TILLVÄXT VERKET

The need for venture capital in Sweden during the EU programming period 2014–2020

Abbreviated report

Investing in your future

EUROPEAN UNION
European Regional Development Fund

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Foreword

For the EU programming period 2014–2020, the intention of the European Commission is to increase the use of revolving financial instruments in Structural Funds programmes and projects. The aim is to improve the focus on results within cohesion policy. Already during the previous programming period, Sweden invested EU Structural Funds in revolving financial instruments in the form of venture capital. So far, results have been very good. The eleven regional venture capital funds have had a demand that exceeds available capital. Private co-financing makes up two thirds of invested amounts, thus exceeding the expected level of 50 per cent. Around the country, investors and business angels are establishing activity.

Sweden thus intends to respond positively to the Commission's encouragement to Member States to increase the use of revolving financial instruments. The analysis presented in this report indicates that there is a gap to fill, a gap that the market is unable to satisfy. Good access to venture capital could be very important for the commercialisation of innovations, which in turn could contribute to structural change, increased employment and economic growth. Privately financed venture capital funds have continued to decline in recent years, as has the interest from institutional investors to invest in Swedish venture capital funds. Therefore, the Swedish Agency for Economic and Regional Growth (Tillväxtverket) assesses that an increased investment in financial instruments should be a prioritised area for the Structural Funds. We believe that this will contribute to realising the Europe 2020 objectives of smart, sustainable and inclusive economic growth.

A Member State should base an implementation of revolving financial instruments on an ex-ante evaluation. The Swedish Agency for Economic and Regional Growth has thus commissioned Ramböll Management Consulting AB to draw up this report in addition to an ongoing evaluation of financial instruments. At the same time, the Swedish Agency for Growth Policy Analysis (Tillväxtanalys) been tasked with undertaking an international comparison of financial instruments, an overview of the state-of-the-art in existing research and planning for the ex-post evaluation.

This analysis and other existing evidence constitutes the basis that enables the Swedish Agency for Economic and Regional Growth to continue with the design of new financial instruments that contribute to regional growth and competitiveness and act as complements to market solutions.

This paper constitutes an abbreviated version of a more comprehensive material. Ramböll Management Consulting AB is solely responsible for the contents included in this report.

Gunilla Nordlöf

Director-general
The Swedish Agency for Economic and Regional Growth

Executive summary

As can be established from this report, there is support for the fact that the Member State of Sweden will:

- continue to use the European Regional Development Fund in the form of financial instruments during the next programme period of 2014–2020
- continue to invest in eleven regional venture capital funds (co-investment funds)
- facilitate that the eleven regional venture capital funds make more seed phase investments by offering flexible, market-like conditions
- stimulate more private actors to establish venture capital funds investing in the early stages of firm development
- stimulate the supply of venture capital to companies in the early stages within the Energy/Environmental Technology and Cleantech sectors

However, in order for any EU-financed investments in venture capital during the 2014–2020 programming period to reach appropriate target companies, attract private co-investors and contribute to the commercialisation of innovations, employment and growth, the business regulatory and institutional framework around must be conducive to this. This report identifies a number of crucial prerequisites:

- *A functioning demand-side:* good access to companies with growth and scalability potential and good knowledge among companies about the range of funding sources available
- *Opportunities to exit:* a good market demand, a functioning stock market and exit strategies at an early stage of the investment process
- *Incentives for private actors to invest:* tax incentives to invest, potential for returns and expertise to invest
- *Geographic prerequisites:* regional growth and culture of private equity financing

- *Sector-specific prerequisites:* ability to cope with long lead times between commercialisation and sales as well as continuous monitoring of the external business environment e.g. with regard to the formulation of policies and regulations affecting business opportunities and willingness to invest in different sectors (usually in the Energy/Environmental Technology and Cleantech sectors etc.).
- *Long lead times:* endurance and continuity in public investments.

1. Background

Since 2009, a nationwide effort consisting of eleven regional fund projects [1] is investing private equity in the form of venture capital [2] in small and medium-sized companies in the early development stages. From a socio-economic perspective, earlier studies [3] show that different types of private investors do not invest enough capital to foster growth in companies' early stages of development. The funds should thus bridge this "financing gap" occurring in the investment chain for SMEs at early stages of development by making high-risk investments in those companies needing additional capital and expertise to develop. Once the companies have developed, shares should be sold onto private actors. At the same time as these funds should fill a gap stemming from market failure, they must make market-like investments, which mean that they must make co-investments with private investors. The venture capital funds are so-called "co-investment funds": they invest alongside with private partners on equal terms, where the private party is responsible for at least half the amount invested. The shared investment thus reduces risk for the private partner.

