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The Economic Significance of Business Angels
Towards Comparable Indicators

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Abstract

Due to their importance for fostering high-growth entrepreneurship, business angels have over the last decades attracted considerable interest among policy-makers around the world. However, most of the policy initiatives to support business angel investing have been made without any strong empirical basis to guide them. Thus, the research results so far have done little to inform policy-makers regarding – what is the state of business angel market and what (if any) policy action is required? In this paper, we take one step in the direction of “making sense” of the existing evidence. We make a differentiation between the scope of the business angel investing and the significance of business angel investing and relate the recent empirical estimates of the business angel activity to the supply of venture finance on the one hand and the demand for venture finance on the other. In this respect, we move beyond talking about the scope of the business angel market and discuss the importance or potential impact of this source of finance for new and growing ventures.

JEL codes: G18, M13, M20, O16.

Keywords: business angels; entrepreneurship policy; indicators; supply-side; demand-side.

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3.1 The role of business angels in the economy – the potential for impact

The importance of access to early-stage finance for fostering high-growth innovative entrepreneurship has been widely acknowledged in the literature. Business angels are believed to be one of the most important sources of funding for such early-stage, high-risk, high-potential ventures. But their potential contribution for firms and for the economy may well go beyond that. In principal, four types of contributions can be distinguished:

1) Increasing the supply of capital. In countries where evidence of the scope of business angel activity is available, the data indicates that business angels provide at least as much capital to firms as formal venture capital investors and finance manifold more ventures. Thus, business angels contribute directly to increasing the flow of finance to firms. Further, it is not just the quantity of finance that business angels provide that is important, but also the type of finance. Primarily providing small amounts of finance in early stages of firms’ development, business angels play a quite unique role in the SME finance landscape.

2) Contributing to ventures ability to attract more financing. Since business angels predominantly invest equity capital, their investments contribute to strengthening the balance sheets of the firms, as opposed to loan financing that weakens a company’s financials, and a business angel investment might also give positive signals to other investors and the market (provided that the firm succeed to attract the ‘right’ business angel), reducing some of the informational asymmetry and leading to lower perceived risk for other financiers (e.g. Elitzur and Gavious, 2003; Conti, Thursby and Rothaermel, 2011). Thus, companies that have received angel funding would presumably be more likely to receive other types of funding later (e.g. Madill and Riding, 2005; Robb and Robinson, 2012). This may in turn imply a larger pool of financing opportunities for firms, better valuations (in case of equity) and better interest rates (in case of loans).

3) Increasing the “quality” of firms. Business angel investing is often associated with an active involvement of the investor, which can take shape of advising, coaching, providing access to investor’s network, etc. It can also be assumed that business angels may add value faster and in a more flexible manner than many other investors such as
venture capitalists and banks. Thus, firms that receive business angel funding potentially gain access to non-financial value, which can be expected to result in better prospects for development and growth (e.g. increased productivity, profitability and level of innovation) compared to firms that use more traditional sources of funding.

4) Strengthening the entrepreneurial eco-system. Scholars have started to draw attention to business angels’ role in entrepreneurial eco-systems (Zacharakis, Shepherd and Coombs, 2003). Often being active or former entrepreneurs themselves, many business angels are well-networked in their local communities. Therefore, when a business angel acts by connecting firms to competence, intermediaries, etc., the entrepreneurial eco-system in itself may benefit, which contributes to improved conditions for firm growth in the region. An eco-system with high level of angel investing can also be perceived as more attractive for innovative start-ups, which may lead to an increase in start-up rates and growth of firms.

This brief overview shows that the issue of business angel funding can be discussed on different levels and that there are both input and effect dimensions to be considered. By the input dimension we mean the activities of business angels – what do business angels do? What is the nature of their contribution to the firms? How much do they invest and what do they invest in? etc. By the effect dimension we mean – what are the outcomes of business angel financing? Does it affect firms/regions/industries/countries in the positive way? In this chapter, we will limit the discussion to the input side (what business angels do) and we will focus on the financial contributions of business angels on the macro (market) level. Thus we do not cover their non-financial contribution; these aspects are covered in Chapter 7 by Politis on business angels as smart investors and in Chapter 8 by Collewaert on the business angel-entrepreneur relationship. Nor do we talk about the firm-level or system-level effects of business angel investing (see Kerr et al., 2010 for an embryo of such analysis).

Due to its importance, the business angel market has over the last decades attracted considerable interest among policy-makers around the world (see Chapter 16 by Carpentier and Suret on tax incentives). However, most of the policy initiatives to support business angel investing have been made without policy-makers having any strong empirical basis to guide their actions. Thus, there are strong incentives for policy-makers and politicians to be able to measure the scope and significance of the business angel market (Mason and Harrison, 2008).
For example, it is important to monitor the changes in the number of business angels and their investments that could threaten the entrepreneurial “eco-system” and it is important to determine the need for interventions to support the market. However, the invisibility of the market makes it difficult to gain information about the size of the market, and therefore, there is a risk of inappropriate policy interventions.

