regions with a high average level of wealth and income (Mason and Harrison, 1995, 2002; Mason, 2007).

The logic of the supply side perspective is related to the location of informal venture capital investors, while it is the location of informal investment activity that is of significance. The argument here is, however, based on the view of the informal venture capital market as a local market, i.e. most investors prefer to invest close to their homes (e.g. Gaston, 1989; Landström, 1992; Coveney and Moore, 1998). To summarize, this reasoning implies that the location of informal investors is primary, and that it is driven by a number of regional economic factors. The location of the investment activity is therefore secondary, and merely follows the location of the investors.

The supply side argument about the distribution of informal investment activity is similar to that used to explain the location of entrepreneurial activity. For instance, Davidsson et al. (1994) have found that such factors as unemployment level, the existing business stock, population density and growth, and regional development support were important for explaining the level of entrepreneurial activity at certain geographical locations in Sweden. Further, Reynolds et al. (1995) have shown that economic diversity, personal wealth and employment policy flexibility were important predictors of the variation in business births and deaths in the USA. The existing discussion about the location of the informal investors has also been based on the supply side reasoning.

In the context of informal venture capital investing, this line of reasoning is, however, problematic for the following reasons. The results from different countries have shown that the share of informal investors with an entrepreneurial background varies considerably, from 46% in Norway (Reitan and Sørheim, 2000) to 95% in Finland (Lumme et al., 1998). The level of entrepreneurial experience is also much higher for business angels, while when it comes to a broader definition of informal investors, it is considerably lower, in some

cases just over 40% (e.g. Maula et al., 2005). The same reasoning can be applied to the concentration of wealth and income, as it has been shown that informal investors can be described as comfortably well-off rather than super-rich (Haar et al., 1988.; Gaston, 1989; Mason and Harrison, 1994; Mason, 2006). Thus, while many of the investors might be concentrated in the regions with a high average wealth and income, a large portion might not be.

Another problem with using the supply side view is that it does not pay much attention to the geographical connection between the investor and the location of investments; rather it is taken for granted. At the same time, given the considerable evidence that many investments take place outside the geographical proximity from the investor (Mason and Harrison, 1994; Lumme et al., 1998; Harrison et al., 2003; Sohl, 2003), the location of the investors themselves does not provide sufficient explanation for the distribution of the investments activity. Taken together, this implies that the supply side of informal investments is far from unambiguous, and there might be some better determinants of the geographical distribution of informal venture capital investment activity.

The demand side perspective on the distribution of informal venture capital

The other perspective for analysing the geographical characteristics of the informal venture capital market can be labelled the demand side perspective (Mason and Harrison, 2002; Mason, 2007). This perspective implies that the location of the investment opportunities will be the main predictor of the distribution of the informal investment activity, and not the location of investors. The reasoning behind this view is that individuals become informal venture capital investors as they realize their investment potential. This implies that some individuals with certain prerequisites in terms of, for instance, income, professional experience and entrepreneurial background, will realize their investment potential, while others will not. In other words, to become an informal investor, an individual needs to come in contact with an investment opportunity and go through with an investment.

This is in line with several studies looking at potential, or virgin, investors, where the lack of access to attractive investment opportunities was found to be one of the major factors that hinder the individuals to put in effect their investment potential (Freear et al., 1994; Coveney and Moore, 1998).

The demand for informal venture capital is likely to be highest among the companies that are unable to finance the company's development with internally generated funds and to obtain other types of finance. The companies that require most external financing are usually the ones in the early stages of development, as the entrepreneur runs out of capital at the same time as banks are reluctant to provide loans due to unavailability of collaterals or track records (Landström, 2003). Further, the demand for informal venture capital financing can be expected to be greater among the technology-based firms as they are more capital intensive and least likely to survive and grow on the internally generated resources (Keeble, 1994; Murray, 2007). They are also the ones that usually cannot provide the traditional type of collateral as many of their assets are immaterial such as patents. Finally, the firms that require most external financing are the potential "gazelles". These are firms with high growth and high potential, that usually need substantial financing to fund their growth far beyond what can be provided by entrepreneurs' own capital or loan institutions (Mason, 1985; Storey, 1994). To summarize, the demand for informal venture capital can be expected to be concentrated in regions with a high new business formation rate, a concentration of technology-based firms and a presence of high growth companies.

The demand side reasoning is also advantageous because it accounts for the possibility of long-distance investing. The general assumption is that investors living in most economically dynamic and entrepreneurial regions would be less likely to make long-distance investments, at the same time as investors living in less economically dynamic regions will be more likely to make long-distance investments (Mason, 2007). In other words, investors who have sufficient access to local investment opportunities will also be more likely to invest in their geographical proximity. Meanwhile, investors who can-

not find attractive investment opportunities in their proximity will be more inclined to invest over distance.

