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Policies in support of high-growth innovative SMEs

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About this document

This is a final draft of an INNO-Grips Policy Brief about policies in support of high-growth SMEs. The Policy Brief was prepared by empirica Communication and Technology Research, Bonn, Germany. The principal author is Stefan Lilischkis. Contact: stefan.lilischkis@empirica.com.

An INNO-Grips Policy Brief is an expanded discussion paper exploring issues relevant to the formulation of innovation policy at European level. A Policy Brief is typically based on a literature review, international case studies / policy examples and expert interviews. It shall offer a well-structured, concise synopsis of available evidence on the innovation policy issue at stake, and serve as a starting point for further discussion of related issues among stakeholders, in particular at INNO-Grips workshops. Validated Policy Briefs shall be published on the INNO-Grips website.

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Executive Summary

Study objectives and scope

In recent years policy makers have shown increased interest in fostering fast growing enterprises as they are seen as a key driver of economic growth and employment. Europe has performed relatively badly in generating high-growth innovative companies that quickly become global leaders. Against this background this Policy Brief addresses the following main questions: What role can the EU level play in supporting high-growth SMEs? How are policies in support of high-growth SMEs distinct from general SME policy? What examples of such effective policies exist?

Overview of key findings

Attention for high-growth SMEs: High-growth SMEs have attracted much attention in recent years. Findings suggest that high-growth firms contribute significantly to creating new jobs.

Few targeted policies in Europe: While attention for high-growth SMEs is high in the European Commission, attention in Member States is limited. Few policy initiatives target high-growth SMEs.

Initiatives outside Europe: Korea and Singapore have recently implemented policies for high-growth SMEs. Israel plans to introduce such policies. In Canada, combined SME support through R&D programmes and venture capital increased the number of high-growth companies considerably.

Lack of evaluation studies: There is a lack of evaluation studies that could substantiate certain measures to support high-growth SMEs as being particularly effective or ineffective.

Systematic support advisable: Support for high-growth SMEs may require a comprehensive approach that could include certified coaching networks, improved access to equity finance, and facilitated internationalisation.

Prepare breeding ground: Policies should prepare a fertile breeding ground for SMEs to grow, e.g. by removing incentives to stay small, rather than trying to "pick winners" and foster them.

Key definitions

The OECD defines high-growth enterprises as firms with average annualised growth in employees or in turnover greater than 20% a year, over a three-year period, and with ten or more employees at the beginning of the observation period. "Gazelles" are newly born high-growth enterprises not older than five years. These definitions have become prevalent in publications on this issue. The notion of "large international player" may, however, more accurately describe what policy makers desire, since the definition of high-growth firms includes companies that remain small after three years of "high growth". *(Section 2.1)*

Consistent statistical data is missing

Comparable international data about high-growth SMEs are missing, so that a consistent picture of their prevalence cannot yet be drawn. The OECD-Eurostat Entrepreneurship Indicators Programme found that in 2006, the USA were ahead of most European countries for which data were available. A Eurobarometer study found that in several European countries the share of high-growth firms in the three years before 2009 was larger than 20%.

A recent study found that the share of young enterprises among large innovative companies was much larger in the US and also in other countries than in the EU. Thus the US is apparently a better breeding ground for high-growth innovative SMEs than Europe. One may however contest the importance of such "big young global leaders" for overall economic wealth by pointing to the "hidden champions" in Europe. *(Section 3.2.)*

Theoretical arguments for SME support

Policies promoting high growth of innovative SMEs should be in accordance with principal insights of economic theories. Most relevant here are the theories of market failure and state failure. Market failures with respect to policies in support of high-growth SMEs can, above all, potentially be traced back to externalities and imperfect information.

However, some arguments do not only apply to SMEs performing high growth, and growing enterprises may also produce negative externalities. State failure theory deals with possible failures in governmental decisions and policy making. As regards the relationship between governments and companies, state failure can be traced back to one principal source: imperfect information. This questions attempts to "pick winners". *(Section 3.3.)*

Growth determinants and related policies

The answer to the question why enterprises grow is complex. Many factors can trigger enterprise growth and, vice versa, possible barriers to growth are manifold. In recent years, research has widely substantiated the importance of high-growth new companies for job creation. The number and share of high-growth enterprises is small, but the number and share of jobs they create is disproportionally large.

However, the number of studies about policies to support high-growth enterprises is still small. Research for this Policy Brief found hardly any focused analyses, such as cost-benefit analyses of specific instruments or longitudinal studies with control groups of companies not receiving specific types of support. *(Section 3.4.)*

Policy examples in Europe and beyond

In Europe, policy attention for high-growth SMEs is limited. Related EU-wide programmes include Eurostars and the growth facilitator of the European Investment Fund. Targeted national policies for high growth SMEs were mainly found in the Nordic countries of Denmark, Finland and Norway. Further countries with such policies include Estonia, France, Ireland, Netherlands, and Spain. Beyond Europe, relevant policies were found in Australia, US, China, Singapore and Korea. *(Section 4.1.)*

Specific policy issues

Entrepreneurship: Certified coaching may help grow SMEs and cross the "chasm" between pilot markets and mass markets. There are specific coaching programmes for entrepreneurs aspiring for high growth and high-growth programmes offering coaching. However, many SMEs do not take advantage of coaching opportunities, and there is, as of yet, no appropriate infrastructure to encourage the replication of coaching networks throughout EU Member States. *(Section 4.2.1.)*

Access to finance: Improving access to venture capital (VC) may be a priority policy objective when supporting high-growth SMEs. Existing structures of public support for VC in Europe may be revised in the years to come, aiming at establishing a European venture capital market. *(Section 4.2.2.)*

Internationalisation: Companies seeking to grow quickly need large international markets. However, the benefit of participating in platforms such as the Enterprise Europe Network (EEN) may not be tangible enough for SMEs, and the EEN's search tool currently does not allow semantic search which limits its usefulness. *(Section 4.2.3.)*

Industry focus: Business ecosystems are important for SME growth and often cut across several industries. Targeting specific industries may thus neglect important links to other industries. Furthermore, empirical evidence suggests that high-growth companies can be found in any industry.

General and high-growth SME policies

One may label policies seeking to support foundation and viability of SMEs, without specific growth objectives, as "general" SME policy. On the other hand, policies for high-growth SMEs target outstandingly high growth. The instruments of both types of policies may be the same, e.g. easing access to finance, taxation, and regulation, but their specifications are different. There is no simple answer to the question of how to best allocate resources between general and high-growth SME policy. One group of experts argues that governments should do both, while others favour a policy focused on the most promising SMEs.

A basic economic model can illustrate this trade-off issue and reach intuitive conclusions. Assuming that the government spends 100% of available resources on one type of policy, even if maximum returns from one type of policy were higher than for the other type, it may well be economically efficient to spend resources on both types. (See Section 4.3.)

Case studies: increased interest to support high-growth SMEs outside Europe

Case studies for this Policy Brief show how some countries support high-growth SMEs, while others focus on general SME policies. Cases from Korea, Singapore and Japan were selected because these countries are often considered as being among Europe's main competitors, while the understanding of their policies is limited. Canada provides insights about the combination of government-funded research and venture capital; Israel is of particular interest due to its current innovative and economic performance. *(Chapter 5.)*

South Korea: Recently there have been noticeable changes in the direction of SME policies in Korea. The policy concept for SMEs has been directed towards competitive SMEs, away from protection of the weak. Transforming traditional SMEs to high-growth SMEs is a new policy focus, in particular in the "inno-biz" and "Global Stars" programmes. It is yet too early to assess the impacts of these programmes. However, Korean SME policies have been criticised for being ineffective and inefficient. *(Section 5.1.)*

Singapore: The government is currently seeking to diversify the country's high-growth sectors. Two agencies are directly involved in supporting high-growth SMEs: SPRING assists promising local businesses with funding, capability and management development, technology and innovation enhancement, and internationalisation. GET-Up supports long-term pre-competitive R&D. Since there are no evaluation studies that could substantiate the impacts of the government's SME policy, lessons for Europe are difficult to draw. *(Section 5.2.)*

Canada/USA: In either Canada or the USA there are no specific grants that focus on high growth SMEs. Since the high tech bubble burst there has been a drastic drop in capital financing, especially for venture capital (VC). VC support to SMEs has been shown to lead to more high growth SMEs. In the USA, the SBIR program is the major form of federal assistance provided to SMEs, which work with large research departments of the federal government. Typically in Canada and the USA, only 4-6% of all firms are "gazelles"; but among those firms which access VC, the level of "gazelles" increases to 12%. Furthermore, when combined with certain government R&D assistance programs, these rise to over 20%. *(Section 5.3.)*

Japan: The strategic line of SME policy discussion in 2010 gravitated around the diversification and clustering of SME business activities. Diversification policy initiatives focus on supporting SMEs to move (1) up the technology ladder, (2) between industries, and (3) across national borders. Clustering policy initiatives focus on promoting local clusters, such as regional linkages among manufacturers, and university industry collaborations. The government's 2009 New Growth Strategy identifies SMEs as an engine for future high economic growth. However, there are no specific policies for high-growth SMEs in Japan. *(Section 5.4.)*

Israel: In Israel, the main relevant body is the Office of the Chief Scientist in the Ministry of Industry, Trade and Labour (OSC). The OSC operates no policy tools aimed explicitly or exclusively at high growth SMEs; however, high growth SMEs can benefit from all the supportive policy measures provided by the OCS. Furthermore, a new programme named "The Relative Advantageous" will address the whole value chain of strongly growing sectors. *(Section 5.5.)*

Findings from the IW Future Panel

According to the IW Future Panel, a survey of several thousand German enterprises, the single most important reason for growth stated by high-growth companies is that management actually targeted growth. Further important reasons were that "the company supplies to a growing market" and "successful introduction of new products or services". Company growth is apparently mainly the consequence of entrepreneurs taking active advantage of business opportunities.

The most important reasons for non-growth stated by non-high-growth enterprises were an unfavourable development of the business cycle and strong competition. The companies stated a great variety of reasons for non-growth, including e.g. unfavourable political framework conditions. (*Section 6.*)

Policy implications

Research for this Policy Brief led to the following ten policy implications. Items 1-5 are on a general level and thus apply to policy making on European, national or even regional level; item 6 about legal framework conditions applies mainly to national policy but may partly be influenced by European Directives, Recommendations and Communications; items 7-10 take a European perspective and require co-operation between European-level policy making with Member States *(Chapter 7).*

1. Policies supporting high growth of SMEs are worthwhile: Since there is empirical evidence for the importance of high-growth SMEs for employment creation, it appears to be worthwhile to support high growth of enterprises in order to leverage the positive impact of these enterprises. Such policies in any case need to result from market failure.

2. Seeking sustainable (high) growth: As high growth can also lead to high failure, the policy objective should be to generate sustainable growth. Policies should not set incentives for simply growing or growing strongly.

3. Policies for general SMEs and for high-growth SMEs may coexist: Arguments from market failure theory and a theoretical welfare model assuming that both types of policy generate positive returns for society suggest that policies for general SMEs and for high-growth SMEs should co-exist. Expert statements for this Policy Brief also support this view.

4. Broader approach to support high growth: Existing evaluations and expert statements collected for this Policy Brief suggest that such policies should take a broader approach, not exclusively focusing on specific aspects (e.g. finance).

5. No need to focus on specific industries: Since high-growth enterprises can be found in any industry and since business ecosystems, which are important for companies' sustainability and growth, often cut across different industries, policies in support of high-growth SMEs should not necessarily target specific industries.

6. Creating the right framework conditions: There are ample examples of legal framework conditions unfavourable for high growth of SMEs. They may, for example, be related to investment regulation, start-up regulation, market entry barriers, labour law, bankruptcy law, taxation, and also to SME policies rewarding staying small. Hence, rather than trying to "pick winners", policy makers should first of all set framework conditions right in order to prepare a fertile ground for winners to pick themselves. Second, policies could be designed for "hampered winners", i.e. those that would not grow substantially without support – see implications 7-9.

7. Specific roles of the European Commission: Theoretical and empirical arguments weighing centralisation and subsidiarity against each other suggest that the European Commission can take specific roles in supporting high-growth SMEs. The Commission's main role could be to drive the further expansion and improvement of the Single Market, e.g. for venture capital, rather than launching specific measures for high-growth SMEs.

8. Enhance coaching opportunities: Since many SMEs do not take advantage of coaching opportunities and may not know where to find qualified coaching, an infrastructure to encourage the replication of existing successful coaching networks throughout EU Member States could be set up. A certificate for high-growth coaching could be introduced.

9: Improve access to growth finance: Since access to finance is a problem for many growth-oriented SMEs in Europe, improving the access to growth finance should be a priority for policy makers seeking to support high-growth SMEs. From a European perspective, this means e.g. to realise a single market for venture capital.

10: Improve internationalisation opportunities: Since high growth requires tapping larger markets, and national markets may be too small, internationalisation of SMEs should thus be facilitated. This may include further work towards single markets in Europe as well as enhancing the European Commission's Enterprise Europe Network.

1 Setting the scene: study background and objectives

Background: Europe is seeking more high-growth companies

In recent years there has been an increased interest of policy makers in Europe and around the world to foster fast growing enterprises – sometimes labelled "gazelles" or, when having reached considerable size, "gorillas".[1] These enterprises are seen as important drivers of economic growth, employment and social well-being. There is also an increased interest of policy makers in fostering innovation, and it is often assumed that high growth of companies is based on innovation. Europe has performed relatively badly in generating high-growth innovative companies that quickly become global leaders, compared to the US and also to some Asian economies. For example, while the US are home to companies such as Google, Microsoft and Amazon which are all fairly young but grew to big international players within a few years, Europe falls short of a similar track record. Therefore Europe is eager to find effective ways to promote high-growth enterprises. In particular, Europe seeks to strengthen growth of enterprises that are yet small or medium-sized but possess high potential to grow fast in order to become the Googles, Microsofts or Amazons of tomorrow. The European Commission's "Innovation Union" Communication of October 2010, one of seven flagships of the Europe 2020 Strategy, directly mentions the support of high-growth SMEs as a political objective.[2]

Study objectives and research questions

However, there is uncertainty about how to best design policy measures to support high-growth innovative SMEs in order to reach the desired impact. Hence this Policy Brief focuses on policies for high-growth innovative SMEs, contributing evidence about related issues. "Traditional" key issues for fostering high-growth SMEs are, firstly, how to identify high-growth companies in advance and, secondly, why they should be promoted at all if they perform particularly well. Keeping in mind these overall issues and considering the objectives of INNO-Grips, this Policy Brief addresses the following key questions:

(1) What role can the EU level play in fostering high-growth innovative SMEs?

(2) How are policies for innovative high-growth SMEs distinct from general SME policy? It is not only the distinction of instruments of policies for high-growth innovative SMEs and general SME policy that is of interest here, but possible trade-offs – the issue of policy efficiency: Is it more efficient (in terms of economic growth and job creation) to support all SMEs "a little bit", or to concentrate efforts on those with the highest growth potential?

(3) What examples of effective policies exist? Countries of particular interest to DG ENTR are Japan, Israel, South Korea and Singapore.[3]

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1 See section 2.1 for definitions.

2 See European Commission (2010), p. 12: "The Commission will design future EU research and innovation programmes to ensure simple access and stronger involvement of SMEs, in particular those with a high growth potential." An annual performance scoreboard of the EU is to include an item "3.1.3 High-growth enterprises (with more than 10 employees) as % of all enterprises", see p. 37.

3 These countries are also home to many high-growth innovative SMEs but the conditions under which they emerged and the policies to foster such companies are less well understood than the conditions and policies in the US.

(4) Entrepreneurship, access to finance, SME internationalisation, as well as opportunities and risks of sectoral policy approaches are special issues dealt with here.

The Policy Brief will prioritise specificity over broadness. Since several general studies about high-growth innovative SMEs were conducted on behalf of DG ENTR in recent years, this Policy Brief will focus on these specific themes which are of particular interest to DG ENTR. It suggests answers to these questions based on evidence from literature analysis, case studies, an enterprise survey and expert interviews.

Structure of this Policy Brief

After this introductory chapter (Chapter 1), the methods applied including some basic definitions and the description of an analytical framework are described in Chapter 2. Chapter 3 then presents state of the art research results about high-growth innovative SMEs, including key findings from recent literature, statistical data, theoretical ideas and empirical results. Chapter 4 analyses current policy developments, focusing on European and national policy approaches as well as specific issues related to entrepreneurship, access to finance, internationalisation and industry focus. Exemplary policy approaches are presented. Chapter 5 presents case studies which are the main empirical contribution of this Policy Brief. Chapter 6 summarises findings about reasons for growth and non-growth from an enterprise survey. Finally, Chapter 7 draws conclusions for practical policy, focusing on policy themes, possible specificities of European policy versus national policy and particular policies for high-growth SMEs versus general SME policies.

2 Research concept

2.1 Definitions of key terms

Type of enterprises focused in this study

This Policy Brief follows the OECD definition which defines **high growth enterprises** as follows: "High-growth enterprises, as measured by employment (or by turnover), are enterprises with average annualised growth in employees (or in turnover) greater than 20% a year, over a three-year period, and with ten or more employees at the beginning of the observation period."[4] A size threshold of ten employees is suggested to avoid the growth of micro enterprises distorting the picture. Excluded from this definition are companies that were born three years ago or less – which are nevertheless relevant here because they may quickly surpass the formal thresholds – as well as companies that underwent a merger or take-over. By definition, high growth is related to entrepreneurial activity, i.e. "enterprising human action in pursuit of the generation of value through the creation or expansion of economic activity".[5]

A certain share of high-growth enterprises are so-called "**gazelles**", defined as "high-growth enterprises born five years or less before the end of the three-year observation period."[6] This means that this Brief also deals with "gazelles", but they are not the exclusive focus of interest because this Brief also considers companies that are older than five years. Furthermore, gazelles are not necessarily SMEs; they may be not older than five years but nevertheless have more than 250 employees. Animal metaphors have some popularity in literature about high-growth enterprises – there is also the notion of "**gorillas**" for companies that grow quickly from small start-ups to large international players in high-technology markets.[7] In fact the notion of "large international player" may more accurately describe what policy makers desire, since the definition of gazelles includes for example new companies that grow from ten to 18 employees within three years – reaching a size that does still not make much difference from a regional or national economy point of view.

Furthermore, this Brief does not consider just any high-growth enterprises, but only **innovative high-growth** enterprises. This focus can be justified with empirical findings: Innovative companies in Europe were found to be more likely to perform over 20% growth in three consecutive years than non-innovative companies (25% versus 14%).[8] However, high growth may normally but not necessarily be related to innovative activity. High growth may for example also be related to increased demand in a business cycle upturn, to the fact that competitors seized the market or that new qualified distribution staff was hired. Furthermore, while high growth may often stem from innovation, this innovation does not necessarily need to be technology-related. It may also and above all be related to innovative production or business processes or to organisational in-

4 OECD (2009), p. 28. See also Eurostat/OECD (2007), p. 61.

5 OECD (2009), p. 6.

6 See OECD (2009), p. 30 and Eurostat/OECD (2007), p. 61. One may ask whether the attributes of being young and growing fast symbolise gazelles well because gazelles normally are assigned attributes like running fast and gracile. However, since the term "gazelle" is commonly used for young, high-growth firms in literature, it is also used here.

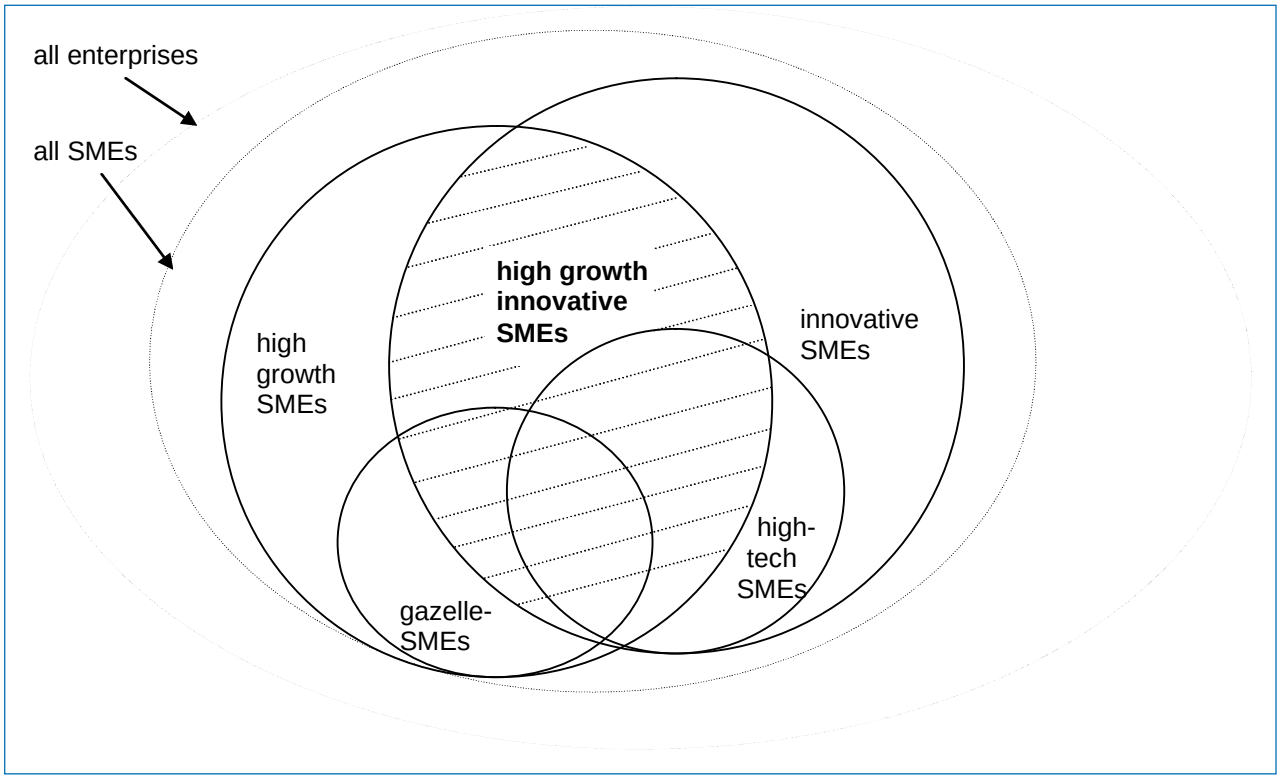
7 See Moore (1998).

8 See the results of a Flash Eurobarometer survey in Gallup Organisation (2009), p. 5.

novation:[9] "Contrary to popular perception, only around one-third of gazelles are 'high-tech' companies. Fast-growing firms whose success comes from innovative approaches to marketing, organisation or distribution can be found across a wide range of activities (for example, Wal-Mart, Starbucks, Office Depot, or Amazon Bookstore)."[10] For example, finding a new niche for an existing product in another sector can be innovation and can lead to very rapid growth.

Finally, this Brief considers **small and medium-sized enterprises** (SMEs), defined as companies with less than 250 employees. Nota bene, the obvious consequence of high growth of SMEs is that they soon turn into large companies. Exhibit 2-1 visualises the share of enterprises which this studies targets.

Exhibit 2-1: Visualisation of the share of companies targeted in this study: high growth innovative enterprises



Note: Circle sizes do not reflect the actually existing number of companies. In particular, high-growth enterprises and innovative enterprises are in reality just a small share of all enterprises. Not shown: There are gazelles that are not SMEs.

Source: empirica

A definition of innovation

The OECD's "Oslo Manual" is a commonly accepted source for definitions of innovation. According to this Manual, "an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations".[11] The minimum requirement for an innovation is that it must be new or significantly improved to the firm. However, this Policy Brief is targeting innovations which are new on a broader scale – new to an industry, new to a country, or even new to the world.

[9] See also the next sub-section „a definition of innovation".

[10] Rigby/Bleda/Morrison/Kim (2007), p. 18.

[11] OECD/Eurostat (2005), p. 46.

In the widely used meaning of the term as introduced by Joseph Schumpeter, "innovation" refers to market introduction, i.e. commercialisation, of a new product or service. However, innovation in this definition often implies preceding research and development activities as well as subsequent diffusion of the good or service among private households, companies and public authorities.[12] Therefore, any concept of innovation and innovation policy should consider research, development and diffusion aspects as well – which constitutes what can be called the "innovation stream". This is also the view of this Policy Brief.

A definition of policies and "support"

A policy is defined here as *"a deliberate act of government that in some way alters or influences the society or economy outside the government"*.[13] Policies include, but are not limited to, taxation, regulation, expenditures, legal requirements and prohibitions, as well as the provision of consulting, coaching and training. Governments include those on local, regional, national or European level.

Policies "in support of" high-growth innovative SMEs may mean two things: policies fostering the emergence of high-growth SMEs, and policies supporting SMEs that do already perform high growth in order to sustain their high growth. Both approaches are fundamentally different. While policies fostering the emergence of high-growth SMEs seek to provide a breeding ground for forthcoming high growth of SMEs, policies supporting SMEs which perform high growth means to "pick winners". The rationales and justification of these two approaches are different; both are considered here.

2.2 Methodological approach

Overview

A range of methods is being used to answer the guiding questions of this Policy Brief. The main sources are summarised in Exhibit 2-2 and then explained in more detail.

Exhibit 2-2: Matrix of main data sources for INNO-Grips Policy Brief 2

<table>
<tr><th></th><th>Quantitative focus</th><th>Qualitative focus</th></tr>
<tr><td>Primary data collection</td><td>• Representative enterprise survey (CATI)</td><td>• INNO-Grips case studies and case briefs
• Interviews with individual experts
• Expert survey</td></tr>
<tr><td>Secondary data analysis</td><td>• OECD and Eurostat databases
• Data from industry associations</td><td>• Existing case studies from various sources</td></tr>
<tr><td></td><td colspan="2">• Literature evaluation (desk research)</td></tr>
</table>

[12] Research and development do not necessarily have to take place, considering for example user entrepreneurs who develop solutions for their own interest and then start selling them because they discover others are interested in their solution as well. Hint from Philipp Koellinger, study guide for this Policy Brief.

[13] Deardorff's Glossary of International Economics, "policy", accessed 2 May 2010.

Literature analysis

A thorough literature analysis has been conducted, focusing on the following sources:

- Review of articles in major economic journal since 2008. Relevant are journal articles in three fields: entrepreneurship/SMEs (most relevant), economic and public policy, and innovation.
- Research in publications lists of major relevant public organisations such as the OECD and business associations.
- Internet research with key search words such as “high-growth enterprises”, “gazelles”.

Data from various secondary sources is used here not only for exhibiting numbers of high-growth enterprises but also for other indicators such as venture capital provision.

Primary data collection

The description of examples of successful support of high-growth innovative companies is a key element of this Policy Brief. Chapter 5 includes three extended **case studies** about policies for high-growth SMEs in South Korea, Singapore and Canada as well as overviews of general SME policies in Japan and Israel.

Three **expert interviews** were conducted for this Policy Brief: One with OECD economist Jonathan Potter, one with US venture capital and innovation policy advisor Burton Lee, and one with business advisor Rebecca Scheel from the Danish Accelerace programme.

Targeted questions were included in a primary **enterprise survey** by the Institut der Deutschen Wirtschaft, the IW Zukunftspanel (directly translated from German: “IW Future Panel”) in early 2011. This panel includes several thousand German companies that replied to a written questionnaire providing information about their business activity and impacts of current economic developments. The 2011 survey deals with innovation issues and is thus very well suited for questions about innovation-related high growth. The slot for this INNO-Grips Policy Brief includes questions to growing companies about the reasons for their growth, and questions to non-growing companies about the reasons for not growing (see Annex 2).

Guidance by an advisory board

Two experts were charged with guiding the research for this Policy Brief, constituting an advisory board:

- **Allan Martel**, President of Allan Martel Consulting based in Ottawa, Canada (http://www.allanmartelconsulting.com). Allan Martel Consulting specialises in coaching SMEs and also larger enterprises to develop and operate business innovation projects in collaboration with other firms, universities and research institutions.
- **Philipp Koellinger**, Assistant Professor in Economics at Erasmus University Rotterdam. He is associate editor of the Small Business Economics journal and has research interests and a sound publication track record in the fields of entrepreneurship and innovation.

These experts had agreed to review drafts of this policy brief and contributed to the workshop where the results were discussed. Allan Martel Consulting also contributed a case study (see section 5.3) and an expert statements paper (statements are used throughout the Policy Brief).

2.3 A framework for analysing policies for high-growth innovative SMEs

A conceptual framework is supportive for an analysis of policies in support of innovative high-growth SMEs. The framework needs to identify the "levers" which policy makers could target. A company's performance depends on a multitude of factors (see section 3.4). The framework suggested here examines business from a functional point of view. It distinguishes four basic determinants to innovation and growth: access to resources ("input"), incentives to innovate and grow ("motivation"), access to markets ("output") as well as infrastructure and economic stability ("framework").[14] This framework is conducive to the analysis of barriers to innovation and growth targeted by INNO-Grips as well as for systematising approaches to innovation policy.

The critical **resources** for innovative and growth-oriented companies are knowledge and capital:

- *Knowledge*. Technological and business knowledge – including skills – can be separated as follows: issues of human capital, access to specialised technology and business consulting, R&D clustering, technology scouting to identify R&D projects with commercial potential, technology transfer, and an effective regulatory system to protect intellectual property rights. Alignment of competencies with strategic priorities is also an important issue.
- *Capital*: Finance and real estate is fundamental for innovation. High-growth finance includes primarily the availability of venture capital through business angels, specialised private companies, other corporations or public funds, but it also requires a functional banking system. Venture capital should correlate with companies' growth stages. As regards real estate, innovative start-ups may benefit from business incubators as well as science and technology centres.

Incentives to innovate and grow a company may originate in individual and social aspects:

- *Individual incentives* include first of all income, including issues such as taxation, bankruptcy regulation, rewards for innovative employees, possible income limits, and regulations of sideline income (including equity shares in new companies) of entrepreneurial researchers. A further individual incentive may be self-fulfilment.[15]
- *Social recognition* is related to social values, including issues such as recognition for entrepreneurs and innovators, social acceptance of entrepreneurial failure, recognition of innovative and entrepreneurial activities of employees in large companies, and recognition of business relationships of university researchers in peer groups.

Markets are indispensable to sell innovative products and services on the output side:

- *Business start-up regulation* may be an initial barrier to formation, growth and innovation.
- *Trade conditions:* Demand conditions may sound trivial as a determinant, but consumers play a huge role in fostering and directing innovative efforts, and they ultimately pick the winners. Trade barriers may for example be related to the Internal Market and tariffs. A specific barrier to market entry and

[14] The concept presented here is a further developed version of the concept in Lilischkis (2001).

[15] See Hamann/Heuser (2010): Die Rivalen. In: Die Zeit, 27.10.2010, pp. 23-14, quoting Lars-Henrik Röller, President of the European School of Management and Technology in Berlin.

