Do **Selective Industrial Policies** Cause Growth?

– Experiences from Sweden

Questions regarding economic growth are at the top of the economic and political agenda in Sweden today. This report provides an analysis of how selective policies supporting innovation and entrepreneurship have been implemented and their impact on firm performance, growth and competitiveness.

growth analysis

Foreword

Every year, the Swedish Agency for Growth Policy Analysis (Growth Analysis) produces a book in Swedish under the heading *Tillväxtfakta* (Growth Facts). A topical issue of relevance for the agency, the government and society is chosen; that issue is then analysed and discussed.

The global slump in economic growth has placed questions regarding economic growth at the top of the economic and political agenda. This report is an English summary and synthesis of the sixth book in this series and provides an analysis of how selective policies supporting innovation and entrepreneurship have been implemented and their impact on firm performance, growth and competitiveness.

This analysis concerns both the role of the government and policies for growth. Like many other countries, Sweden has a range of tools for stimulating innovation and entrepreneurship. However, designing and implementing these interventions to have the desired effects has proven a daunting task.

In the report, we raise a series of questions regarding design and efficiency of selective policies towards innovation and entrepreneurship, paying special attention to policies that target innovative small- and medium-sized firms. How well do the various measures work? On what grounds can selective policies be motivated? What role do evaluations play in policy adaptation and innovation policy?

One conclusion is clear: Little is known about the real effects of how various support schemes actually work. This problem is not unique to Sweden. We therefore believe there is great potential for improvement. In particular, better micro data and more counterfactual evaluations are needed to ensure that feedback and lessons learned from earlier support schemes could be both used and passed on to decision-makers.

The work has been led and carried out by Enrico Deiaco, Director and head of department at Growth Analysis and Associate Professor Patrik Tingvall of Growth Analysis and the Ratio Institute. Irene Ek, Lars Bager-Sjögren and Barbro Widerstedt, analysts at Growth Analysis, have made various types of contributions to the work. In addition, we would like to give special thanks to several people who read both the draft and the final version of the report.

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Content

1   Introduction

The economic growth that many parts of the world experienced during the early 21st century came to an abrupt end in conjunction with the 2008 international financial crisis. Over the course of six months, world GDP fell by three per cent and global trade decreased by thirty per cent. Despite massive economic stimulus, many countries found it difficult to recover, and traces of the financial crisis still remain. As a result of the economic slowdown, issues linked to economic growth—and in particular, innovation-led growth—have become a central objective for politicians. The international debate warns of a future with low economic growth in which the term "secular stagnation" epitomises the gloomy prospects for Western economies (VOX EU 2014).

Within the EU, the growth strategy for 2012-2020 (the Europe 2020 Strategy) is part of this trend, which regards innovations as key to future sustainable growth. We also see that many OECD countries are experiencing tighter fiscal constraints, while there at the same time is an increasing need to mobilise innovation to address economic, environmental and social goals. This situation generates demands for more efficient and impactful research and innovation activities. Efficiency objectives raise difficult questions concerning the appropriate balance between immediate impact and long-term orientation.

Although Sweden has managed the crisis better than many of its European neighbours, it has nevertheless been affected by the international turbulence. The new government launched discussions concerning future growth policies by establishing a Minister dealing with future challenges, a strategy for re-industrialisation and an innovation council. One justification for these measures is the need for substantial investments in research, development and innovation (RD&I) to stimulate growth and employment.

There has also been a shift towards more hands-on industrial and innovation policies. Relative to other OECD countries selective polices accounts for considerable sums in the Swedish national innovation system (OECD 2012). In 2011, nearly 3.1 percent of the State budget was allocated to selective policies targeting Swedish trade and industry.

How to optimally use this money is not self-evident. Indeed, surprisingly little is known about the actual effects of these selective policies, and Sweden's problems and experiences are by no means unique (Nesta 2013). As there are good arguments for using selective policies, so are the challenges to make existing RD&I programmes as efficient as possible. We believe that the Swedish experience might be useful in the OECD's on-going discussion of achieving greater efficiency and higher impact in research and innovation activities.

The purpose of this report is to highlight and discuss the effects of selective growth policies. We begin by asking what is known about the effects of RD&I schemes on employment, innovation, entrepreneurship and growth. What should the role of the State be? What can be learnt from earlier measures, and what factors should be considered when creating an RD&I programme? Thus, the efficiency and costs of selective policies to enhance innovation and regional development are recurring themes in this report.