In this respect, the demand-side reasoning corresponds quite closely to the neo-classical financial theory, where the capital is expected to flow to the most profitable investment projects, and financial markets ensure an effective allocation of capital between firms and across the geographical space. This means that financial markets will be perfectly integrated across regions, so that investments in any given region would be independent of local capital availability, and local demand for finance would not be constrained by local supply (Klagge and Martin, 2005). According to this theory, the financial system functions to reduce or eliminate the inter-regional differences in capital supply (Martin, 1999) and there will be no sectoral or geographical equity gaps in the demand or supply of finance. This implies that the geographical concentration of financial activity merely depends on the lack of demand for finance in peripheral regions (Klagge and Martin, 2005).

The demand side reasoning about the location of informal venture capital investments is complicated by two factors. The information about investment opportunities does not flow freely and is not equally available to all actors irrespective of their location. Instead, this information usually becomes available to individuals through their networks, and is therefore restricted to a certain group of individuals (Wetzel, 1983; Arum, 1987; Mason and Harrison, 1994). Therefore, it is argued that the chance that information about an investment opportunity reaches an investor decreases with the geographical distance between the two (e.g. Wetzel, 1983; Mason, 2007). The second factor is that informal venture capital investing involves a great deal of uncertainty, ambiguous information and agency issues, and investors are reluctant to pursue investment opportunities outside their geographical proximity. This logic suggests that the spread of informal venture capital investments is constrained by the very nature of the informal venture capital market, and demand side factors will not fully explain the location of informal investments.

The occurrence of long-distance investing is, however, not uncommon. Depending on the national context and the measure of proximity used in the study, the observed share of long-distance investments varies between 25% and 45% (Gaston, 1989; Landström, 1993b; Mason and Harrison, 1994; Lumme et al., 1998; Sohl, 2003). This means that, despite the obvious tendency to invest close to home, there is a significant portion of informal investments that are conducted over distance. Therefore, to explain the locational patterns of informal venture capital investing on the aggregated level, we need to understand the role that geography plays on the individual investment level, and in particular why geographical proximity is less important in some investments than in others.

2.2.2 The role of proximity in informal venture capital investing

The dominance of local investing can be explained by several factors. Informal investors need to acquire information about the existence and characteristics of investment opportunities and assess the quality of these opportunities. The likelihood that a certain investment opportunity will come to an investor's attention increases the closer the potential investment object is to the investor (Wetzel, 1983). As informal venture capital investing is characterized by a high degree of uncertainty, risk and ambiguous information, the information about investment opportunities will be perceived as reliable if acquired from trusted parties (Harrison et al., 1997). This is in line with studies that show that informal investors prefer to obtain information on potential deals from their personal social and business networks (e.g. Wetzel, 1983; Mason and Harrison, 1994).

Further, informal investors are more likely to provide finance to entrepreneurs with whom they either have a previous social relationship or whose reputation is known, as it reduces risk for opportunism and uncertainty associated with investment (Harrison et al., 1997; Mason, 2007). This again would lead to localization of informal investments, as the investor would either need to have a previous trustful relationship with the entrepreneur, or be able to obtain

information about the entrepreneur's reputation that would be perceived as more reliable if it originated from a local source (Gompers and Lerner, 1999).

After the investment is conducted, some informal investors take a hands-on role in the companies they invest in (Landström, 1992; Mason and Harrison, 1995). The purpose for getting actively involved in the investment object is two-fold, and related both to the value-added contribution in terms of commercial skills, entrepreneurial experience, business know-how and contacts (Mason and Harrison, 1995, 1996) and the need to monitor (Landström, 1992; Mason, 2007). As both of these activities require some degree of physical presence at the investment object location, they are facilitated by the geographical proximity to the firm, as it reduces the required time commitment and financial resources.

Because both the opportunity identification and appraisal and the post-investment role related to the value-added and monitoring activity are facilitated in the presence of geographical proximity, the prevalence of local investing is well justified. However, because the tendency of local economic interaction is a wide spread phenomenon far beyond the context of informal investing (e.g. Lublinski, 2003; Venables, 2005), and due to the range of potential explanations for this, the prevalent local nature of informal venture capital investing does not constitute a particularly significant finding. Far more interesting is the existence and commonness of non-local investing despite the multiple factors stressing the importance of geographical proximity.