The eleven venture capital funds are financed by the European Regional Development Fund (ERDF or the "Regional Fund") together with national and regional co-financiers in Sweden within the framework for the current 2007–2013 Structural Funds programming period. Consequently, they are operated as projects and are thus often called "fund projects". The initiative is exploratory and uses public funds in a new way: venture capital is a revolving financial instru-

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1 Earlier there were twelve funds, but two have been merged.

2 Venture capital is private equity for companies in the early stages: seed, start-up and expansion phase.

3 See, for example. *European Investment Fund (EIF) JEREMIE (Joint European Resources for Micro to Medium Enterprises), Interim Report for Sweden and Sweco Eurofutures (2008) Strukturfonder för kompletterande kapitalförsörjning i Sverige – En sammanfattning av åtta behovsstudier inför ett JEREMIE-initiativ*

ment involving the use of public funds that are invested and eventually divested, which can produce a positive return that can then be reinvested in more companies in the regions. The structural funds are still dominated by direct grants to projects or companies.

Several actors finance and/or operate the funds: Almi Invest, Saminvest, Norrlandsfonden and Inlandsinnovation.

Since the merger of Almi and Innovationsbron at the end of 2013, Almi Invest is currently running eight fund projects (including the two southern Swedish entrepreneurship funds) and is part-owner in two others (Saminvest and Partnerinvest Norr). Mittkapital in Jämtland/Västernorrland was originally run by the Sixth Swedish National Pension Fund (the Sixth AP Fund),[4] but has been run by Inlandsinnovation since October 2013.

Even though it is too early to assess the effects of the investments, so far the fund projects have demonstrated good results (up to and including March 2014):

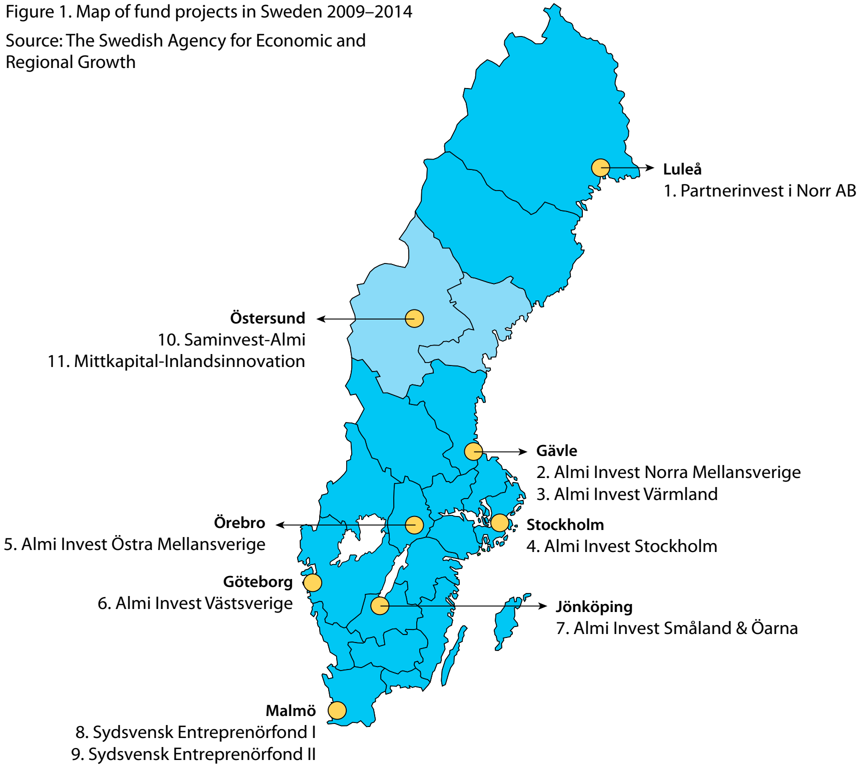
- There is great interest from the companies: almost 3 500 investment proposals have been submitted to the fund projects
- Private actors have shown great interest in co-investing with the fund projects: private capital represents a little more than 60 per cent of the total investments and for each public Swedish krona invested, private capital has invested 1.7 Swedish krona
- The investment contributes to mobilising private capital, primarily from private individuals/business angels
- The fund projects find companies to invest in: 265 companies have shared a total of SEK 2.7 billion (of which approximately SEK 1 billion constitutes public funds)
- The exit phase has been initiated and further development in the companies is in line with good practice within the venture capital industry