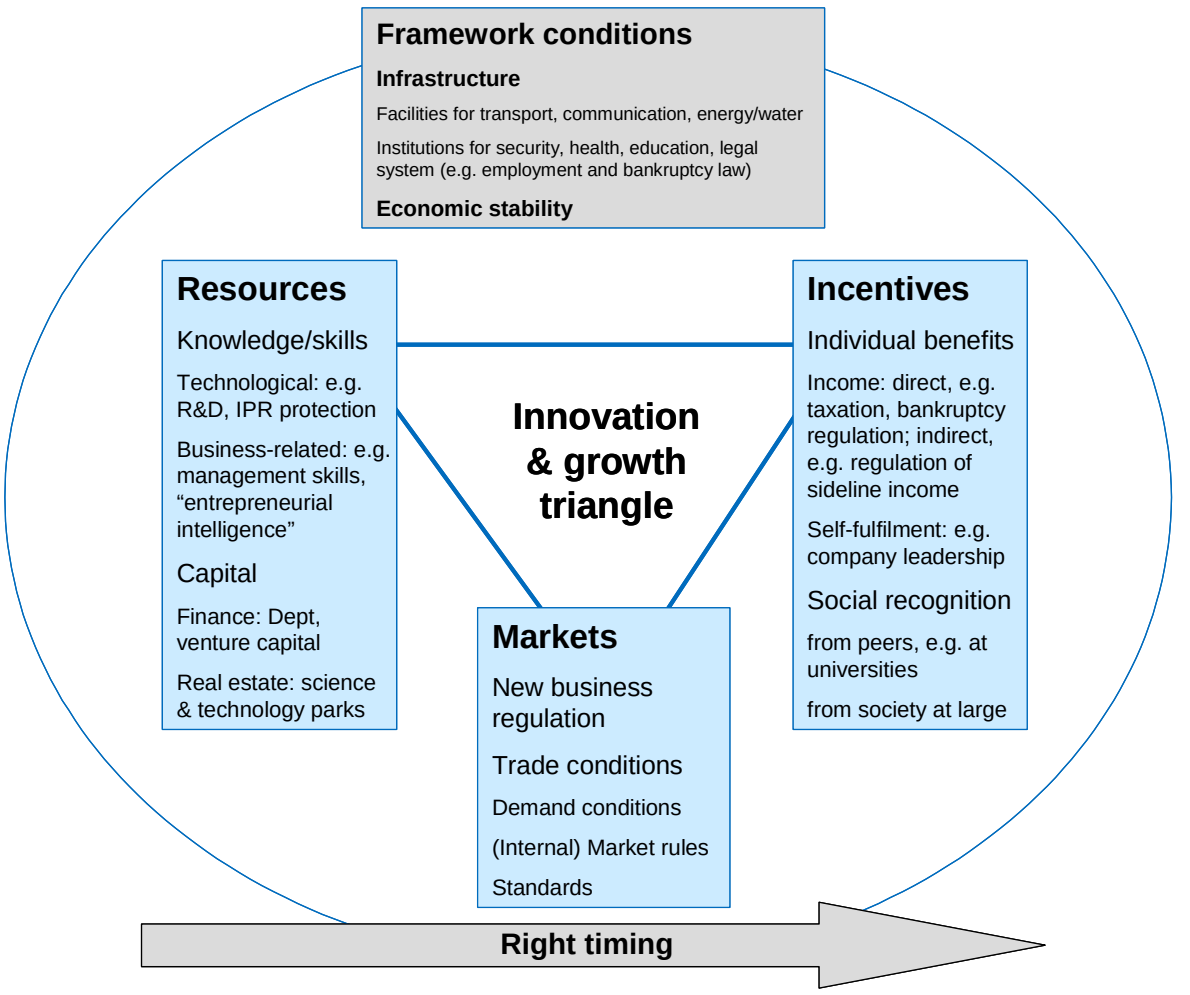
trade may be standardisation and standards adoption, proprietary standards defined by large companies in particular.

Favourable **framework conditions** for innovation and growth require a sound infrastructure as well as economic stability.

- *Infrastructure* includes physical infrastructure for transportation, communication (e.g. broadband), energy/water as well as institutions for security, health, education and the legal system.
- *Economic stability* and growth are conducive to future revenues and thus foster companies' investment into growth.[16]

Last but not least, the right timing, e.g. related to market opportunities, is important for firms and for government assistance. Timing is an issue for any company, but in high-growth firms things move very fast and lengthy approval cycles are not tolerated. Altogether, resources, incentives and markets form an "innovation triangle" supplemented by framework conditions and subject to the right timing as outlined in Exhibit 2-3.

Exhibit 2-3: Determinants of enterprises' innovation activity and growth – the "innovation and growth triangle"



The arrow "right timing" only indicates that the right time matters; it does not suggest a flow from resources to markets and incentives.

Source: empirica

[16] See Bares et al (2006), p.13, and Rigby et al (2007), p. 20.

At present, policy decision makers generally recognise the importance of these determinants. But the kind of political measures that should be implemented to make the determinants more conducive to enterprise innovation and growth, the composition of effective policies and the types of enterprises that should be supported are all controversial issues.[17] In the Policy Brief, the conceptual framework will ameliorate this analysis, allowing the EC to identify its role in supporting high-growth innovative SMEs while differentiating such policies from those generally applicable to SMEs. It will also help identify specificities in the case studies and other examples, as well as providing structure for current discussions in academic journals and other publications.

[17] See Ahmad/Gonnard (2007), p. 1: "Many of these pre-conditions [that foster the development of high growth enterprises] are generally thought to be understood; minimising red-tape, creating an entrepreneurial culture, removing barriers to competition etc but what is not so clear is what combination of conditions works best and, indeed, what types of entrepreneurs and businesses need to be fostered in order to maximise the potential number of high growth firms."

3 State of the art of research on high-growth SMEs

3.1 Literature review

Overview of available literature

Although the subject of high-growth enterprises is of fairly recent interest, a considerable and further growing amount of literature is available.[18] For this Policy Brief, the following types of literature were evaluated: Studies for the European Commission, other studies for policy clients, economic journal articles, and literature from other sources.

Major studies about high-growth SMEs for the European Commission

In recent years the European Commission charged three studies about high-growth enterprises which brought forward the following main results:

Hölzl, Werner; Friesenbichler, Klaus (2008): Final Sector Report Gazelles. Innovation Watch – Systematic. Europe Innova. – The key research question of this report was whether gazelles are more innovative than other firms. It found that there are many factors which can trigger the growth process, that there are a significantly higher number of gazelles in the new Member States, and that fast growing firms are quite different across countries. Most importantly, *"firm growth in countries at the technological frontier requires an innovation-based strategy, and growth in catch-up countries makes much more use of strategies that exploit comparative advantages"* (p. 6) and are oriented towards export markets. The authors conclude that *"when developing a gazelle policy framework, different countries will likely have different priorities"* and that there are *"no clear rationales for conducting high growth SME policies at the European level"*. From the perspective of the European Commission it may thus be insightful to shed further light on such rationales.

Cunningham, Paul (2008): Policies in support of high-growth SMEs. Thematic Report. PRO INNO Europe, Inno Policy Trendchart. – This study provides a very good overview about political activities to promote "gazelles" in different countries, based on a survey of national correspondents of the INNO-Policy Trendchart. However, the study concludes that *"from the nature of the data collected and the limited number of examples of relevant policies precluded the formulation of any specific recommendations for Commission action, other than to suggest a more comprehensive review of the topic"* (p. 2). Thus there remains a need for more concrete policy guidance. It may be advisable to focus on a selected number of cases rather than provide an update of all initiatives.

Rigby, John; Bleda, Mercedes; Morrison, Kathryn; Kim, Jong-Seok (2007): Are Gazelles leaping ahead? Innovation and rapidly growing small firms. INNO-GRIPS. – This study provides a comprehensive overview of issues related to gazelles, ranging from context and definition to impact and policy. A shortcoming may be that precise messages or conclusions are sometimes hidden by the wealth of information provided.

The available studies leave room for specific issues and methods to be taken up in this Policy Brief.

[18] It may even be a case of high growth meeting the OECD definition of at least 20% in each of the past three years.

Further studies about high-growth SMEs for political decision makers

There have been further major policy-oriented studies about high-growth SMEs in recent years. Autio et al. (2007) studied "high-growth SME support initiatives in nine countries" and concluded: initiatives promoting rapid entrepreneurial growth should be highly selective; should have a proactive approach; participation of private sector actors is preferable; should address managerial motivation and skills; involve highly customised and tailored management development activities; policies require broad-based measures which address multiple aspects of policy design, implementation, and monitoring; at the level of the individual, firm, sector, and society.

In December 2010 the OECD published a report named "high-growth enterprises: what governments can do to make a difference". Key findings include that "high growth can occur in the life of virtually any enterprise" which implies that policy should not focus on specific companies or sectors when seeking to foster high growth.

Articles about high-growth SMEs in entrepreneurship journals 2008 – 2010

For this Policy Brief, the volumes of 2008 – 2010 of major economic journals were scanned for articles about high-growth SMEs. The time horizon since 2008 was selected because the last major study of the European Commission, the one by Hölzl/Friesenbichler, was published in May 2008. It can be expected to include major journal articles prior to 2008. There are more than 40 English-language journals dealing with entrepreneurship subjects. Top journals and second-level journals have been scrutinised (see Annex 1). Altogether 19 articles were found to deal with high-growth SMEs. Many of them however do not include considerably helpful conclusions for public policy.

3.2 Statistical evidence: international prevalence of high-growth SMEs

Introduction: unsatisfactory statistical data

From a scientific point of view data availability is always unsatisfactory, but measurement of entrepreneurial activity, including high-growth SMEs, apparently remains particularly difficult. Internationally comparable data are scarce. The most notable initiative to make international data on entrepreneurship available may be the joint OECD-Eurostat Entrepreneurship Indicators Programme (EIP) launched in 2006. Some key findings from the EIP are presented in the following, supplemented by data from other sources.

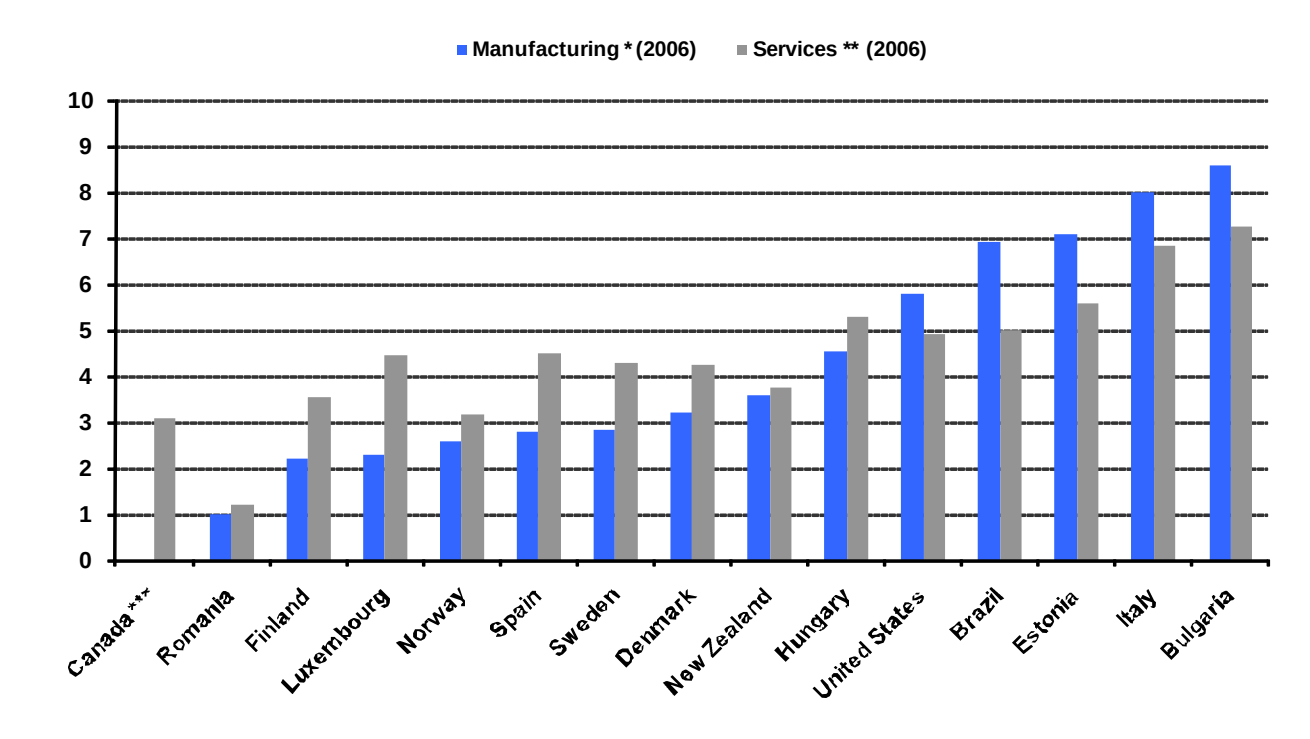
OECD

The EIP provides data about high-growth enterprises which may be taken as a proxy for data about high-growth innovative SMEs. Data are available for 15 countries, divided by manufacturing and services.[19] The most recent data available at the time of authoring this Policy Brief were for 2006. For this year, Bulgaria was on top for both manufacturing (8.6% high-growth enterprises) and services (8.2%) – see Exhibit 4. The following countries were Italy (8% / 7.9%), Estonia (7.1% / 5.6%), Brazil (6.9% / 5%) and the USA (5.9% /

[19] See OECD (2009), pp. 28-31.

4.9%). Thus, while some European countries, notably from Eastern Europe, outperformed the US in terms of high-growth enterprises, the USA were nevertheless ahead of most other European countries for which data about high-growth enterprises were available, including Hungary, Sweden Spain, Norway, Luxembourg, Finland, and Romania. Unfortunately this picture is only a fragment as four of the six largest European economies (Germany, France, UK, Poland) are missing and no Asian country is included.

Exhibit 3-1: Share of high-growth enterprises (employment definition) in % of enterprises with ten or more employees



* Mining and quarrying; Manufacturing; Electricity, gas and water.
** Wholesale and retail trade; Hotels and restaurants; Transport, storage and communications; Financial intermediation; Real estate, renting and business activities.
*** Employer enterprises with fewer than 250 employees.

Source: OECD (2009), p. 29.

The picture is similar for "gazelles". Among the countries for which data are available, Bulgaria performed best (2.3% gazelles in manufacturing, 1.9% in services). This was far more than in the following countries: Hungary (1.1% / 0.75%), Estonia (1% /0.6%), and New Zealand (0.4% / 0.5%). The USA had a relatively low share of gazelles, approximately 0.2% for both manufacturing and services.

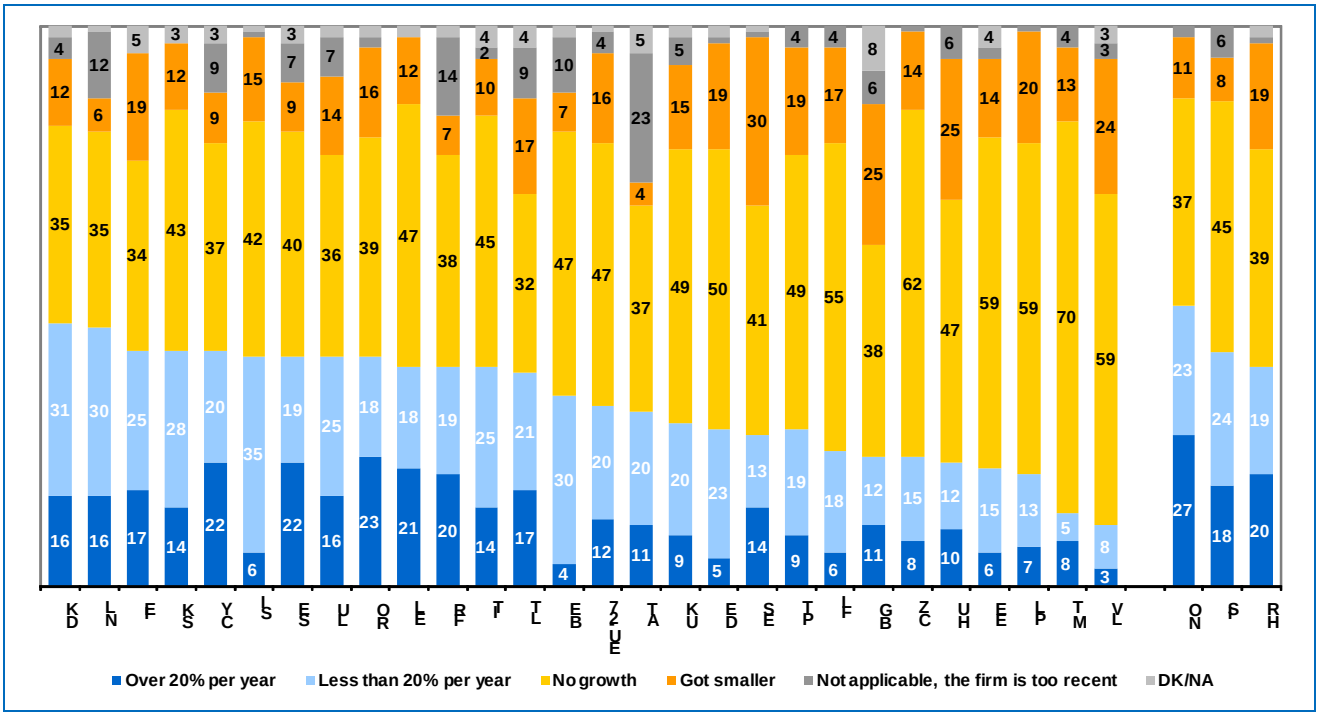
Eurobarometer

A Eurobarometer survey in 2009 of more than 9,000 companies provided data for all EU-27 countries.[20] As the denominator and the data source is different from the OECD data, both datasets cannot be compared. It found that 12% of the companies had grown by over 20% on average per year in the previous three years, in terms of full-time employment or full-time equivalents. The largest share of high-growth companies was found in Norway (27%), followed by Romania (23%), Sweden (22%), Greece (21%) and France (20%). Con-

[20] 9,063 companies were interviewed by telephone in the EU, Croatia, Iceland and Norway. Eligible respondents were chief executive officers or chief financial officers.

sidering the large differences in the economic conditions in these countries, the nature of high growth can be assumed to be very different. The lowest shares of high-growth companies were found in Latvia (3%), Belgium (4%) and Germany (5%).

Exhibit 3-2: Average annual growth of European companies over the past three years as of 2009



Source: Gallup Organisation (2009), p. 15.

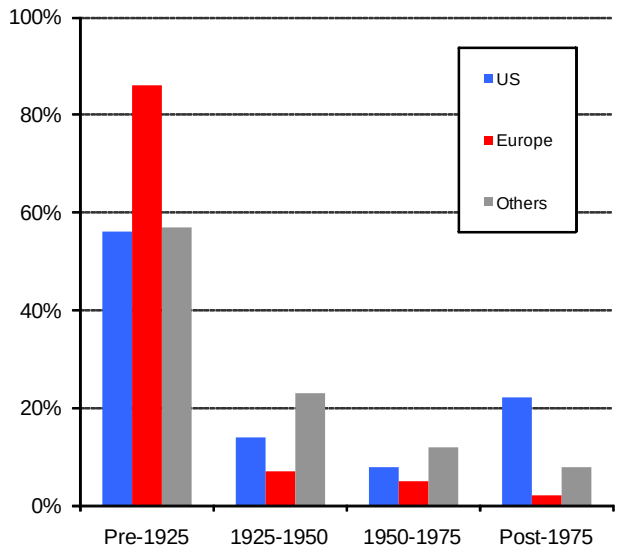
As regards “gazelles”, their share was found to be largest in Romania (17%), followed by France (13%) and Estonia (12%). A share of less than 1% of “gazelles” was found in Belgium, Germany and Slovenia.

Bruegel study

There are other sources that do not refer directly to high-growth innovative SMEs but which allow related conclusions. A Policy Brief by Bruegel, a Brussels based think-tank, in 2009 examined the age of the companies with the highest R&D expenditures among the largest enterprises from the US, Europe and other countries.[21] Of the US enterprises, 22% were founded after 1975 and 57% before 1925, and of the enterprises from other countries, 9% were founded after 1975 and 58% before 1925. In contrast, only 2% of the European enterprises were founded after 1975, while 86% were established before 1925. Exhibit 3-3 shows the related data.

[21] See Veugelers (2009), p. 2. The largest US companies were taken from the Financial Times Global 500 of 2007, the largest European companies from the EU-IPTS Top 1000 of 2007, and the largest enterprises from other countries from EU-IPTS non-EU R&D scoreboard companies. The sample for the US included 80 enterprises, the EU sample 86 enterprises and the sample for other countries 60 enterprises. Firm-level data was provided by the Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim, Germany.

Exhibit 3-3: Share of enterprises with highest R&D expenditure by age class and world



Source: Veugelers (2009), p.2.

Thus the share of young enterprises among large innovative companies is much larger in the US and also in other countries than in the EU. This allows conclusions to high-growth innovative SMEs: If large innovative enterprises are young, they must have passed through a period of high growth. In other words: The US is apparently a much better breeding ground for high-growth innovative SMEs than Europe. Illustrative examples mentioned in the Bruegel report are Microsoft (founded 1975, the US' fourth largest R&D spender), Amgen (1980, tenth largest in R&D) and Cisco (1984, 12th in R&D). In Europe, the first relatively young company in the list is SAP, founded 1972 and Europe's 22nd largest R&D spender.

Big young global leaders won mass markets and set standards also for the economic benefit of the countries of their origin. One may however contest the importance of such big young global leaders for overall economic wealth in a country and point to the numerous "hidden champions"[22] in Europe: smaller global leaders, some in niche markets, enterprises that may be long established but largely unknown to the public due to their specific products and services, but nevertheless very innovative and very important for jobs and wealth.[23] Bluntly speaking: The current economic crisis hit the US, home to many big young global leaders, worse than many European countries which are home to hidden champions.

NESTA study

A study by the UK National Endowment for Science, Technology and the Arts (NESTA) published in 2010 explored business growth and contraction in Europe and the US, drawing from a purpose-built database of business growth in the period from 2002-2005 with individual records for six million businesses. Key results include the following: "European countries have on average a lower share of high-growth firms than the US. But they also have fewer medium-growth firms and fewer shrinking firms. At the same time, Europe has a much larger share of firms that neither expand nor contract in a three-year period. (...) The top half of firms grow faster in the US than in the average European country, while the bottom half shrink faster. Thus, the US has both faster-growing and faster-shrinking firms. (...) The faster successful companies grow, the faster unsuccessful companies in the same industry shrink."[24] These results shed light on the crucial importance of business dynamism for generating high-growth enterprises – and that more high growth firms in Europe may also mean more high failure firms.

[22] See Simon (2009).

[23] In fact, the Korean author of a case study for this Policy Brief (see Section 5.1) is conducting research about the determinants of hidden champions.

[24] Bravo-Biosca (2010), p. 2.

3.3 Theoretical foundations of SME policy

On the importance of a theoretical foundation for economic policy

If policy makers seek to promote high growth of innovative SMEs, such policies should be in accordance with principal insights of theories of economic policy. Otherwise such policies run the risk of wasting scarce resources – which is generally undesirable but particularly undesirable in a situation of economic distress which many European countries face in the financial crisis. The main theories relevant here are the theory of market failure and the theory of state failure.[25]

Market failure theory

A market failure is a situation in which free markets produce inefficient results. Market failures imply that rational decisions of individuals based on self-interest lead to situations that are unfavourable from a societal point of view. The compilations and interpretations of market failures differ. There are some schools of economic thought that neglect the existence of market failures or the need for governments to intervene. Market failures with respect to policies in support of high-growth SMEs can be traced back to three factors: externalities, imperfect competition and imperfect information.[26]

An **externality** is an impact on a party that is not directly involved in a transaction. Externalities imply that prices do not reflect the full costs (negative externalities) or benefits (positive externalities). High-growth innovative SMEs can be considered to have positive externalities to society beyond the individual benefits of the entrepreneur: First, innovative enterprises introduce new products, services, production processes or business methods that enhance consumer welfare. Second, their new knowledge may create spill-over benefits for other companies. Third, enterprises can contribute to industrial clusters and ensuing agglomeration benefits for other firms. A specific type of positive externalities is a public good. The creation of jobs in SMEs and the related economic and social stability or upturn – or the prevention of decline – in the region where they are located may be considered a public good. These arguments do however not only apply to SMEs performing high growth: The first and second argument applies to any innovative company, the third to any new company, and the public good argument applies to any growing company. Furthermore, growing enterprises may also produce negative externalities: First, they may destroy the rents, market shares or employment of established enterprises. Second, when there are strong “first mover advantages” for market entrants, the result may be an undesirable contest with too much rent seeking and investment from the society’s perspective. Finally, high growth can potentially lead to high failure, turning positive externalities into negative ones.

Imperfect competition means that one or a few agents in the market are able to shape the equilibrium allocation by their own investment, pricing or quantity decisions. Imperfect competition may be due to entry barriers e.g. in the form of high “sunk costs” or increasing returns to scale which may lead to monopolies. Markets with only one or a small number of firms generally imply that the firms can exploit their market power to

[25] The following elaborations have been adapted from European Commission (2009), sections 3.2.3 and 3.2.4.

[26] See Murray/Hyytinen/Maula (2009), section 5.2.1, for a summary of possible market failures in the context of promoting high-growth SMEs.

increase their profits which does not correspond to socially efficient allocations. In reality there are few, if any, examples of perfect competition, so that there are many arguments in favour of state regulation or intervention to counteract market power. Policies in support of high-growth SMEs may also serve in this direction.

Imperfect information may lead to inefficient investment decisions. For example, imperfect information related to market conditions and resource availability can lead to suboptimal investments. A particular type of imperfect information is asymmetric information, i.e. one side is better informed than the other about a certain subject and may exploit this advantage for its own benefit or, likewise, one side is worse informed and holds up investment because of uncertainty. Access to growth finance is an example of asymmetric information: firms seeking finance are less well informed about finance options and consequences than firms offering finance.

State failure theory

State failure theory is the counterpart of market failure theory. It deals with possible failures in governmental decisions, i.e. with inefficient policies. Assuming that governments as well as companies and industry lobby groups act rationally in an economic sense, political decision making is a "game" between these sets of players. It can be assumed that companies and lobby groups maximise their individual utility and the profits of their members, respectively. Governments may have different objectives. Some schools of economic theory assume that governments act in their own interests. For example, governments may seek to increase the probability for being re-elected or to adopt policy measures which are in line with their own ideology or which support specific lobby groups. Policies in support of high-growth SMEs could also be used to pursue such motives. More positively, it could be assumed that governments seek to maximise social welfare.

As regards the relationship between governments and companies, state failure can be traced back to one principal source: **imperfect information**. As regards high-growth SMEs, policy makers' information is above all imperfect with regard to what companies may actually perform high growth in the future. Attempts to try to "pick winners" for promoting them may thus be doubtful.[27] Information is also imperfect with regard to the way companies will react to policies as well as policy effects and side-effects in the future. A special problem of imperfect information is biased information provided from companies potentially benefiting from policy support. Even governments that try to maximise social welfare may have to base their decisions upon information provided by companies or lobby groups which act strategically.

Issues of policy making and state failure also apply to governments on different institutional levels. In this Policy Brief, the relationship between the **European Commission and Member States' governments** is considered, as the EC is seeking to more precisely define its role in supporting policies for high growth of SMEs. Essentially, there are two sources of potential state failure in this respect: negative external effects of national policies as well as asymmetric information between institutions enacting and implementing policies.

As regards **negative external effects of national policies**, within a confederation of countries decision rights can be allocated in a way that such effects are not taken into account appropriately. National regulations may distort competition in favour of domestic firms. Thus one may favour to allocate decision rights

[27] See also the critical statements at the workshop related to this Policy Brief in INNO-Grips (2011).

principally to the supranational level. However, there are two key arguments in favour of decentralised allocation of decision rights. First, the subsidiarity principle stipulates that central authorities should perform only those tasks which cannot be performed effectively at lower levels, safeguarding the preferences of the citizens and firms affected in the national states. Second, as competition can be interpreted as a discovery process, the relationship between nations can be interpreted as a beneficial competition to search for most effective policy solutions. These may then be implemented in other nations, too.

As regards **asymmetric information**, state failure in international relationships may also be due to institutional separation between decision makers enacting policies and the institutions implementing these policies. This may also apply to the EC and Member States. Centralised decision makers enacting policies can be assumed to have imperfect information about the implementation of a policy, and monitoring is costly. Information is "asymmetric" as the supranational institutions know less about actual implementation than the national institutions. Thus, centralised institutions may not be able to ensure that policy measures are implemented consistently by national or even local authorities. Instead, actual implementations may be driven by the national authorities' preferences. The decisive issue here is that changes in the originally intended policy increase uncertainty on the part of companies to be promoted.

3.4 Findings on growth determinants, role of high-growth SMEs, and SME growth policy

Many determinants of enterprise growth – opportunity seeking crucial

A crucial question for evidence-based and effective policies to foster enterprise growth is: Why do enterprises grow? Or rather: Why do some enterprises grow while others do not? This is a general question that requires a complex answer.[28] Hölzl (2008) found that "there are many factors which can trigger the growth process, such as, for instance, new technologies, new organisational structures, internal capabilities that allow for cost reduction or allow the firm to react more quickly to market trends, the social capital of the entrepreneur, the use of unique opportunities". From a business functional point of view – see the framework suggested in section 2.3 –, companies need resources, incentives and markets to innovate and grow. Following from this, companies which successfully access resources, which have and use incentives determining their performance and which successfully enter markets will innovate and grow.

A comprehensive study by the World Economic Forum provides important insights about growth determinants and strategies of young companies, based on 70 executive cases from 22 different countries and surveys from the CEOs and CFOs of 110 companies from 17 different countries. The study identified eight different growth strategies that early-stage companies from around the globe are adopting. These include wave ventures, new product in new category ventures, new product in existing category ventures and idea transfer/transplant ventures.[29] The "wave strategy" reflects the dynamic forces that can come out of early-stage companies. Companies like Microsoft, Genetech, Google and Facebook not only grew rapidly but also stimu-

[28] For recent studies on the issue of determinants of firm growth see Moreno/Casillas (2008); Harms/Scillitoe (2010); Stam (2010); Wiklund/Patzelt/Shepherd (2009).

[29] See also Janczak/Bares (2010) for a recent study about characteristics and strategies of "gazelles" in France.

late a broader ecosystem of related companies. The idea transfer or transplant strategy implies adaptation of an idea developed in a different geography as part of the growth strategy. The WEF study also concluded that "many prior discussions in this area over-emphasize the risk dimension", highlighting "the importance entrepreneurs from around the globe place on taking a perspective of proactive opportunity" and the ability to survive "dark moments".[30] In the workshop related to this Policy Brief, many experts took a similar view, highlighting that Europe is largely lacking such opportunity-looking entrepreneurial spirit.

Possible barriers for high growth of enterprises in the EU

As there may be evidence that Europe generates less high-growth SMEs or at least less young global leaders than other major economic regions in the world, the question arises why this is the case. Referring to the "innovation and growth triangle" presented in section 2.3 and the determinants of growth mentioned in the previous section, possible barriers are manifold.

The barrier possibly most frequently mentioned in discussions about high-growth SMEs is **access to finance**. Small, young and innovative companies are more likely to experience constraints in accessing finance for innovation than established firms: "Young radical innovators will be affected disproportionately by a financial crisis. Innovating companies that rely on external financing, and who find it more difficult to access external finance because of their risk profile, will be particularly hard hit by malfunctioning financial markets."[31] Access to finance may also be hampered by unfavourable regulations related to investment and company shares: "There are a number of European countries where provisions governing the issuance of equity shares and registration make it very expensive to launch a company and grow it quickly."[32] Section 4.2.2 of this Policy Brief deals more detailed with the financing issue.

Another issue that is often mentioned is the need for and a **lack of qualified coaching** and business services – an issue that will be dealt with more detailed in Section 4.2.1 of this Policy Brief.

As regards impeding market regulation, highly **regulated labour markets** may be an important barrier for companies to grow.[33] As innovation policy advisor Burton Lee states: "To grow a company quickly, you need to hire staff quickly - and you need to be able to dismiss them again if necessary. It is so costly to dismiss employees in Europe that entrepreneurs and company managers are extremely cautious about hiring."[34] However, this argument becomes less strong considering the relatively large shares of high-growth enterprises in the Nordic countries of Denmark, Sweden and Norway with traditionally highly regulate labour markets, while Austria, a country with a fairly loose labour market regulation, has only an average share of high-growth companies (see section 3.2 above).

Since the European culture is said to favour security, the risk of **failure** may be an important impediment to start and grow companies: "It is important to allow entrepreneurs to fail. Failing is very instructive, because

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30 WEF (2011), p. 6.

31 See Aghion et al (2007), quoted by Veugelers (2009), p. 3.

32 Statement from Burton Lee in an interview for this Policy Brief, quoted from INNO-Grips Newsletter 1/2010, p. 6.

33 See Baughn/Sugheir/Neupert (2008) who found that "labor flexibility is a significant predictor of the prevalence rates of high-growth entrepreneurship". See also Minniti (2008), p. 787, suggesting that in developed countries labour market reforms may be particularly conducive to "support the growth of high-performance ventures".

34 Quotation from INNO-Grips Newsletter October 2010, p. 5.

next time you will do it better. This is where the need to modify bankruptcy law comes in. And there is a need for change in social attitudes towards entrepreneurs who failed, too."[35]

Further barriers may include, for example, education systems not sufficiently preparing for running and growing a company, university and research systems not targeted sufficiently towards transferring innovative ideas to business, difficulties in protecting intellectual property,[36] a lack of international orientation in marketing products, and a still fragmented European market.