Thus, the research results so far have provided little guidance for policy-makers regarding – what is the state of the business angel market and what (if any) policy action is required? In this chapter, we take one step in the direction of “making sense” of the existing evidence. We will make a differentiation between the scope of the business angel market and the significance of the market. So far, most of the studies have focused on measuring the scope of the market, i.e. to estimate business angel investment activity. However, we will argue that we need knowledge about the significance of the business angel market. In this respect we move beyond talking about the scope of the market and discuss the importance or potential impact of this source of finance for new and growing ventures.

In the chapter we will start to review the current knowledge on the scope of business angel investing in different countries. Second, we will change focus and talk about the significance of business angel activities in a particular national context. We propose two sets of indicators of the significance of business angels – from the supply and the demand side – and discuss their informational value and availability and quality of data to construct such indicators. While we do use three countries (USA, UK and Norway) to demonstrate the how the indicators can be calculated and what they reveal, our purpose is not to make any strong statements about the business angel markets in these specific countries. Thus, the examples provided are of illustrative nature. Finally, we discuss how these findings can be of guidance for policy-makers.

### 3.2 Review of the scope of business angel activities

The history of business angel research is now more than three decades long. The research has provided important insights into the functioning of business angel financing and our level of understanding of the phenomena has gradually increased. Yet, as some researchers have pointed out, the field seems to have moved from providing “no answers” to providing “a flora of answers” about business angels’ nature and activity (Shane, 2009). Particularly, no clear
picture has yet emerged with regards to just how significant this source of funding is for financing entrepreneurship, which is also the main rationale for writing this chapter.

There are mainly three factors that explain why our knowledge about the significance of the business angel market has not progressed further. First, accessing data on business angel investing has been a challenge in itself, as in most countries there are no official registers of business angel activity, and as a consequence, most studies have been cross-sectional and based on small non-representative samples. Second, a variety of definitions have been used by different scholars, which has inhibited build-up of a consistent knowledge-base. Third, the results of different studies have rarely been put into a wider context of access to finance system on a country level, or the regional entrepreneurial eco-system for that matter, making it difficult to understand and make sense of the results. For a more comprehensive discussion about the definitions and methodologies in business angel research see Chapter 2 by Mason and Harrison.

3.2.1 Early attempts to measures the scope of business angel activities

Already William Wetzel Jr noticed in his seminal work on business angels in 1983 that the population of business angels ‘is unknown and probably unknowable’ (Wetzel, 1983, p.26). More than 30 years later, Wetzel’s observation seems to hold. It has been shown in many studies over the years that the scope of business angel activity is difficult to measure.

In one of the first attempts to measure the scope of the activities, Wetzel (1987) ‘played with existing number’ of information, using a variety of fragmented data on high income families and the financing of business, and he concluded (p. 305).

‘… if the average net worth of millionaires is between $1 million and $2 million, then, excluding borrowed funds, the total wealth controlled by the one million or more US millionaires is between $1 trillion and $2 trillion. If the average millionaire commits 10% of his or her net worth to venture investing, the total informal venture capital pool is between $100 and $200 billion. If only one-fourth of US millionaires have any interest in venture investing, the pool of informal venture capital controlled by these 250,000 individuals lies in the $25 to $50 billion range, about twice the capital managed by professional venture investors. … it appear that each year over 100,000 individual investors finance between 20,000 and 50,000 firms for a dollar investment totaling $5 billion and $10 billion. The typical firm financed by angels raises about $250,000 from three or more investors.’
Obviously, these are rough estimations, but the numbers served a useful purpose at the time when there was a need to provide some numerical estimation of the scale of the business angel markets in order to highlight the significance of the market for policy-makers and politicians.

Since these early attempts to measure the scope of the market, many researchers have used different definitions and samples in order to generate estimates of the size of the market (see reviews of studies in Mason and Harrison, 2008; Farrell et al., 2008; Avdeitchikova et al., 2008): from (a) ‘supply-side approaches’ in which the researchers have tried to identify the individual making business angel investments, for example, using mailing lists of particular groups of individuals that potentially are making business angel investments, self-selected registers from Business Angel Networks, or “snow-ball” method that are using the fact that business angels may have an extensive network and a contact with one business angel might lead to a contact with other business angels; to (b) ‘demand-side approaches’ where the ventures that have received business angel investments have been identified through large surveys or public and tax data.