At the macro level, venture capital investments may have great significance for the commercialisation of innovations, which in turn may contribute to economic structural

4 The Sixth AP Fund) manages public pension funds in order to create high long-term returns and maintain satisfactory risk diversification by investing in Swedish small and medium-sized growth companies.

Figure 1. Map of fund projects in Sweden 2009–2014

Source: The Swedish Agency for Economic and Regional Growth



change, increased employment and economic growth. Research and international experience show that public venture capital investments require long-lead times to be able to provide lasting results and effects. At the same time, current fund projects are approaching their end date, and will end on the 31 of December 2014. Investment activity on the private venture capital market has continued to decline in past years and investments are distributed very differently in different regions, which may indicate a continuing need to stimulate the supply of venture capital to companies in the early stages throughout the country.[5] The question is

5 Näringsdepartementet (2014) "Förslag till nationellt regionalfondsprogram för investeringar i tillväxt och sysselsättning 2014-2020" (The Ministry of Industry, Employment and Communications (2014) "Proposal for a national regional fund programme for investments in growth and employment 2014-2020", author's translation)

whether there is still reason to invest EU funds in this type of activity during the next 2014–2020 programming period?

In addition to the decline in the investment activity in the private venture capital market, the number of private venture capital funds in Sweden is also decreasing. The total number of active funds has decreased by approximately 70 per cent during the 2000s and the interest from institutional investors to invest in Swedish venture capital funds has continued to decline during the current programming period. Thus, one question is whether there are grounds for supporting new fund managers with EU funding within the venture capital segment in Sweden, in order to increase dynamics in the private market to increase SME access to private venture capital in the long term?

In addition to the task of promoting commercialisation of innovations, employment and economic growth, society is faced with specific challenges, in particular energy and climate issues, which constitute a global challenge for economic, social and environmental prosperity. Sustainable growth is one of three core priorities in "Europe 2020", EU's strategy for smart, sustainable and inclusive growth. The strategy includes a number of goals that must be achieved by 2020 (with 1990 as a reference):[6]

- Emissions of greenhouse gases will be reduced by 20 percent
- The renewable energy sources' share of the final energy consumption will increase to 20 percent
- Energy efficiency will increase by 20 percent

Energy-related carbon dioxide emissions can be reduced using new innovative technology for energy efficiency or renewable energy technology. A well-functioning venture capital market for companies within the energy efficiency sector can thus play an important role in allowing companies to gain access to capital and expertise in order to develop new products and services that reduce climate change.[7] At the same time, venture capital investments in Energy/environmental Technology and Cleantech companies, in line with other industries, have declined during the 21st century .The research literature points to specific entry

6 Ibid.

7 Ibid.

barriers for investments in these sectors in the early stages that deter private investors from investing. Thus, a third question is whether there are grounds for strengthening access to venture capital via EU funding for companies specifically within these sectors?

2. Companies in early stage development are important for society but encounter growth problems

Small and medium-sized enterprises are of great significance to the economy, but there are many barriers to their potential for growth.[8] Often, access to capital is described as posing a particularly significant problem for small companies in their early stages, as commercial banks and investors feel that it is more risky to finance this type of company compared to larger, more established companies. Start-up businesses often lack a track record and collateral, and the innovative companies' business ideas are difficult to evaluate. Meanwhile, the number of bank offices around Sweden is declining.[9] A recent study shows that commercial loans and credits constitute a very unusual source of financing for innovative companies in their early stages. According to companies themselves, the most common reason for this is that they are too young and lack the track record that banks require. The second most important reason for this is that costs (interest and capital repayments) are deemed to be too high.[10]

Financiers, both private and public, and business developers/advisors throughout the country express the need for loans by banks and other commercial credit institutes to be supplemented with risk capital in order to strengthen possibilities for growth in companies in early stages of development.