Social recognition of entrepreneurs or the lack of it, respectively, is apparently not a crucial impediment in Europe. A population survey of the Global Entrepreneurship Monitor 2010 in 21 innovation-oriented countries asked whether starting a company is considered an attractive professional option and whether successful company founders are highly respected. European countries did not perform worse than the US, South Korea and Australia in this respect and much better than Japan. In fact, the largest share of answers of "yes" for "company start-up is an attractive professional option" was found in the Netherlands (86%).[37]

High-growth enterprises are very important for employment creation…

Considering policy makers' desire to create jobs, the question arises to what extent high-growth SMEs contribute to this objective. The importance of high-growth new companies for job creation has in recent years been widely substantiated by economic research. The number and share of high-growth enterprises – more precisely: of those enterprises with persistent high growth – is small, but the number and share of jobs they create is disproportionally large.[38]

A study by the **World Economic Forum** published in 2011 claims to "present the first extensive evidence that covers both revenues and headcount growth in Years 2 to 5 of early-stage companies across multiple countries". The study took Year 2 as the start year as it is often the first full year of operations. The study found that "the top 1% of all companies ranked by the level of revenue (job) creation contributes 44% (40%) of total sector revenue (job) creation".[39] It is however also worthwhile mentioning the concentration at the other end of the row: "The top 1% of all companies, ranked by the level of revenue (job) losses, accounts for 53% (46%) of all sector revenue (job) losses."

A study by the **Finnish Ministry of the Economy** published in 2011 found that in the period 2006-2009, 691 newly founded companies fulfilled the OECD criteria for high growth, i.e. at least 20% growth in three consecutive years. These 691 companies made up 4.9% of new companies with more than 10 employees in 2006. In the period of 2006-2009 they contributed 51,164 new jobs which was almost half the job increase created by new companies in this period.[40]

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35 Statement from Burton Lee in an interview for this Policy Brief, quoted from INNO-Grips Newsletter 1/2010, p. 6.

36 See e.g. Veugelers (2010), referring to Gans/Stern (2002): "Often lacking the scale to accrue all the necessary complementary assets for successful commercialisation (...), YICs may find it harder to appropriate the returns from their innovations."

37 See Brixy et al. (2011), p. 19. Answers translated from German by the author.

38 In addition to the studies mentioned in the following see also Mason/Brown (2010) with findings for Scotland, Hölzl (2010) with findings for Austria, and Henrekson/Johansson (2008) with an overview of studies for different countries.

39 WEF (2011), p. 7.

40 See Finnish Ministry of Employment (2011), p. 6.

A **Kauffmann Institute study** of the US economy in 2010 with data for 2007 contained 5.5 million firms. Approximately half a million of these firms were just founded; another two million were five years old or younger. Only a small number of firms, the top-performing one, created a disproportionate share of additional jobs. For example, the top 5% of companies measured by employment growth created two-thirds of new jobs in any given year. The top 1% of companies generated 40% of new jobs in any given year. Importantly, however, many of the jobs created by these fast-growing firms will disappear.[41] On a sub-national level, analysing business dynamics in 320 US Metropolitan Statistical Areas, Acs and Mueller found that "only start-ups with greater than twenty employees have persistent employment effects over time and only in large diversified metropolitan regions".[42]

Several studies by the Finnish economist Erkko **Autio** published in 2007 substantiated the importance of a small share of high-growth enterprises for overall employment creation in several countries.[43] Other studies include Storey (1994) with results for the United Kingdom (4% of new start-up survivors in the UK were responsible for 50% of jobs created by all new firms 10 years later and Birch et al. (1997) for the US (3% of the fastest growing firms generated over 70% of the new jobs created by new firms between 1992 and 1996.[44] Autio (2007a) concludes that "in order to promote economic growth, therefore, what really is needed are new jobs and new growing firms".

… but high growth can be a misperceived indicator

Policy makers should however also consider what Bianchi/Winch call the new phenomenon of "'business gigantism' – a situation of rapid and unsustainable growth that places severe strains on firms".[45] The authors recount two case studies of small firms that secured substantial funding for rapid expansion, in both cases via public agencies, but "failed to foresee the perils when the firms attempted to grow too quickly and both experiences major crisis". By way of simulation modelling they found that more moderate but still ambitious growth could have allowed sustainable futures.

Furthermore, Davidsson/Steffens/Fitzsimmons argue that growth is often not a sign of sound enterprise development. They hypothesised that firms which grow without first securing high levels of profitability tend to be less successful compared to firms that first secure high profitability at low growth. Empirical tests with two longitudinal data sets found that "the profitable low growth firms are both more likely to reach the desirable state of high growth and high profitability and have a decreased risk of ending up performing poorly on both performance dimensions". Policy makers are thus recommended to "adopt a more nuanced view of firm growth that explicitly incorporates its intricate relationship with profitability"[46].

[41] See Stangler (2010).

[42] See Acs/Mueller (2008), p. 1.

[43] See Autio/Kronlund/Kovalainen (2007), Autio (2007a) and a summary of several studies in Autio (2007b).

[44] See Autio (2007a), p. 9-10.

[45] Bianchi/Winch (2009).

[46] Davidsson/Steffens/Fitzsimmons (2008), p. 2.

SME growth policy

While the number of studies about high-growth SMEs has been increasing significantly in recent years, the number of studies about policies to support such companies is still small. Highly sophisticated analyses, applying for example cost-benefit analyses of specific instruments – also comparing the costs and benefits of alternative use of public funds – or longitudinal studies with control groups of companies not receiving specific types of support, were not identified in the course of research for this Policy Brief. This does not only apply to high-growth SME policies but to entrepreneurship policy in general: Economic research can as yet give no clear answers to the question what entrepreneurship policies are particularly conducive.[47] While many authors are cautious about entrepreneurship policy interventions, some argue that "governmental policy for promoting technological entrepreneurship can contribute to the vitalisation of the national economy through the generation of new jobs and innovation".[48]

Among the most prominent studies about policies for high-growth enterprises are the ones by the OECD (2010) and Autio (2007). The **OECD** report report suggests a set of combined elements to foster high-growth SMEs: improve the business environment, encourage entrepreneurial attitude, support the provision of training in young and small enterprises, improve access to debt and equity finance when necessary, and promote innovation and internationalisation activities of new and small firms. In practice, countries' policies for fostering SME growth tend to focus on R&D and access to finance, while neglecting skills upgrading and encouraging growth ambitions.

Autio et al. produced a comprehensive analysis of policies for high-growth enterprises. The study team mentions the following lessons and good practices from a study about policies for high-growth SMEs in the nine countries of Australia, Brazil, Finland, Hong Kong, Hungary, Italy, Netherlands, Spain, and the UK:[49]

- **Selectivity**: Initiatives seeking to promote rapid growth must be highly selective when choosing participating enterprises and entrepreneurs because only a very small share of them are willing and able to achieve rapid growth. Selectivity should increase with the maturity of the company.[50]
- **Proactiveness**: Instead of waiting for SMEs to approach the supporting agency, agencies can actively scan the environment for potential high-growth firms in order to develop customised support for them. However, a proactive approach may induce abusive practices as it grants significant power to the support agency. "Excluded firms may complain of discrimination. Therefore, a proactive approach should be implemented carefully".[51]
- **Private sector collaboration**: Active participation of private-sector actors ensures experience-based skills in managing growth and enhances the credibility of the initiative. Credibility is crucial as high-potential firms may tend to shun public support as inefficient and not sophisticated enough.
- **Professionalism**: The support agency needs to nurture its professionalism, competence, and a certain degree of exclusivity in order to be able to provide real value and to be credible.

47 See Minniti (2008), p. 779.

48 Lee/Gang (2010), p. 311.

49 See Autio/Kronlund/Kovalainen (2007), p. 76.

50 Autio/Kronlund/Kovalainen (2007), p. 75.

51 Autio/Kronlund/Kovalainen (2007), p. 75.

- **Sustained efforts**: Since growth may take time and since high-growth firms may be volatile, sustained efforts are necessary, "prepared to accept casualties".[52]
- **Focus on skills**: Since the management of growth is very demanding, the policy should emphasise the development of managerial competencies, involving experienced managers.[53]

The authors conclude that "the time for generic entrepreneurship policy has passed, and new focus and sophistication needs to be introduced in policy-making and implementation in order for economies to take full advantage of their entrepreneurial potential".[54] The study however does not deal in depth with the issue of state failure (see section 3.3). The authors developed an overview of differences between policies for general SMEs versus high-growth SMEs, as shown in Exhibit 3-4.

Exhibit 3-4: Principal differences between general SME policy and high-growth SME policy

	SMEs Policy	High-Growth Entrepreneurship Policy
Policy Goals		
Objectives in relation to entrepreneurs	Entice more people to become entrepreneurs	Entice the right people to become entrepreneurs
Objectives in relation to entrepreneurial firms	Increase the number of new entrepreneurial firms	Increase the growth of entrepreneurial firms
Objectives in relation to operational environment	Facilitate the environment for small business operation	Facilitate the environment for entrepreneurial firm growth
Resource Provision		
Source	Mostly from public sources	Combination of public and private sources
Type of financial resources	Grants, subsidies, soft loans	R&D loans and innovation grants, business angel finance, venture finance, IPOs
Dominant service	Basic (standard) advice for firm creation, business planning, small business operation	Experience-based advice for venture finance; strategic planning, internationalisation; organisational growth
Resource distribution principle	Ensure equal access for everyone (resource spread)	Select promising recipients (resource focus)
Regulatory Emphasis		
Life cycle focus	Remove bottlenecks to new business entry	Remove bottlenecks to entrepreneurial firm growth
Compliance bottleneck addressed	Reduce cost of compliance for small businesses	Smooth compliance requirements for growing firms
Fiscal regulations	Reduce VAT for small firms	Accommodate dramatic changes in firm scale; treat share options neutrally
Attitude toward failure	Avoid failure, bankruptcy	Accept firm failure and bankruptcy, but reduce the related economic and social cost
Links to other policy domains	Industrial policy, social policy, labour policy	Industrial policy, innovation policy, labour policy

Source: Autio et al. (2007), p. 79.

[52] Autio/Kronlund/Kovalainen (2007), p. 76.

[53] See Littunen/Niittykangas (2010) for the importance of entrepreneur's know-how for high growth of firms in the Finnish metal-producing industry.

[54] Autio/Kronlund/Kovalainen (2007), p. 78.

4 Current developments in policies for high-growth SMEs

4.1 Policies for high-growth innovative SMES in Europe and beyond

4.1.1 European policies for high-growth innovative SMEs

Eurostars

The European Commission considers the promotion of SMEs as very important. Its numerous related activities cover the "Small Business Act (SBA)" for Europe, improving the business environment, promoting entrepreneurship, facilitating access to markets and disseminating good practices.[55]

While there is no support programme of the European Commission directly and explicitly targeting high-growth innovative SMEs, there is a European programme named “Eurostars” that needs to be mentioned in this context. Eurostars is jointly powered by Eureka – a platform for supporting R&D-performing entrepreneurs uniting 39 member countries and the EU – and the European Commission. The Eurostars programme “is the first European funding and support programme to be specifically dedicated to SMEs”[56] with the objective “to support R&D-performing entrepreneurs, by funding their research activities, enabling them to compete internationally and become leaders in their sector.”[57] While the programme’s objectives do not explicitly include the term “high growth”, the notion “leaders in their sector” points to the ambition to produce “gorillas” and implicitly high growth.

Eurostars is initially running 2007-2013, combining national R&D programmes of 33 countries which have committed 300 million Euro, the European Commission’s Framework Programme 7 with up to 100 million Euro committed, and the Eureka Secretariat for co-ordination. By the time of completing this report in mid-2011, Eurostars had received 1,470 applications in five calls, of which 329 were approved in the first 4 calls. 15 projects had been concluded. According to Eureka, applicants were aspiring high growth.

Based on statistics and a interviews at national and EU level, an interim evaluation of Eurostars found that ”Eurostars is a good programme, which meets its objectives and adds value to European R&D performing SMEs”. The Group of Independent Experts concluded that “Eurostars should not only be sustained but preferably its budget should be increased in the future. However, in spite of good progress, some scope for further improvement also remains.”[58]

The European Investment Fund’s high growth and innovative SME facility

The European Investment Fund (EIF), a public-private partnership founded in 1994 whose shares are held by the European Investment Bank (61.2%), the European Commission (30%) and financial institutions (8.8%), is a specialist provider of SME risk finance across Europe and a major player in the European venture capital market. Its investment strategy has historically focused on early stage VC funds and the promo-

[55] See http://ec.europa.eu/small-business/policy-statistics/policy/index_en.htm.

[56] See http://www.eurostars-eureka.eu/.

[57] See http://www.eurekanetwork.org/about-eureka.

[58] Laperouze/Autio (2010), p. 5.

tion of European technology but it currently seeks a more diversified portfolio. In 2009, the EIF combated the fall-out of the financial crisis for venture funds in their fundraising efforts. It increased its commitments to high quality funds with the aim to preserve the European VC infrastructure in a period of capital attrition.[59] Since 2007 the European Investment Fund's operates a High Growth and Innovative SME Facility (GIF), providing risk capital for innovative SMEs. It offers two funding opportunities:[60]

- GIF1 – risk capital for innovative SMEs in their early stages: EIF can usually invest 10 to 25% of the total equity of the intermediary venture capital fund or up to 50% in specific cases;
- GIF2 – risk capital for SMEs with high growth potential in their expansion phase: EIF can invest 7.5 to 15% of the total equity of the intermediary venture capital fund or, exceptionally, up to 50%.

SMEs seeking equity investment from these schemes need to contact funds that have signed an agreement with the EIF. These funds decide about their investments based on normal commercial criteria. The GIF's indicative budget for 2007-2013 is 550 million euro. By the end of 2010, 116 SMEs were supported by GIF1 at an average cost of 300,000 euro, and 26 by GIF2 at an average cost of 600,000 euro.[61] No valid data for jobs created, turnover growth and return on investment was indicated yet because the programme was not fully implemented yet and most beneficiaries had received the financial support only recently. However, 66% of the enterprises stated they would not have set up the business without GIF support.[62] The share of high-growth SMEs (more than 20% growth in three consecutive years) in GIF was 48%. 62% of the GIF beneficiaries indicated that the support was crucial to find the finance needed, and 77% stated that GIF funds facilitated acquiring additional finance.[63] The evaluators found that GIF and national VC support programmes do not interfere, given the current scarcity of VC in Europe.[64] They conclude that GIF is "relevant to the needs of European SMEs" and that it contributes "to the start up and growth of SMEs".[65]

4.1.2 National policies for high-growth innovative SMEs

Overview of policies

The following compilation includes policies with the objective of supporting high-growth SMEs, mentioning this target group explicitly or implicitly. Innovativeness is put aside for a moment. Compiling policies "in support of high-growth SMEs" is not a straightforward task; the amount of relevant policies is obscure. First, policy programmes or initiatives may express "high growth" in different manners (e.g. "leaders in their sector",

[59] See http://www.eif.org/what_we_do/equity/venture/index.htm.

[60] See http://ec.europa.eu/enterprise/policies/finance/cip-financial-instruments/index_en.htm and http://www.eif.org/what_we_do/resources/european_commission/GIF_InvestmentPolicy_Implemenation_Guidelines.htm?lang=-en.

[61] See Centre for Strategy and Evaluation Services/EIM (2011), p. 48.

[62] See Centre for Strategy and Evaluation Services/EIM (2011), p. 67.

[63] See Centre for Strategy and Evaluation Services/EIM (2011), p. 58-59.

[64] See Centre for Strategy and Evaluation Services/EIM (2011), p. 109.

[65] See Centre for Strategy and Evaluation Services/EIM (2011), p. 142, also section 4.2.2 of this Policy Brief about access to finance.

"global stars") and it may be difficult to assess whether a policy actually targets high growth of SMEs or not. Second, policies may target high-growth SMEs as one of several groups of SMEs.

In Europe, targeted policies for high growth SMEs can mainly be found in the Nordic countries of **Denmark** (the former Gazelle Growth Programme and the current Accelerace), **Finland** (TEKES funding for growth-oriented SMEs, Finnish Growth Company Service, Vigo) and **Norway** (Incubator Grant, Seed capital scheme, Nyvekst). Further European countries with such policies include **Estonia** (Estonian Development Fund), **France** (Gazelles Programme, France Gazelles fund), **Ireland** (High Tech Startup programme), **Netherlands** (Growth Accelerator "Groeiversneller"), and **Spain** (Neotec Fund). Beyond Europe, relevant policies were identified locally in **Australia** and the **USA** as well as in **China**, **Singapore** and **South Korea**. One of the most prominent and recent national policy activities for high-growth enterprises is the Startup America initiative by the US government.[66]

In the following, some policy approaches in Europe which were modified since 2007 are described in more detail.[67] Annex 3 of this Policy Brief provides an overview of some initiatives also in other parts of the world.

Denmark: Accelerace

Objectives: In Denmark, Symbion, the largest science park in the country, runs a programme named Accelerace, started in early 2008 with a pilot phase (2008-2009) followed by an operational phase with funding from 2010 onwards, providing loans for eligible companies that have participated in the programme. According to the programme's description, "Accelerace is a practical, fast-action and internationally focused business development programme for small companies and entrepreneurs in Denmark".[68] Its objective is to provide knowledge, tools and access to networks of customers, partners and investors that enable companies to commercialise their innovations or grow internationally. Companies with only national ambitions are not considered for support. High growth in a global market is an explicit objective of the programme.[69]

Instruments and funding: Accelerace offers coaching, training and resources to selected innovative and growth-oriented entrepreneurs in an "intensive five-month process". The process includes contacts to customers and industry experts as well as support to find the necessary resources, above all funding and employees. Key elements of support include four workshops: customer insight, value proposition and business model, go-to-market strategy and pitch training. The programme seeks to bridge the gap between start-up and larger international venture capital funding. Accelerace's services are for free and sponsored by the state investment fund "Vaekstfonden", the Region Hovedstaden (Denmark's capital region), Region Midtjylland (Denmark's Middle-Jutland Region) and the European Commission's Regional Development Fund.

Operations: The programme runs twice a year with starts in January and August. Each time the Accelerace team, made up of twelve employees, selects 10-15 companies to be supported. The team applies eight selection criteria, including for example market potential, sustainability of the business model, the quality of the

66 See http://www.whitehouse.gov/issues/startup-america.

67 There may be further European policy approaches which were newly introduced or changed since 2007 of which the authors of this Policy Brief did not become aware of.

68 See http://symbion.dk/subsites/accelerace/english/.

69 See Symbion homepage, English version, at http://symbion.dk/index.php?id=815.

management team, and whether the company may be a venture case. “Timing is essential”, says Accelerace senior management consultant Rebecca Scheel – the applying companies need to be at the right development stage and open for coaching to enter the programme.

Companies find their way to Accelerace either through applying themselves or by being identified through Accelerace or its network. The Accelerace team has a wide network including for example venture capitalists, entrepreneurship organisations, technology transfer offices, and the private non-profit organisation Connect[70] which provides free advice and coaching to small businesses with high growth potential.

After one or two months of support, market evidence may show that the product is not yet ready for the market; after three months it may turn out that the company is not a venture case. After the programme it will be clear which of the companies can be attributed high-growth potential. In the programme’s first round with financing in the first half of 2010, two of three companies were selected for further funding; in the second round it was two of nine companies. In the selection process for entering the programme and for receiving funds, the Accelerace team provides a short-list of candidate firms that have been vetted by at least two business consultants. These companies then do a pitch to Accelerace’s investment committee which makes the final decision. The investment committee is made up of several investors, industry experts as well as Symbion’s CEO. The initial pitch to enter the programme resembles a typical investor pitch, while the final pitch includes validated information for customers and industry experts, an actionable operational plan, and a clear plan to attract the necessary resources, e.g. team members, advisory board and additional funding.

The main belief of Accelerace is that usual venture capitalist operations have shortcomings. “We do not know yet if our model is better than venture capitalists”, says Rebecca Scheel, “but we spend more time and pursue a hands-on policy in working with the companies over 5-8 months before offering them a loan. We believe that this more market and action-focused due diligence process will lead to a higher rate of success.”

The programme has no specific industry focus, but the companies tend to be knowledge-intensive, for example in environmental technology, biotechnology, power efficiency and mobile information technology. The Program has created a specialized “Bio Accelerace” for early stage biotech projects.

Assessment: An initial external evaluation was conducted in 2008 after the pilot round. The lessons from this evaluation were considered for programme redesign. The Accelerace team continuously evaluates the programme through participant satisfaction and perception of impact. It also tracks baseline data for its performance, such as employees, revenue growth and number of customers. A mid-term evaluation is expected to be ready in autumn 2011. Accelerace’s predecessor, the GazelleGrowth programme which ran from 2007 to 2009, supported some companies that turned out to perform high growth, including for example Autorola, Language Wire and Logimatic.[71]

Finland: VIGO, Tekes funding, Growth Company Development Service

Finland stands out as a country with several policy activities to promote high-growth. The most prominent may be the **VIGO** programme which was introduced in 2009 by the Ministry of Employment and the Econ-

[70] See http://www.connectdenmark.com.

[71] See http://www.autorola.co.uk, http://frontend.languagewire.com, http://www.logimatic.dk/lang_uk.

omy together with Finland's most important R&D&I funding agency Tekes and Veraventure, a venture capital investment company serving as the hub for public early-stage venture capital investments. VIGO is a type of incubator that focuses on young enterprises with high growth potential. VIGO is meant to bridge the gap between early stage technology firms and international venture funding. "The backbone of the programme is formed by the Vigo Accelerators, carefully selected independent companies run by internationally proven entrepreneurs and executives. (...) The Accelerators are not consultants -- they are co-entrepreneurs who invest in the companies they work with to guarantee common goals and passionate development effort."[72] The Accelerators and other programme participants use their networks to funding sources, potential customers and partners to accelerate the growth of the target companies. The Accelerators select their target companies and negotiate the agreements with them independently. The incentive for the Accelerators is the growing value of the target companies which the Accelerators can realise when exiting their investments. The Accelerators can also charge a monthly acceleration fee from the target companies which can be covered by Tekes. The acceleration period lasts 18 to 24 months. At the end of this period, the target company should be able to perform fast international growth. The Accelerators were selected from the best applicants in their respective fields in a public procurement process. In mid-2011 there were six Vigo Accelerators.

There is a **Tekes funding programme** for young innovative growth companies in. In 2008 and 2009 in total 50 enterprises were funded. This funding is intended for small early-stage enterprises with impressive plans and the resources necessary for international growth. For example, funding was provided to two companies that in January 2010 received the prestigious "red herring global 100 award" for the world's most promising technology industry companies: Severa (http://www.severa.com/int), a provider of enterprise resource planning systems, and 7signal (http://www.7signal.com), a wireless quality advancements specialist.

The **Growth Company Development Service** initiative, established in 2003, is operated by several agencies: Tekes, Finnvera (a specialised financing company owned by the State of Finland and the official export credit agency of Finland), Finpro, and Centres for Economic Development, Transport and the Environment.[73] The development process can be launched with, for example, Finnvera and continue as a project with Tekes or vice versa. In 2009 the growth company development service covered around 400 enterprises.[74]

Enterprise Finland is a business service for foreigners and immigrants in Finland targeted at various firm segments, including growth companies. In January 2011 it organised the first **Enterprise Finland Venture Forum**, connecting 37 national and international financiers with 25 Finnish growth companies.[75]

At the beginning of 2008 the innovation department of the Ministry of Employment and the Economy established a **division for growth ventures**. The rationale behind creating this division was that "the needs of growth companies may substantially differ from others, which requires a special growth ventures policy"[76].

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[72] See http://www.vigo.fi.

[73] See Murray/Hyytinen/Maula (2009), p. 163.

[74] See Tekes (2009), p. 10.

[75] See https://www.efvf2011.b2bmatchmaking.com/p_index.php.

[76] See http://www.tem.fi/?l=en&s=2383.

While an evaluation study of the Finnish innovation system is available that deals with general policies for fostering high-growth SMEs, it does not include an evaluation of specific policy measures in this direction.[77]

Norway: High growth programme and International Growth Programme

Norway recently revised its policies for high-growth SMEs. The following elaborations are based on information empirica received from Innovation Norway in late 2010. Two programmes are relevant here: the "High Growth Programme" and the "International Growth Programme".

The **High Growth Programme** helps high-potential start-ups growing and internationalising their business. The companies targeted are "born globals" in the early phase of development but can already demonstrate market acceptance and competitive advantage. Innovation Norway does not apply specific selection criteria, but companies should have the ambition and potential to realise solid growth in turnover and jobs for a period of 5-10 years. Innovation Norway concentrates its efforts on close follow-up, skills development, connecting and financing. Services are provided for at least two years. Companies in the target group can have a dedicated Innovation Norway team allocated for a given period to act as a promoter and sparring partner. The core of the team is made up of the account manager from the regional office in charge and an advisor from the organisation abroad. The programme offers no new special services but a tailored package of existing services beneficial for growth companies.

The **International Growth Programme** supports Norwegian SMEs with ambitions for international growth, high potential start-ups in particular. The target group also includes SMEs seeking to strengthen their domestic market position against international competition. Services may also be offered to large companies. The companies conclude a contract with one of Innovation Norway's offices abroad for delivery of a tailored advisory project and pay a contribution. These offices work closely with the company's regional offices and other relevant professional environments within the organisation so that the company has one point of access to all expertise within Innovation Norway. Three international consultancy services are offered: international market advice, practical assistance in international markets, and access to foreign expertise. Innovation Norway assists the companies through all phases from idea clarification, development, (international) market introduction and growth. SMEs fulfilling the prerequisites pay a contribution of 50% of the abroad office's hourly rates; the other 50% is covered by public funding through the International Growth Programme. In exceptional cases, very qualified SMEs can contract expertise from "industry insiders" and have 50% of these costs covered through the International Growth Programme.

Seized initiatives, other ceding and prospective programmes

Some initiatives apparently vanished in the past years. For example, the Maltese iSTART scheme which was mentioned in Cunningham (2008) does apparently not exist anymore. **MaltaEnterprise** offers extended services to SMEs, also mentioning growth-oriented SMEs, but without an explicit focus on high-growth SMEs.[78]

[77] See TEKES material at http://www.tekes.fi/en/community/Results_and_impact/468/Results_and_impact/1283.

[78] See http://support.maltaenterprise.net/.

A special case is the UK National Endowment for Science, Technology and the Arts (**NESTA**) which has an investment branch focusing on "companies that are targeting markets that are very large and profitable or are expected to undergo substantial growth".[79] In October 2010 the UK Government announced that NESTA "will be granted full independence, moving from the public to the voluntary sector to become a charitable company. NESTA will continue to operate, as it has done since its inception, at no cost to the Government or taxpayer, by virtue of its Lottery endowment."[80] NESTA investments can thus not be classified as "governmental policy".

Another special case is **Israel**. While a 2008 report for the European Commission indicated that practically all SME policies could be considered as high-growth SME policies, the assessment from the Jerusalem Institute for Israel Studies consulted for this report is that there are currently no policies targeting high-growth SMEs in Israel. However, such policies are planned (see section 5.5).

4.2 Special policy themes

4.2.1 Entrepreneurship

Overview of entrepreneurship policies

Entrepreneurship is the act of starting or growing a company, so that entrepreneurship policies can be defined as political measures to support the start or growth of a company. Hence policies to support high-growth SMEs are a special part of entrepreneurship policies. Both general entrepreneurship policies and high-growth entrepreneurship policies may use instruments related to the "innovation and growth triangle" as described in section 2.3, i.e. they may be related to facilitating access to resources, incentives and markets. The approaches for fostering high-growth SMEs identified in the course of research for this Policy Brief focus on measures facilitating access to finance, foreign markets and human resources. Access to finance and foreign markets will be discussed more detailed below in sections 4.2.2 and 4.2.3. Examples of policies for easing access to human resources include the following:

- The SPRING programme of the government of Singapore offers several human resources related measures: a **Business Advisors Programme** to attach experienced professionals as business advisors for potential high-growth SMEs; the **Executive Training Programme** to link talented undergraduates from Singapore universities with growth-oriented SMEs; and the **Business Leaders Initiative** to enhance management capacity in SMEs. (See section 5.2.)
- The Danish Accelerace organisation offers a five-month programme for high-growth entrepreneurs, including training (see section 4.1.2).
- The Norwegian High-Growth Programme offers high-potential start-ups support from a dedicated team at Innovation Norway (see section 4.1.2).

[79] See http://www.nesta.org.uk/investments/our_approach/investments_criteria.

[80] See http://www.nesta.org.uk/home1/assets/features/government_grants_nesta_full_independence.

- Finnish Vigo Accelerators are even more than coaches, they are co-entrepreneurs who invest in the companies they work with (see section 4.1.2).

The role of coaching: exemplary activities exist – but no EU-wide replication

As the evaluators of the supportiveness of the Finnish innovation system for high growth enterprises state, "most first time, owner-managers of high-growth entrepreneurial firms will likely not have sufficient skill sets (at least in a fully developed and tested form), and will necessarily need to have access to human capital and further levels of professional advice consistent with the growth needs of the enterprise".[81] A special means of accessing knowledge in the course of running and growing a business is coaching – a way to provide managerial competence at arm's length. Studies confirm the importance of coaching for growing a company. In the GIF programme, an appointed business director is among the most appreciated support measures in addition to funding received.[82] The Swiss CTI Start-up programme claims that since 1996 to the present CTI reviewed 1,800 start-up projects, 200 start-up enterprises received the CTI start-up label, and 85% of them are still operating, some having shown remarkable growth.[83] This survival rate is much higher than for normal SMEs. Statements from interview partners, study guides and participants of the workshop related to this Policy Brief also suggest that coaching and policies to support coaching deserve special attention.[84] Findings from the IW Future Panel do however not confirm the importance of coaching for growth.[85]

In particular, coaching may help grow SMEs and cross the "chasm" between pilot markets and mass markets. Many young firms with high growth potential have spun out of academia and are led by managers with extensive research experience and mentality, not approaching their business from a market-driven perspective. In their first growth phase, public funding is often used effectively to advance the technological development of the initial invention. The business model is often focused on unique solutions for pilot customers. With this business paradigm high growth is rarely achievable. The fledgling firm may even decline when its core technology becomes obsolete within a few years. Management often does not understand how to make the transition from customised products for pilot customers to scalable products for larger markets. Even when management understands how to achieve this result technically, they often do not appreciate the other – often massive – changes that this strategy shift entails: networks change, new investment rounds are necessary, business plans and a new business strategy need to be developed, core competencies and organisation structure need to be aligned with emerging business processes. In such a situation, experienced coaching may be crucial.

In addition, coaching may not only provide crucial advice but also facilitate access to finance. For example, the label of the Swiss CTI Start-up coaching programme has become an important determinant in attracting venture capital, angels' investment and other financing partners which are essential to further growth.

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81 Murray/Hyytinen/Maula (2009), p. 168. See also Autio et al. (2007), p. 85.

82 See Centre for Strategy and Evaluation Services/EIM (2011), p. 65. See section 4.1.1 of this Policy Brief for GIF.

83 See http://www.ctistartup.ch.

84 This paragraph is largely based on statements from Allan Martel, study guide for this Policy Brief, assuming that "coaching by experienced certified coaches has been demonstrated to improve significantly the number of firms which make the leap from a fledgling high-tech start-up with a technology optic to a dynamic high-growth firm with a market orientation."

85 See Section 6.2.

Coaching activities and programmes

There are numerous coaching activities for entrepreneurs around the world, including for example the Platinn coaching association in Western Switzerland which uses the business paradigm shift concept described above,[86] the Canadian Industrial Technology Advisors,[87] and the coaching element of the German High Tech Gründerfonds[88]. The EU supported several coaching networks in the past:

- The **smE-MPOWER**[89] project was funded by DG Research from 2005-2007, establishing "a learning community of SME coaches and intermediaries, strategically sharing proven operational know-how". smE-MPOWER materials are freely available under an open license arrangement.
- The **Intelligent Manufacturing Systems**[90] (IMS) programme supports R&D innovation within manufacturing, supported by DG Research. IMS includes Europe, Switzerland, Korea, USA, and Mexico and is building an international business innovation coaching network focused on facilitating the development of international manufacturing technology projects.
- The **Harmony** project completed within IMS provided coaching explicitly designed to guide SMEs through the stages of developing and launching a business innovation collaboration project including e.g. strategic project planning, partner search, and intellectual property negotiations.

There are also specific coaching programmes for entrepreneurs aspiring for high growth – and high-growth programmes offering coaching. SPRING Singapore's Business Advisors Programme is an example (see section 5.2). There are also "coach the coaches" activities: The European Commission supports the "high growth coach" programme, aiming "to adapt and deliver a UK development programme for coaches working with high growth companies", to be used by agencies engaged in high growth coaching in Romania, Lithuania, Slovenia and Hungary.[91] The Danish Accelerace programme for promising start-ups aspiring for high growth also includes coaching.

In spite of these initiatives, many SMEs do not take advantage of coaching opportunities, and there is yet no appropriate infrastructure to encourage the replication of innovation-focused coaching networks throughout EU Member States.