The results of these studies shows that the invisibility of the business angel activities has been a major barrier to measure the scope of the market, and our knowledge about the activities has mainly been based on various ad hoc studies using different definitions of business angels or informal investors, and using different sampling techniques. However, having these definitional and sampling concerns in mind, previous research has tried to document the size of business angel activities in different countries. It has been shown that business angels seems to be the single largest source of external capital, after family money, for firms in early stages of development, and not only providing capital but also providing significant non-financial inputs, i.e. mentoring, advice, contacts, and other forms of non-financial value-added. Not least, it is understood that business angels invest more capital in more firms than formal venture capitalists, especially when it comes to early stage firms.

3.2.2 Contemporary studies on the scope of business angel activities

The scope of business angel investing is likely to change over time and to be affected by changes in market conditions. Looking at the past two decades, the boom and bust of the IT-
bubble in late 1990s and early 2000s, the financial crisis of 2008/2009 and the following credit crunch, and the development of technological infrastructure that facilitates direct equity investments in unquoted businesses are all likely to have had a significant effect on business angels’ investment activity. Thus, the data on business angel investment activity is not easily comparable over time. The market is rather volatile, and even within the scope of few years, there can be considerable variations in the level of angel activity, echoing changes in market liquidity, perceived market conditions and availability of other types of finance. In this respect, short-term fluctuations in angel investment activity can be greater than those of institutional investors, reflecting the inherent difference in the functioning of these finance sources. While venture capitalists need to invest the fund’s equity during the life-time of the fund, business angels do not have such pressure, making it easy for them to hold off investing in “bad” times.

Further, when making international comparisons, we need to be aware of that countries can be affected in different ways by global macroeconomic and societal trends. Equally, national context factors will play an important role for the scope and the functioning of business angel market, such as the structure of national financial markets, tax systems, regulations affecting angel investing and technological advancement, as well as by governmental policies towards promoting investing.

Below, we summarize current knowledge about the scope of business angel investing activity in a number of countries where recent (post 2008/2009 crisis) estimations have been conducted. In next section (3.3) we take a step towards putting these estimates in their national context and developing comparable indicators of the significance of business angel finance.

Mason and Harrison’s (2011) Annual Report on the Business Angel Market in the United Kingdom estimated the business angel activity in UK to £317.7 million annually for the period 2009/2010. The estimate is based on extrapolating from the “visible market”, i.e. investors that are part of business angel networks/syndicates, based on a presumed degree of participation. The estimate is based on data provided by the British Business Angel Association and LINC Scotland, adjusted for undercounting and complemented by a questionnaire. The previous year’s study (Mason and Harrison, 2010) that covered 2008/2009 provided an estimate of £426 million, which indicates a substantial decline during one-year
time. The study does not apply a specific definition of business angels; rather it relies on the self-defined population – investors who are members of BANs/LINC Scotland syndicates.

In the US, the Center of Venture Research at the University of New Hampshire conducts an annual study of the scale of business angel investing. The last available study estimated that in 2013 the scale of business angel investing in the USA was $24.8 billion, representing investments in 70,730 companies. Comparing to estimates for previous years, it appears that the investment activity has been growing steadily over the course of last years: $22.9 billion was estimated to have been invested in 2012; $22.5 billion in 2011; $20.1 billion in 2010 and $17.6 billion in 2009. Thus, the investing volumes seem to be steady recovering towards the pre-crisis level ($26 billion invested in 2007). The estimations are made by extrapolating data from an annual survey to individuals known to be making business angel investments, both independent and belonging to angel groups/networks. The exact definition used is however not provided; nor the methodology for making the extrapolation.

MENON Business Economics has in 2010 conducted a study of business angel activity in Norway on behalf of the Ministry of Enterprise and Trade. The study, based on tax authority data from 2009, found that there are about 2,400 active business angels in Norway that hold equity stakes in around 4,500 unquoted businesses. The study does not provide an estimate of the size of the market, but based on the prior evidence of the average annual investing by business angels Norway (Reitan and Sörheim, 2000), the scope of the market can be estimated to €295 million annually. The definitional choices are discussed in detail in the report and the definition chosen by the authors is “private investor who owns an equity stake of less than 50% in an unquoted company, who receives less than 800,000 NOK (about €100 thousands) per year in salary from that company, who has equity stakes in at least two firms worth at least 500,000 NOK (about €60 thousands), is on the board of at least one of this firms and is not an ordinary manager/CEO of this firm.”

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3 http://paulcollege.unh.edu/research/center-venture-research/cvr-analysis-reports
4 The sensitivity of estimates to the criteria used is also discussed. For instance, if the cut-off point for the value of the portfolio is raised from 500,000 to 1 million NOK, the estimate of the number of business angels would drop by over 50%.
Table 3.1 summarizes the more recent estimates of business angel investing in the UK (2010), USA (2010) and Norway (2009)\(^5\)\(^6\).