8 See, for example, Tillväxtverket (2013a) *Tillväxtmöjligheter och tillväxthinder för svenska små och medelstora företag – Företagens villkor och verklighet 2011*, Stockholm (The Swedish Agency for Economic and Regional Growth (2013a) "Growth opportunities and growth barriers for small and medium-sized enterprises - Conditions and Reality for Enterprises", author's translation)

9 See Backman, Mikaela (2013) *Nyföretagande och närheten till finansiellt kapital*, Entreprenörskapsforum (Backman, Mikaela (2013) "New business creation and proximity to financial capital", author's translation)

10 Söderblom, Anna and Mikael Samuelsson (2014) Sources of capital for innovative startup firms – *An empirical study of the Swedish situation, Entreprenörskapsforum*, Näringspolitiskt forum report #9

In contrast to traditional banks, venture capital investors are specialised in new businesses and the very earliest stages in a company's development, particularly in the transition from a development stage to the first sales starting or at a stage when the company continues to expand. In addition to investing money, the investor is active in the company and adds non-financial value (expertise) that can contribute to a development of company value.[11] A starting point for this report has been to study the need for venture capital investments, a form of financing targeted at (innovative) companies at early stages of development but with high growth potential that are faced with particular difficulties in obtaining commercial loans and credits and whom, in addition to capital, require expertise and skills to grow. These companies are few in number, but they can play an important role for job and wealth creation.

11 See, for example. Braunerhjelm, Pontus (1999) *"Venture capital, mångfald och tillväxt"*, Ekonomisk debatt, årg 27, nr 4 ("Venture capital, Diversity and Growth", author's translation) and Söderblom, Anna (2012) *The Current State of the Venture Capital Industry*, Entreprenörskapsforum, Näringspolitiskt forum report #9

3. The supply of venture capital in Sweden

Venture capital investments in the early stages show a clear downward trend in Sweden.

Invested amounts have decreased by more than half since 2008 and investment activity has declined 4 years in a row. Invested amounts have decreased the most in the start-up stage, but activity has declined also in the seed and expansion stages. However, the number of companies receiving venture capital is relatively constant over time, implying that average investments have decreased in size.[12]

This decrease affects all industries, although the IT/Telecom sector is the industry that has experienced the smallest decline. Invested amounts in Energy/Environmental Technology and Cleantech have declined by 48 and 80 percent respectively and particular entry barriers for investors exist in these sectors: investments are often capital-intensive and associated with high risks linked to technology, market demand and the design of policies and regulations.

Moreover, the number of active formal[13] venture capital funds is declining in Sweden, primarily those financed privately. In total, there are currently approximately 50 active venture capital funds in Sweden, which is 65 percent fewer than at the beginning of the 21st century.[14] Venture capital investments are also strongly concentrated to the large urban areas and this concentration seems to have increased in recent years. Even informal venture capital that is

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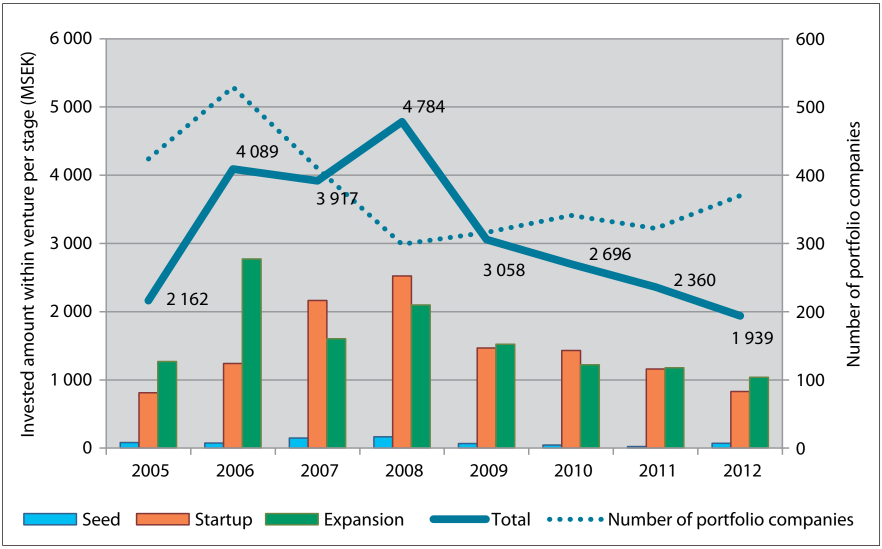
12 Tillväxtanalys (2013a) *Riskkapitalmarknaden i Sverige 2013*, Statistik 2013:07 (Growth Analysis (2013a) "The Venture Capital Market in Sweden 2013", author's translation and SVCA (2013) "Analys av riskkapitalmarknaden – Andra kvartalet 2013" ("Analysis of the Venture Capital Market – Second quarter 2013", author's translation, http://www.svca.se/PageFiles/807/AT%20Q2%202013_Final.pdf