In terms of economic theory, coaching is a private good so that public support for facilitating coaching cannot necessarily be grounded on market failure. However, one may argue that many SMEs are not aware of the benefits of coaching or they do not know where to find reliable, qualified coaches. In this way, a market failure argument for public support to accessing qualified coaches would be imperfect information on the part of the SMEs. One could also argue that a network of qualified coaches has characteristics of a meritoric good, i.e. a good such as education which is consumed too little from a public point of view because consumers do not take into account the positive external effects of their consumption.

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86 See http://www.platinn.ch/eng/ .

87 Provided by the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP); see http://ventureconnection.sfu.ca/index.php?/grow/nrc_irap_industry_technology_advisors_ita/.

88 Directly translated: "High Tech Start-up Funds"; see http://www.high-tech-gruenderfonds.de/coaching.

89 See http://www.sme-mpower.net.

90 See http://www.ims.org.

91 See http://www.exponentialtraining.com/about/eu-projects.

4.2.2 Access to finance

Importance of access to finance for company growth

Access to finance is crucial for new companies to set up, maintain, develop and grow their business. Different sources of finance have to be distinguished. Some companies may be established with own funds and be maintained or grow with their revenues. Others may seek bank loans. Companies with considerable growth perspectives may be looking for venture capital, i.e. "professional equity co-invested with the entrepreneur to fund an early-stage (seed and start-up) or expansion venture."[92] Venture capital is a subset of private equity. Other sources of finance include leasing, factoring, hire-purchasing and trade credits. Finally, companies may use public subsidies in the form of direct grants, reduced interest rates for bank loans or deficit guarantees.

Discussions and analyses about high growth of companies often focus on venture capital. There are empirical indications that a well-functioning venture capital market is conducive to growth not only of single companies but also of national economies: *"Venture capital injects economic dynamism: An increase in VC investments of 1‰ of GDP is statistically associated with an increase in real GDP growth of 0.30 pp. Early-stage investments have an even bigger impact of 0.96 pp. The direction of causality is not always easy to establish. Yet, tests for Granger-causality in the biggest market, the US, suggest that causality runs from VC-investments to growth. There is also substantial micro-evidence that supports this view."*[93]

Yet, bank loans are the preferred source of growth finance for European companies. In a 2009 survey, 64% of companies that expected to grow in the coming years stated that they would prefer to apply for a bank loan to realise these growth ambitions. Further 13% of companies preferred a loan from other sources. Only 6% stated that private equity would be their preferred source of growth finance.[94] This relativises the importance of equity finance for company growth. Furthermore, findings from the IW Future Panel (see Section 6.2) indicate that difficult access to finance is not a primary reason for non-growth of companies at least in Germany.

The European Commission has published plenty of studies about the financing issue.[95] However, analyses of growth finance can hardly be based on solid data. "Access to finance" for entrepreneurs and young businesses, both debt and equity capital, is one area where there is scarce availability of comparable data across countries; often reliable data are not even available at the country level.[96]

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92 Definition of the European Venture Capital Association, see http://www.evca.eu/toolbox/glossary.aspx?id=982.

93 See Deutsche Bank Research (2010).

94 See Gallup (2009), p. 9.

95 See http://ec.europa.eu/enterprise/entrepreneurship/financing/publications_documents.htm.

96 See OECD (2010), p. 11. The Eurobarometer survey quoted in the following provides insightful data and it is based on almost 10,000 interviews, but broken down by country and other indicators the number of cases is often fairly small.

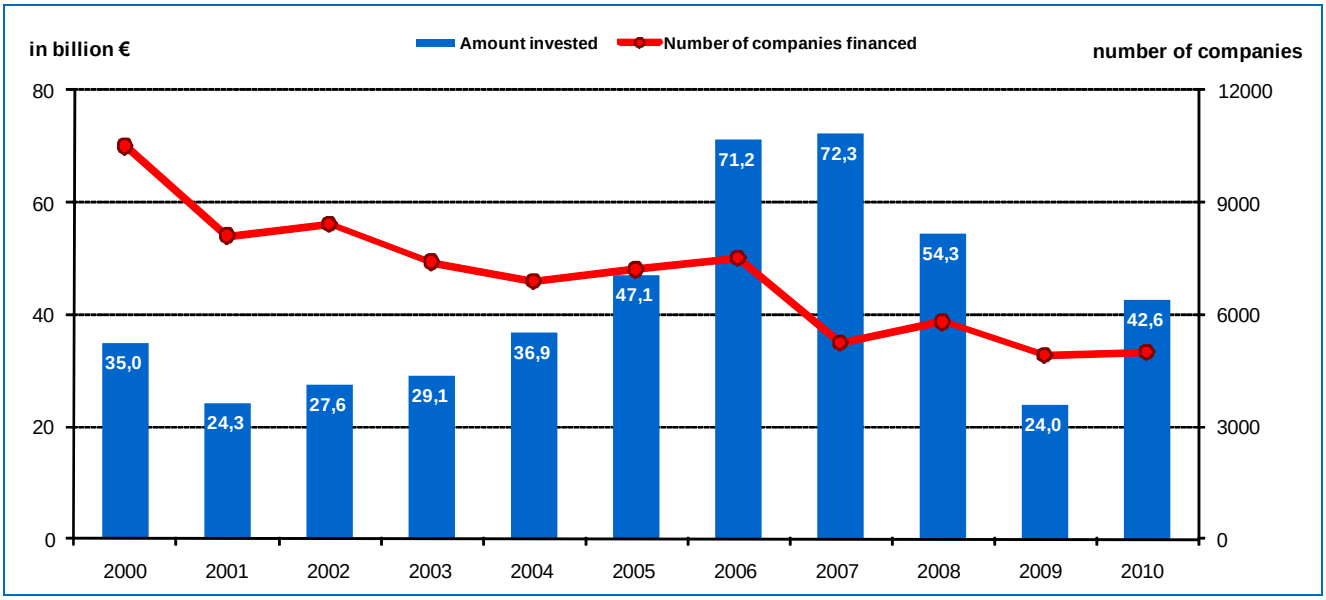
Difficulties in the availability of finance

Companies have to acquire funds in a complex and changing financial environment, in an environment that is particularly difficult in the ongoing financial crisis, and they have to deal with an increasing complexity and extent of financial reporting to their debtors.

The level of difficulties to acquire finance differs starkly between European countries. A Eurobarometer survey in 2009 found that approximately half of companies in Germany (53%) and Belgium (49%) aspiring for growth do not see any obstacles to receive loans for realising their growth ambitions. At the other end, the share of companies seeing no such obstacles is small in Romania (8%) and Italy (12%).[97]

The economic and financial crisis has had starkly deteriorating effects on the venture capital market. While private equity investments in Europe had been tripling from 24.3 billion Euros in 2001 to 72.9 billion Euros in 2007, investments fell to 23.4 billion Euros in 2009, even below the 2001 value, and recovered to 42.6 billion Euros in 2010 – see Exhibit 4-2. This decline and recent slight recovery is a world-wide phenomenon. Considering that the number of companies funded in 2010 was almost the same as in 2009, it is still difficult for high-growth oriented companies seeking venture capital to find adequate funding.

Exhibit 4-1: Private equity investments in Europe 2000 – 2010

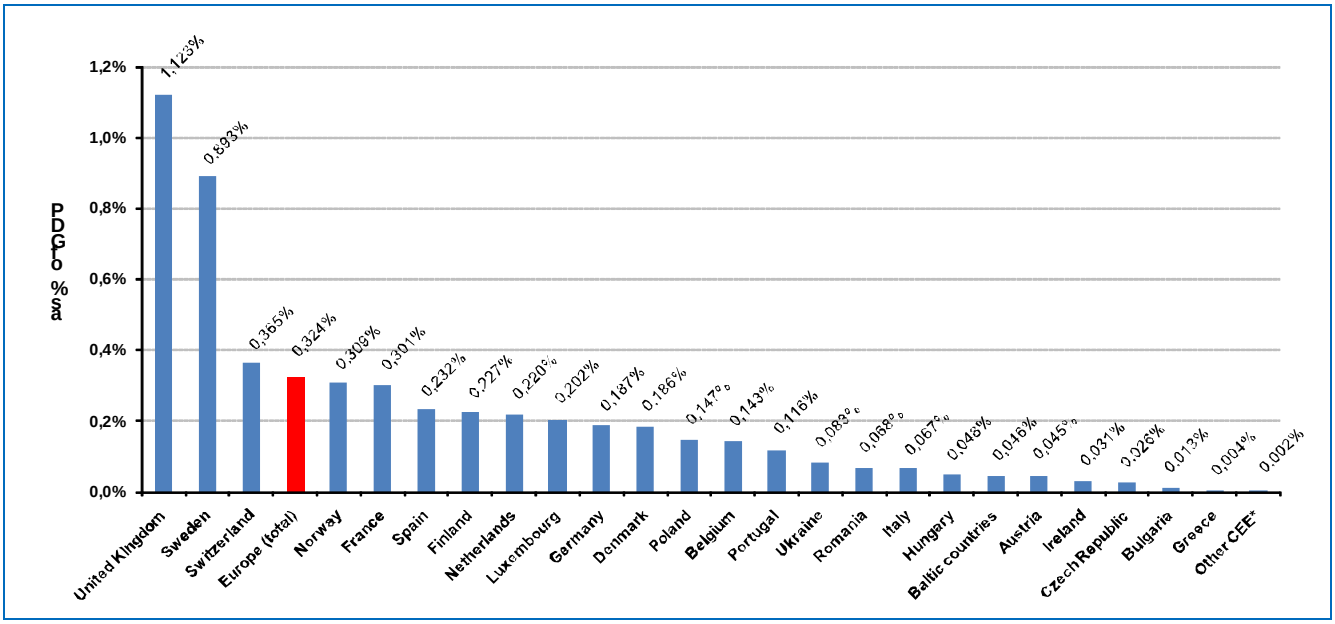


Source: Source: EVCA (2011)

The level of development of venture capital markets and thus the difficulties to obtain VC are very different among European countries – see Exhibit 4-3. The UK is the single largest VC market in Europe; private equity investments made up 1.123% of GDP there in 2010, followed by Sweden (0.893%) and Switzerland (0.365%). At the other end of the line were Greece (0.004%), Bulgaria (0.013%), and the Czech Republic (0.026%).

[97] Only those 15 countries with more than 50 cases were considered.

Exhibit 4-2: Private equity investments as % of GDP in Europe in 2010



Source: EVCA (2011)

Policies to improve access to finance

Unclear economic foundation of policy interventions

The origins of imbalance between demand for finance enterprises and finance supply are well understood in economic science terms and can e.g. be explained by asymmetric information. However, as explained in an evaluation report of the Finnish innovation system, "determining the existence, magnitude and materiality of such a gap and finding the appropriate form and magnitude of government intervention to address the gap in a given region or at a given point in time are less clear".[98] Notwithstanding, improving access to finance is a typical instrument of SME and innovation policy.

European policies

The European Commission and Member States have implemented a comprehensive system of policies and instruments to support SMEs with the most appropriate sources and types of finance at each stage of their life.[99] Improving access to finance is still a prominent issue on current agendas of the Commission: It is the first of twelve items of the Single Market to be implemented by 2012,[100] and the Innovation Union Flagship Initiative Communication[101] dedicates two sub-chapters (2.3 and 3.1) to the finance issue, explicitly mentioning high-growth SMEs and recommending to build on the experience of the Eureka Eurostars initiative.[102] On the operational level, the European Commission established a permanent SME Finance Forum to monitor

98 Murray/Hyytinen/Maula (2009), p. 153.

99 See http://ec.europa.eu/enterprise/policies/finance/financing-environment/index_en.htm.

100 As announced by the European Commission on 13 April 2011, see European Commission (2011).

101 See European Commission (2010).

102 See section 4.1.1 of this Policy Brief for Eurostars.

the market situation and to encourage new approaches to improve access to finance for SMEs.[103] Several policies target risk capital:

- Business angels and investment readiness: “The Commission's policy is to identify and spread good practices that can help improve the conditions for business angel investment.”[104]
- Early stage investment: “Financing through the high growth and innovative SME facility is available to small businesses in their early or expansion phase under the Competitiveness and Innovation framework Programme (CIP) for the years 2007 to 2013.”[105]
- Single market for venture capital investment: “At present, there is no integrated European venture capital market - the regulatory situation varies widely from country to country (...). The EU is seeking to unify the venture capital market (...). To achieve this, it is promoting cross-border venture capital investments.”[106] However, “while there is a consensus among Member States on promoting mutual recognition of national frameworks, no significant measures have been taken yet that would make fundraising and investing across borders easier.”[107]
- Growth stock markets provide listing opportunities with simplified requirements. The EC believes that “easier EU-wide access to growth stock markets is needed in order for firms to be able to become listed easily and for stocks to be readily accessible to qualified investors from all around the EU”. Therefore the EC is seeking “to facilitate cross-border operations in financial exchanges, remove obstacles to the use of competing clearing and settlement systems, and apply common rules to trading”.[108]

The European Private Equity and Venture Capital Association (EVCA) suggests to “adapt and refine the existing structures of public support for venture capital” in order to “increase its competitiveness, attract private investment and also to lead to a phased reduction of its dependence on public money”.[109] The EVCA suggests a Venture Capital Action Plan 2010-2020 for the EU, following the EU’s Risk Capital Action Plan of 1998. According to the EVCA, the European VC market is highly fragmented and has a serious funding gap in that Europe’s large institutional investors consider VC as too small for allocating investment expertise and resources to this asset class. The EVCA thus sees a need for greater VC intermediation, but there are too few funds-of-funds operating in this field.[110]

Furthermore, GIF provisions could be more tuned towards business angel investments. GIF1 includes the option that intermediaries with co-investment arrangements with business angel networks may receive an additional and separate commitment for co-investments. By the end of 2010, such investments were made

[103] See http://ec.europa.eu/enterprise/policies/finance/financing-environment/sme-finance-forum/index_en.htm.

[104] See http://ec.europa.eu/enterprise/policies/finance/risk-capital/business-angels/index_en.htm.

[105] See http://ec.europa.eu/enterprise/policies/finance/risk-capital/start-up-finance/index_en.htm and section 4.1.1 in this Policy Brief about GIF.

[106] See http://ec.europa.eu/enterprise/policies/finance/risk-capital/venture-capital/index_en.htm.

[107] See http://ec.europa.eu/enterprise/policies/finance/risk-capital/venture-capital/index_en.htm.

[108] See http://ec.europa.eu/enterprise/policies/finance/risk-capital/index_en.htm.

[109] EVCA (2010), p. 3.

[110] See EVCA (2010), p. 4.

with business angel networks. The related evaluation study suggests that "the emphasis could be on facilitating a marketplace and promoting networks of business angels and SMEs, rather than fitting business angels into a formalised and inflexible structure".[111]

Policies in Member States and other countries

In EU Member States and beyond there is a variety of initiatives to improve access to finance for innovative SMEs in general and for high-growth innovative SMEs in particular. In fact, an OECD report about policies for high-growth SMEs found that such policies in practice tend to focus access to finance (and also R&D), while neglecting skills upgrading and encouraging growth ambitions. Furthermore, an important issue may be to decrease entrepreneurs' transaction costs in finding finance. An important element of policy support for high-growth SMEs is to create "pathways of financing". Website informing entrepreneurs about where to seek finance for certain stages in the life of an enterprise in a certain region may be helpful when all pieces of finance for this pathway exist.[112]

The case studies conducted for this Policy Brief (see section 5) provide some examples from countries outside Europe:

South Korea:[113] The Korean government intensively fosters the programme "inno-biz", including the support of business ventures through dedicated funds fuelled by domestic and overseas sources as well as by investing in a fund of funds. The government also plans to encourage venture capital investment from overseas funds, oil money, and other sources. The "300 Global Stars" programme which implicitly promotes high-growth companies also includes provision of finance. However, there is yet no evaluation of the effectiveness of these programmes.

Singapore:[114] In light of the economic crisis, Singaporean business associations started the Financial Facilitator Programme (FFP) in January 2009, vigorously supported by the SPRING Singapore programme which targets high-growth SMEs. SMEs can use the FFP to diagnose their financial health, receive advice on financing options and guidance on loan applications. This was stated to be crucial for high-growth SMEs that required high loans for survival, investment diversification and possible expansion.

Canada:[115] While there are no specific policies for grants to industry in Canada that focus on high growth SMEs, the Canadian experience suggests that a government focus on high-tech SMEs combined with adequate levels of venture capital financing holds the greatest potential for creating "gazelles" and that these firms show unusual resiliency. While this assessment is based on empirical evidence, the identification of reasons for this success was beyond the possibilities of this case study.

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[111] See Centre for Strategy and Evaluation Services/EIM (2011), p. 110.

[112] See the related hint by entrepreneur Brian O'Connor at the workshop related to this Policy Brief, INNO-Grips (2011), p. 5.

[113] See section 5.1 of this Policy Brief.

[114] See section 5.2 of this Policy Brief.

[115] See section 5.3 of this Policy Brief.

Last but not least, while taxation is not an issue focussed in this Policy Brief, there are indications that taxation – as a form of finance deduction, i.e. negative finance – can be even more important to SMEs than access to "positive" finance. A survey of Finnish companies in the context of an evaluation of the Finnish innovation system found that "small and young innovative firms think that reducing company and capital taxation is much more important for them than, for example, the availability of risk capital".[116]

4.2.3 Internationalisation

The link between high growth, innovation and internationalisation

Defining internationalisation

The term "SME internationalisation" refers to SME's outreach to business partners and customers in other countries. "Internationalisation" may first of all refer to sales, i.e. to offering products and services in other countries. In a broader definition it may also refer to other business functions such as procurement, hiring employees and financing abroad as well as to cooperation in R&D, production and innovation activities with international partners.

Results of an INNO-Grips study about growth, innovation and internationalisation

The link between growth, innovation and internationalisation is apparently self-evident: innovative companies that seek to grow quickly need large markets, and domestic markets may be too small.[117] Almost four fifths of SMEs receiving GIF growth funding operate in international markets.[118] A 2010 INNO-Grips study about "barriers to internationalisation and growth of EU's innovative companies" confirms this.[119] Analysing empirical data for EU companies, the report shows that "innovative companies are more likely to export", that "they are more productive and therefore internationally more competitive" and that "exporting in turn has a positive impact on innovation". Hence, "exporting and innovation are complementary strategies that result in higher export shares, turnover and employment growth at the firm level".[120] The authors suggest that "policies supporting innovation and internationalisation should be linked up".[121] However, this policy link should be tailored towards the countries' specific ways innovation affects their economic performance: in economically less advanced countries, process innovation is more important, while product innovation is more important in advanced countries.[122] The study also points to "strong evidence (...) that the lack of a single European Patent affects firms' incentives to innovate and raises financial barriers to innovation".[123] The importance of the Single Market for enterprises' growth opportunities was also raised in the workshop related to this Policy

[116] Murray/Hyytinen/Maula (2009), p. 167.

[117] See for example Murray/Hyytinen/Maula (2009), section 5.3.3; also Autio et al. (2007), p. 86.

[118] See Centre for Strategy and Evaluation Services/EIM (2011), p. 71.

[119] See Reinstaller et al. (2010).

[120] Reinstaller et al. (2010), p. v.

[121] Reinstaller et al. (2010), p. v.

[122] See Reinstaller et al. (2010), p. v.

[123] Reinstaller et al. (2010), p. vii.

Brief.[124] Finally, findings from the IW Future Panel (see Section 6.2 of this Policy Brief) support the importance of export orientation for company growth.

Further related findings

In a study for the European Commission's Sectoral e-Business Watch in 2009, 42 experts responded to a survey which, among other questions, asked about the competitiveness of the EU's ICT-producing companies. The lowest level of agreement was for the statement that "legislation ensuring that ICT companies can sell to customers EU-wide needs to be improved" (29% each for "I strongly agree" and "I rather agree"; 27% rather disagreed). For this statement, the share of respondents providing no answer (16%) was the second highest in the whole survey. Possibly the importance of the Single Market for the ICT companies' ability to sell their products and to grow is less well understood than the importance of ICT research, development and innovation.[125]

The relationship between internationalisation and clustering may be of particular interest, since local clusters are often seen as breeding grounds for innovation. Policies for fostering clustering are prominent on European and national level.[126] One could assume that clustering and internationalisation mutually reinforce each other.[127] However, a recent study of 1,600 Norwegian firms suggests that international links are more important for innovation: "The results indicate that firm innovation in urban Norway is mainly driven by global pipelines, rather than local interaction. The most innovative – both in terms of basic product innovation and radical product and process innovation – firms are those with a greater diversity of international partners. Local and even national interaction seems to be irrelevant for innovation."[128] While the determinants of success of clusters and the relationship between clustering and internationalisation cannot be dealt with in depth in this Policy Brief, this finding strongly points to the importance of internationalisation for innovation.

Policy examples

Internationalisation support by the EU: the Enterprise Europe Network

At EU level the link between innovation and internationalisation has been recognised fairly recently.[129] A key initiative is the Enterprise Europe Network (EEN), supported by the European Commission, which links innovation and internationalisation policies. Its mission is "helping small companies make the most of the business opportunities in the European Union",[130] bringing together 580 member organisations in 47 countries. For the period 2007-2010, 257 million euro were committed for EEN, for example for operating the website and search tool, for promotional and informational local events as well as for advisory services e.g. about EU

[124] See for example the statements from Gabriella Cattaneo in the workshop proceedings, INNO-Grips (2011), p. 2.

[125] See European Commission (2009), p. 114.

[126] See for example the statements from Gabriella Cattaneo in the workshop proceedings, INNO-Grips (2011), p. 2.

[127] The EU project TACTICS which "aims at supporting and further expanding the European Cluster Alliance, and contributing to the development of better cluster policies and practical tools in Europe" is also considering the links between clustering and internationalisation; see http://www.proinno-europe.eu/tactics.

[128] Dahl Fitjar/Rodríguez-Pose (2011), p. 5.

[129] See Reinstaller (2010), p. ix. See also public consultation "Small Business, Big World - A new partnership to help SMEs seize global opportunities", http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?item_id=5119 .

[130] See http://www.enterprise-europe-network.ec.europa.eu/about/mission.

projects and intellectual property rights. According to DG Enterprise and Industry, since the establishment of EEN in early 2008 by the end of 2010 more than 2 million SMEs tapped into the network. In a survey of 2,532 EEN clients in November 2010, 59% of clients stated that when looking for support services, the EEN was the only provider they had found. Of the remaining 41% which had also found alternative service providers, more than half (57%) said they preferred the EEN because of the opportunity of accessing European networks.[131] Two thirds of the respondents (68%) said they were satisfied or very satisfied with the service. Hence the EEN apparently fulfils a valuable role at the European level.

EEN provides an internet-based business platform to facilitate companies' networking activities. However, SMEs' deeper participation in such platforms may be limited for several reasons:[132] The benefit of participating in such platforms may not be tangible enough to invest time, money and effort. Experience shows that as long as platforms are for free, e.g. funded through the European Commission, SMEs take part, but as soon as SMEs are meant to pay for participating, they step out. Furthermore, as soon as international cooperation is involved, language barriers occur. The operation of such a large, centralised networking facility was critically commented at the workshop related to this Policy Brief.[133]

National policies

Policy makers' interest in the link between growth, innovation and internationalisation is fairly recent. In EU Member States there is considerable variety in combining or separating innovation and internationalisation policies.[134] Some European countries recently combined innovation and internationalisation activities in supporting SMEs, including for example the Netherlands, Ireland and Norway. **Norway** merged the Norwegian Industrial and Regional Development Fund, the Norwegian Trade Council, the Norwegian Tourist Board and the Government Consultative Office for Inventors to a new organisation "Innovation Norway" in 2004. Innovation Norway requires SMEs to prove international potential to receive public funds, and it provides advice on developing an international strategy to the enterprises. A 2010 study evaluating the results of the merger found that the merger helped to establish the international perspective within the organisation, and the percentage of grants to internationally oriented projects increased. However, SMEs' consultation of Innovation Norway's offices abroad effectively declined so that the results are not clearly positive.[135]

Several case studies conducted for this Policy Brief indicate the importance that policy makers attribute to internationalisation in supporting innovative high-growth SMEs:

- The **Korean** "300 Global Stars" programme carries the international ambition in its title (see section 5.1).
- In **Singapore**, both the SPRING and the Get-up programme which are targeting high-growth companies are oriented towards internationalisation (see section 5.2).

[131] See Centre for Strategy and Evaluation Services/EIM (2011), p. 75.

[132] Remarks at the INNO-Grips workshop about "innovation policies in an anti-cyclical conjuncture" in Cologne, 30/9/2010.

[133] See workshop proceedings in INNO-Grips (2011), p. 3.

[134] See Reinstaller et al. (2010), p. ix.

[135] See Econ Pöyry (2010), p. 4. See also http://www.innovasjonnorge.no/Om-oss/Innovation-Norway/ for the organisation's mission.

- The current **Japanese** SME policy, though not targeting high-growth SMEs, aims at internationalising as one way to diversify SMEs' business activity (see section 5.4).
- In **Israel**, the Office of the Chief Scientist – the country's principal SME policy maker – emphasises international activities considering the relatively small size of the country (see section 5.5).

4.2.4 Sectoral approaches

Possible rationales for sectoral approaches to foster high-growth SMEs

Pros and cons of sectoral focus

Different industry sectors have different economic characteristics: different compositions in terms of companies' sizes and ages, different age of the industries as such, different value systems, different levels of internationalisation and innovativeness – and different opportunities for high growth of innovative SMEs. It could therefore be adequate to target policies for high-growth innovative SMEs towards specific industries. Typical candidates for such industries may be those which are fairly new, leaving relatively many opportunities for new market leaders.

At the workshop related to this Policy Brief, the importance of business ecosystems as well as clusters for SME growth was highlighted in particular.[136] However, such ecosystems and clusters often cut across several industries. Targeting specific industries may thus neglect important links to other industries. Furthermore, empirical evidence suggests that high-growth companies can be found in any industry.[137] Targeting specific industries may mean missing emerging opportunities for high-growth in other industries – emerging opportunities which policy makers may be unable to realise sufficiently early. Furthermore, innovation sometimes takes the form of adapting an existing solution which is already prevalent in Sector A to be used in Sector B where it can become a so-called "killer application", i.e. a solution with groundbreaking success leading to high growth of the company introducing it. Sector-focused approaches might miss these opportunities.[138]

Insights from other policy types

A possible focus on specific industries is also an issue in other types of policies for which studies are already available. For example, at the beginning of the past decade several EU Member States launched national or regional initiatives for promoting e-business exchanges within specific sectors. A key objective of these initiatives was to strengthen the participation of SMEs in larger firms' digital supply chains. DG Enterprise and Industry issued a study to assess sectoral policy approaches and to identify good practices in these initiatives.[139] The study found that sectoral initiatives were not necessarily more effective than other programmes. A sectoral focus was found to have two main advantages: First, improved involvement of stakeholders, nota-

[136] For ecosystems see the related statements by Martin Fransman, INNO-Grips (2011), p. 4, for clusters the statements by Gabriella Cattaneo, INNO-Grips (2011), p. 2.

[137] See OECD (2010c), also Mason/Brown (2010) for Scotland.

[138] Assessment from Allan Martel, member of the advisory board for this Policy Brief.

[139] See European Commission (2007).

bly strong support from industry associations. The sectoral focus is a facilitator as it drives to the involvement of stakeholders and experts with sectoral background and reputation. Second, its suitability for addressing advanced goals. However, a sectoral focus was found to be neither a guarantee of nor a condition for success. The decision to focus on specific industries should derive from the objectives of the initiative. The study also found challenges to the sectoral approach, in particular the typically cross-sectoral characteristics of value systems. Most SMEs trade with different sectors.

Policy examples

The Finnish activities to support high enterprise growth apparently have no industry focus (see section 4.1.2). The Danish Accelerace programme has no specific industry focus either, but the companies tend to be knowledge-intensive, for example in environmental technology, biotechnology, power efficiency and mobile information technology.

The case studies conducted for this report provide some information about sectoral foci of policies for high-growth innovative SMEs:

Singapore's economic success has largely been built on the strength of its manufacturing and financial services sectors (see section 5.2). However, the government seeks to diversify the country's high-growth sectors to bring about new avenues of trade and growth, also by promoting high-growth SMEs. So the general lesson is that policies for high-growth of SMEs may seek to diversify a national economy's key sectors.

The **Canadian** experience (see section 5.3) of linking governmental R&D funding with venture capital investment suggests to focus high-growth policies on technology-based industries, for example biotechnology.

In **Japanese** government's SME policies, the strategic line of discussion gravitates around the diversification and clustering of SME business activities. Diversification policy initiatives focus, among other items, on supporting SMEs to move between industries (new business activities in related industries) – which is opposite to focusing on specific industries.

4.3 Policies for high-growth innovative SMEs versus general SME policy

Introduction to the issue

One may label policy measures seeking to support foundation and viability of SMEs, without specific growth objectives, as "general" SME policy. Related measures may facilitate access to resources and markets and improve incentives for entrepreneurial activity.[140] Such measures include, but are by no means limited to, financial benefits. In particular, general SME policy measures may seek eased access to finance of various kinds for various development stages of SMEs, less costly consulting, office and workshop space in incubators and technology parks, support for intellectual property protection, tax exemptions, export support, re-

[140] See also the innovation and growth triangle presented in section 2.3 of this Policy Brief.

duced administrative burdens and many other benefits. There is a vast array of such general SME policies.[141]

On the other hand, policies for high-growth SMEs are targeted at supporting outstandingly high growth of SMEs. Both types of policies may target specific company sizes, ages, industries or other characteristics, and the instruments – eased access to finance, eased taxation, regulation and the like – may be the same as for general SMEs policies, but the specifications of the instruments are different. This may for example mean to focus policies on improving access to venture capital instead of access to micro credits.[142]

How are policies for innovative high-growth SMEs distinct from general SME policy? It is not only the distinction of instruments of policies for high-growth innovative SMEs and general SME policy that is of interest here, but possible trade-offs – the issue of policy efficiency: Is it more efficient (in terms of economic growth and job creation) to support all SMEs "a little bit", or to concentrate efforts on those with the highest growth potential? A related question is whether governments are in a position to help fast moving high-growth innovative SMEs, or whether they are too slow to react to the needs of these companies. Here there is a possible hook for the discussion on simplification of the EU's research programmes.[143]

Approaches to the trade-off issue

There is no simple answer to the question of how to best allocate resources between general and high-growth SME policy. Some economists take the opinion that "only the market can determine what the optimal amount of entrepreneurship is. We do not know enough to answer this fundamental question, much less to determine which firms to target for success or failure."[144] The experts consulted for this Policy Brief took different views. At the workshop related to this Policy Brief, Luc Hendrickx, Director for Enterprise Policy and External Relations at the European Association of Craft, Small and Medium-Sized Enterprises (UEAPME), suggested focusing on improving the business environment for all enterprises rather than aiming to create specific incentives for growth. Fast growing enterprises could be taken into account, but not at the expense of other SMEs. On the other hand, Canadian SME coach Allan Martel favours a focus on high-growth SMEs. This position is supported by US economist Scott Shane: "Getting economic growth and jobs creation from entrepreneurs is not a numbers game. It is about encouraging the formation of high quality, high growth companies. Policy makers should stop subsidizing the formation of the typical start-up and focus on the subset of businesses with growth potential. While government officials will not be able to 'pick winners', they can identify start-ups with a low probability of generating jobs and enhancing economic growth."[145]

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[141] For example, the case study about Korea in this Policy Brief (see section 5.1) mentions that the Korean government developed more than 100 different SME policy measures, and at the workshop related to this Policy Brief, a representative from an EU Member State indicated that stock-taking of SME policies in his country found far more than 100.

[142] See also the instructive distinction between "small business startups, scalable startups, corporations dealing with disruptive innovation and social entrepreneurs" by retired US serial entrepreneur Steve Blank in a comment about the Startup America programme at http://steveblank.com/2011/02/08/startup-america-dead-on-arrival/.

[143] See http://ec.europa.eu/research/fp7/pdf/communication_on_simplification_2010_en.pdf,

[144] Minniti (2008), p. 788.

[145] See Shane (2009).