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimate of scope of BA investing (amount)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (2010 data)</td>
<td>£317.7 million</td>
<td>Mason and Harrison (2011)</td>
</tr>
<tr>
<td>USA (2010 data)</td>
<td>$20.1 billion</td>
<td>CVR (2014)</td>
</tr>
<tr>
<td>Norway (2009 data)</td>
<td>€295 million(^7)</td>
<td>Menon (2010)</td>
</tr>
</tbody>
</table>

### 3.2.3 Summary

So far, we argue that in the last 30 years, the research field has gone from providing no answers to providing a flora of answers about the scale of business angel investing. However, most of the studies are still methodologically weak, drawing upon self-selection samples, and using unclear definitions and methodologies. While some advanced approaches, for example, using large surveys to a randomly selected sample of individuals in a country or using information that can be received from tax and firm register databases, to estimate the scope of the market have been successfully tested, they have not won popularity, likely due to large costs and data access problems.

Looking forward, first, we would reiterate the recommendations from Avdeitchikova et al. (2008) and Mason and Harrison (2008) and call for increased use of registry-based data that would give us close-to-full coverage of the population, possibilities to work with accurate definitions and align data collection practices between countries. Second, it appears to be more accurate and potentially fruitful to focus on the investments made by business angel

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\(^5\) Years 2009-2010 were chosen to increase comparability and ensure availability of secondary data for construction of indicators.

\(^6\) In addition to this review, rather detailed and recent data on business angel investing is available in Canada, derived from a database of all incoming external financing at firm-level. This database however only covers one of the regions, British Columbia. For this reason we chose not to present it here. For more information about the dataset, see http://www.tinbergen.nl/wp-content/uploads/2013/11/Angels-and-Venture-Capitalists-Complements-or-Substitutes.pdf

\(^7\) The study does not provide data on the amount invested, only the number of business angels. If we assume that the financial activity an individual angel in Norway is on the same level as it was in the late 1990s, the average yearly amount invested by a business angel would be ca €122 874 in 2009 money value (€100 000 according to Reitan and Sörheim, 2000 estimates, adjusted for ca ten years of inflation, https://www.ssb.no/en/kpi), giving a total annual investment amount of €295 million.
(and thus work with investment-based data), rather than business angel investors as individuals (and use individual-based data), which would also have implications for the choice of data sources. Finally, as new ways of investing are emerging (crowd-funding being a good example), it calls for a renewed interest in measuring investment activity according to a ‘broader’ definition of informal investors, in order to capture the variety of investment behavior and potentially important new segments. In this study, we don’t include empirical evidence on the scope of informal venture capital investing according to a ‘broader’ definition, since no serious attempts have been made to measure it in the recent years.

3.3 The significance of business angel investing

So far in this chapter we have talked about the scope of business angel investing, referring to estimates of business angel investment activity. The significance of this financing source, on the other hand, is a more complex but also potentially more relevant concept. It goes beyond measuring the scope of the market and refers to importance or potential importance of this source of finance for businesses.

Earlier studies that have used relative measures of venture capital activity (institutional and informal) have mainly used a country’s GDP, one of the common measures of the size of the economy, as the denominator (Avdeitchikova, 2008a, OECD 2013). However, while having some obvious strengths, such as simplicity, stability over time, good data access and comparability, such indicator is inherently problematic. Firstly, countries with small GDPs might get unreasonably high values (Hungary is a good example, see OECD, 2013). Secondly, and probably even more importantly, GDP does not reflect the structure of the economy, the size and composition of the SME sector that is the receiver of the financing. Thus, we argue, such indicators are not a particularly meaningful ground for cross-national comparisons or tool for policy-making.

Below, we suggest two alternative sets of indicators for the significance of business angel finance: one that focuses on the supply perspective (the relative importance of business angels as a source of finance to firms compared to other financing sources) and another that focuses on the demand perspective (the extent to which business angel finance is available in relation to the structure of the SME sector). We discuss the indicators’ strengths and weaknesses in terms of (1) information value and ask the questions: Does the indicator help us advance our
understanding of the importance of business angels? and Can the indicator potentially provide ground for more informed policy-making? and (2) methodological issues, asking: Is the underlying data available, comparable and of sufficient quality?

3.3.1 Indicators of business angel significance from the supply perspective

As a first step, we look at the significance of business angels from the supply side. One possible way of determining how significant business angels are as financiers is by relating business angel investing volumes to the total supply of external equity in early stages, thus addressing the question of how important business angels are as providers of external equity finance. Another possible way to increase our understanding of business angels’ significance is by relating business angel finance to the total amount of external finance that flows to SMEs, thus addressing the question of their overall significance as providers of external finance.