13 Formal venture capital is invested by firms while informal venture capital is invested by private individuals/business angels

14 Söderblom (2012)

Figure 2. Venture capital investments in Sweden from 2009–2012



Sources: Tillväxtanalys (2013) and data from SVCA [Swedish Venture Capital Association]

invested by private individuals/business angels is strongly concentrated to the large urban areas.[15]

There are a number of reasons for the downward trend for venture capital investments, that are important to keep in mind when designing possible public investment schemes during the 2014–2020 EU programming period, including:[16]

- venture capital funds have generated poor returns
- venture capital is generally attracted to regions with a high rate of growth
- the exit markets have shrunk
- sector-specific problems: Energy/Environmental Technology and Cleantech, for example, are sectors associated

15 Tillväxtanalys (2013a) och (2013b) *Affärsänglar, riskkapitalfonder och policyportföljer*, Rapport 2013:08 (Growth Analysis (2013a) and (2013b) Business Angels, *Venture Capital Funds and Policy Portfolios*, Report 2013:08)

16 See, for example, Söderblom (2012) and Tillväxtanalys (2012) *Privat riskkapital och Cleantech – Förutsättningar och hinder utifrån investerarnas perspektiv*, Rapport 2012:10 (Growth Analysis (2012) *Private Venture Capital and Cleantech - Prerequisites and obstacles from an investor perspective*, Report 2012:10, http://www.tillvaxtanalys.se/download/18.1ebc24b613b93da1e9850d/1357293989956/Report_2012_10_summary.pdf)

with high risks linked to technology, market demand and the design of policies and regulations

- long investment horizons: venture capital funds are often set up with a ten-year perspective, while in many industries, the period from initial investment to sales is much longer (like for instance in Energy/Environmental Technology and Cleantech and Life Sciences)
- large investors have abandoned the venture capital segment: in Sweden, institutional investors place only small amounts of capital into venture capital funds due to a history of poor returns

4. The demand for venture capital in Sweden

Venture capital is a form of financing that targets prospective growth companies: those that are able and want to grow; have the ability and willingness to bring in external investors that make demands, and those that would consider selling on their company. It is estimated that barely one percent of companies in Sweden have used venture capital as part of their funding structure.[17] However, the interest for venture capital is great throughout the country: for instance, almost 3500 companies have approached the eleven regional venture capital funds to learn more about their offers or to submit an investment proposal.

The regional fund projects are so-called co-investment funds. They require private co-financing of at least half the amount in each investment. Still they invest in a greater number of companies (8%) than many private funds (one or a few percent). One explanation for this is that the regional funds co-invest with informal venture capital: private individuals/business angels, to a large extent. The latter are willing to commit to their investments with a slightly longer time horizon and to a lower rate of return than many formal, privately financed funds. This would be an indication of demand for capital from good quality companies that is not fully met by the formal, private venture capital funds.

The demand for venture capital, or other sources of external financing, also depends on the knowledge companies have about what is on offer. Here, there is a clear "knowledge gap": many companies have no idea of the external funding opportunities that are available. This highlights the importance for public authorities on the local, regional and

17 See, for example, Tillväxtanalys (2011a) *Kapitalförsörjningen i små och medelstora företag – En inventering av statistik över riskkapitalmarknaden*, Working paper/PM 2011:32 (Growth Analysis (2011a) "The supply of capital in small and medium-sized companies - An inventory of statistics of the venture capital market", author's translation)

national levels to provide accessible information about, and continued marketing around, available sources of funding.