A basic economic welfare model

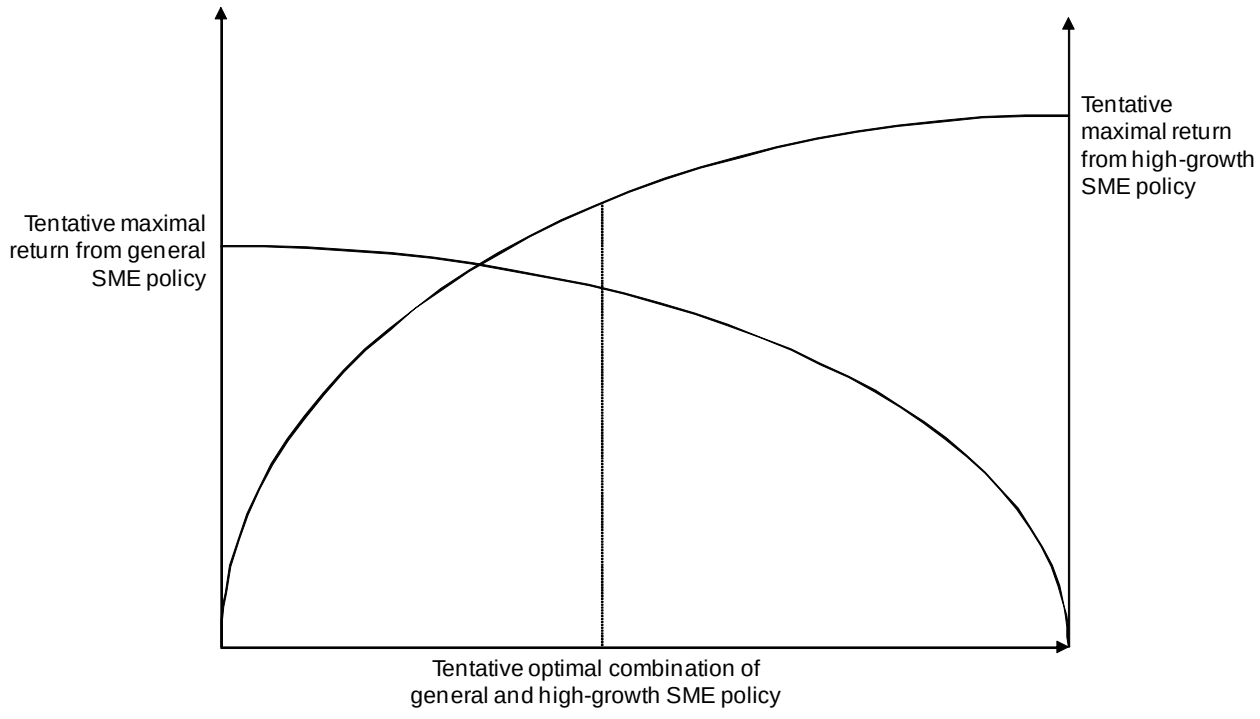
How solve this issue? A basic economic welfare model – see Exhibit 4-4 – can illustrate the trade-off issue and reach intuitive conclusions. The following assumptions are made:

(1) A government has a defined amount of resources that it can spend on SME policy in a certain period of time, and the government can decide to allocate a certain percentage of resources to general SME policies and to high-growth SME policies.

(2) The economic returns from general SME policy and from high-growth SME policy are positive. Say, for example, the GDP or the employment level of a country grows if such policies are applied. This means that if the government spends no funds at all on one type of policy, the returns will be zero. These assumptions do not go without saying. The benefits from SME policy could even be negative if the funds spent do not have a positive effect on the companies' performance, for example because the companies would have behaved the same without subsidies (substitution effect).

(3) If the government spends 100% of the available funds on general SME policy, this will yield a maximum of GDP growth for this type of policy; the same applies to high-growth SME policy. This assumption, too, does by no means go without saying – it may well be that the maximum returns are yielded when less than 100% of funds are spent on a certain type of policy. In other words: The yields may shrink when more than a certain percentage of funds are spent on the particular type of policy, for example due to administrative inefficiencies.

Exhibit 4-3: Tentative trade-off between resources allocated to general SME policy and high-growth SME policy



Note: The optimal combination depends on the slope of the graphs and is not necessarily the intersection of both graphs.

Source: empirica

(4) The curves for both types of policies are convex, i.e. when more funds are spent on a certain type of policy, the marginal return will decrease. This is an economically plausible assumption that makes the graphic simple; the curves could for example also take S-shape.

(5) The return from spending 100% of available funds on high-growth SME policy is larger than from spending 100% of funds on general SME policies. This is purely hypothetic; it may in reality well be the other way round.

The main conclusion of this theoretical consideration is: Even if returns from one type of policy – either general SME policy or high-growth SME policy – are higher when the government spends 100% of available funds on one type of policy, it may well be economically efficient to spend funds on both types of policy. However, this does not allow conclusions on what percentage of funds should be spent on both type of policy. One could suggest answers to this question by drafting and evaluating econometric models and scenarios about the combined effectiveness of general SME policy and high-growth SME policy. In any case, such models and scenarios would have to be built on vague assumptions about the policies' effectiveness, for example about returns from government subsidies and substitution effects. Consequently, the evidence of such models would also be vague.

5 Case studies of fostering high-growth innovative SMEs

Overview

This section presents examples of policies for high-growth SMEs and also for general SME policies from industrialised countries outside Europe. The three East Asian countries of South Korea, Singapore and Japan were selected because they are often considered as being among the main competitors of European countries, while the understanding of their policies is limited in Europe. Among their main commonalities relevant here is a strong linkage between private business and policy as well as a pronounced orientation towards innovation and internationalisation. Israel is of high interest also because of its innovation and internationalisation performance. Canada is often in the shadow of its big neighbour, the USA, in terms of economic policies, but deserves attention with regard to high-growth SMEs. These countries are however very different in terms of population, economy and – the prime criterion here – SME policies:

- **South Korea**, with a population of close to 50 million, has emerged as a primary competitor of Europe in the past 20 years. It is one of the few developed countries that could avoid a longer recession during the economic crisis, it has one of the world's highest shares of R&D in GDP, and is shifting its SME policies towards competitive and high-growth SMEs. Increasing European interest in Korea has also become evident in 2010 by establishing five contact points of the European Enterprise Network there, and Korea became a member of the EUREKA programme in 2009.
- **Singapore** is a relatively small country with 5 million inhabitants – and thus a small internal market – that ranks third in the 2010 Global Competitiveness Index and that has policies specifically targeting high-growth SMEs.
- **Canada** has more than 34 million inhabitants, ranks tenth in the Global Competitiveness Index, and provides insightful examples of promoting access to finance to high-growth SMEs.
- **Israel** is a relatively small country (approximately 7.6 million inhabitants) that is moving up on the global competitiveness ladder (from rank 27 in 2009/10 to 24 in 2010/11). The country has targeted SME policies relevant for high growth, but no dedicated policies for high-growth SMEs.
- **Japan** has a very large population (127 million), has been a long-standing competitor of Europe since the middle of the 20th century ranking sixth in the World Economic Forum's Global Competitiveness Index of 2010, is heavily suffering from the economic crisis and the 2011 Earthquake, and has no dedicated policies for high-growth SMEs.

Exhibit provides an overview of the countries and their SME policies.

Exhibit 5-1: Overview of characteristics of the case studies in this Policy Brief

Country	Policy area targeted in case study	Targeted policies for high-growth SMEs?
South Korea	Entrepreneurship (start-up and growth of SMEs)	Yes
Singapore	Internationalisation of SMEs	Yes
Canada	SMEs' access to finance	Yes
Japan	General SME policy	No
Israel	General SME policy	No

5.1 Korea: shifting SME policies towards competitiveness and growth

In Korea the SME sector, accounting for 99% of enterprises and 88% of employees, is considered as ensuring sustainable growth for the future. The Small and Medium Business Administration (SMBA), founded in 1996, has been a major policy player in promoting growth of SMEs and the Korean economy at large. SMBA applies more than 100 SME promotion measures. Recently there have been noticeable changes in Korean SME policies. Over all, the policy concept for SMEs has been directed towards competitive SMEs, away from protection of the weak. Transforming traditional SMEs to high-growth SMEs – in Korean policy terms: "inno-biz" and "global stars" – is the new policy focus. Furthermore, a new category of "mid-sized enterprises" with 300 to 1,000 employees is to be introduced for policy purposes. Korea's SME policies have supported the increase in SME's R&D activity and thus their competitiveness and the policies have supported the growth of the venture business. However, some of the traditional SME policies have been criticised for inefficiency and ineffectiveness. On the basis of the new policy concept of competitiveness, the role of SMEs and policies to support them may change substantially in coming years.

The Korean concept of governmental support for SMEs – and current shifts

In Korea, SMEs make up the vast majority of companies, ensuring sustainable growth for the future. SMEs account for 99% of all enterprises and 88% of all employers. The traditional Korean policy perception of SMEs is that they are weak and need support. As a result, there are currently more than 100 programmes and policy measures for SMEs. This perception is accompanied by a narrow definition of eligibility for public support. Currently, the operational definition of an SME in Korea for the majority of sectors, including manufacturing, is an enterprise with less than 300 employees and with sales less than 8 billion won (approximately 6.6 million US dollar). In policy practice, serious problems arose from this definition. Whereas the government supports SMEs with up to 300 employees with numerous measures, enterprises with more than 300 employees are regarded as large firms under strict government regulation and cannot receive any support. As a result, many enterprises do not grow.

Although the "weakness concept" is still dominant, in the past few years a new concept has started to replace it: The keywords today for SME policy in Korea are competitiveness through innovation, growth and globalisation. The strategic focus is to promote high growth and global competitiveness of SMEs.

The most important organisation supporting Korean SMEs is the Small and Medium Business Administration (SMBA). SMBA is a government branch with the primary task of encouraging, nurturing and growing new business start-ups and entrepreneurial spirit in Korea. The agency deals with almost all areas of government policy for SMEs. The SMBA's annual budget for 2010 was 1.68 trillion won (1.4 billion USD). Excluding special support for the financial crisis, this is higher than in 2009. In addition, SMBA had a SME promotion fund of 4.3 trillion won (3.6 billion USD), making it a powerful authority.

Activities to promote SMEs and high-growth SMEs

Overview

Out of the numerous SME policy measures in Korea, those directly or indirectly related to fostering high growth of SMEs can be subdivided into three categories: policies for entrepreneurship, SME innovation and

SME internationalisation. Innovation policies can largely be categorised as policies in support of access to finance. These types of policy are summarised below.

Entrepreneurship policies

Recent activities to foster business start-ups

In order to mitigate the negative effects of the economic crisis and to increase employment, the government recently introduced several new programmes and activities:

- the venture businessmen's special lecture programmes on entrepreneurship at universities;
- the youth start-up education programme;
- strengthening encouragement of start-up activities of professors, researchers and students;
- improved support to spin-offs by executives and employees of large enterprises;
- enabling start-ups at home and expanding the infrastructure for one-person creative enterprises;
- establishing a support system to link excellent technology ideas with start-ups;
- financial support and training for entrepreneurs' clubs at universities;
- offering start-up courses for would-be entrepreneurs or starters.

Furthermore, SMBA will introduce a system that evaluates the impact of regulations on SMEs and that recommends solutions as well as an ombudsman system to help SMEs solve specific problems. A second ecosystem-related programme will offer a one-stop business linkage service and a service corps that will travel to SMEs for on-site support.

SME innovation policies

Financial support for SMEs' technology R&D

For most SMEs in Korea technological capability is the most important driver of competitiveness. Consequently SMBA has made the promotion of technologically innovative SMEs one of its most important policy initiatives. There are several programmes for this purpose:

- The SME Technological Innovation Programme, established in 1997, is the backbone of R&D support for Korean SMEs. It supports a portion of R&D expenditure for new technology and new product development, aiming at pragmatic developments which can be commercialised within three years.
- Reinforcement of networks between industry, academia and research institutes as well as support for commercialisation of developed technology and establishment of a digital infrastructure.
- Partial funding for SMEs' R&D expenses in two types of projects: "strategic projects" which are for SMEs potentially producing items with far-reaching effects; "general projects" which aim at developing a new product within one year.
- The "Purchase-Guaranteed New Product Development Programme" supports SMEs' new product development in two stages. First, public organisations and large firms voluntarily announce demand for products that SMEs may develop. Second, SMBA supports the development of these products

with up to 500 million KRW, and the ordering organisation guarantees the purchase. According to the SMBA's 2009 Report on SMEs, this programme has been very effective for SMEs in lowering development cost and, from a national perspective, substituting previously imported products with nationally produced ones. Participation has steadily increased; in 2008 over 170 purchasing organisations took part.

- "Matching funds" for SMEs for developing new products with the help of universities, research institutes and other enterprises.
- If more than two SMEs and a research institute cooperate to create a new product or model in one or two years, they can receive Enterprise Joint Tech Development funds.
- The Production Environment Innovation Tech Development programme provides funds to improve efficiency of the production line and product quality.
- While most of the financial support is for technology R&D, product commercialisation is greatly encouraged as well.

Specifically, the government has encouraged R&D investment in response to the contraction of SME investment potential due to the recent economic slowdown. In April 2009 the government prepared a Five-Year SME Technology Innovation Plan which encompasses, for example, continuous expansion of SMEs' R&D investment and support for technology innovation R&D of global leader enterprises. The government also initiated the "SME-type Promising Green Technology Roadmap" in June 2009. The overall number of beneficiaries in R&D programmes has been reduced recently, but the allocated amount has steadily increased, which reflects the increasing scale of R&D projects and more prudent evaluation of beneficiaries.

Inno-biz and measures to strengthen venture capital investment

The Korean government intensively fosters the programme "inno-biz" (acronym for "innovative business").[146] It certifies SMEs with particular technological competitiveness and growth potential as "inno-biz", including three categories: innovative firms, ventures and firms with outstanding managerial innovations. The programme does not explicitly aspire to high growth but at least the "venture" category implicitly carries the high growth objective. A company may belong to two or three categories at the same time. Once designated as an inno-biz, they enjoy a priority status in receiving government support. The number of inno-biz SMEs is continuously growing: 3,454 in 2005, 11,526 in 2007 and 15,772 in June 2009.

Ventures, according to the SMBA definition, are firms in which venture capital is invested, which invest in R&D and which commercialise new technology.[147] SMBA continues to promote the venture sector as a new growth engine. The government is supporting business ventures, through the support of a one trillion won private fund, by investing in a "Fund of Funds" in 2009 as well as through a two trillion won fund with inducement of further funds from the fiscal administration, the Korea Development Bank and foreign and private funds by 2012. The government also plans to encourage venture capital investment from overseas funds, oil money, and other sources. It intends to allow joint fund operation between overseas investment in-

[146] See http://eng.smba.go.kr/pub/poli/poli04010802.jsp#cer02 for the SMBA's criteria of inno-biz certification.

[147] See http://eng.smba.go.kr/pub/poli/poli040108.jsp#cer01 for the SMBA's "venture" certification criteria.

stitutions and domestic venture capitalists, while providing preferential treatment by increasing the investment equity ratio for foreign funds to 50% from the present 30%.

In addition, the government plans to facilitate venture investment by institutional investors, the post office, insurance firms, universities, and other organisations. The government intends to review the methods of equity investment in the Fund of Funds more than three times a year and to rapidly respond to demand in the investment market. Since the Korea Venture Fund has other confirmed investors, small investments of less than one billion won are allowed at any time.

In April 2009, the government created a venture ecological system that integrates the capabilities of newborn venture companies and of the leading venture companies in the market. Under this system, the government intends to create a ten billion won fund and support joint R&D and overseas marketing for ventures.

Business incubators

The SMBA supports business incubators which are usually operated by universities and public research institutes. This programme is designed to promote the survival and growth of newly established venture companies. SMEs are, for example, provided with land, consulting services, and marketing education.

Internationalisation policies

New directions of SME policies for globalisation

SME globalisation is an important part of SMBA's policies. Korea's overseas market development policy has transformed the country from being poverty-stricken into the world's 15th largest economy. Now Korea is in a transitional period in terms of SME policy in response to the global economic challenges and to the necessity of revising the traditional policy paradigm. Globalisation of SMEs in the past was the basis of participating in global value chains. Promoting independent global players is the new policy goal, emphasising aggressive globalisation beyond the mere participation in global value chains. Competitiveness, innovation, growth and globalisation are all combined in this move. Currently the government is pursuing two directions for promoting global players: one within the existing framework and the other with the new concept of the "mid-sized enterprise".

Revitalising and globalising SMEs as new growth engines: the "Global Stars" programme

Korea is expanding its outward-looking initiative, which was oriented towards large enterprises in the past, to SMEs. The new focus is on the promotion of "Global Star SMEs" as the backbone of the economy. The Korea Export Import Bank (Eximbank) launched the **"300 Global Stars" Programme** in 2010.[148] For three years, 100 SME candidates are selected yearly for this programme on the basis of their merits (see Exhibit 5-2 for criteria). The selected enterprises will be supported by a comprehensive support package; examples of this support include technology, financing, networking, and an international marketing survey. The programme does not necessarily seek high growth of the supported SMEs but international championship which may in many cases come along with high growth. There are other programmes already introduced or strengthened in this direction.

[148] Information is available only in Korean, see http://www.koreaexim.go.kr/kr2/08_hiddenchamp/01_info/01.jsp.

Exhibit 5-2: Korea's criteria for selecting "Global Stars"

Note: Percentages indicate the weight in the selection process.

Source: Korea Eximbank

Promoting the "mid-sized enterprise"

Korea is concentrating on the advancement of "mid-sized enterprises" with more than 300 and up to 1,000 employees, responding to global competition and developing initiatives to foster "hidden global champions". The introduction of policy schemes for supporting this group of enterprises will probably impact the Korean economy dramatically in the coming years. Introducing a related law (Mid-sized Enterprise Promotion Act) and the institutionalisation of this structural change are complicated issues and currently under discussion. The government already extended and strengthened some existing SME programmes in this direction.

In addition, the government is supporting the transformation of SMEs focusing on domestic demand into export-oriented enterprises. Identifying promising export companies, up to 2,400 firms, and nurturing them into small but strong global enterprises is the policy focus.

An Example of a company with Korean government support: DongHwa Entec

DongHwa Entec is a manufacturer of heat exchangers for ships, power plants, food factories and agriculture as well as of air coolers for Diesel engines. The company was established in 1980 (until 2001 named DongHwa Precision Ind. Co., Ltd) and is based in the Busan Metropolitan City in Korea. In the first years the company's technologies were not able to compete internationally, but they were superior to those of domestic competitors. The company tried to overcome its lack of technological capability by investing in own and joint R&D. The company formed research partnerships for example with the Korea Ship Research Institute and Ssangyong Heavy Industry.

In 2002 the Korean government recognised DongHwa Entec formally as a "venture" and an "Inno-Biz" in terms of government support schemes, and the company received a five billion dollar export award from the government. By that time the company had already started to establish international cooperations with British and Chinese companies such as Rolls-Royce, CBPVI Company and Caird & Rayner Clark. This marked the beginning of DongHwa Entec's globalisation strategy. An additional office and factory in Shanghai were set up to provide access to the Chinese market, where DongHwa Entec's biggest rivals were located. The Korean government provided capital for continuous R&D from 2004 until 2008, enabling the firm to occupy market niches early and to differentiate its portfolio of highly innovate technologies. In combination with the company's globalisation strategy this led to increasing sales up until 2008, then hampered by the financial crisis, but expected to recover soon.

Source: http://www.dh.co.kr/English/index.asp, DongHwa Entec

Impacts of Korea's SME policies

Overview of impacts

Korea's SME policies are creating profound impacts; the most important in the context of this Policy Brief are summarised in the following. They comprise an increase of SME's R&D activities, an expansion of venture business, and various impacts on different areas of SME performance. However, the downsides of support to SMEs also need to be mentioned.

Increased R&D activities of SMEs

As a result of the SMEs' own efforts and of SMBA support, R&D activities and the number of R&D conducting SMEs have increased substantially since 2000, as Exhibit 5-3 shows. The average R&D intensity of SMEs, measured by the ratio of R&D expenditure and total sales, increased from 1.37% in 2000 to 2.85% in 2007. In the same period the number of R&D conducting SMEs increased from 10,748 to 25,560.

Exhibit 5-3: Trends in SME's R&D Investment

	2000	2002	2004	2005	2006	2007
No. of SMEs conducting R&D (% in all manufacturing SMEs)	10,748 (12.0)	18,101 (18.1)	20,714 (19.5)	22,449 (20.8)	25,769 (23.2)	25,560 (22.6)
Average amount of funds spent on R&D per firm (in KRW)	97	122	126	156	167	200
% of R&D to total sales	1.37	2.28	2.16	2.46	2.56	2.85

Source: SMBA, Kbiz.

Expanded venture business

All related indicators confirm the high growth in the venture business from 1998 to 2008, as Exhibit 5-4 indicates. For example, the number of certified ventures increased from 2,042 firms in 1998 to 15,401 firms in 2008, and there are now five graduate schools specialising in the venture business. However, figures for 2009 may indicate a decline caused by the world-wide economic crisis.

Exhibit 5-4: Development of the venture business in Korea 1998-2008

	Indicator	1998	2008
Creation of venture firms	Number of certified venture firms	2,042	15,401
	Thereof: established by professor or researcher	582	1,555
	Number of graduate schools for venture business	0	5
Venture capital (in 100 mio. KRW)	New venture investments	7,870	12,041
	Newly established venture funds	4,929	11,954
	Foreign venture funds	30	702

Source: SMBA

Impacts on particular areas

Korea's SME policies can be ascribed impacts in the following, particular areas – not accounting for potential bandwagon effects and possible other negative effects of government support:

Export support: Since 2003 the Korean government supported exports in, on average, more than 1,000 SMEs every year and the increase in exports was more than 200 million dollars every year.

Production improvement: Companies receiving support for production improvement in 2007 and 2008 experienced an increase of their revenues by 21% and exports by 36%. While revenue increase is similar to that of all SMEs during the period (23%), the export increase by far exceeded that of all SMEs (15%).

Business creation fund: In the same period, companies benefiting from the new business creation fund attained an average revenue increase of 37% and an export increase of 60%.

Technology commercialisation: For SMEs receiving support for commercialisation of developed technologies, revenues increased by 24% and exports by 36%, far exceeding the average of all SMEs.

Overseas investment: Not only large enterprises, but also SMEs invested in foreign countries aggressively. SMEs' share of overseas investment reached 54% in terms of the number of cases and 26% in terms of amount. The majority of Korean SMEs invested in China.

Negative side effects of SME support

Over 100 SME policy measures resulted in application congestion in SME administrations, duplicated efforts and SME managers distracted from real business. The rigid definition of SMEs resulted in the undesirable behaviour that SMEs do not increase sales or the number of employees in order to sustain the status of an SME and be applicable for government support.

Although it cannot be denied that Korea's SME policies supported SME growth significantly, the policies have been criticised for being inefficient and ineffective in many cases. Government grants are too many and too much. Although, for example, more than 30,000 enterprises were designated as innovative SMEs, the designation system itself seems less practical. Furthermore, even though the government has supported venture capitalists substantially, they have been reproached for not having been equally active in actual investment.

Lessons learned

Positive assessment of the new SME policy concept

The new directions of SME policy in Korea for nurturing global players and institutionalising policies for "mid-sized enterprises" are a new development that is attracting attention. The replacement of the traditional concept of weak SMEs by a new concept of small but strong SMEs is considered as promising in Korean public opinion.

Overcoming weaknesses of current SME policies – concrete, practical and efficient policies

There are voices in Korea arguing that more than 100 policy measures for SMEs are excessive and that the number of policy measures and programmes should be trimmed. Specifically, the innovative SME Designation System is considered to be too complicated; it may be simplified and integrated with other programmes. Efficiency and effectiveness of policies should be emphasised. Further proposals to improve Korean SME policies include the following: advanced policy evaluation systems are lacking and could be introduced; more funds could be directed to start-ups than to SMEs in the growth stage; and SME policies could be pushed even further in strengthening innovation capability, network-based competitiveness, and globalisation.

Although SMBA is a semi-independent and powerful government agency, as a central entity its power is limited considering the actual implementation of new directions in SME policies. A decentralised country-wide support system for SMEs and SME-related intermediaries could be established, supported by SMBA.

The Korean government is still very powerful in industrial policy. Government intervention in the private sector in general and SME support in particular have been well accepted by the private sector and the general public in Korea. One may cautiously assess that undesirable crowding-out effects of government support for SMEs have been moderate because most support is supplementary and on the basis of matching funds. Support for high-growth SMEs has been introduced recently in addition to support for general SMEs, and possible trade-offs between these two types of policies have not yet been discussed in Korea – it appears to be too early to assess this issue.

Although SME policies in Korea contributed to SMEs' competitiveness in general, the policies did not yet directly emphasise firms' growth. The awakening of the importance of high-growth SMEs is a recent phenomenon so that the EU may not yet learn much from Korea in this respect. In contrast, there is considerable interest in learning for Korea's SME policies from the EU, especially from Germany and France.

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5.2 Singapore: government support to growing and globalising SMEs

Summary

*Singapore's economic success is largely built on its manufacturing and financial services sectors. However, the government is currently seeking to diversify the country's high-growth sectors and has launched initiatives towards developing high-growth enterprise clusters. Two Singaporean government agencies are directly involved in supporting high-growth SMEs: SPRING (Standards, Productivity and Innovation for Growth) Singapore and A*STAR with a sub-programme named Get-Up (Growing Enterprises through Technology Upgrade). SPRING collaborates with trade development agencies to assist promising local businesses with government funding, capability and management development, technology and innovation enhancement, and internationalisation. SPRING explicitly seeks to "grow dynamic and innovative growth-oriented enterprises". GET-Up supports long-term pre-competitive R&D. Its objective is to "help promising local companies grow, glow and globalise", thus implicitly aspiring to generate high-growth enterprises. While the government has attributed the successful recovery from the word-wide economic crisis to the numerous opportunities SMEs have been provided with, there are no evaluation studies available that could substantiate the impacts of the government's SME policy. Lessons for Europe are thus difficult to draw.*

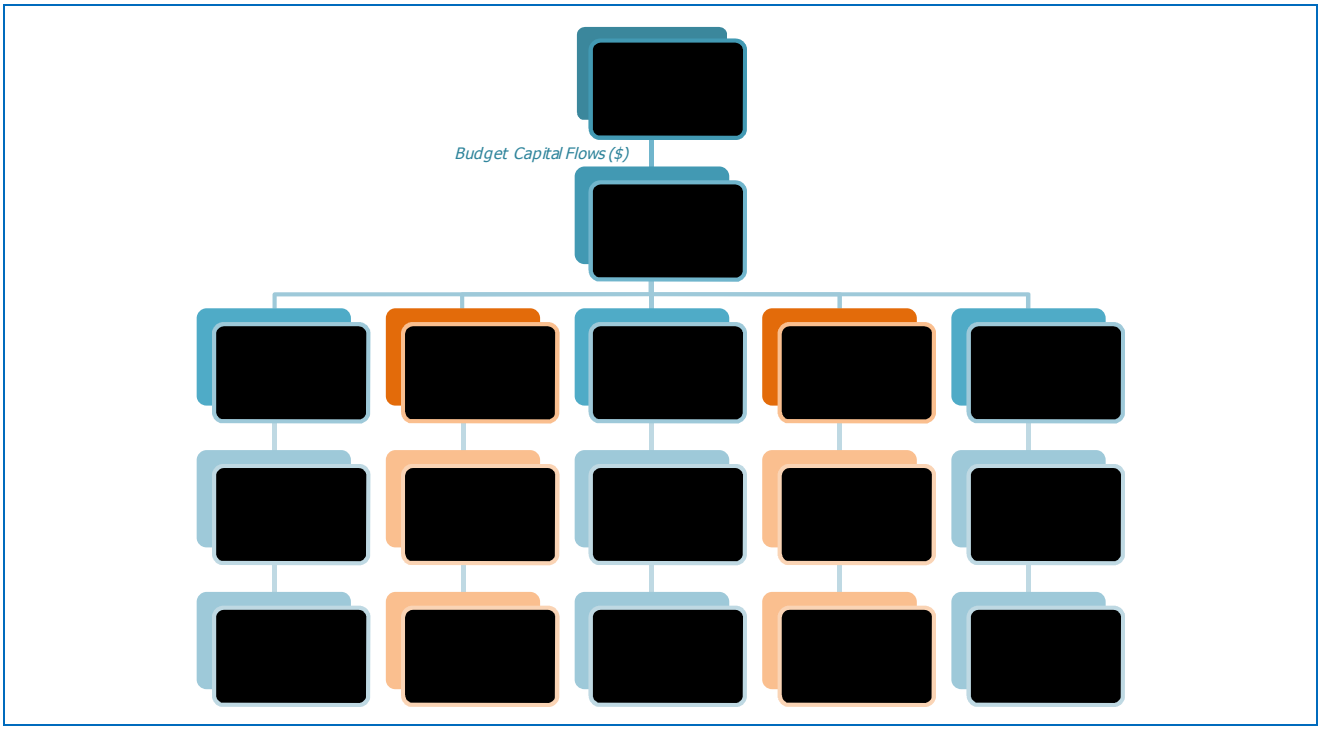
Background to Singapore's policies for high-growth SMEs

Singapore's stable macroeconomic policies, solid social and physical infrastructures, reasonably clean and competent public services and the emphasis on the rule of law have spurred the state ahead with remarkable economic prosperity since gaining its political independence in 1965. In 2009 Singapore ranked 17 in the World Bank's country ranking for GDP per capita. According to Statistics Singapore and the Economic Development Board, 99% of all enterprises are micro, small and medium-sized enterprises. These employ 60% of Singapore's workforce and contribute an approximate value-added of 40% to the local economy. Governmental policies have been a vital factor in sustaining Singapore's business-friendly environment.

Singapore's economic success has largely been built on the strength of its manufacturing and financial services sectors. However, the government seeks to diversify the country's high-growth sectors to bring about new avenues of trade and growth. Singapore has launched an array of initiatives towards developing high-growth enterprise clusters. The aim is to generate "new creations, new products, new services and technology through the careful analysis of emerging markets, technologies, business perspectives and global trends", as Francis Chu, Manager at the Infocomm Development Authority (IDA) of Singapore, explains.

Two of the Singaporean government agencies are directly involved in supporting high-growth SMEs: SPRING (Standards, Productivity and Innovation for Growth) Singapore and A*STAR with a sub-programme named Get-Up (Growing Enterprises through Technology Upgrade). Exhibit 5-5 provides an overview of the Singapore Government's organisational structure in support of a sustainable business ecosystem, high-growth SMEs in particular (marked red). Related efforts are headed by the Ministry of Trade and Industry, with the Economic Development Board supporting growth of local industries, IE Singapore promoting the internationalisation of potential high-growth enterprises and the Jurong Town Council providing real estate and connectivity infrastructures for high-growth SMEs.

Exhibit 5-5: Singapore's governmental organisations supporting SMEs (high-growth SMEs marked red)



Source: Singapore Ministry of Trade and Industry

Singapore's activities in support of high-growth SMEs

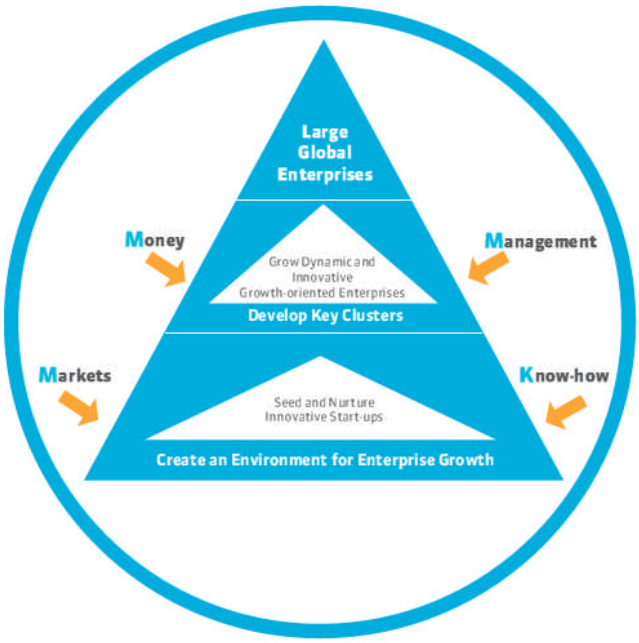
SPRING Singapore

Objectives

In April 1996, the merger of the National Productivity Board and the Singapore Institute of Standards and Industrial Research created the Productivity and Standards Board which was renamed SPRING Singapore in April 2002. This signified a shift of its goals towards creating an innovative environment. SPRING Singapore is an enterprise development agency with a focus on supporting the growth of local Singaporean enterprises.

SPRING explicitly seeks to "grow dynamic and innovative growth-oriented enterprises" – i.e. to support high-growth SMEs. SPRING Singapore is also the national body for standards and conformance, seeking to elevate foreign trust in Singapore's enterprises, products and services. Exhibit 5-6 shows SPRING's scheme for developing companies from start-up to large enterprises.