In order to illustrate our argumentation we will bring together the data provided by the studies of the scope of business angel activity in the UK, USA and Norway on the one hand, and data on the scope of other external financial flows to SMEs (European Venture Capital Association [EVCA] and the National Venture Capital Association [NVCA] in the US data on venture capital investing, and OECD Financing SMEs and Entrepreneurs Scoreboard for bank financing) on the other, we find following:

- In the UK, out of £1.1 billion early stage external equity finance that was invested in 2010, £317.7 million, or 28.4%, was provided by business angels. Business angels’ share of total external financing, including bank loans and governmentally guaranteed loans, that went to UK SMEs that year was 0.27%.

- In the USA, out of $27.9 billion early stage external equity finance that was invested in SMEs in 2010, $20.1 billion, or 72.0%, was provided by business angels. Business angels’ share of total external financing that went to the USA SMEs that year was 3.08%. Thus, the significance of business angels as providers of external equity finance in 2010 was about 2.5 larger in the USA than in the UK, while their overall significance as a supplier of finance to SMEs was more than ten times larger in the USA compared to the UK.
In Norway, out of €428.8 million early stage external equity finance that was invested in SMEs in 2009, approximately €295 million, or 69.0%, was provided by business angels. Business angels’ share of total external financing that went to Norwegian SMEs that year was 0.59%. This means that business angels as players on the external equity market for unquoted SMEs were considerably more important than in the UK during the same period, and relatively speaking almost as significant as they were in the USA. Still, if business angel activity is compared to the total flow of finance to these firms, the significance of business angels in Norway, while being more than twice as high as in the UK, was almost five (5) times lower than in the USA.

Table 3.2 summarizes the data on external early stage equity/total external capital flow to SME (including commercial and governmental loans) in the UK, USA and Norway, and presents both indicators per country, expressed as percentages.

### Table 3.2 Business angel investments vs. external equity/capital flow to SMEs

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimate of scope of BA investing (amount)</th>
<th>Total equity flow to SMEs (BA and VC)</th>
<th>BA’s share of total equity flow to SMEs</th>
<th>Total capital flow to SMEs (incl. bank loans)</th>
<th>BA’s share of total capital flow to SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (2010 data)</td>
<td>£317.7 million</td>
<td>£1.1 billion</td>
<td>28.4%</td>
<td>£115.6 billion</td>
<td>0.27%</td>
</tr>
<tr>
<td>USA (2010 data)</td>
<td>$20.1 billion</td>
<td>$27.9 billion</td>
<td>72.0%</td>
<td>$652.4 billion</td>
<td>3.08%</td>
</tr>
<tr>
<td>Norway (2009 data)</td>
<td>€295 million</td>
<td>€428.8 million</td>
<td>69.0%</td>
<td>€50.4 billion</td>
<td>0.59%</td>
</tr>
</tbody>
</table>

Strengths and weaknesses of the indicators

In this section we have suggested two indicators of the significance of business angel investing from the supply perspective: business angels’ share of total early stage external equity investing in SMEs, and business angels’ share of total external financing that flows to SMEs. Below, we discuss their strengths and weaknesses.

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8 VC in early stages, including public venture capital (2010 data, [www.evca.eu](http://www.evca.eu)) plus BA capital (Mason and Harrison, 2011).
12 VC in early stages, including public venture capital (2009 data, [www.evca.eu](http://www.evca.eu)) plus BA capital (Menon, 2010; Reitan and Sörheim, 2000).
13 Bank loans (the source does not state if publicly supported loans are included, 2009 data, OECD, 2014), VC in early stages, including public venture capital and BA capital; conversion rate as per 20091231: 1€= 8.33 NOK
Information value
The two indicators give different and potentially valuable information about the state of the business angel market. The first indicates how well-positioned business angels are as a source of external equity funding, while the second indicates their overall significance for financing SMEs. If the first indicator shows a relatively low value, the policy attention will need to be turned to understanding hinders for business angel investing, while if the second indicator shows a relatively low value, the policy attention should probably be turned towards understanding hinders for external (unquoted) equity investing as a whole. There can also be combinations when one of the indicators is high, while the other one is low, which would signal where the potential problem is.