Table 1. The number of companies applying to the regional fund projects

Fund project	Region	Number of investment proposals	Number of portfolio companies	Share of investment proposals resulting in an investment, %
Partnerinvest i Norr AB	Övre Norrland	458	35	8 %
Almi Invest Norra Mellansverige	Norra Mellansverige	190	18	9 %
Almi Invest Västsverige Värmland		130	9	7 %
Almi Invest Västsverige	Västsverige	470	34	7 %
Almi Invest Stockholm	Stockholm	620	23	4 %
Almi Invest Östra Mellansverige	Östra Mellansverige	402	33	8 %
Almi Invest Småland & Öarna	Småland med öarna	245	34	14 %
Partnerskapsfond Mittsverige (Saminvest)	Mellersta Norrland	208	32	15 %
Mittkapital i Jämtland och Västernorrland		207	12	6 %
Sydsvensk Entreprenörfond I	Skåne-Blekinge	309	20	6 %
Sydsvensk Entreprenörfond II		219	17	8 %
Samtliga		3 458	267*	8 %

Source: Fund project reporting to the Swedish Agency for Economic and Regional Growth and Ramböll Management Consulting

* In all, 265 companies have received investments, but two fund projects have made investments in two joint ventures

5. What can we expect from venture capital policy initiatives during 2014–2020?

At the macro level, venture capital investments may have great significance for the commercialisation of innovations, which in turn may contribute to economic structural change, increased employment and economic growth. A well-developed venture capital market may therefore play a central role for industrial and business sector renewal. In addition to the task of promoting competitiveness, employment and economic growth within the business sector, society is also faced with specific challenges, in particular energy and climate issues. There is potential in reducing energy-related carbon dioxide emissions using new innovative technology for energy efficiency or renewable energy technology.

There are rational explanations for the downward trend in the venture capital market in Sweden: for example, it is no wonder that investors are reducing their investments in funds that have generated poor returns. However, the private and public sectors are driven by somewhat different motives and have partly different tasks. While good financial return on investments is the primary goal for many private venture capital investors, this does not have to be the overriding objective for public investors, even if this does have significance. For the public sector, for example, increased risk-taking among entrepreneurs in the region or the fact that more private individuals are taking the chance to invest in young companies may be equally important goals. The public sector has an obvious role in helping create necessary conditions for a dynamic and competitive business sector, including a well-functioning venture capital market.

With financing from the European Regional Development Fund, the Member State Sweden may have the opportunity to continue to invest in eleven regional venture capital funds, stimulate more private actors in establishing venture capital funds in the early stages, and increase the supply of venture capital to companies in early stages of development within the Energy/Environmental technology and Cleantech sectors. These three initiatives all aimed to increase the supply of venture capital which implies that some desirable effects are to be expected:[18]

Co-investment funds can contribute to stimulating private investors to invest (through shared risk and as a leverage for invested capital)

Co-investment funds can contribute to increased investments from private individuals/business angels (through shared risk and as a leverage for invested capital and the opportunity for knowledge transfer: the fund can share its investment procedures and formalities: e.g. contracts)

A fund-of-funds initiative can have several private actors establishing venture capital funds and contribute to an increased willingness to invest from somewhat larger investors than private individuals/business angels

More efficient use of EU's regional funds: in contrast to direct grants to projects and companies, investments in the form of venture capital or other so-called revolving financial instruments (e.g. loans and guarantees) may result in returns that may benefit more companies thereby representing a more efficient use of tax payers money

At the same time, it is important to remember that initiatives aimed at providing an increase in the supply of venture capital cannot be expected to solve all underlying problems or trends over recent years, such as poor returns, shrinking exit markets or the impact regulations has had on the potential for new products and services developing within Energy/Environmental Technology and Cleantech. In order to deal with these, wider challenges, other measures will be required.

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18 See, for example, Tillväxtverket (2012a) *Halvtidsutvärdering av regionala riskkapitalfonder, Implementering och lärdomar, Kortversion*, Info 0458 (Swedish Agency for Ecomonic and Regional Growth (2012a) *Mid-term evaluation of regional venture capital funds, Implementation and lessons learnt*, http://publikationer.tillvaxtverket.se/ProductView.aspx?ID=1723, and Tillväxtverket (2012b) *Offentliga fond-i-fondaktörers aktiviteter i tidiga skeden*, Rapport 0133 ("Public sector fund of funds actors' activities in the early stages", author's translation)

6. Possible designs of venture capital initiatives during the 2014–2020 programming period

During what stages will venture capital be needed?

There is a demand for venture capital that the available supply cannot fully satisfy. Thus, there are good arguments for continuing regional initiatives in the companies' start-up and expansion stages where the eleven regional co-investment funds have been investing during the current 2007-2013 programming period.