The multi-dimensional nature of proximity

Theorists in the area of economic geography have suggested a multi-dimensional view of proximity as a way of understanding spatial characteristics of economic interaction (e.g. Boschma, 2005; Moodysson and Jonsson, 2007). They suggest that along with the geographical dimension, proximity can also be described in terms of cognitive, social and institutional factors, and that the process of economic interaction between actors is an outcome of the interplay be-

tween these various dimensions of proximity, rather than geographical proximity alone.

Cognitive proximity can be defined in terms of individuals' common knowledge base. According to Moodysson and Jonsson (2007:120), individuals are cognitively proximate when they "share a similar educational and/or professional background and have thereby acquired a similar frame of reference…which makes it easier for them to establish and retain relations and carry out advanced communication". In the context of informal venture capital investing, cognitive proximity between the investor and the entrepreneur would mean that both the process of identifying the investment opportunity, conducting the evaluation and following up the investment *ex post* will be facilitated if the investor and the entrepreneur share the same knowledge base. Cognitive proximity enables individuals to communicate efficiently, without implying that they have to be geographically proximate.

Social proximity can be defined in terms of socially embedded relations between actors. Relations between actors are socially embedded when they involve trust based on friendship, kinship and experience (Boschma, 2005). Trust can, in turn, be defined as "…one party's confidence that the other party in the exchange relationship will not exploit its vulnerabilities" (Dyer and Chu, 2000:260). If the level of trust in the relationship is high, individuals will be more willing to put themselves in a vulnerable position (Sørheim, 2003) such as disclosing potentially sensitive information or providing resources without obtaining security in the hope for future returns.

Institutions are defined as "sets of common habits, routines, established practices, rules or laws that regulate the relations and interactions between individuals and groups" (Edquist and Johnson, 1997:46). A distinction can be made between formal institutions on the one hand, which are laws and rules, such as governmental regulations, tax policies and the legal system that enforces contracts, and informal institutions on the other hand, which are cultural norms and habits (Boschma, 2005). Shared norms and values can be related to the local culture and associated with a certain geographical place, which can vary from community to a country level; or associated

with what came to be known as "epistemic communities", which can be described as communities based on distanced ties and relationships supported by increased mobility offered through travel, the Internet and specialized literature. The role of institutional proximity is to provide assurance about trustworthy behaviour of agents that does not rely on prior social relationships between individuals (Tsai and Ghoshal, 1998).

The background to the multi-dimensional view of proximity is the argument about what geographical proximity brings (and what it does not bring) in economic interaction. Studies within the area of economic geography have identified many advantages for economic actors to be co-located. Bathelt et al. (2004) introduced a concept of local "buzz", referring to the information and communication ecology created by face-to-face contacts, co-presence and co-location of people and firms within the same region. This "buzz" is described as "specific information and continuous updates of this information, intended and unanticipated learning processes in organized and accidental meetings, the application of the same interpretative schemes and mutual understanding of new knowledge and technologies, as well as shared cultural traditions and habits…" (Bathelt et al., 2004: 28). This local "buzz" is often used to explain the existence of clusters and industrial districts, and more broadly the process of interactive learning, technology transfer, knowledge creation and innovation (e.g. Boschma, 2005). This is also what Gertler (1995) referred to as the advantages of "being there". However, while some authors view geographical proximity as an advantage, others argue that local presence is essential for such processes as learning and knowledge transfer to take place (Zook, 2002).

Defining proximity in terms of geographical factors alone has, however, posed some problems. Firstly, much of the literature stressing the importance of proximity and co-location has failed to define what should be considered as proximate, and how close the actors need to be in order to benefit from it (cf. Gertler, 2005). Further, it has been argued that "buzz" has much less practical significance than initially suggested, especially in such industries as information technology and biotechnology, where knowledge sharing and learning

processes are structured, planned, and limited to a small group of individuals, as opposed to unintentional, sporadic and involving all local players (Moodysson and Jonsson, 2007). Finally, there is still no agreement in the field regarding whether the geographical co-location in itself enables learning, technology transfer and knowledge sharing, or whether it can be substituted by other factors, such as interpersonal trust, cultural affinity and shared understandings (Boschma, 2005; Moodysson and Jonsson, 2007). The latter argument has gained support during the recent years, as it was increasingly recognized that geographical proximity alone is not sufficient to enable such processes as knowledge sharing and learning, at the same time as some of the processes previously explained by co-location of economic actors in fact proved to be not local in nature (Bathelt et al., 2004).

The multi-dimensional view of proximity stands for separating out different dimensions of proximity and identifying factors that researchers normally attribute to geographical proximity, but that can have other origins. Therefore, the multi-dimensional view questions the traditional concept of proximity and what it implies in economic interaction, and emphasizes the cognitive, social and institutional factors' role in economic interaction.

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