Still, both indicators should be interpreted with caution. Here, the relativity aspect of the measure is important to keep in mind, because of complementarity and substitutability of different capital sources. A high proportion of firms financed by business angels does not in itself indicate a well-functioning business angel market, nor does the opposite indicate a poor functioning market. The financing eco-system is a complex system where different sources of finance (loans, angel investments, venture capital investments, grants, customer credits, etc.) can be both complementary to each other and act as substitutes. One possible scenario is that certain sources of financing grow increasingly important primarily due to other being unavailable. An example would be the business angel market in Scotland, where business angels got organized in syndicates and grew increasingly financially strong to a degree that they can play in a niche normally occupied by venture capital firms to a large degree due to Scotland not having a functioning institutional venture capital market (‘supplementary role’). In the same way, some business angels found themselves increasing their investment activity under the last financial crisis, because their portfolio companies where unable to receive bank finance, losing sales and not getting paid by the customers. Thus, what may have looked as increasingly well-functioning business angel market in reality has rather been a sign of a poor-functioning bank sector and a depressed economy. Even more generally, we can find signs of such supplementary relationship. In countries with traditionally bank-centered financial systems (Black and Gilson, 1998; Jeng and Wells, 2000), e.g. Germany, banks have been more important in financing new, high-risk ventures, than in the market-centered economies, where this role is to a larger played by external equity financiers. Also between
regions, the banks’, business angels’, government agencies’, etc. roles would likely differ, depending on the relative availability of other financial sources.

Equally important is the ‘complementary role’ of different financing sources, where in this case business angel financing can trigger other forms of capital inflow. For instance, banks are more likely to lend to firms that have received and equity investment. Also, many governmental funding programs are conditioned on getting co-financing from a private source. Thus, an active and well-functioning business angel market can contribute to an overall better functioning financing system for SMEs, which in turn can lower their relative significance, measured this way.

Finally, relating business angel financing to external equity or total capital provided to SMEs disregards the specificity of business angel financing, which most SMEs never attract or even consider. Thus, a more detailed view of the demand-side would contribute to better understanding of the significance of business angels. The next section introduces our suggestion for demand-side indicators.

**Methodological issues**

The availability of internationally comparable data has increased substantially over the last years. NVCA and EVCA are providing yearly data on venture capital investing and OECD has an ambition to collecting data on a variety of financing sources on a yearly bases, gradually increasing the number of countries involved (now 32). However, a lot remains to be done on terms of streamlining methodologies and definitions and increasing the quality of data.

Based on the existing data, both indicators of the relative significance of business angel activity are likely to exaggerate business angels’ significance. The measure of the total external capital flows to SMEs currently does not incorporate governmental grants, tax subsidies and other types of governmental support other than loans, which means that the total pool of finance to SMEs is larger than indicated by the data used here. Further, the external equity measure does not include corporate venture capital and crowdfunding, which means that the total external equity flow also is larger than the numbers used here indicate. Further work with enhancing quality of the data and incorporating other data sources will contribute to increasing the quality of this set of indicators.
3.3.2 Indicators of business angel significance from the demand perspective

Talking about the significance of business angel funding from the demand perspective necessarily requires a discussion – who are the receivers of business angel funding and just how significant is this source of finance for them? In the literature, the “target group” for business angel funding is usually quite vaguely described. Most studies indicate that business angels target young, innovative, often technology-based SMEs; there is however no agreed-upon definition of what companies fall under this definition. It may further be the case that the target population on business angel investing changes over time, as a result of emergence of other financing mechanisms (public sector venture capital, crowdfunding, etc.), decreasing cost of starting a business, shifting the need for the first round of financing for most firms towards post-start-up stage; along with general technological development. While during IT-boom of late 1990s, technology-based firms were considered to be the main attractor of business angel financing, in mid-2010s, a significant share of start-ups have a technological component in their business model. For that reason, we do not look at start-ups, nor do we attempt to identify technology-based firms. Instead, we propose a set of demand-based indicators where we relate business angel activity to the (a) total stock of SMEs on the on hand and the (b) stock of growth-oriented early-stage ventures on the other. While the first one is a way of relating business angel investing to the total business activity, the second gives a more nuanced view on the potential users of business angel finance, and also, as we show here, indicates even larger differences in the financing situation in the countries that we have looked at.

To illustrate this, we bring together the estimates of the business angel activity on the one hand with the OECD Scoreboard data on SME sector, and GEM data on growth-oriented early stage entrepreneurship\(^\text{14}\) on the other hand, and find following:

- In the UK, with an SME stock of approximately 1.6 million (2010), total business angel investing in relation to the number of SME firms is £193.3 per year. If we instead relate the angel activity to the number of growth-oriented new ventures, the annual investment per firm would be approximately £444.

\(^{14}\) According to Global Entrepreneurship Monitor, newly started firms or firms in the start-up process that have an intention of employing at least five people in the next five years (i.e. medium or high growth expectations according to GEM definition).
In the USA, with an SME stock of approximately 14.5 million enterprises (2010), business angel investing divided by a number of firms is $1,382, approximately five times larger than in the UK. Further, if only growth-oriented new ventures are considered, the annual investment per firm is $2,967, approximately four times higher than in the UK.

In Norway, with an SME stock of approximately 0.3 million enterprises (2009), total business angel investing in relation to the number of SME firms is €1,105.3, which is slightly higher than in the USA. Further, if only growth-oriented new ventures are considered, the annual investment per firm is Norway would be €4,150, almost twice as high as in the USA and eight times higher than in the UK.