Exhibit 5-6: SPRING's enterprise development concept



Source: SPRING Singapore

In the financial year 2009/2010, SRING Singapore was allocated an operating budget of 54.5 million Singapore dollars (approximately 27.3 million euro), making it a considerably powerful organisation. SPRING collaborates with trade development agencies to assist promising local businesses with government funding, capability and management development, technology and innovation enhancement, and internationalisation.

SPRING Singapore runs a series of business capability development programmes for interested local SMEs. There are strict requirements for government funding support. Criteria include, for example, proof-of-concept and proof-of-value, evidence of products or services and independent third-party investors. The government considers its funding mechanisms as an investment when reviewing potential high-growth SMEs.

Business capability development programmes

SPRING Singapore operates three key SME business capability development programmes for all SMEs: Business Leadership, Technology Innovation, and Business Capabilities.

Highlights of the **Business Leadership** scheme include:

- The *Business Leaders Initiative* focuses on enhancing management capacity both at the top and middle levels as well as grooming the next generation of future leaders. In 2009, 209 business leaders were trained through the Advanced Management Programme, 35 Management Development Scholarships were awarded and 45 Executive Development Scholarships were awarded.
- The *Business Advisors Programme* was created to attach experienced professionals, managers, executives and technicians as business advisors to potential high-growth SMEs. In 2009, 93 business advisors were matched with 63 SMEs.
- The *Executive Training Programme* helps SMEs groom the next generation of potential business leaders by linking talented undergraduates from Singapore's universities, with growth-oriented SMEs. There were 332 trainees matched to 265 companies in 2009.
- In mid-2010, close to 30 million Singapore dollars were allocated to the *Management Associate Partnership (MAP) Initiative* and the *Enterprise Internship Programme (EIP)* to assist the development of high-growth SMEs. MAP works with high-growth SMEs to attract, develop and retain fresh talents. Targeting local university graduates, SPRING will co-fund these SMEs to train the graduates to run core and expanding operations of the company. EIP seeks to expose local university and polytechnic students to the dynamic and rewarding working environment of high-growth SMEs through short term internships, co-funded by SPRING. This programme will complement MAP in influencing young entrepreneurial talents during their school days to consider SMEs as an attractive career choice.

The **Technology Innovation Programme** encourages the development of technological innovation by providing technological support and resources. This programme supported 303 projects in 2009 and 666 since 2006.

Highlights of the **Business Capabilities** scheme:

- The *BrandPact Initiative* helps companies gain business competitiveness via an effective branding strategy. There were 55 branding projects in 2009 and 331 since 2005.
- *Customer Centric Initiative* seeks to ensure service quality standards across industry sectors: 84 retail companies since 2006; 64 food and beverage companies since 2007; 15 healthcare companies since 2008; 9 transport companies since 2008; 31 hospitality companies since 2009.

- The *Design Engage Initiative* helps local enterprises build strategic-design thinking capabilities. There were 17 companies supported in 2009, 23 since 2008.
- The *SME Management Action for Results Initiative* provides 70% of funding for business excellence consultancy costs. 26 companies were supported in 2009 and 136 since 2006.

SPRING Singapore's industry development programmes encompass a wide range of sectors, for example biomedical and healthcare services, electronics, chemical and engineering services, logistics, precision engineering, and retail.

Financial Facilitator Programme

In light of the economic crisis, Singaporean business associations started the Financial Facilitator Programme (FFP) in January 2009. SPRING Singapore supported FFP vigorously. SMEs can use the FFP to diagnose their financial health, receive advice on financing options and guidance on loan applications. This was crucial for high-growth SMEs that required high loans for survival, investment diversification and possible expansion. The FFP offered two types of financial support: Government Business Financing Schemes and Special Risk-Sharing Initiatives.

Get-Up Programme with A*STAR

The GET-Up programme, short for “Growing Enterprises through Technology Upgrade”, supports long-term pre-competitive research and development (R&D) and enhances the technology competence of potential enterprises. It is a joint initiative led by the Singapore Agency for Science, Technology and Research (A*STAR), in collaboration with the Economic Development Board, IE Singapore and SPRING Singapore, launched in 2003. A*STAR's Science and Engineering Research Council helps enterprises in the Get-up programme pair up with research partners to enhance their technology edge. In fiscal year 2009/2010, A*STAR received an operating budget of 39.5 million Singapore dollars (approximately 20 million euros).

GET-Up’s objective is to “help promising local companies grow, glow and globalise”[149], thus implicitly aspiring to generate high-growth enterprises. There are four support initiatives under the Get-UP programme in support of innovative high-growth SMEs:

- Technology for Enterprise Capability Upgrading (T-Up) is a multi-agency effort involving sending Research Scientists and Engineers (RSEs) to local enterprises.
- Operation and Technology Roadmapping (OTR) provides the “big” picture view of the technologies required and financial co-support.
- Technical Advisory Support (TA) provides advisory services from senior research staff at research institutes.
- A*STAR Facility Sharing Programme (A*FSP): potential high-growth enterprises may leverage on the Research Institutes laboratory facilities for their R&D related activities.

In fiscal year 2009, within Get-Up over 300 research scientists and engineers assisted 297 SMEs to increase their productivity and competitiveness. Since its inception in 2003, officers from Get-UP have visited over 1,000 potential high-growth SMEs. In consequence, 223 companies have benefited from the initiative. By the end of 2010, 3 million Singapore dollars, in grants, had been extended to 34 promising local enterprises.

[149] See http://www.a-star.edu.sg/Industry/ProgrammesforSMEs/GETUpProgramme/tabid/220/Default.aspx.

Improving access to growth finance

The Singapore government introduced further policy measures relevant for support of high-growth SMEs in the field of access to finance:

- Tax Deductions for Angel Investors: Eligible angel investors committing a minimum of 100,000 Singapore dollars equity investment in a qualifying start-up can claim a 50% tax deduction on the investment at the end of a two-year holding period. This deduction is subject to a cap of 500,000 Singapore dollars investment per year.
- Catalysing growth investments through co-investment: 1.5 billion Singapore dollars of growth capital for companies by seeding a range of funds over ten years, with contributions of up to half the capital.

Impacts of Singapore's policies for high-growth SMEs

No policy evaluations or assessments identified

At the 2010 National Day Rally, Singapore's Prime Minister Lee Hsien Long announced that the country emerged victorious from battling its "worst recession since independence". In light of this recent economic resilience, the government has attributed the success to the numerous opportunities SMEs have been provided with so as to further develop their business and technical capabilities through R&D and technology upgrading.

However, there are no evaluation studies available that could substantiate the impacts of the Singapore government's SME policy, neither for SMEs in general nor for high-growth SMEs. In the course of research for this case study, officials from the SME administration were not ready to provide assessments of the programmes and their impact for reasons of transnational competitiveness. At a GET-Up Seminar in April 2009, A*STAR announced that more than 250 local SMEs, which were on the GET-Up programme, projected twice as much revenue and employment growth over the next three years as their counterparts which were not on GET-Up. Independent assessments were however not identified. The following company examples may at least illustrate how the Singapore government supports SMEs.

Cases of successful companies supported by the Singaporean government

Examples from SPRING Singapore

Business Advisors Programme for Greenpac

Greenpac (S) Pte Ltd (http://www.greenpac.com.sg) is a knowledge-based company that designs customised, cost effective and environmentally-friendly packaging solutions. Greenpac has been growing continuously since its inception in 2002. In keeping with the growing demands of its customers, Greenpac expanded its analysis and consultation services, re-engineered its packaging systems and analysis of shipping efficiency to include kit packing, programme management, warehouse services, professional packing services, rigging services and contract packing. The company's lists of loyal clients comprise some of the world's largest multi-national corporations. Through SPRING's Business Advisors Programme, the company engaged professionals with financial and operational know-how to support its global expansion plans.

Sources: http://www.greenpac.com.sg, *IDC Government Insights Asia/Pacific*

Business Leaders Initiatives of Micro United Network

Micro United Network Pte Ltd (http://www.microunited.com.sg) provides voice, video and data through internet protocol product distribution services for multi-national corporations. The company was incorporated in 1999 in collaboration with an India-based technology company that had years of experience in running niche distribution for internet-based products and solutions. The company has business representations in countries such as Singapore, Malaysia, Thailand, the Philippines and Indonesia, as well as in India, Sri Lanka Nepal, and Bangladesh. The CEO, Jayaraman, joined the Asia-Pacific Executive Master of Business Administration Programme at the National University of Singapore through SPRING's Advanced Management Programme. Applying what he learnt from the course, Jayaraman changed Micro United Network's negotiation process. The results were instantaneous – Micro United Network achieved 40% growth in fiscal year 2008. A recently sealed 1.3 million US dollar deal with a multi-national corporation is set to propel Micro United Network to achieve 100% growth in fiscal year 2009.

Sources: http://www.greenpac.com.sg*, IDC Government Insights Asia/Pacific*

Example from Get-UP

Technology for enterprise capability upgrading for Resin and Pigment (R&P)

Resin and Pigment Pte Ltd (http://www.resinpts.com/) is a supplier and manufacturer of colour and engineering polymer compounds since 1989. It has grown to be one of the region's leading companies in this business. In order to stay competitive, the company decided to adopt innovative processes and to build technical and knowledge capabilities through R&D. Notable operations in this respect include both the Singapore and Wuxi (China) headquarters that serve the global market of international polymer customers in the electrical and electronics, automotive, construction and civil engineering, household and consumer, packaging and agriculture sectors. Under the GET-Up programme, two research engineers were seconded to the company to help set up research and testing facilities as well as develop processes to manufacture new polymer materials. As a result, Resin and Pigment increased its average monthly revenue by 140,000 Singapore dollars in 2009. It also successfully registered a product patent and clinched a business contract with ExxonMobil. The contract with ExxonMobil is also the first ever won by an Asian firm in the polymer compound business.

Lessons learned

Government initiatives as well as investments in infrastructure and education are strong in Singapore. Considering the dominance of micro, small and medium-sized enterprises in Singapore and the traditional strength of the manufacturing and finance sectors, the government is seeking strategic investments to groom potential high-growth enterprises and drive the diversification of the local economy. Consequently, investments by Singapore's government are expected to rise steadily. However, as there are no evaluations of government support available, the actual impact of these policies cannot be assessed here and it is difficult to draw lessons for European policy.

In any case, success of Singapore's companies is based on an entrepreneurial environment in the country and a critical mass of qualified technical and managerial manpower. As Rowen et al. (2006) note about the rise of Asian countries in high technology production, the availability of a knowledge-intensive professional service firms that assist start-ups in outsourcing their non-core work plays a significant role in the growth of high-tech entrepreneurial clusters. Related services include for example law firms specialising in intellectual property and new ventures, human resources head-hunting, consulting and market research, and investment banking services for merger and acquisition activities. Such preconditions may be conducive to high growth of SMEs in any region in the world.

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5.3 Canada and US: policies to back venture finance

Summary

*The **Canadian** experience suggests strongly that a concentrated focus by governments on high-tech based SMEs combined with adequate levels of venture capital (VC) financing holds by far the greatest potential for creation of "gazelles" and that these firms, once created, show unusual resiliency as measured by low failure rates and multiple growth spurts. There are no specific policies for grants to industry in Canada that focus on high growth SMEs. The Canadian Industrial Research Assistance Program (IRAP) switched its focus to concentrate on high-tech SMEs in the early 1980s aiming to attract VC funds for IRAP clients and to increase gazelle creation. The VC industry in Canada did begin to support IRAP-funded high-tech SMEs. Between 1995 and 2007, VC funded high-tech SMEs contained about 12% gazelles. Over the same period the pool of high tech SMEs that received both VC funding and IRAP assistance contained 22% gazelles. These results suggest that a focus on high-tech SMEs within the proper support environment can stimulate gazelles creation significantly. In Canada, the response to the dire shortage of capital funding has been the creation of indirect government assistance tools, at both the federal and provincial levels, such as VC pools.*

*In the **United States** there are also no direct programmes in support of high growth SMEs. As in Canada, the US focus is also principally on high-tech based SMEs as having the largest growth potential. In the US there is some sign of capital market recovery for SMEs with increased levels of VC placements. The Small Business Innovation Research (SBIR) programme is the major form of federal assistance provided to SMEs, which work with large research departments of the federal government. SBIR recipients have been able to attract higher levels of follow-on VC funding. Recently, the US venture capital sector has been lobbying hard to change the access rules to SBIR funding for SMEs controlled by venture capital firms.*

The returns to VC providers in Canada and the US over the past ten years have been low, and the interest in VC fund investment is problematically low.

Background and objectives of VC funding and government assistance

Canada

Current situation in venture funding

The Canadian experience suggests strongly that a concentrated focus by governments on high-tech based SMEs combined with adequate levels of VC capital financing holds by far the greatest potential for gazelles creation and that these firms, once created, show unusual resiliency as measured by low failure rates and multiple growth spurts.[150]

The focus on high growth SME support programmes and policies in Canada is squarely on high-tech based SMEs with two main support programmes: The National Research Council of Canada's Industrial Research Assistance Program (IRAP), and the federal provincial Scientific Research & Experimental Development (SR&ED) Tax Credits. Both are centred on high-tech SMEs. History also shows clearly that gazelle creation rates increase markedly – in sectors for which data are available – when a combination of venture capital

[150] See Cooper (2009).

and IRAP assistance is available, as is summarised below. This has led to the focus by governments in Canada on providing capital financing availability in Canada in order to stimulate growth, particularly through gazelle creation. Gazelles are defined as high growth firms which within a five-year period double in size to a minimum of 20 employees or to 10 million Canadian dollars (CAD) in sales or both.

There is currently a critical shortage of capital for technology based firms. The VC market in Canada collapsed from a peak of 5.9 billion CAD placed in 2000 to just over 1 billion CAD in each of the past three years.[151] Many technology- based firms at the development stage with high burn rates have had to cut back activities. Even with these cutbacks, many of these firms have only one year or less left of funds available to them from earlier financing rounds, and the Canadian Manufacturers and Exporters Association (CME) states that new products in the pipeline are often on hold.[152] Consider this example from the Canadian biotech sector. Ernst & Young showed that "the normal level of bio companies in Canada with less than one year of cash is about 25-30%. In 2008 this level saw a big jump – to over 40%".[153]

There are some signs of modest improvement in some sectors recently, but the overall shortage remains at critical levels. VC funding raised in the US for biotech was up in up 2% in 2010 at 3,765 million US dollar versus 3,682 million US dollar for an increase of 83 million US dollar (2%). An even larger increase has been reflected in Canada in part because of a key amendment made in the Canadian federal budget of 2010 February to simplify reporting by foreigner VC investors. In Canada total bio investments increased from 210 million CAD in 2009 to 300 million in 2010.[154]

Description of Canadian Capital Financing Market

Business Angels: Angel financing is widely dispersed across most regions of Canada and cover a broader range of business types. Total funds placed by angels are much greater than that provided by VC sources. According to the Canadian Angel Investment Network their members are currently investing over CAD 3 billion in Canadian businesses each year.[155]

Venture Capital: VC investments by the VC community in Canada have decreased from a peak of CAD 5.9 billion dollars in 2000 to just over CAD one billion dollars for each of the past three years (2008-2010). With the down turn, VC firms have reduced the number of technology specialists, and become more risk averse. With the relatively poor ten year returns for VC funds and the availability of other more attractive retail alternatives (such as income trusts), investment by individuals in VC funds in Canada has all but dried up. The other major investment source has been pension funds, but these funds have become risk-averse and have cut back their interest in high tech VC investments preferring to go to infrastructure investments instead.

Foreign VC flow has been an important source of financing for technology firms. Indeed for placements of over CAD 5 million dollars over 75% of the funds come from foreign sources. However, the total foreign sources have dropped from 41% in 2007 to 26% in 2008 with CAD 549 million dollars to only 22% of the

[151] CVCA (2009) and Falconer (2009) Thompson - Reuters.

[152] See Jayson Myers, CEO CME interview November 24, 2010.

[153] Ernst &Young's report, 2010 "Beyond Borders" (versus up to 70% in BIOTECanada's survey in 2009).

[154] See Thompson Reuters 2011 slide 18, http://www.canadavc.com/files/2010EnglishOverview.pdf.

[155] See http://www.angelinvestmentnetwork.ca/about.

CAD 334 million dollars in 2nd quarter 2009. In the federal budget 2010, the regulatory requirement for foreign investors to register each placement was eased. CVCA believes that this change should increase the flow but at the date of writing this paper (June 2011) it has had little effect so far.

Initial Public Offerings (IPOs). Since the ICT-bubble burst there have been very few IPOs in the technology area. In 2009/2010 there have been a few new placements. IPOs are an important exit strategy for VCs and the difficulties in placing IPOs further discourage VC financing.

USA

Venture Capital: The US experience is similar to that of Canada, in terms of the collapse of financing since the bubble burst in 2000 where VC dropped from a peak of 100 billion USD to just 18 billion USD in 2009. VC funds placed in 2009 were still falling from 2008 levels 18 billion USD versus 28 billion USD. But a turnaround is now evident in 2010 according to Price Waterhouse Money Tree reports at 23.3 billion US dollar – all of this without federal government involvement. VC funding was especially important for the biotech sector with 4.6 billion US dollar in 2009 which was the second highest level after 5.5 billion US dollar in 2007.[156] As of 2007, there were state government sponsored VC funds in 22 states with 2.3 billion USD in venture funds but there is no data available to measure the investment performance of this group of funds.

SBIR: The US Small Business Industrial Research program (SBIR), at about 2.5 billion USD per year, requires support to be provided to SMEs for R&D contracts with federal agencies – up to 2.5% of those with research budgets over one billion USD. The potential for SME growth is one consideration in the support criteria of SBIR. The program has to be reviewed by US Congress every few years. As of November 2010, SBIR has been renewed to 31 January 2011, and yet again in spring 2011 to 30 September 2011. The next proposed renewal bill is stalled because of a dispute relating to SBIR access by VC-controlled SMEs (see below).

Impacts of state support schemes on generating high-growth SMEs

Canada

In Canada, a study by Statistics Canada and the NRC of 550,000 firms found gazelles occurred within Canadian industry generally at the 3-4% level. However, a study by Cooper of 2,240 firms which had received venture capital (CAD 18 billion dollars) between 1995 and 2005 showed much higher levels of gazelles creation at 12% in the 1,500 technology based firms, but the rate was still very low in the manufacturing sector generally.[157]

The NRC-IRAP program was created in 1962 with annual funding from Parliament – it assists 10,000 firms per year and funds over 2,000 firms annually. Initially the focus was on larger firms, but by the mid 1970s it switched to high tech SMEs with up to 500 employees (mostly under 25 employees). In Canada, in Cooper's ongoing longitudinal study of 800 university spin-off firms, formed up to 1999, 167 high growth firm gazelles were present (21%). For firms (193) known to have received VC funding CAD 1.6 billion dollars including the

[156] Source: E&Y 2010 Ann Report op cit). (Note: PWC shows that the bio turnaround does not begin until 2010.

[157] See Cooper (2009).

amounts for public firms with follow-on private placements), the gazelle rate rose to 52%. A subset of the VC study in (a) above showed that the 210 university spin-off firms had 12% gazelles, but if they also had IRAP funding the rate rose to 32%. Indeed, when firms with VC funding also had received assistance from the federal NRC-IRAP programme, gazelle formation rates rose to 91% for all USOs (net 22 - 28% in biotechnology and ICT).[158] The high levels of gazelles' formation were found in both studies, listed in b and c above.

USA

The US National Research Council of the National Academies found more than 14,800 firms received at least one SBIR grant from 1992 to 2005. More than 20% of these companies said they were founded entirely or partly due to the programme, with more than two out of three funded projects owing their inception to SBIR funding. Another study by the SBA Office of Advocacy found that SBIR firms produced 13 to 14 times more patents per employee than did larger firms.

In 2006 the US General Accounting Office (GAO) reported that from 1983 to 2004, participating federal agencies awarded over 17 billion USD in SBIR grants, contracts, or cooperative agreements to over 82,000 projects. However, in spite of glowing presentations on individual company growth before various US Congress committees, the GAO has criticised the programme administrators for the low level of studies on performance and impact studies. One exception is indicated in a 2009 book edited by Charles Wessner on VC funding which found that firm growth of SBIR recipients was related to the amount of VC funding raised - most of it sourced in a few key regions -, but no other relationship was found when compared with a matched set of non-recipient firms.[159]

The SBIR is focused on SMEs – namely over 41% of respondents had 15 or fewer employees –, while about 15% had more than 100, for a mean of only ten employees. As expected very small firms had lower increased sales and employment – with the best results for firms in the range of 15 to 25 employees. Even though they had the data, the review did not assess the presence of high growth firms or gazelle aspects. [160]

Lessons learned

Canada

Government support may be needed to fill the key gap in the innovation process in order to get firms to grow. In the face of this, governments have acted albeit timidly, even though history shows great payoffs to Canada in terms of jobs, sales and exports. So far there is apparently no evidence that government funding has crowded out the private sector programs. Indeed, some VCs welcome the prior involvement of certain grant assistance programmes, such as the NRC-IRAP program, and a firm's use of the SR&ED tax filing as they require a degree of due diligence and provide some risk reduction for the investor. As in Europe, VC financing is heavily concentrated on ICT as well as biotech and life sciences. The shortage of capital financing for

[158] See Cooper, D presentation at APEC SME Innovation conference in Seoul, Korea 2009 August VC Financing and Growth of Firms).

[159] See: An Assessment of the Small Business Innovation Research Program at http://www.nap.edu/catalog.php?record_id=11963.

[160] See: An Assessment of the Small Business Innovation Research Program at the Department of Defense (2009): http://www.nap.edu/openbook.php?record_id=11963&page=65.

high tech firms is leading to increased numbers of foreign take-overs and strategic alliances, thereby weakening the potential for future job growth in Canada.

VC financed firms provide greater economic benefits

Hellmann et al at the University of British Columbia undertook an international study of the performance of 21,852 firms based in 25 countries including Canada, the US and several Asian ones. The firms had received VC funding – with or without government funding – in the 2000-2008 period. They found that firms receiving a minority share of their VC funding from government VCs have significantly better exit performance than the base category of firms with no government VC funding. However, enterprises with the majority of their VC funding (but less than 100%) coming from government VCs have significantly worse exit performance than enterprises with private VC funding. Government programmes often have multiple agendas, e.g. local employment and regional development. Therefore governments should take note of this key finding.[161]

In a 2010 study for CVCA Gilles Duruflé undertook a review of government assistance for firms in eight countries that showed that there was a positive role played by government supported VC funds but also noted that there were many pitfalls in the design and implementation of support programmes which do not meet the needs of industry, or where firms deliberately restructure their application to access the subsidies rather than be driven by the needs of the firm.[162] There are three key lessons here:

1. High growth firms self select, i.e. governments cannot predict when and where they will appear, with an historic heavier weighting in ICT and Bio.

2. Linking government assistance (IRAP) with subsequent VC financing leads to less shareholder dilution and higher growth for the SME.

3. These measures help fill gaps – to the extent that these exist in Europe, these measures should be considered.

USA

The lessons from the US are less clear:

1. SBIR funded firms attract more VC funding.

2. No information was found about impacts on state funded VC programs. This could be further investigated.

3. GOA has been critical about lack of overall performance measures of SBIR program.[163]

One increasingly painful lesson to be learned from the acrimonious debate occurring now in the US regarding access to SBIR funds for VC-controlled SMEs is that if one agency operates its funding projects at a level roughly ten times higher than other participating agencies, the VC industry will take notice of and exhibit par-

[161] Brander, Du and Hellmann, 2010 June: The Effects of Government-Sponsored Venture Capital: International Evidence.

[162] See Government involvement in the venture capital industry International comparisons, http://www.cvca.ca/files/Downloads/Government_Involvement_in_the_VC_Industry_Intl_Comparisons_May_2010.pdf .

[163] See Hellmann 2005 study.

ticular interest in the richest program. If Europe plans to put programming into place for which SMEs will be expected to apply, the regulations regarding eligibility based upon ownership will need to be clarified from the outset.

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5.4 Japan: Diversification and clustering of SMEs for future growth

Summary

Although the fall out from the 2008 Lehman Brothers collapse continues to skew the Japanese government's SME (small and medium-sized enterprise) policies towards finance and employment safety net issues, the strategic line of discussion in 2010 gravitates around the diversification and clustering of SME business activities. Diversification policy initiatives focus on supporting SMEs to move (1) up the technology ladder (product development), (2) between industries (new business activities in related industries), and (3) across national borders (internationalisation of business). Clustering policy initiatives focus on promoting (1) local clusters, such as regional linkages among small and medium manufacturers, and (2) network clusters, such as university-industry collaborations. Through these overlapping diversification and clustering policy initiatives, the government's 2009 New Growth Strategy (Basic Policies) Toward a Radiant Japan identifies SMEs as an engine for future high economic growth.

Key characteristics of SME policies in Japan

The key concept guiding Japan's SME policies through much of the post second world war era has been to "rectify the gap between SMEs and large enterprises in terms of productivity." In 1999, the government revised the SME Basic Law in recognition of the growing importance of new forms of business outside the traditional closed innovation networks of the *keiretsu* (i.e. corporate groupings) in stimulating the domestic economy. The new concept guiding SME policies became to "develop and support a wide range of independent SMEs for greater economic vitality." Under this rubric are three new *policy systems:* (1) supporting self-help efforts for business innovation and start-up, (2) strengthening of management base and (3) facilitating apt responses by enterprises to abrupt environmental change. Two *policy systems* were carried-over from the previous law: (4) finance and taxation and (5) consideration for small-scale enterprises. These five new policy systems have shifted public discussion **from protection to promotion of SME** business activities; however, they do not specifically target high-growth innovative SMEs.

In contrast to the "administrative guidance" (top-down) policy approach of Japan's post-war dynamic economic development, the central government is now giving the prefectural governments, and more recently municipal governments, the flexibility to use fiscal resources to facilitate the R&D capacity building within SMEs as well as cluster them into regional support networks. With the **devolution of the central government's policy implementation role**, the new message is that innovation should be open and market-driven (bottom-up) in order to stimulate local economic development as well as to promote the international competitiveness of SMEs.

Current developments in and discussions about Japan's SME policies

Japan's New Growth Strategy

At the end of 2009, the Cabinet approved a New Growth Strategy (Basic Policies) Toward a Radiant Japan, revised in July 2010, specifically identifying SMEs as one of the main drivers of the economy. Three keywords emerge from the New Growth Strategy: **strengths, frontiers, and platforms**. First, Japanese companies should leverage their strengths in the areas of environment and energy (green innovations) as well as

health. Second, they should pioneer new frontiers, especially in the areas of in-bound tourism and local economy revitalisation. Third, the government will create platforms for growth in the areas of science, technology and information technology, employment and human resources, and financing.

Addressing barriers to access finance

Beyond its regular annual reports, the SME Agency has been active recently in commissioning numerous surveys to check the needs of SMEs this has resulted in action to fine tune related policies. Although the post-Lehman economic downturn has led the government to focus on legislating remedial measures to support struggling SMEs (e.g., Emergency Guarantee Programme and the SME Financing Facilitation Act), a commissioned Survey of Fund Raising by Small and Medium Enterprises finds that a more fundamental problem hindering innovative SMEs is the **corporate tax burden and bottlenecks in financing**. An earlier Survey on the Innovation Situation through the Creativity and Research and Development of Companies found that SMEs fund their initial R&D activities mainly through internal cash flow and then in the later commercialisation stages they prefer bank loans over equity finance, venture capital, and other financial products. In connection to this, lowering the effective corporate tax rate (currently 40%) to jump start innovative activities and increase employment in the private sector is clearly on the minds of politicians and business organisations (e.g., Nippon Keidanren and the Japan Chamber of Commerce and Industry). Nevertheless, as Prime Minister Naoto Kan quickly learned in the 2010 Diet election, shifting the tax burden from businesses to consumers by raising the consumption tax to 15% from 5% is a very sensitive issue for citizens.

According to the Survey of Fund Raising by Small and Medium Enterprises, a major bottleneck in financing is due to a perception gap between financial lenders and innovative SMEs, i.e. those conducting R&D. Japanese city banks and especially regional banks do not always have the capacity to evaluate loan applications based on potential cash flow. Historically they have secured loans based on tangible assets, primarily land, and only in recent years began using alternative methods. On the other hand, the Survey found SMEs are weak in formulating business plans for innovative products and services. The SMRJ has been tasked, in a fine tuning of the SME Technological Advancement Act, with improving the capacity of SMEs to develop feasible business plans. Since writing a business plan is as much an art as a science, in coordination with the METI Industrial Cluster Plan, the SMRJ often introduces an innovative SME to local clusters of small and medium manufacturers and R&D support institutions to vet and support their business plan.

Addressing barriers in commercialising new products

Access to finance is important in launching SMEs on pathways to innovation; however, many SMEs already possess unused technologies. Their reluctance to file for patents, for example, reveals other organisational weaknesses. The Survey on Market Capture and Intellectual Property presents case studies of how these technologies could find their way into the marketplace if the SMEs establish partnerships with intermediaries who share their values. The Survey particularly identifies that SMEs need strategic collaborators and external resources, partners to outsource examination and testing of products, and assistance in marketing and sales. In the recent past, a large lead company (e.g., Toyota Motor, Hitachi) would perform the coordination of these functions through its vertical *keiretsu*, consisting of a layered division of labour among SME suppliers. With the decline of such inter-firm, intra-group arrangements, Japanese SMEs find they are strong in

technologies but weak in the intermediary steps of taking a concept to the market. To strengthen the independent innovative capacity of SMEs, then, the SME Agency pursues innovation promotion activities in two areas: (1) technology development and IT (information technology) adoption and (2) new business activities.

Further policy fields

Further important fields of current Japanese SME policy include the following:

- Fostering IT take-up: From 2010 the SME Agency's main policy tools to encourage the adoption of IT platform systems are subsidies and tax breaks.
- Fostering employment of high-tech employees in SMEs: the SME Agency introduced for the first time in 2010 a subsidy programme for SMEs employing next-generation high-tech human resources.
- Fostering business transfer: To facilitate the transfer of business to next generation entrepreneurs, the government provides special provisions, financial assistance, and inheritance tax deferrals.
- Fostering external partnerships: The SME Agency promotes two channels. (1) Low interest loans to SMEs engaging in trial manufacture and development of new products; (2) "hands-on support offices" facilitate and subsidise the creation of new business partnerships among local SMEs.
- Fostering marketing of Japanese products: Japan's SME initiatives primarily focus on the domestic market more than the overseas markets. In the overseas market, the METI and Ministry of Foreign Affairs are taking a soft diplomacy approach to promote creative industries (Cool Japan!) products.

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This innovation policy summary has been authored by Dennis Tachiki, Tamagawa University, Graduate School of Management, Tokyo, Japan. Sources:

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The preceding overview of major SMEs policy activities in Japan does not include the Japanese SBIR programme – for the reason that this programme apparently has not developed to be a major activity of SME policy. This has been stated in a report of the OECD (2010), as summarised in the following box-text.

Small Business Innovation Research in Japan

The Small Business Innovation Research (SBIR) programme was first introduced in 1999 and is implemented by seven government ministries, with the budget set annually by the Cabinet. Budget allocations awarded under the programme have gradually increased (…) to JPY 37.1 billion in 2007. There are 17 programmes through which SBIR is implemented (…). Two types of support are offered: i) research and development support through subsidies or contract grants; and ii) support for technological application development, such as patent fee reductions, loan guarantees, capital investment loans, and loans for facilities. Funding recipients should have less than 300 employees or capital below JPY 300 million. The majority of schemes target venture companies and SMEs. The number of projects awarded to participants over time has been relatively stable. (…) In 2007 the number was 1,365. The programme does, however, suffer from a lack of applications, and has been found to be administratively difficult to implement. In particular the methods of application are too complex. Japan basically follows the United States' SBIR model but with a budget about one-fifth of the size, and it funds around a quarter of the number of projects awarded in the US.

Source: OECD (2010), p. 76.