As knowledge and ideas to a large extent are collective goods, policy plays an important role in establishing a system that creates favourable preconditions for research and innovation. The new policy ideas that are becoming more spread out in the EU and Sweden are based on the notion that business and innovation policy both can and should play a more active role. A recurring theme of, for instance, "the new industrial policy" discussion in the

OECD is that, with the help of various horizontal RD&I programmes, the government can improve resource allocation and accelerate economic growth (Warvick 2013). However, there are not always clear, concrete suggestions concerning how such programmes should be designed and implemented to have the desired effects. Moreover, it is well known that economic theory and empirical evidence both can be used to justify and advise against selective business and innovation polices.

To increase our understanding of the effects of selective policies, more and better micro data are needed. Although better data are themselves valuable, they also open up more sophisticated methods to use when evaluating the programmes. For a number of years, Growth Analysis has analysed and evaluated different programmes and instruments that were intended to enhance innovation and entrepreneurship in Sweden. In recent years, we have been able to develop and improve this work, not least through better access to micro data and using counterfactual evaluation methods. The lessons learnt from this work are presented in this book, and the analysed programmes' effects and underlying costs are discussed. There is also a relatively large body of international literature that analyses the effects of growth-promoting selective measures on businesses. This means that Swedish and international outcomes can be compared (Edler et al 2013). This comparison is also used as a basis for a discussion of how Sweden can improve its evaluation efforts and, thereby, provide decision-makers with better evidence to support future policy decisions and public accountability.

Accordingly, our primary message is that evidence-based policy will increase the possibility of designing measures that will have the desired effects, namely, to increase innovation, entrepreneurship and employment. This is focus of our inquiry. The chapters are structured as follows: Chapter 2 discusses the potential justifications of selective growth-promoting policies for businesses. Chapter 3 provides a brief history of the emergence of selective Swedish RD&I policies and how motives and objectives have changed over time. Chapter 4 describes the rules that govern RD&I programmes, the stakeholders that finance and administrate programmes and the amounts of money in circulation. Chapter 5 analyses the economic effects of different forms of selective policies, focusing on innovation programmes and regional support schemes. Chapter 6 discusses both the problems of evaluation and how well-conducted evaluations can provide facts to facilitate the adaptation of improved policies. Chapter 7 summarises and discusses the conclusions drawn.

2   The role of the State

Summary, Chapter 2

This chapter discusses arguments for and against State intervention and selective support measures. Under what circumstances is it justifiable to support businesses and RD&I activities, and what challenges does such policy face?

Those in favour of State support claim that the State can solve market problems. For example, the State may need to support innovative companies that would otherwise have problems obtaining funding. It is often difficult for banks and other financiers to assess the profitability of such companies, which makes them less inclined to lend money.

Another argument is that new knowledge not only has positive effects on the assisted businesses but also is beneficial for other parties. Therefore, the State should support innovative companies and projects that are not yet profitable enough for the market.

Moreover, the State can take an active role in coordinating and streamlining the innovation system and collaboration among the State, trade and industry, the academic community and financiers.

One argument against State support is that companies devote time to applying for support instead of doing productive work. Moreover, financial support may be given to businesses that are good at applying for support, rather than those that are efficient producers.

Another counter-argument is that it can be difficult to explain why the State would be better than the market at finding profitable businesses. Selective State support may also bias competition, resulting in a less productive firm outcompeting a more productive firm.

Examples of other challenges that support policy must address are that the administration of public support schemes can be expensive; State funding may not generate new investments but instead merely replace other methods of project funding that would have been used otherwise (i.e., the crowding-out phenomenon); moreover, State support can prevent necessary structural change.

However, public support schemes might support businesses in disadvantaged regions and sectors. Accordingly, such schemes implicate compassion and people's freedom of choice instead of pure growth. However, our opinion is that even this type of support should be deployed as efficiently as possible.

The main theme of this chapter is the State's role in enhancing innovation and regional development with selective policies. What circumstances justify support to business in general and to RD&I in particular, and what challenges does such a policy entail? One common argument in favour of government intervention is that the market solution results in less innovation than what is optimal for the society. We will therefore begin with a discussion of government interventions to promote research and innovation.

The basic assumptions concerning the effects of increased RD&I are largely based on economic theories developed in recent decades (Solow 1957; Romer 1986; Romer 1990; Lucas 1988; Aghion & Howitt 1992). One important element is that new knowledge is primarily a collective good, which cannot be fully protected. Some knowledge will leak out and strengthen other companies within the same sphere. Moreover, knowledge can be

shared with several stakeholders without being consumed. Overall, this implies that the market solution provides inadequate R&D and innovations.