The data is presented in table 3.3.

### Table 3.3 Business angels investment in SMEs

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimate of scope of BA investing (amount)</th>
<th>Size of SME stock</th>
<th>BA investing per number of SMEs</th>
<th>Number of growth-oriented new ventures</th>
<th>BA investing per number of growth-oriented new ventures</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (2010 data)</td>
<td>£317.7 million</td>
<td>1,643,291</td>
<td>£193.3</td>
<td>715,922</td>
<td>£444</td>
</tr>
<tr>
<td>USA (2010 data)</td>
<td>$20.1 billion</td>
<td>14,544,533</td>
<td>$1,382.0</td>
<td>6,774,202</td>
<td>$2,967</td>
</tr>
<tr>
<td>Norway (2009 data)</td>
<td>€295 million</td>
<td>266,894</td>
<td>€1,105.3</td>
<td>71,085</td>
<td>€4,150</td>
</tr>
</tbody>
</table>

In a way of summarizing, considerable differences seem to exist in the way that the SME sector is supplied by business angel finance in the three countries. With business angels’ activity calculated this way, the UK is lagging behind the most, both when it comes to the total SME stock and the group of growth-oriented new ventures. Norway seems to be best off,

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15 Exchange rate per 31 December 2010 $1 = £0.64
16 Exchange rate per 31 December 2009 $1 = €0.70
17 OECD SME financing Scoreboard, 2010 year data
18 [www.gemconsortium.org](http://www.gemconsortium.org)
19 OECD SME financing Scoreboard, 2010 year data
20 Calculated based on country’s population, TEA, and % of TEA with medium or high growth expectations.
22 Calculated based on country’s population, TEA, and % of TEA with medium or high growth expectations.
outperforming both the UK and the US, particularly when it comes to relative availability of business angel finance to growth-oriented new ventures.

The results are in line with the earlier study by Avdeitchikova (2009) that looked at the variations in the business angel finance supply between different regions in Sweden and found that differences in the demand had high explanatory power in understanding these variations. This is also in line with the more general discussion that dynamic entrepreneurial systems can contribute to building venture finance markets, while the opposite rarely is the case.

**Strengths and weaknesses of the measure**

In this section we have suggested two indicators of the significance of business angel activity from the demand perspective: amount of business angel investing in relation to the total stock of SMEs on the one hand and amount of business angel investing in relation to the stock of growth-oriented early-stage ventures on the other. Below, we discuss their strengths and weaknesses.

**Information value**

Depending on the policy focus in a country, on SMEs or/and on growth-oriented new ventures, both indicators are potentially of considerable relevance for policy-makers. Instead of looking at the supply of business angel finance, the indicators answers the question “Are the SMEs/growth-oriented start-ups of this particular country disadvantaged in terms of access to business angel finance?” The latter gives concrete tools to understanding whether there is a “problem” to be “fixed” and can more easily be translated to policy standpoints and action.

One weakness of both proposed indicators is that they are based on an assumption about who the receivers of business angel financing are. This however can vary between (and within) countries, as well as over time, and the fact is that we still have rather little systematic knowledge about what companies business angels invest in. Thus, the potential relevance of the indicator is affected by the choice of the “denominator”.

Another weakness is that these indicators assume that the supply and demand can be separated in a meaningful way. However, the actual level of investing would be better described as an equilibrium amount of investing, the quantities being determined by both the supply and demand of different types of capital (cf. Robb and Robinson, 2012; see also the
discussion under 3.3.1). Further, this equilibrium may change over time, as higher availability of finance over time could contribute to increased entrepreneurial activity and particularly ambitious entrepreneurship. Finally, it is important to note that these indicators do not measure to what extent business angel finance is actually used by SMEs/growth-oriented new ventures; they only reflect the amount of finance that is available to the firms. Naturally, there can be considerable differences between the groups when it comes to what firms the finance actually flows to. Understanding this would require a different type of analysis.

Methodological issues

Methodologically, one of the major strengths of the indicators is data availability. Data on the size of the SME stock is available for most of OECD countries and is accessible through OECD Statistics. Also, the data on growth-oriented new ventures is easily accessible through GEM reports, is collected annually, and made available with less than a year time lag (aggregated data).

A potential weakness of the data on growth-oriented new ventures is that an entrepreneur’s growth expectation/intention is inherently subjective. Also, one might assume that there can be some systematic differences between countries that affect this variable, for instance related to culture and societal norms, which would mean that the data is not entirely comparable between countries. This is, however, a common weakness of self-reported data, rather than of this specific variable.