5.5 Israel: Envisaged targeted support for high-growth sectors and SMEs

Summary

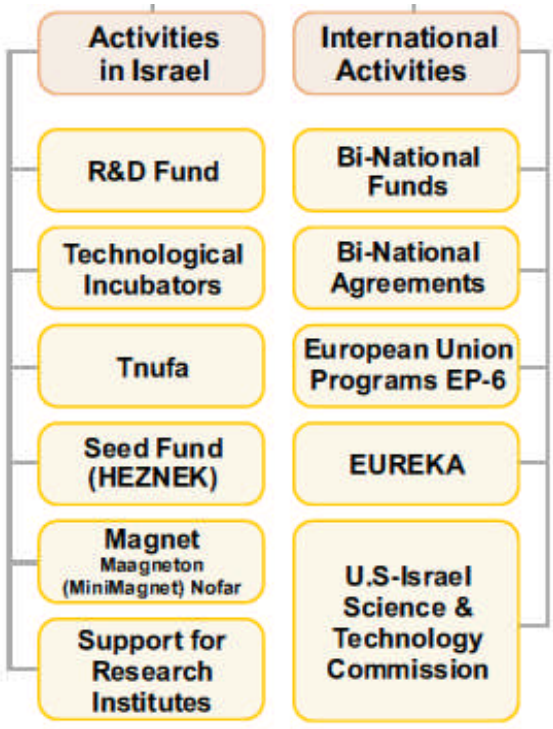
In Israel, the main body that operates policy tools for the promotion of R&D in industry is the Office of the Chief Scientist in the Ministry of Industry, Trade and Labour (OSC). The OSC operates no policy tools aimed explicitly or exclusively at high growth SMEs; however, high growth SMEs can benefit from all the supportive policy measures provided by the OCS. Three of the four top priorities set by the OCS for R&D may be specifically relevant for high-growth SMEs, namely bio-tech, nano-tech and transformation of technology from academia to industry. Furthermore, a new programme named "The Relative Advantegous" will address the whole value chain of strongly growing sectors, based on the understanding that high-growth SMEs are one of Israel's main growth engines.

Key player in SME support: Office of the Chief Scientist

The key player in Israeli policy efforts for the support of R&D and innovation in SMEs is the Office of the Chief Scientist (OCS) at the Ministry of Industry, Trade and Labour (MOIT). According to their mission statements, the MOIT "focuses on the promotion of economic growth in Israel" and the OCS "oversees all Government sponsored support of R&D in the Israeli industry". The OCS works at different levels on these issues, and manages several programmes that aim at the promotion of innovation and support of SMEs. Among its activities the OCS provides access to the Eureka programme and supports the companies who are found to be eligible, mostly SMEs. Another tool the OCS supports is the Israel Europe R&D (ISERD) - a body responsible for managing all aspects related to the participation of Israel in the European framework programmes.

During 2009 and 2010, the OCS set up four main priorities: supporting R&D in traditional industries, supporting the nanotech sector, supporting the bio-tech sector, and promoting transfer of technologies from academia to industry. Though not formally declared, all the priorities have, in practice, a strong tendency towards high-growth SMEs. Also, beside the priority for traditional industries, all other priorities have a strong bias toward high tech and high growth industries. The Israeli nano-tech and bio-tech industries consist mainly of small and fast growing start-up companies. In June 2010 the Israeli Minister of Treasury presented a new integrative programme named "The Relative Advantageous" based on the understanding that high growth SMEs are one of the main growth engines of Israel.

Exhibit 5-7: Activities of the OCS



Source: The Office of the Chief Scientist – an Overview

The programme will address the whole value chain of strongly growing sectors, based on academic research, from commercialisation through to the establishment of strong and sustainable companies. At the time of writing this report, at the end of 2010, this programme was planned to become active soon.

The paragraphs below describe the main policy bodies and tools operated by the OSC to promote R&D:

Regular R&D Programme: At the heart of the Israeli R&D support schemes stands the OCS's "Regular Programme" with an overall budget of 200 million US dollar. The OCS's main activity is the operation of the industrial R&D fund providing grants of 30-50% to selected projects deemed industrially competitive. This programme has no specific priorities and selects projects according to their merit. Companies receiving OCS grants are obliged to pay royalties to the OCS upon the success of the project. According to the OCS data most of the grants are provided to high growth SMEs, though the OCS makes great efforts to increase the participation of firms belonging to traditional sectors.

Technological Incubators Programme ("Hamamot"): Incubators have been a major tool in the Israeli policy for support of R&D in SMEs over the last two decades. The Hamamot programme has been underway since 1991. The programme supplies entrepreneurs with physical premises, financial resources, professional guidance and administrative assistance, and acts as a venture capital fund in the early stages. An incubator company receives a development grant of up to 500,000 US dollar for a period of two years. Over the last decade, the Technological Incubators Programme has gone through a process of privatisation during which the ownership of the different incubators passed to private hands, while the OCS is still maintaining an administrative and supervising role. Today, 21 incubators are active. Over the 19 years of the programme's existence, 1,209 companies "graduated" from the incubators, and about 37% of them have survived and are still independently active. An evaluation of the programme in 2009 pointed out that the programme played a crucial role in building the entrepreneurial spirit that exists in Israel today, as it enabled entrepreneurs who had no real experience in business to realise their ideas without taking very high personal risks.

"Tnufa" ("Momentum"): This programme aims at encouraging technological innovation and entrepreneurship by granting limited financial support to new industrial projects during their very first steps. The programme operates five different courses: (1) new entrepreneurship projects, with innovative technological ideas; (2) projects to upgrade traditional industry, aimed at developing new technology or products; (3) cooperation with international enterprises, aimed at developing joint technological projects; (4) "green momentum" for SMEs, aimed at developing technologies or products related to water and green energy; and (5) "industrial design" for innovative industrial design ideas. The programme provides conditional grants - that have to be paid back in the case of success – up to 50,000 US dollar that can be expended on different development activities such as: patent search and submission, prototyping, and writing a business plan. In 2009, the supports given by the programme amounted to approximately 4,600,000 US dollar.

Magneton: Another project that targets the promotion of innovation in SMEs is Magneton, also initiated and managed by the OCS. Magneton aims to promote the transfer of technology from the academic sphere into the industrial enterprise. This is done by financing university-industry joint research projects, where the research is carried out by the academic side, and the technological feasibility prove process is done at industry level. In practice, most of the projects funded – almost two thirds - were found to generate high growth

SMEs. The benefactors of governmental finance are exempt from paying back royalties, once the product goes commercial. In 2008, 24 projects where active on the Magneton programme and additional 16 projects where approved. The companies that received Magneton support come from different high tech fields, such as communication, bio-tech, software, new materials. An evaluation of Magneton found that most of the projects approved and funded by Magneton were considered successful by the industrial partner, and were highly effective in enabling the process of proving the feasibility of new technologies – and therefore in affecting the growth potential of the companies.

Matimop: The Israeli centre for R&D "Matimop" is an executive agency of the OCS that generates and implements international, cooperative, industrial R&D programmes between Israeli and foreign enterprises. Matimop implements international technological cooperation programmes with international agencies, bodies and organisations; initiates meetings between local and foreign companies with mutual technological interests and assists international, joint R&D projects in finding funds. Matimop is also the coordinator of the Eureka programme in Israel. Israel is a full member of Eureka, and during 2010 served as the president of the programme.

ISERD is an inter-ministerial directorate, established by the MOIT, and other public authorities to promote joint Israeli-EU R&D ventures within the EU's R&D Framework Programme.

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This innovation policy summary has been authored by Reut Marciano, Jerusalem Institute for Israel Studies, Jerusalem, Israel. Sources:

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6 Findings about company (non-)growth from the IW Future Panel

6.1 Methodological explanations

About the IW Future Panel

A specific set of questions about reasons for growth and non-growth of SMEs, commissioned by the INNO-Grips, was included in the 16th wave of the IW-Zukunftspanel (IW Future Panel) of IW Consult, the consulting branch of the Institut der deutschen Wirtschaft (IW, Institute for the German Economy).[164] The IW Future Panel is a survey of German enterprises which was established in 2005 with the objective of identifying trends and challenges of structural changes of the economy. The surveys include companies participating in previous waves, companies not responding in the previous wave but willing to partake in the following one, and new companies to compensate for drop-outs. Only enterprises from manufacturing and manufacturing-related services (such as wholesale, transport services, research and development, consulting) are included in the survey. Companies in the IW Future Panel are more innovative and more export-oriented than the average of German companies. The 16th wave was conducted in March and April 2011 in the form of an online survey.

Breakdowns

In all surveys of the IW Future Panel the enterprises are asked about their growth by employment and turnover; information about their size is also available. This allows identifying those companies with a growth rate of 20% or more in each of the previous three years and a size of more than nine employees at the beginning of the period, classifying them as high-growth enterprises as defined by the OECD (see section 2.1). For 1,510 enterprises this information about their growth is available. 59 enterprises (4%) were found to having performed high growth in the past three years, equalling the Eurobarometer findings (see section 3.2). 28 of these 59 companies had more than ten employees and thus fulfilled the OECD criteria for high-growth enterprises; 26 of them were SMEs. Of the 59 high-growth enterprises, 71% stated to have introduced new products, services or processes in the past two years and can thus be classified as “innovative”. 52% of the 59 high-growth enterprises are exporting.

The survey also provides the age of the enterprises, allowing to identify “gazelles”, i.e. high-growth companies that are not older than five years. However, the number of gazelles was only 22, going down to 9 when excluding micro companies with fewer than ten employees and large companies with more than 250 employees. In the following, survey findings presented for high-growth SMEs and “gazelles” include all high-growth companies irrespective of their size because otherwise the number of cases would be too small to allow for reasonable interpretations of the findings.

981 companies said they had not grown in the past three years or even declined.

[164] IW Consult is a project partner of the INNO-Grips.

Questions

Those enterprises performing high growth in the past three years were asked about the reasons for this growth. They were offered eight pre-formulated items and for each the possible answers "important reason for growth", "less important reason for growth" and "no reason for growth". The items were formulated towards the objectives and subjects of this Policy Brief. There was also a ninth, open option allowing the enterprises to fill in further reasons as appropriate. Those enterprises stating that they did not perform growth in the past three years were asked about the reasons for not growing. They were also offered eight items with similar subjects as the growing companies as well as one open question for further reasons of non-growth. The complete sets of questions are included in Annex 2.

Since this survey is restricted to German enterprises, it does not necessarily allow conclusions for other countries to the extent that specific national circumstances are concerned. This may in particular apply to the questions about the relevance of the business cycle and access to finance. However, answers to the other questions, e.g. about the importance of target markets, management, coaching, innovativeness and export orientation, may provide insights that potentially also apply to other countries.

6.2 Main findings

Findings for high-growth enterprises

The single most important reason for high growth quoted was that management actually targeted growth (see Exhibit 6-1). 71% of the high-growth companies stated that this was an important reason for growth. Further important reasons were that "the company supplies to a growing market" (49%) and "successful introduction of new products or services" (43%). Taking these three items together, one can conclude that company growth is mainly the consequence of entrepreneurs taking active advantage of business opportunities – growth-oriented entrepreneurs targeting growing markets with new products and services. Recent third-party research findings confirm this conclusion.[165] It also indicates that growth is primarily an issue internal to the company, not externally related to issues like the business cycle, consulting or public promotion.

Other items with outstandingly high percentages may confirm this interpretation of the data. 83% of the high-growth companies said that "good coaching by external consultants" was no reason for growth. This finding possibly indicates that the high-growth companies relied on their own competences in growing – it is not known whether the company had actually made use of coaching services, and – if so – whether the company was satisfied with it. 59% of the high-growth companies stated that "unproblematic access to growth finance" was no reason for growth. This may mean that access to growth finance was actually difficult; it may also mean that the company did not have to acquire external growth finance.[166] Further 52% of high-growth companies said that "successful expansion of supply to international markets" was no reason for growth; this

[165] See Brettel/Engelen/Voll (2010) who found that management style significantly impacts company performance; and Yim (2008) who found that rapid growth start-ups owe their superior performance to firm-specific innovation ability; see also Andersson/Tell (2009).

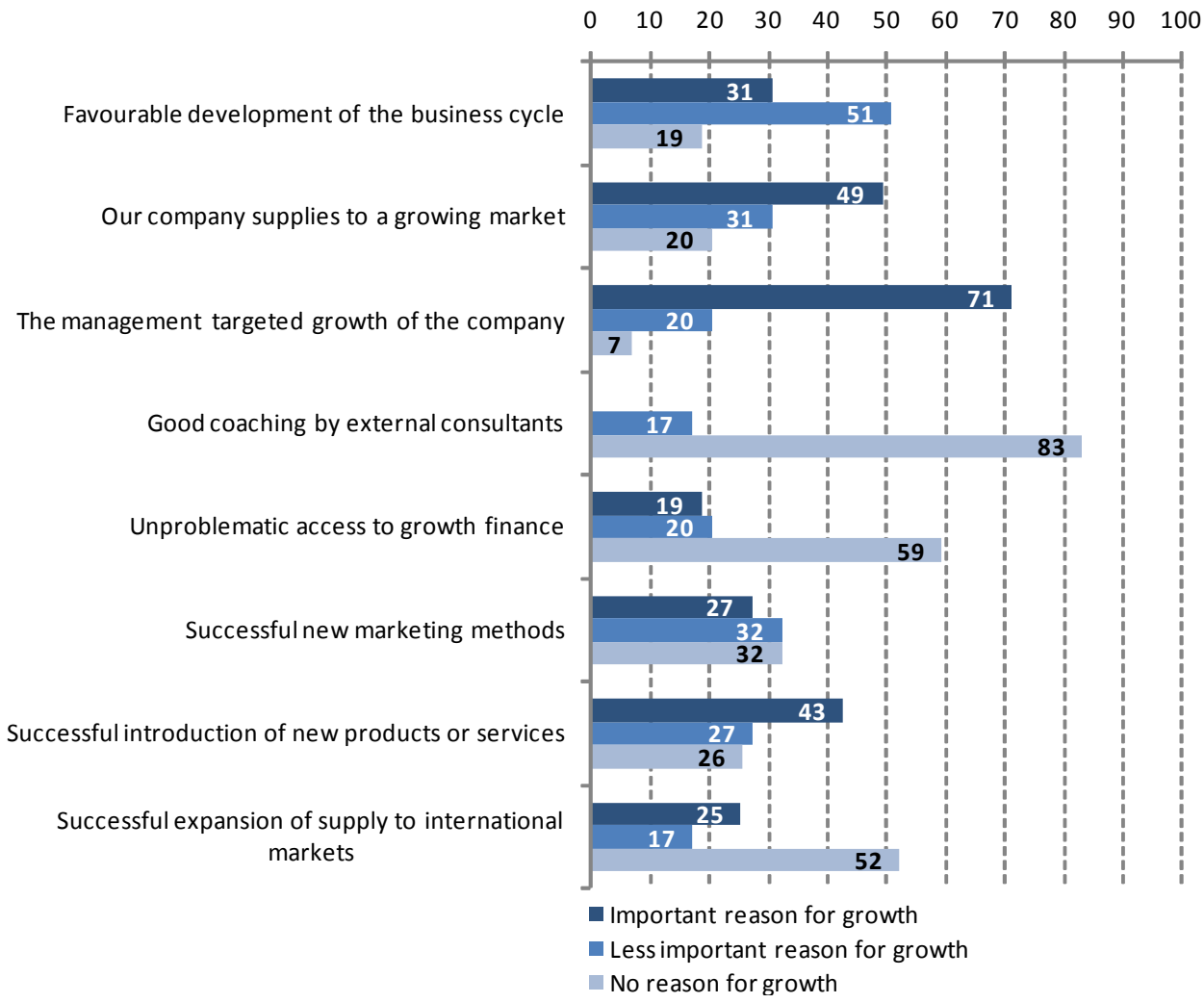
[166] Particularly for this item it would have been insightful to further differentiate the question which was not possible due to restrictions of interview time.

share is identical with the percentage of high-growth companies that do already export. Hence, considering those companies that did not export before, expansion to international markets was an important reason for growth for about half of them.

Unspectacular results were found for "successful new marketing methods". 27% of companies stated that this was an important reason for growth, 32% said it was a less important reason. One may conclude that marketing innovation plays a minor but nevertheless relevant role.

There was a variety of responses to the open-ended question about reasons for growth, differentiating some of the pre-formulated options and reflecting sectoral specificities and specific business incidents: e.g. acquisition quality (mentioned three times), political framework conditions, niche market (mentioned twice), word of mouth recommendation, employees, controlling, successful innovation marketing, extended distribution opportunities after being acquired by a trust (mentioned twice), withdrawal of competitors, severe winters.[167]

Exhibit 6-1: Reasons for high growth of companies in the IW Future Panel



N = 59 companies stating employment or turnover growth of 20% or more in each of the previous three years

Source: IW Zukunftspanel 2011, presentation by empirica

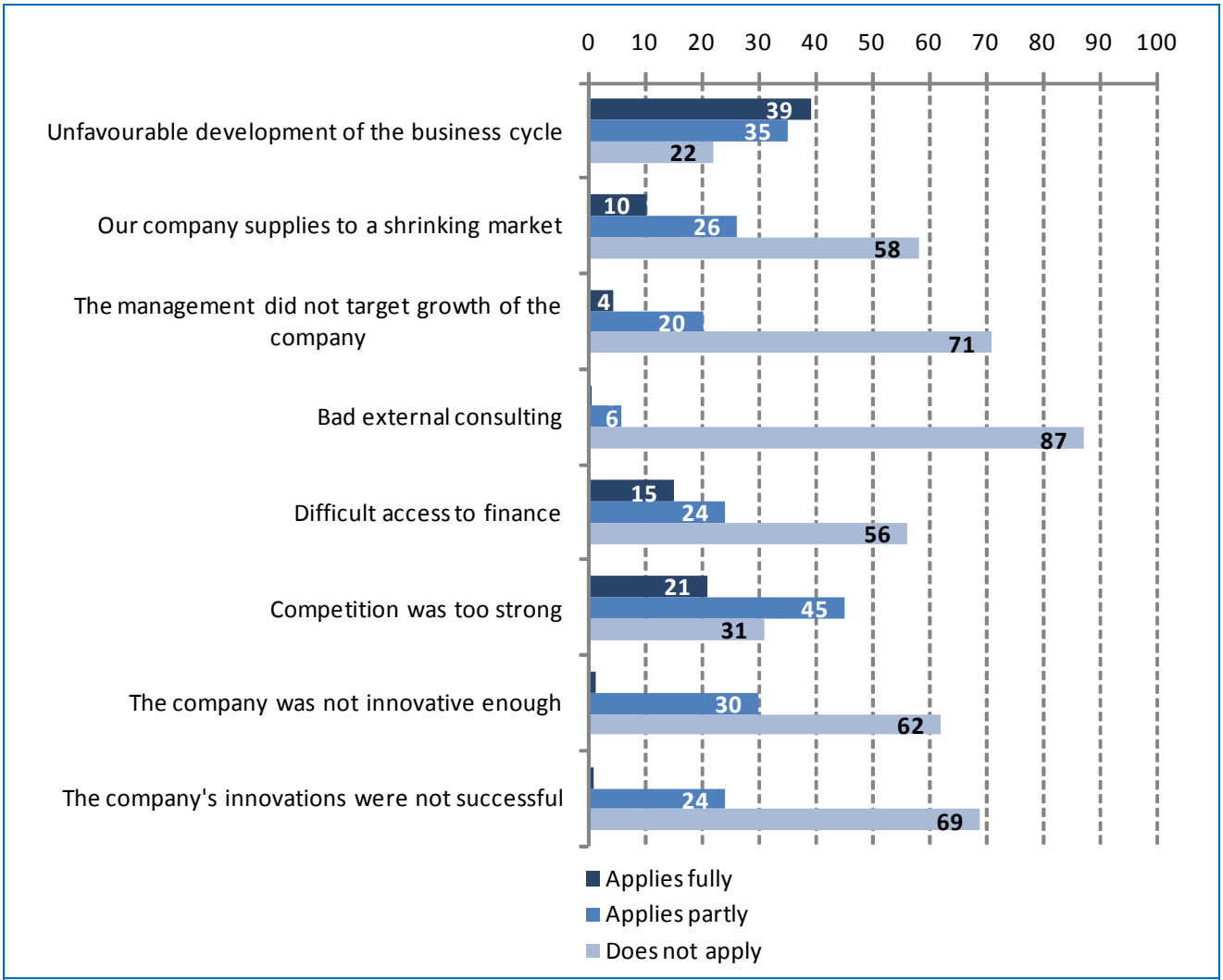
[167] Answers from growing companies, not only from high-growth SMEs.

The findings for high-growth enterprises in total are similar to the findings for high-growth enterprises with 10-250 employees, i.e. meeting the OECD's definition criteria for high-growth SMEs. For high-growth SMEs, management targeting growth and unproblematic access to finance were somewhat more important reasons than for the total of high-growth companies, while product or service innovation was somewhat less important (without Exhibit).

Findings for non-growth enterprises

The most important reason for non-growth stated by the non-growing enterprises was "unfavourable development of the business cycle". This reason was stated as applying fully by 39%; further 35% said that this was partly a reason. Another important reason was apparently that "competition was too strong"; 21% of the companies said that this applied fully, 45% partly. Two other options were somewhat relevant: Access to finance was difficult for 39% (15% "applies fully", 24% "applies partly"), and "our company supplies to a shrinking market" applied fully to 10% and partly to 26%. The other possible reasons that were suggested in the survey were rather not relevant: 62%-80% of the companies said they would not apply (see Exhibit 6-2).

Exhibit 6-2: Reasons for non-growth of companies in the IW Future Panel



N = 1,451companies stating employment or turnover growth of less than 20% or no growth or even decline in the previous three years. Differences to 100%: don't know / no answer.

Source: IW Zukunftspanel 2011, presentation by empirica

These findings can be read in different ways. One interpretation is that the companies are unable to realise or accept the real reasons for non-growth. Another explanation is that the pre-formulated items did not adequately cover the reasons for non-growth. A further interpretation is that the results adequately reflect the reasons for non-growth and their diversity: For quite some companies an unfavourable development of the business cycle was the main reason, for others it was strong competition, for a few it was difficult access to finance, a shrinking market, not targeted growth, lack of innovativeness or unsuccessful innovation.

The variety of answers to the open-ended question about reasons for non-growth was even larger than for growth, many of them specifying "unfavourable development of the business cycle" and "strong competition". Reasons that were mentioned several times include political framework conditions such as legislative changes, taxation, and additional regulation (six times), competition from "low wage" firms or "low wage countries" (mentioned five times), "lost customers" (four times), "financial crisis" and "automobile market crisis" (four times), "raw material costs" (three times), "deliberate drawback" or "consolidation" (three times) and "difficult infrastructure" (twice). Specific items include e.g. management change, lack of skilled workers, too low distribution of risk, lack of experience with export markets.

Findings for "gazelles"

Results for "gazelles" indicate particularities of newly founded high-growth enterprises. There are several differences to the results for the total of high-growth enterprises (see Exhibit 6-2):[168]

The most important differences include:

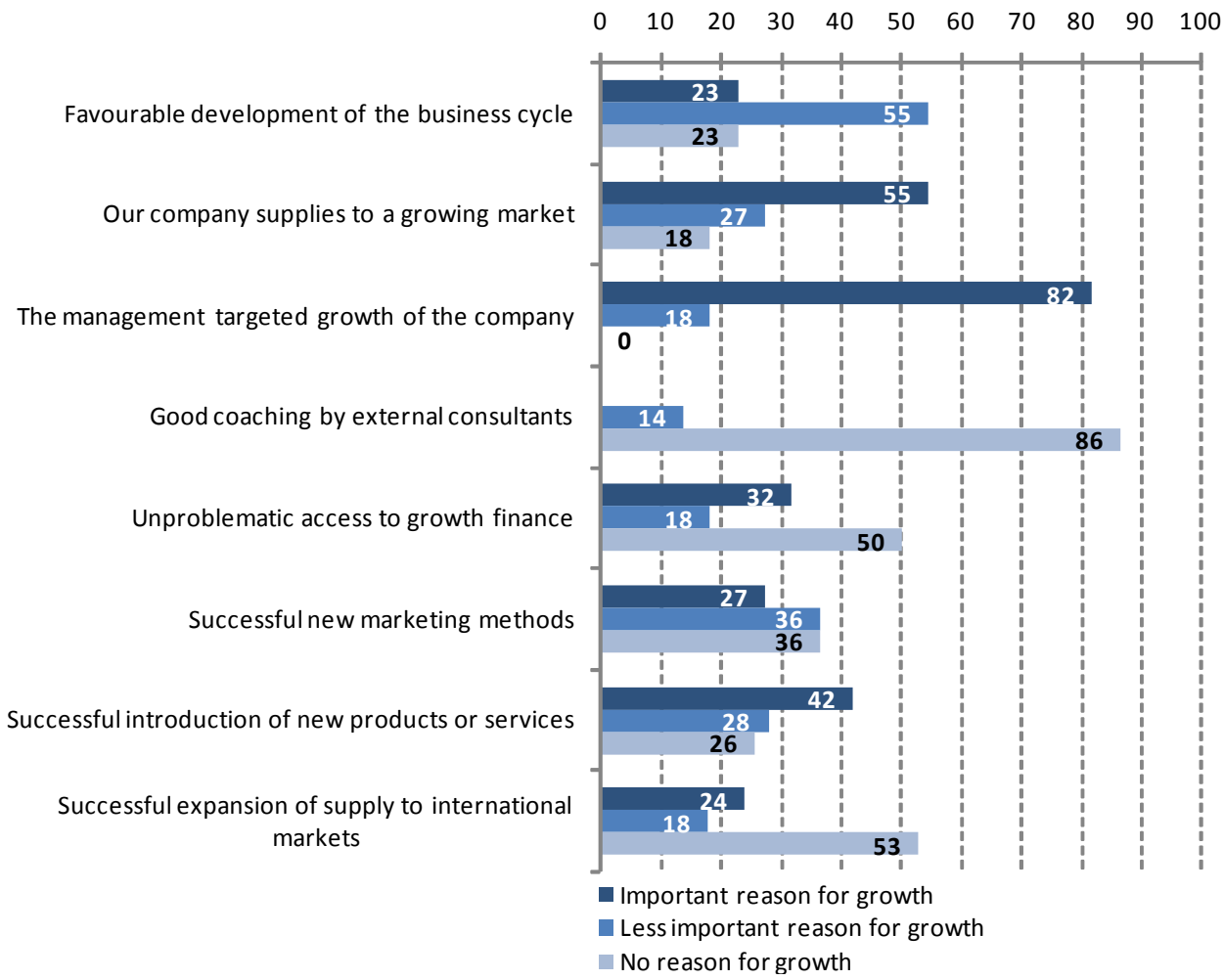
- The assessment that "the management targeted growth of the company" applied to 82% of the gazelles, which is 11 percentage points more than for all high-growth firms (71%).
- "Our company supplies to a growing market" was stated by 55% of gazelles, six percentage points more than for all high-growth firms (49%).
- Only 23% of gazelles saw a "favourable development of the business cycle" as an important reason for growth, in contrast to 31% of all high-growth firms.
- Unproblematic access to growth finance was apparently much more important for gazelles' growth (32%) than for growth of all high-growth firms (19%).

Coaching apparently did not play a role even for young high-growth firms; 86% said that good coaching was no reason for growth, which is similar to the value for all high-growth companies (83%). Similar values for both groups were also found for new marketing methods, new products or services and export orientation.

All in all, entrepreneurs pursuing business opportunities appear to be an even more pronounced reason for gazelle growth than for growth of older high-growth enterprises.

[168] Differences should be considered cautiously because they might be within the statistical range of variation.

Exhibit 6-3: Reasons for growth of young high-growth enterprises ("gazelles") in the IW Future Panel



N = 22 companies not older than five years stating employment or turnover growth of more than 20% in each of the previous three years

Source: IW Zukunftspanel 2011, presentation by empirica

7 Policy implications for fostering high-growth SMEs

7.1 Difficulties of policy formulation

Challenges of policy support for high-growth SMEs

Drawing conclusions from research for this Policy Brief, policy makers first of all face several challenges related to possible political support of high-growth SMEs: overall lack of knowledge and evidence, a need for specific policy design, possible government failure, dilemmas related to justification and resource allocation, limitations with regard to quality and speed, and the co-occurrence of high growth with high failure.

Lack of empirical evidence: There is a lack of substantial evaluation studies of policies for high-growth SMEs. It is thus difficult to assess the impact and limitations of such policies. For example, one does not know whether publicly sponsored direct support for promising innovative SMEs – see examples in section 4.1.2 of this report – are more effective and efficient than indirectly supporting growth-oriented entrepreneurship training programmes. Even if there were evaluation studies, it could be questionable to adopt policies if these were successful in different cultural contexts. Lessons from East Asia may be helpful, but it is "challenging to factor out the cultural issues that are so much a part of corporations in these regions."[169] Thus there remains uncertainty about how best to design policies for high-growth SMEs. As Veugelers (2009) put it: "We still do not know enough to support evidence-based policy design for young radical innovators in the EU. Are young innovative companies indeed the most promising firms in terms of radical innovations in the EU? What obstructions do these companies face? Can policy intervention make a difference?"[170]

Need for specific design: The dynamic character of high-growth enterprises suggests that static policies – i.e. policies aimed at all SMEs, treating them the same whether they are growing or not – will not work to facilitate growth for enterprises which grow quickly: "In fact, such policies may put a break on growth, particularly on the fastest growing and most successful firms, because static policies fail to address the issue of growth."[171]

Possible government failure: As there is an overall lack of knowledge and evidence about policies in support of high-growth SMEs, and as there is a need for specific design of such policies, there is an increased risk of government failure. For example, "the evidence from the German CIS sample confirms this risk of government failure. (…) In fact, subsidised YICs do worse than non-subsidised YICs in terms of new/improved products." [172] Brännbak/Carsrud argue that because of "perceptual differences" between entrepreneurs and policy makers, "ventures are not created and obviously the keenly sought high growth ventures are not realised either".[173]

Justification dilemma: The crucial argument against direct and selective promotion of high-growth SMEs is: Why promote those SMEs that are successful anyway? Even if there is evidence that fast-growing firms con-

[169] Statement from Allan Martel, advisory board member for this Policy Brief.

[170] Veugelers (2009), p. 3.

[171] See Rigby et al. (2009), p. 8.

[172] Veugelers (2009, p. 5.

[173] See Brännbak/Carsrud (2008), p. 58.

tribute the bulk of new jobs in a national economy, it would be a waste of resources to foster specifically those companies that would grow anyway.

Resource allocation dilemma with general SME policy: Is it worth while to promote SMEs in general as well as high-growth SMEs in special programmes in parallel? Or is this inefficient; are there trade-offs? How should resources be split between general SME policies and policies for high-growth SMEs?

Quality limitations: A general question about policies for high-growth innovative SMEs is that it may be very hard to attract the attention of these firms and to keep their interest in the face of rapid internal growth. It is not certain that governments can supply market intelligence at a level of quality and detail to support the strategic planning of high-growth potential SMEs.[174] This applies particularly when considering that enterprises' strategies may have to change in the face of changing economic environments.[175]

Speed limitations: Policies for high-growth SMEs targeting certain companies would need to react very quickly because high-growth companies depend on quick decisions. "If government looked at support as an investment and used risk-reward criteria for approvals and if they can squeeze the entire process from application to approval to within one month, then there might be a role."[176]

High growth co-occurs with high failure: Even if policy achieved an increase of the numbers of high-growth enterprises, the downside may be an equal increase of high failure.[177] Is Europe ready for this type of business dynamism as in the US? In recent years there were ample examples that even in new, high-growth markets, the promising high-growth enterprises of today can be the big losers of tomorrow.

In conclusion of these dilemmas, it appears to be advisable for policy makers to not seek to pick winners and foster them specifically but rather to prepare a fertile breeding ground for winners to pick themselves. The following sub-sections put in more concrete terms what this may imply.

7.2 The European Union's role in fostering high-growth SMEs

General considerations

When defining its role in fostering high-growth innovative SMEs, the European Commission needs to avoid negative effects on policies in Member States. In particular, the EC needs to avoid substitution effects – it must not crowd out existing or potential activities in Member States (see section 3.3). There are two key arguments in favour of decentralised allocation of decision rights: subsidiarity and international competition.[178] The **subsidiarity** principle stipulates that central authorities should have a subsidiary function, performing

[174] Based on a statement from Allan Martel, member of the advisory board of the study for this Policy Brief. See also Achtenhagen/Naldi/Melin (2010) who found that practitioners perceive growth as a complex phenomenon, with a strong emphasis on internal development, while scholars have a more simple concept.

[175] See Parker/Storey/Witteloostuijn (2005).

[176] Statement from Allan Martel, member of the advisory board for this Policy Brief.

[177] See Bravo-Biosca (2010).