Companies, however, require venture capital in both earlier and later stages than those in that the regional venture capital funds invest in today. Thus, from a policy perspective, "the financing gap" should be regarded as a *dynamic* one: the capital needs of companies at certain stages will determine whether a financing gap will arise in later stages. If, for example, all financing gaps are eliminated in the seed and start-up stages, this may well result in a funding gap in the expansion phase because an increasing number of companies will grow and develop, while the supply of expansion capital has not been adjusted to the increased demand.[19]

Altogether, this provides support for investments also in the seed and expansion stages. It is possible to integrate seed investments in the existing structure of eleven regional fund projects and a possible fund-of-funds initiative could be expected to result in investments primarily in the expansion phase.

Actors such as the Swedish Energy Agency and Almi Invest have portfolio companies and an established deal flow in Energy/Environmental Technology and Cleantech. The sectors are also diversified and products and services are constantly changing as new, more environmentally friendly

19 Tillväxtanalys (2013b)

solutions are introduced.[20] Thus, there will likely be a future demand for external financing from companies in the early stages and an argument for a venture capital fund that can take over at the stage where the Swedish Energy Agency is no longer able to provide funding.

What industries need venture capital?

Venture capital is a specific form of funding appropriate for a limited percentage of companies. Moreover, it is not possible to predict in advance where future business ideas and innovations will come from. For these reasons, as far as possible, initiatives in the 2014-2020 programming period should not be restricted to investments in certain pre-defined industries. Energy/Environmental Technology and Cleantech constitute sectors, which in turn consist of a large number of different sub-sectors. Target companies for any new fund should be evaluated based not only on accepted criteria for investment decisions in venture capital, but also based on the business ideas relevant to the overall climate and energy goals.

Where is venture capital needed in the country?

The current initiative comprising eleven regional fund projects is a national one, but the funds have a regional presence and can only invest in the regions where they are located. Based on how business angels invest, this design is appropriate and relevant: research on Swedish conditions show that 70 percent of business angel investments are local, i.e. they take place in the labour market region where the investor lives/works.21 Private individuals/business angels play a major role as co-investors to the eleven regional funds and there are signs that the co-investment model has contributed to mobilising regional business angel capital and to activating new private capital from pri-

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20 See, for example, Nutek (2008) *Vad menas med cleantech? En studie av hur olika aktörer betraktar och definierar begreppet cleantech*, R 2008:17 (Nutek (2008) ("What does Clean Tech mean? A study of how different actors look upon and define the concept of Cleantech", author's translation) and VINNOVA (2013) *Företag inom miljötekniksektorn* 2007–2011, VA 2013:06 (VINNOVA [Sweden's Innovation Agency] ("Companies within the environmental technology sector", author's translation)

21 Se, for example, Tillväxtanalys (2011b) *Kompetent kapital? Tre länder, tre försök*, Rapport 2011:05 (Growth Analysis (2011b) *Competent Capital? Three countries, three attempts*. Report 2011:05)

vate individuals who have not previously invested. Thus, when investing in early stages, regional investor presence is an advantage.

However, a fund-of-funds initiative aimed at attracting somewhat larger investors to invest in new venture capital funds should face as few restrictions as possible: formal private venture capital funds are reluctant to restrict their investment geographically and often invest globally. This means that the national level is the smallest unit possible. Already at the outset, any fund within Energy/Environmental Technology and Cleantech is restricted to investing into specific sectors (even if they are broad). Given this restriction, it would not be appropriate to limit investments to specific regions.

Necessary conditions for attracting private capital

The regional fund projects' co-investments with private capital have surpassed expectations. Private venture capital represents approximately 60 percent of the total invested amount, meaning that for each Swedish public krona invested, 1.7 Swedish krona of private money has been invested. Thus, if the regional initiative continues, there will be no need to introduce special benefits for private investors in the start-up and expansion stages (such as an altered distribution of profits or down-side protection) in order to incentivise them to invest. However, an increased focus on investments in the seed phase would require a review of the regulatory framework: here, the public funds could be drawn first, followed by the private funding. There should also be an investigation as to whether it will be possible to deviate from the so-called "independence requirement"[22] in seed investments.