3.3.3 Summary

In this section we have argued that the significance of business angels as a source of finance is a more relevant concept than merely talking about the scope of business angel investing. While there is no straightforward answer to how this significance can and should be measured, we propose two sets of indicators (demand and supply side oriented) and discuss their informational value and challenges in terms of measurement and interpretation.

Relating business angel activity to the nature of the financial flows to enterprises on the one hand and the structure of the SME sector on the other, we find some significant differences between the countries included in the analysis. Particularly, Norway seems to come out even
better off than the US when business angel investing is related to the demand factors, while
the UK is lagging behind considerably. From the supply side, the US seems to be far
“superior” to both countries of comparison in terms of business angel activity.

3.4 Conclusions: Towards comparable indicators and relevance for policy

In this chapter, we have reviewed the studies of business angel activity in different countries
and summarized the recent estimates of the scope of business angel activity in countries
where post 2008/2009-crisis estimates were available (USA, UK and Norway). We have also
discussed the need for understanding the significance of business angel finance in a particular
national context (rather than merely measuring the scope), and suggested two sets of
indicators to measure the significance of business angel activity. In this concluding section we
summarize the findings and discuss how they can be of value for policy-makers. We also
suggest some paths for further knowledge development.

3.4.1 From data to information – constructing meaningful indicators

In early phases of knowledge development in an area of interest, research and policy analysis
focuses on exploratory studies of the phenomenon – how prevalent is the phenomenon and
how does it function? Yet, the information value of such data for policy-makers remains low
unless policy-makers also have tools to understand it. Further, as the amount of empirical
evidence growths, the “flora” of evidence may become increasingly problematic to tackle, due
to potentially conflicting evidence, uncertainty about whether and how the data can be
compared and an overall confusion regarding what the data actually says. Yet, most of the
policy-making in the area of business angel financing is, at best, based on fragmented data on
business angel activity.

Indicators, as opposed to data, say something about the state of things in a way that is relevant
to the context of the phenomenon. In the current case, we have suggested to measure the
relative significance of business angels by relating business angel activity to the prevalence of
other financing sources on the one hand and the size of the stock of firms that are potential
users of business angel financing on the other. Thus, instead of discussing How prevalent is
business angel investing (in a particular country)? we suggest moving the focus to the
question of How important are business angels as providers of finance to firms? and How well-supplied are firms with business angel finance?

Describing business angel activity with a use of meaningful indicators allows comparisons between countries (benchmarking). It also allows following business angel activity over time, which can be useful when a government is pursuing policies towards increasing business angel investing, as a base for evaluating policy effectiveness. Still, having indicators of business angel activity does not automatically imply having tools for policy-making. For the latter, an intelligent interpretation of the indicator values is the key.

3.4.2 From information to knowledge – using indicators to guide policy action

While low values of business angel activity probably deserve policy attention, it does not automatically imply that they deserve a policy action. As discussed earlier, even well-functioning financial eco-systems can have relatively low levels of business angel activity due to substitutability and complementarity between different financial sources. Therefore, there is not necessarily a “problem”, even if the indicators suggest that.

Also, from a policy perspective, there is always an alternative cost to be considered; thus, can the public money be used more productively elsewhere? Therefore, creating policies to promote business angel investing is not necessarily the right “solution”, given the cost-effect tradeoff of the policy.

Finally, SMEs access to finance, as well as need for external finance, is affected by a considerable number of factors in different spheres of economy, such as taxation, administrative burdens, financial market regulations and other framework conditions. It is a holistic understanding of these conditions (and developments) that must drive formulation of business angel policies, in combination with the information about the current state of business angel activity that the indicators suggested here can provide.

3.4.3 Future research

In this chapter we have focused on the national level indicators and comparisons. Thus, we have not considered the regional perspective; yet we know that business angel activity is highly skewed to certain regions (e.g. Avdeitchikova, 2009). Thus, even is a country “comes
out well” in an international comparison, there may still be an under-supply on the regional level. Therefore, one potentially fruitful path for further studies would be focusing on the regional business angel activity/indicators for angel finance.

In this chapter, we have focused on the group of business angels and discussed their economic significance. As new ways to provide finance emerge, for example crowd funding, studies need also to include a broader definition of the market, informal venture capital investing, which becomes increasingly interesting in order to capture these new developments. Therefore, another potentially fruitful path for further studies would be studying and benchmarking the significance of informal venture capital investing. Given the recent start of the use of registry-based data (e.g. tax data) in the studies of venture finance, there is a good potential for finding ways to capture informal venture capital market as a whole in countries where such data is systematically gathered and available. Crowdfunding platforms are also a potential source of data, at least on these particular investments, though the quality and reliability of data obtained through these sources has not been tested.

Finally, to reiterate and conclude, as the quality of indicators is only as good as the quality of underlying data, the future research needs to focus on aligning definitions and data collection practices across countries and produce periodic, reliable estimates.

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