[178] See the arguments about state failure in the theoretical analysis of ICT-relation industrial policy in European Commission (2009), p. 45-46 in particular.

only those tasks which cannot be performed effectively at lower levels. This principle seeks to safeguard the preferences of the citizens and firms affected in the national states and regions. Following the principle of subsidiarity, every political issue that can be well addressed by Member States or by regions should be addressed by them and not by the European Commission. **International competition**: In general, competition can be interpreted as a discovery process, meaning that competing companies search for solutions to best please the needs of consumers – which leads to solutions which were unknown at the outset and which could thus not be implemented at the outset by a central agency. Similarly, the relationship between nations can be interpreted as a beneficial competition to search for most effective policy solutions. These may eventually be implemented in other nations, too.

In the following, more specific suggestions for the European Commission's role in fostering high-growth SMEs are formulated, structured by the policy themes as in section 4.2: entrepreneurship, access to finance, and internationalisation.

Enhanced entrepreneurship policies

Establishing a network of certified coaches across Europe

There have been several initiatives to establish professional coaching networks for SMEs in Europe, also by the European Commission (see section 4.2.1). However, many SMEs do not take advantage of coaching opportunities, many may not know about the benefits of coaching or where to find reliable high-quality coaching, and there is yet no appropriate infrastructure to encourage the replication of innovation-focused coaching networks throughout EU Member States. Building on past and existing activities, the European Commission could work towards establishing such a coaching infrastructure, targeting high-growth innovative SMEs. A special certificate for high-growth coaching could be introduced. These suggestions do not necessarily imply that coaching services as such would need to be subsidised.

Promoting serial entrepreneurs

Entrepreneurship policies may not have to consider the question how to identify SMEs with high growth potential. Findings from an enterprise survey in the context of this Policy Brief (see Section 6.2) suggest that company growth largely depends on the management's willingness to grow and to pursue market opportunities. Thus, entrepreneurship policy may, more basically, have to seek to ensure that there are entrepreneurs who are able to generate companies and take them through the troubled waters from idea to the market. Here the question of serial entrepreneurs comes in. They may deserve much more attention, and their importance may not yet be fully understood by policy makers.[179] In order to foster the emergence and proliferation of serial entrepreneurship, policy can use various instruments, and the European Commission can take a role. First, **modifying bankruptcy law** in order to allow failed entrepreneurs to learn from failure and start again. The European Commission could produce model legislation and contribute to an enhanced understanding of the importance of serial entrepreneurs in Member States. Second, s**upporting entrepreneurial education** at universities, schools and other educational institutions. The European Commission could disseminate good practices in entrepreneurial education among Member States.

[179] An issue addressed by US innovation policy advisor Burton Lee in an interview for this Policy Brief.

Enhanced access to finance

Enhancing the European venture capital market

The European venture capital market is highly fragmented and lacking intermediaries (see section 4.2.2). Opportunities for companies with high growth aspirations to find venture investors are thus suboptimal. In order to overcome these shortcomings, the European Commission may be well advised to continue and strengthen its efforts to establish a Single European Market for VC – which is a natural task of the European Commission. This would mean to improve the tax and regulatory environment for VC and remove impediments to attract international institutional investors to VC funds, as stipulated in the Innovation Union Flagship Initiative.[180] The European Commission could initiate related European-wide discussions, expert groups and legislation.[181]

Linking research funding and venture capital

Case studies conducted for this report indicate that governmental policies may support access to finance for high growth SMEs indirectly. In Canada, SMEs who accessed funding from the Industrial Research Assistance Program (IRAP) before working with venture capitalists experienced significantly higher growth than VC-funded firms with no IRAP funding background.[182] Such experiences may be relevant for the European Commission's plans to introduce a European programme for Small Business Innovation Research.

Bank loans to be considered as a source of company growth

Bank loans are the preferred source of growth finance for European companies, and only a small percentage seeks private equity (see section 4.2.2). This relativises the importance of equity finance for company growth – a fact which policy makers may have to consider. However, the importance of a small share of high-growth firms for employment creation also needs to be considered.

Considering country differences

The level of difficulties in acquiring finance differs starkly between European countries (see section 4.2.2). Policy makers should thus apply different approaches to different countries, considering their specific situation and problems.

Improving the data base for company finance

A further issue is the data base on which policies to enhance finance can build. Access to finance for entrepreneurs is an area with scarce comparable data across countries (see section 4.2.2). In order to ensure evidence-based policies for high-growth SMEs, the European Commission could seek to further improve the development of related databases.

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[180] See European Commission (2010), p. 14-15; see also EVCA (2010), p. 13.

[181] The EC launched a "consultation on a new European regime for venture capital" in June 2011.

[182] Statement from Allan Martel, member of the advisory board for this Policy Brief.

Enhanced policies for SMEs' internationalisation

Further removing trade barriers in the Internal Market

There is evidence that high growth of innovative SMEs is very often based on internationalisation, i.e. selling to and sourcing from international markets and cooperating with international partners (see sections 4.2.3 and also 6.2). Since most cross-border trade of EU-based companies takes place within the EU, further removing trade barriers in the Internal Market may facilitate SMEs' internationalisation. This is a "natural" policy activity of the European Commission.

A suggested enhancement of the Enterprise Europe Network

The Enterprise Europe Network (EEN) provides opportunities for SMEs to enter into joint development arrangements with appropriate partners across Europe, which could potentially foster their growth (see section 4.2.3).[183] However, the lack of a semantic search capability makes reference to this network difficult for SMEs. Furthermore the EEN also offers cooperation opportunities with Technology Offers and Technology Requests. Those are not Framework Programme (FP) cooperation but alternative or complementary opportunities for SMEs and – appropriately linked to FP topics – can be a way to complete FP consortia with specific expertise. Here again SMEs have to scan the EEN technology database or to subscribe for the EEN technology e-alert system by using a keyword based profile. This is not a very user friendly solution and does not favour increased SME participation in FP7.

A semantic based search would allow an SME to describe the project idea or technology of interest by free text. It could be even the content of its own webpage or any other document describing the activity of the company or even the technologies needed to innovate. The opportunity finder would then return a list of open call topics – not just open calls – and technologies from the EEN database ranked by relevance. This semantic based search concept would offer to the SME the opportunity to conduct a quick scan of relevant topics, short descriptions and related EEN technologies in a very efficient way. The access to meta-data would be straightforward. It would empower the user to discover new knowledge and open opportunities without having to process extensive data and information from various sources. In this way, the EEN could contribute more to SME growth and possibly high growth.

Improving the understanding of combined innovation and internationalisation policies

The linking of policies for innovation and internationalisation is fairly recent (see section 4.2.3), but there is no consistent overview of this policy link. Hence a 2010 INNO-Grips study about "barriers to internationalisation and growth of Europe's innovative companies" suggests "to conduct a systematic EU-wide review of national export promotion programmes and innovation support measures" which could also "consider the interactions and complementarities between national and EU level instruments". This review could pay particular attention to how supportive the link between innovation and internationalisation is for high-growth of SMEs. Case studies conducted for this Policy Brief indicate a trend towards combining policies in support of high-growth SMEs with innovation and internationalisation (see sections 4.2.3 and 5).

[183] This paragraph is largely based on statements and formulations from Allan Martel, study guide for this Policy Brief.

7.3 Balancing general SME policies with high-growth SME policies

Towards co-existence of policies for high-growth SMEs and general SMEs

If policy makers decide to promote high-growth SMEs, they need to consider constraints of public budgets, and they need to decide how to allocate limited budgets towards promoting SMEs in general and high-growth SMEs in particular. Should general SME policy be largely abandoned in order to focus on high-growth SMEs? Considering empirical evidence that new high-growth SMEs create a large share of new jobs (see section 3.4), this conclusion may be tempting. However, there are several arguments against:

- Directing SME policies largely towards growth and high growth may induce unsustainable growth and high failure rates, even of companies that may have well survived without growing.[184]
- Even if the majority of SMEs do not create new jobs, they still account for a significant share of employment. Abandoning general SME policies in favour of high-potential SMEs could harm established and stable SMEs.[185]
- Theoretical considerations of market failure do not only apply to innovative high-growth SMEs but also to other companies (see section 3.5).
- A basic welfare analysis of policies for high-growth SMEs and general SMEs suggests that both types should be applied even if one type yields larger returns than the other (see section 4.4).

The conclusion should be that policies for high-growth SMEs and general SMEs should co-exist. Since policies for high-growth SMEs are fairly new on the agenda, for many countries this means to consider introducing policies for high-growth SMEs. For others it may mean extending or refining their high-growth policies (see the examples in section 4.1.2). Fine-tuning policies for general and high-growth SMEs is necessary because the rationales behind both types are different and sometimes conflicting (see section 3.4).

Above all, SME policies need to be reviewed to check whether they include incentives to stay small.[186] In any case, policy makers need to keep (or make) their SME policy set transparent.[187] Introducing further specific instruments to support high growth of SMEs should not make the SME support landscapes in Europe even more complex which would counteract helpfulness of such policies.

Balancing instruments of policies for high-growth SMEs

Balancing should not only apply to policies for high-growth SMEs versus general SMEs, but also to certain fields of possible policies in support of high-growth SMEs. The available literature favours broad, systematic

[184] See the related statement by Philipp Koellinger at the workshop related to this Policy Brief, INNO-Grips (2011), p.6.

[185] A related statement was contributed by Lux Hendricks from UEAPME at the workshop related to this Policy Brief, see INNO-Grips (2011).

[186] See the Korean example in section 5.1; see also Autio et al. (2007), p. 80.

[187] A participant of the workshop related to this Policy Brief said that an account of all SME policies in his country revealed that there are way more than 200 measures.

approaches rather than focusing certain elements.[188] As Autio et al (2007) put it: "Comprehensive entrepreneurship policy (..) should (..) be multi-layered. Policies addressing one level alone may not lead to successive outcomes, if other layers are neglected. Measures aimed at providing funding for high-growth new ventures may find little opportunity to fund growth if the right individuals are not persuaded to make the entrepreneurial choice. (...) Only a balanced palette of policy initiatives, tailored to suit the national economic and social context, is likely to make a difference for high-growth entrepreneurship."

Balancing SME policies with economic policies at large

The question of balancing policies for general and high-growth SMEs may have to be asked even broader: How should SME policies be balanced with enterprise policies at large? Economists suggest that policy should not principally favour SMEs. Which type of enterprise generates most innovations and growth depends on many factors, e.g. market size, stage of market development, industry, and many more. Since these factors and their interplay are difficult to monitor, policies favouring specific types of companies are prone to producing more economic damage than benefit.[189]

7.4 Concluding overview

Ten policy implications

Research for this Policy Brief leads to the following ten policy implications. Items 1-5 are on a general level and apply to policy making on European, national or even regional level; item 6 about legal framework conditions applies mainly to national policy but may partly be influenced by European Directives, Recommendations and Communications; items 7-10 take a European perspective and require co-operation between European-level policy making with Member States.

1. Policies in support of high-growth SMEs worthwhile: Since there are empirical findings supporting the importance of high-growth SMEs for employment in developed national economies, it appears to be worthwhile for EU policy makers to support high growth of enterprises in order to leverage the positive impact of this type of enterprises. It needs to be stated clear, however, that the positive impacts of high-growth entrepreneurship in themselves are no ground for political activity; policies should only be the result of market failures.[190]

2. Seeking sustainable (high) growth, not just growth: As high growth may lead to high failure, and as high growth may require a preceding period of low growth ensuring high profitability, the policy objective should be to generate sustainable growth.[191] Policies should not set incentives for simply growing or growing strongly. Sustainable growth may be invisible to the public but it may create "hidden champions" and consid-

[188] See for example Murray/Hyytinen/Maula (2009), p. 165, and their conclusions on pp. 176-187. See also the statements from Jan Dexel at the workshop related to this Policy Brief in INNO-Grips (2011), p. 6.

[189] Statement supported by Philipp Koellinger, member of the advisory board for this Policy Brief.

[190] See Minniti (2008), p. 787, and Audretsch (2004).

[191] See in particular Bianchi/Winch (2009).

erable employment and welfare. Furthermore, governments should also not aspire to eliminate new venture failures.[192]

3. Policies for general SMEs and for high-growth SMEs may coexist: Arguments from market failure theory on which policies for innovative high-growth SMEs can be based also apply to non-growing, larger and non-innovative enterprises. While the arguments may be particularly strong for high-growth SMEs, they do not provide ground to terminate policies for general SMEs. Furthermore, a theoretical welfare model assuming that both types of policy generate positive returns for society suggests that policies for general SMEs and for high-growth SMEs should co-exist. Expert statements received on researching for this Policy Brief also support this view.

4. Take broader approach to fostering high growth of SMEs: Since substantial evaluations of policies for high-growth SMEs are apparently missing so far, it remains unclear what instruments of policies for innovative high-growth SMEs are particularly successful or unsuccessful. However, existing evaluations and expert statements collected for this Policy Brief suggest that such policies should take a broader approach, not exclusively focusing specific aspects (e.g. finance).

5. No focus on specific industries: Since high-growth enterprises can be found in any industry and since business ecosystems, which are important for companies' sustainability and growth, often cut across different industries, policies in support of high-growth SMEs should not necessarily target specific industries.

6. Get framework conditions right rather than try to pick winners: There are ample examples of framework conditions unfavourable for high growth of SMEs. They may for example be related to the research and education system, investment regulation, start-up regulation, market entry barriers, labour law, bankruptcy law, taxation, and also to SME policies rewarding to stay small. Hence, rather than trying to "pick winners", policy makers should first of all set framework conditions right in order to prepare a fertile ground for winners to pick themselves.[193] Second, policies may be designed for "hampered winners", i.e. those that need support to grow substantially, addressing market failures – see implications 7-9.

7. Specific roles of the European Commission: Theoretical and empirical arguments weighing centralisation and subsidiarity against each other suggest that the European Commission can take specific roles in supporting high-growth SMEs. When an issue involves a European dimension which cannot be solved by single Member States, there are grounds for the European Commission to become active. A typical example is European Single Markets, e.g. for venture capital.

8. Enhance coaching opportunities: Qualified coaching may help grow SMEs and cross the "chasm" between pilot markets and mass markets. Since many SMEs do not take advantage of coaching opportunities, an infrastructure to encourage the replication of existing successful coaching networks throughout EU Member States could be set up.

[192] See Minniti (2008), p. 788, and Davidsson/Steffens/Fitzsimmons (2008).

[193] See also Minniti (2008), p. 787 and 788.

9. Improve access to growth finance: Since access to finance is a problem for many growth-oriented SMEs in Europe, improving the access to growth finance should be a priority for policy makers seeking to support high-growth SMEs. From a European perspective, this means e.g. to realise a single market for VC.

10. Improve internationalisation opportunities: Since high growth requires tapping larger markets, and national markets may be too small, internationalisation of SMEs should thus be facilitated. This may include further work towards single markets in Europe as well as enhancing the EC's Enterprise Europe Network.

A tabular summary in the "innovation and growth triangle"

The "innovation and growth triangle" framework (see section 2.3) can be used to summarise policies for which the EC may take particular care (as opposed to policies on national and regional level), and policies for high-growth innovative SMEs (as opposed to policies for SMEs in general). Exhibit 6-1 provides a related overview of policy distinctions. Some of the indicted policies go beyond the focus of this Policy Brief, indicating the broad spectrum of possible policy areas.

Exhibit 7-1: Policy distinctions: EU vs. national policy – general SME policy vs. high-growth SME policy

Determinants	Possible specificities of EU policies for high-growth SMEs versus national/regional policy	Possible specificities of policies for high-growth SMEs versus general SME policy
Resources (input)		
Knowledge		
Technological knowledge	Formation of European technology expertise and clusters (e.g. European Technology Institute, European Research Area) International large-scale research (e.g. European Technology Platforms)	Ensure high-level technological education, incl. intellectual property rights competence Ensure availability of high-skilled engineers/scientists Ensure high-quality R&D and funding Ensure effective IPR protection
Business knowledge	Build infrastructure for certified European high-growth coaching European exchange programmes for students with entrepreneurial ambitions	Entrepreneurial training at tertiary and secondary level and in further education Specific high-growth business services and professional coaching
Capital		
Finance	Develop single European market for VC European Investment Bank instruments for high growth of SMEs	Ensure effective growth capital provision (VC funds, corporate VC, business angels)
Real estate	Further develop European Business and Innovation Centre Network	Develop growth-oriented science parks and incubators
Incentives (motivation)		
Income		
Direct	National regulation – no specific role for EU except opinion leadership	Design SME policies rewarding growth, not punishing for it Ensure conducive sideline income regulation of university researchers
Indirect	National regulation – no specific role for EU except opinion leadership	Ensure income taxation and bankruptcy regulation conducive to growth orientation
Social recognition		
Recognition from peers	Publish examples of successful EU entrepreneurial scientists (role models) Support inter-European exchange of entrepreneurial scientists	Foster recognition of entrepreneurial activity of university scientists Publish examples of high-growth entrepreneurs
Recognition from society	Publish examples of successful EU entrepreneurs (role models)	Publish examples of successful high-growth SMEs
Markets (output)		
New business regulation	National regulation – no specific role for EU except opinion leadership	Possibly specific labour law rules for new high-growth companies
Trade conditions	Establish common markets and support international firm contacts (e.g. EEN) European and world-wide standardisation and standards adoption initiatives	Establish common markets to facilitate customer access beyond national boundaries and support international firm contacts (e.g. EEN)
Framework conditions		
Infrastructure		
Physical infrastructure	Focus on European dimension of physical infrastructure	Ensure broadband internet access
Institutions for security, health, education, legal system	Largely national regulation – no specific role for EU except opinion leadership	Ensure provisions in labour law and bankruptcy law conducive for high growth
Economic stability		
Economic stability and growth	European monetary policy	(No difference between general SME policies and high-growth SME policies)
Right timing		
Right timing	(No specific issue for EU.)	Swift reaction to high-growth SMEs' needs

Source: Compilation by empirica

Resources

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Annex 1: Journal articles on high-growth SMEs 2008-2010

The study team scanned the following entrepreneurship journals and other journals for articles about high-growth companies.

Top level entrepreneurship journals	Public policy journals
1 Journal of Business Venturing 2 Entrepreneurship Theory & Practice 3 Small Business Economics 4 Journal of Small Business Management	1 Cato 2 Journal of Public Policy and Management
Level 2 entrepreneurship journals	**Top-level general journals**
1 International Journal of Entrepreneurial Venturing 2 Journal of Small Business and Entrepreneurship 3 International Journal of Entrepreneurship and Innovation Management 4 International Small Business Journal 5 Journal of Developmental Entrepreneurship 6 Venture Capital 7 International Journal of Entrepreneurship 8 Journal of Enterprising Culture 9 Small Business and Enterprise Development	1 Harvard Business Review 2 California Management Review 3 Sloan Management Review 4 Long Range Planning 5 Growth and Change

Exhibit A-1 lists articles in top level or level 2 scientific entrepreneurship journals dealing with high-growth SMEs in 2008-2010. Full references are included in the Reference section of this Policy Brief.

Exhibit A-1: Articles on high-growth SMEs in entrepreneurship journals 2008-2010

Year	Author(s)	Journal / Article title
		Top Level
		Journal of Business Venturing
2008	Hyung Rok Yim	Quality shock vs. market shock: Lessons from recently established rapidly growing U.S. startups
		Small Business Economics
2010	Parker et al	What happens to gazelles? The importance of dynamic management strategy
2010	Henrekson/Johansson	Gazelles as job creators: a survey and interpretation of the evidence
2010	Goedhuys/Sleuwaegen	High-growth entrepreneurial firms in Africa: a quantile regression approach
2009	Shane	Why encouraging more people to become entrepreneurs is bad public policy
2008	Acs/Mueller	Employment effects of business dynamics: Mice, Gazelles and Elephants
		Level 2
		International Journal of Entrepreneurial Venturing
2010	Wyrwich	Assessing the role of strategy and socioeconomic heritage for rapidly growing firms: evidence from Germany
2010	Kraus	Book Review: Success Factors of Fast Growing Companies by Holger Ernst, Stefan Glanzer and Peter Witt (Eds.)
2009	Harms/Ehrmann	Firm-level entrepreneurship and performance for German Gazelles
2009	Bianchi/Winch	Supporting value creation in SMEs through capacity building and innovation initiatives: the danger of provoking unsustainable rapid growth
		Journal of Small Business and Entrepreneurship
2010	Baughn et al	Labor Flexibility and the Prevalence of High-Growth Entrepreneurial Activity
2009	Harms	A Multivariate Analysis of the Characteristics of Rapid Growth Firms, Their Leaders, and Their Market
		International Journal of Entrepreneurship and Innovation Management
2010	Zhou et al	Entrepreneurial innovation problems associated with the dynamic growth of university spin-outs in China

Exhibit A-1 continued.

		International Small Business Journal
2008	Gilman/Edwards	Testing a Framework of the Organization of Small Firms: Fast-growth, High-tech SMEs
		Journal of Enterprising Culture
2008	St-Jean et al	Factors associated with growth changes in „gazelles“
2008	Brännback/Carsrud	Do they see what we see? A critical nordic tale about perceptions of entrepreneurial opportunities, goals and growth
		Small Business and Enterprise Development
2010	Hoxha/Capelleras	Fast-growing firms in a transitional and extreme environment: are they different?
2010	Littunen/Niittykangas	The rapid growth of young firms during various stages of entrepreneurship
2008	Zhang et al	A quantitative analysis of the characteristics of rapid-growth firms and their entrepreneurs in China

Source: research by empirica, status October 2010.

Annex 2: Questions about (non-)growth in IW Future Panel

The following questions were included in the IW Zukunftspanel (IW Future Panel) in spring 2011.[194]

Note: The interviewees filled in the questionnaire online; no computer-assisted telephone interviews.

Nr.	Basis	Question / Information	Answers
1	<Filter for companies growing 20% or more in each of the previous three years>	We would now like to learn more about the reasons for the growth of your company. Please tell me whether the following was an important reason, a less important reason or no reason for the growth of your company: (a) favourable development of the business cycle (b) Our company supplies to a growing market (c) the management targeted growth of the company (d) good coaching by external consultants (e) unproblematic access to growth finance (f) successful new marketing methods (g) successful introduction of new products or services (h) successful expansion of supply to international markets (i) Were there other important reasons for the growth of your company? _____	(1) important reason for growth (2) less important reason for growth (3) no reason for growth (4) don't know
2	<Filter for companies not growing or shrinking in the previous three years>	We would now like to learn more about the growth situation of your company. Please tell us whether the following applies: (a) unfavourable development of the business cycle (b) our company supplies to a shrinking market (c) the company's management did not seek growth (d) the company was consulted badly (e) difficult access to finance (f) competition was too strong (g) our company was not innovative enough (i) the innovations of our company were not successful (j) Were there other important reasons for non-growth of your company? _____	(1) applies fully (2) applies partly (3) does not apply (4) don't know

[194] Translated. Since the sample included only German enterprises, the original questions were in German.

Annex 3: World-wide policy initiatives for high-growth SMEs

The initiatives were identified in literature about high-growth companies and by national correspondents charged by the INNO-Grips. The list does not claim to be exhaustive.

Country	Name of activity, organisation	Objectives and main characteristics	Website	Focus level
EU				
Denmark	Accelerace, by Symbion	"Accelerace is a practical, fast-action and internationally focused business development program for small companies and entrepreneurs in Denmark. The program gives you insights into your customers, competitors and markets. The goal is to give you the knowledge and tools that enable you to establish or growth your business internationally. During an intensive five-month process you will be in contact with customers and industry experts and we will help you find the resources necessary for your success - no matter if it is financials or people. With help from our sponsors, we are able to provide our services for free. The program runs two times a year with program start in January and August." (Source: http://symbion.dk/subsites/accelerace/english/.)	http://symbion.dk/subsites/accelerace/english/	* * *
Estonia	Arengufond	"The Development Fund performs risk capital investments into the starting and growth-oriented technology companies together with the private sector and carries out socio-economic and technology foresight." (Source: http://www.arengufond.ee/eng/about/strategy) Example for emulation: Finnish Innovation Fund (SITRA). (Source: http://www.arengufond.ee/eng/about/aboutus)	http://www.arengufond.ee/eng	* *
Finland	Growth funding by TEKES	"Tekes offers companies funding and expert services for challenging development projects that help companies to promote international growth; rejuvenate their business; boost growth and success on the Finnish market; and increase networking and international competitiveness." A company can receive funding if it is "a specifically growth-orientated and development-orientated small or medium-sized enterprise". (Source: http://www.tekes.fi/en/community/Small_businesses/548/Small_businesses/1420) TEKES is the Finnish Funding Agency for Technology and Innovation.	http://www.tekes.fi/en/community/Small_businesses/548/Small_businesses/1420	* * *
	Growth Business Service, by EnterpriseFinland	"A key aspect of growth business policy is that offered by the Growth Business Service, part of the Enterprise Finland (Yritys-Suomi) project, a service model provided jointly by the Centres, Tekes, Finnvera Oyj and Finpro for companies that are growing and internationalising their operations." (Source: http://www.tem.fi/?l=en&s=2733) EnterpriseFinland is a business service for foreigners and immigrants provided by the Ministry of Employment and the Economy.	http://www.yrityssuomi.fi	* * *
	Vigo, by Finnish Ministry of Employment and Economy	"The programme bridges the gap between early stage technology firms and international venture funding. The backbone of the programme is formed by the Vigo Accelerators, carefully selected independent companies run by internationally proven entrepreneurs and executives. These Accelerators help the best and the brightest start-ups to grow faster, smarter, and safer into the global market. The Accelerators are not consultants -- they are co-entrepreneurs who invest in the companies they work with. (…) The Finnish Ministry of Employment and Economy launched the Vigo Programme in 2009. PROFict Partners Oy manages the execution of the program." (Source: http://www.vigo.fi/program1.)	http://www.vigo.fi/frontpage, http://www.slideshare.net/jsalmio/vigo-presentation	* * *
France	Support to growing SMEs by OSÉO	"Our mission is to help your company innovate and grow" and "to make a success of international expansion". (Source: OSÉO (2008), p. 1.) OSÉO is a governmental agency that provides assistance and financial support to French SMEs.	http://www.oseo.fr/oseo/oseo_in_english2	* *
Ireland	High Potential Start-Up (HPSU) Funding by Enter-	The HPSU offers "a range of supports for start-up projects that are considered High Potential Start-Up (HPSU) companies. Funding available to HPSUs is offered in three ways. Grant funding is available to help entrepreneurs build an investor-ready business plan. Once a HPSU has developed a sound business plan and identified	http://www.enterprise-ireland.com/en/funding-	* * *

	prise Ireland	investors, you can apply to the Innovative HPSU Fund for an Enterprise Ireland equity investment. Having secured the necessary investment to start the business, further supports are available to assist in the implementation of key aspects of your plan." (Source: http://www.enterprise-ireland.com/en/funding-supports/Company/HPSU-Funding/) "Enterprise Ireland is the government organisation responsible for the development and growth of Irish enterprises in world markets." (Source: http://www.enterprise-ireland.com/en/About-Us/)	sup-ports/Company/HPSU-Funding	
Netherlands	Programma Groeiversneller, by Ministry of Economic Affairs	"Summer of 2008 kick-off of the Growth Accelerator [Groeiversneller] programme (IP and Ministry of Economic Affairs). Objective: To support 100 companies in achieving a turnover growth of several million to at least €20 million in five years' time." (Source: Innovatie Platform, http://www.innovatieplatform.nl/en/press/portal-to-europe.doc, 24.4.2008.)	http://www.programmagroeiversneller.nl	* * *
Spain	Neotec fund-of-funds	"NEOTEC is a Spain-based fund-of-funds sponsored by EIF and the Centre for the Development of Industrial Technology (CDTI: Centro para el Desarrollo Tecnológico Industrial), the tech transfer office of the Spanish Ministry of Industry, Tourism and Commerce. This high-tech and innovation co-investment facility was subscribed in February 2006 by CDTI, EIF and several other private investors, mainly Spanish blue chip companies. (…) EIF's investment represents just over 25% of the fund's final size of EUR 183m. (…) The programme has brought together Spanish public and private sector investors to boost investments in Spanish SMEs which will foster innovation, research and development. Building on similar initiatives in other Member States, notably in France and the United Kingdom, the CDTI-EIF partnership leverages EIF resources to ensure a coordinated approach between EIF, national public bodies and the private sector. Furthermore, it gives Spanish public and private investors access to EIF's know-how in fund-of-funds management."	http://www.eif.org/what_we_do/equity/re-sources/neotec/index.htm	* *
Other Europe				
Norway	High Growth Progarmme	The High Growth Programme helps high-potential start-ups growing and internationalising their business. The companies targeted are "born globals" in the early phase of development but can already demonstrate market acceptance and competitive advantage.	Information provided to empirica by Innovation Norway	* * *
	International Growth Programme	The International Growth Programme supports Norwegian SMEs with ambitions for international growth, high potential start-ups in particular. The target group also includes SMEs seeking to strengthen their domestic market position against international competition. Services may also be offered to large companies.	Information provided to empirica by Innovation Norway	* *
America				
USA	Startup America	"Startup America is the White House initiative to celebrate, inspire, and accelerate high-growth entrepreneurship throughout the nation. (...) President Obama has called on both the federal government and the private sector to dramatically increase the prevalence and success of entrepreneurs across the country. First, the Obama Administration is rolling out a set of entrepreneur-focused policy initiatives in five areas: Unlocking Access to Capital, Connecting Mentors, Reducing Barriers, Accelerating Innovation, Unleashing Market Opportunities. Second, leaders in the private sector have launched the Startup America Partnership, an independent alliance of entrepreneurs, corporations, universities, foundations, and other leaders, joining together to fuel innovative, high-growth U.S. startups."	http://www.whitehouse.gov/issues/startup-america	* * *
USA	Greater Louisville's High Impact Program	"The High Impact Program is a public/private partnership, initiated by Mayor Jerry Abramson, funded by Louisville Metro Government and administered by Greater Louisville Inc. - The Metro Chamber of Commerce (GLI) that identifies and serves fast growth companies, companies with the potential for fast growth and those companies that enable growth in others. This program focuses on companies of these types headquartered in Louisville	http://www.greaterlouisville.com/highimpactprogram/default.asp	* * *

		that have a disproportionately higher impact on the metro area economy."		
East Asia				
China	Zhongguancun Science Park (ZSP) Gazelles Plan	"The Zhongguancun Science Park (ZSP) in Beijing initiated a Gazelles Plan in July 2003 to subsidise qualified high-growth SMEs. In cooperation with a number of commercial banks, including the Bank of Beijing, ZSP provides highgrowth SMEs with different rates of discount loans according to their credit grade. Enterprises with the highest credit grade enjoy the highest discount loan of 40%." (Source: Cunningham (2008), p. 24.)	http://city.chinaassistor.com/Beijing/2007/1212/1197441533_2939.html	* * *
	Gazelle Valley by High-tech Incubator in Xi'an	The High-tech Incubator in Xi'an set up a Gazelle Valley in May 2007 to support the development of high-growth enterprises. (Source: Cunningham (2008), p. 24.)		* * *
	Five-year Plan for Gazelle Enterprises, by Hangzhou Municipal Government	"Hangzhou Municipal Government announced a Gazelles plan in May 2008, the Five-year Plan for Gazelle Enterprises in Hangzhou (2008-2012). The plan aims to invest in 500 high-growth enterprises by 2012 by providing special funds and increasing capital accessibility." (Source: Cunningham (2008), p. 24.)	http://eng.hangzhou.gov.cn/main/zpd/English/goal/gov/T307099.shtml	* * *
Singapore	Spring Singapore	Spring Singapore is the government statutory board responsible for growing local SMEs. Source: Case study for this Policy Brief by Gerald Wang (2010), forthcoming.	http://www.spring.gov.sg/aboutus/pages/spring-singapore.aspx	* * *
	A-Star	Agency for Science, Technology and Research (A-Star) is the leading government agency dedicated to fostering scientific research and grooming talent for innovative and high growth SMEs. Source: Case study for this Policy Brief by Gerald Wang (2010), forthcoming.	http://www.a-star.edu.sg	* * *
South Korea	Support to high-growth SMEs by SMBA	Small and Medium Business Administration (SMBA) is the Korean government branch in charge of SME policies. Source: Case study for this Policy Brief by Yoo Soo Hong (2010), forthcoming.	http://www.smba.go.kr	* *
Australia				
Australia	Economic Gardening Illawarra	"The Economic Gardening Illawarra Program is a business support program that has been designed to assist Illawarra-based entrepreneurs who are looking to drive their businesses to achieve increased profits and sustainable growth." Started 2006. (Source: http://www.economicgardening.com.au/.)	http://www.economicgardening.com.au/	* * *

* * * = dedicated focus on high-growth innovative SMEs
* * = high-growth innovative SMEs targeted among other groups of companies