In order to attract private capital to new venture capital funds within the framework for a possible fund-of-funds initiative, the public sector should be flexible when it comes

22 In each initial investment, the fund projects must co-invest with at least one new, independent commercial actor (a private party with no connection to the portfolio company), who must invest at least 25 percent of the total amount. This implies that the public fund can take 50 percent of the investment, the company's founder 25 percent of the investment and a third party the final 25 percent. This has resulted in a challenge for the fund projects and the challenge seems to be particularly great in the very earliest stages.

to funding both new and existing management teams and the new funds should have the flexibility to invest in companies at different stages and in different industries nationwide. In order to attract institutional investors, there is also support for using a budget-based management fee for the fund managers.[23] Within the Energy/Environmental Technology and Cleantech sectors, investors have different ideas on how private capital can best be attracted to invest. If one objective with an initiative in the area is to kick-start private investors, this may motivate a co-investment fund with requirements for private co-investment, at least at some stages. It should be possible to exempt seed investments from this requirement.

Necessary conditions for integrating horizontal criteria

Sustainable growth is one of the three core priorities in the Europe 2020 strategy: EU's strategy for smart, sustainable and inclusive growth.[24] As with all programmes and projects funded by the Regional Fund, any initiatives within venture capital 2014–2020 must observe the so-called horizontal criteria in the regional structural fund programmes: equality between women and men, diversity and inclusion and environmental sustainability. However, the experiences of attempts to integrate horizontal criteria in the current 2007–2013 programming period are that there are significant challenges that need to be dealt with in the next programming period.[25] There is reason to question whether it is reasonable that regional venture capital funds, a fund within the Energy/Environmental Technology and Cleantech sector and managers of any new funds will be able to deal with these large and complex areas. These areas should be regarded as special areas of expertise, just like venture capital investments, sector expertise within the energy sec-

23 See, for example, Tillväxtverket (2013b) *Synpunkter från företrädare från VC-branschen på hur en statlig fond-i-fondsatsning bör utformas* ("Comments from representatives from the VC industry on how a governmental fund-of-funds initiative should be designed", author's translation) and Söderblom (2012).

24 Näringsdepartementet (2014) (The Ministry of Industry, Employment and Communications)

25 See, for example, Tillväxtverket (2012c) *Horisontella kriterier i de regionala strukturfondsprogrammen*, Info 0424 Rev A ("Horizontal criteria in the regional Structural Fund programmes", author's translation) and (2012d) *Följeforskning 2012 – Regionala riskkapitalfonder,* Rapport 0149 ("Ongoing evaluation 2012 – Regional Venture Capital Funds", author's translation)

tor or innovation. If smart, sustainable and inclusive growth is to seriously permeate any venture capital initiatives in the 2014–2020 programming period; at least two things are required:

- Definitions, problem descriptions and analysis of these questions
- That the managing authority, national and regional financiers monitor, evaluate and implement initiatives based on relevant indicators

Necessary conditions for exit

Shrinking exit markets constitute a challenge for venture capital. The development over the past decade has several implications for any initiatives in the 2014-2010 programming period:

- Public investors, private investment partners and portfolio companies need to discuss and prepare for exit opportunities at an early stage in the investment process
- "The financing gap" should be regarded as being dynamic: an increased supply of venture capital in the early stages may in itself create a financing gap at a later stage, when an increasing number of companies grow and request venture capital at a later stage where larger amounts are required to prepare the company for exit
- It should be studied if, and how, markets for new products/services that promote energy efficiency can be stimulated, since a challenge within the Energy/Environmental Technology and Cleantech sectors is demand for the products being developed (market risk).

Necessary conditions for long-term results and effects

Public venture capital investments at irregular intervals, uncertainty about extensions, as well as any changes in structure and conditions, run the risk of not only affecting the actors' willingness to invest but also of hindering the development of competent capital. Thus, in order to function well, the market needs a long-term horizon and predictability. Furthermore, it takes time to develop expertise, establish networks and put rational routines in place.[26] Any initiatives aimed at contributing to regional investment structures, increased dynamics and diversity in the venture capital market and increased interest from private capital to invest in challenging sectors (Energy/Environmental Technology and Cleantech) are ambitious undertakings that take time and should be implemented over the long term. The objectives will not be achieved during one programming period of the EU Structural Funds.

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Tillväxtverket
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Info 0564. Produktion: Ordförrådet AB. Tryck: Danagård Litho AB. Tryckt i 100 ex, december 2014.