Because knowledge and ideas are (to some extent) collective goods, the State plays an important role in establishing and developing well-functioning innovation systems with the aim of creating favourable preconditions for R&D, the dissemination of knowledge and the commercialisation of innovations. It is well known that economic theory can be used to either justify or counsel against selective policies. In this chapter, we offer a brief account of the most common theoretical arguments that either justify or counsel against interventions directed at business support in general and RD&I policies in particular.

2.1 Arguments in favour of State intervention

One argument in favour of State intervention is based on the assumption that there is some form of market failure that leads to a market solution being suboptimal. The two most frequently discussed market failures are incomplete capital markets and positive spillovers (i.e., externalities). Incomplete capital markets create difficulties for enterprises, especially small and medium-sized ones, in funding investments and R&I projects that otherwise would be both long-term and profitable. The externalities argument notes that the usefulness of new knowledge is greater than the benefits gained by the innovative business.[1] This means that without State intervention, market solutions will lead to insufficient R&D and fewer innovations than optimal.

There is also a broader approach called the system perspective (e.g., Edquist 2001 and Nelson & Nelson 2002). The system perspective states that there may be a reason for the State to take on a more active role in the process, which progresses from basic R&D to development of a more applied nature and that the State's role must not be limited to rectifying market failures. An active State can therefore cultivate more growth than a passive State. Overall, this means there are three arguments that justify State intervention in general and R&I support in particular:

- Incomplete capital markets;

- Positive externalities; and

- The system perspective.

2.1.1 Incomplete capital markets

Businesses, especially young and growing companies, often need access to external funding at various times, for instance, to invest in an R&D project. Funding can either be through a loan (traditionally via a bank) or via corporate bonds or external ownership. The latter can be either direct or indirect (i.e., via the stock market). Capital enables investments, bridging temporary declines in sales, and the possibility of developing a company before the necessary sales volume is reached.

However, capital markets are not perfect, which means that not all businesses that deserve funding from a socio-economic perspective receive credit. There are several reasons for this. Capital markets are affected by asymmetric information, which means that the person applying for funding knows more about the product or service than the financier (Akerlof 1970). This makes it difficult for the financier to assess risks and thus to set the correct price, leading to the financier either rationing credit (i.e., giving a smaller loan than would

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[1] Here, note that there are also positive externalities that are not necessarily linked to R&D and innovations.

otherwise have been the case) or increasing the price of the capital (i.e., increasing the interest that the company has to pay on the loan). In both cases, the private market has a deficit of capital from a socio-economic perspective (Svensson 2006; Svensson 2011).

The problem of asymmetric information is particularly acute when innovative activities need to be funded through loans. It is difficult for a bank to assess the profitability of new, innovative products. Moreover, it is especially difficult to obtain a loan in industries in which there is no physical property that can be pledged. For example, after a firm has gone bankrupt, it is often easier to sell a machine and thereby recover some capital than to sell software code. Because a bank that lends money to a company cannot actively control that company, there is also the potential for a moral hazard problem, i.e., the borrower will use the money for non-productive purposes such as his/her own consumption. This leads to a need for further risk premiums and thereby even higher interest, above all for entrepreneurs who do not have a good reputation and a good credit history.

In addition, there is a "double trust" problem. A company that has a ground-breaking idea will not wish to share all the information about the innovation because of the very real risk of ideas being stolen. The problem is that the less information the company provides, the less willing the bank or financier will be to give a loan (Cooter & Schäfer 2012).

The result is that it is difficult to obtain a bank loan, especially for companies founded by young people who do not have a good credit history, who are selling a product or service that is new or innovative, and who do not have tangible capital assets to pledge. However, there are also companies such as Spotify or Klarna that fit this description but have nevertheless done well.

New companies can also gain access to capital via investors who assume partial ownership of the business, i.e., venture capital (VC) companies. These companies invest in businesses, assume partial ownership and later earn money when the company either is sold to another company or is publicly listed through an IPO (initial public offering). The advantages of VC funding relative to a bank loan are that the VC companies have a greater ability to control the company, thus reducing moral hazard (Kaplan & Strömberg 2001). VC companies also contribute skills and management, thus increasing the likelihood of the business being successful. Because VC companies take over shares in the companies that they finance, they make large profits on the enterprises that become successful. Therefore, they can take greater risks than banks do because a bank's profit does not increase if the company to which it has lent money does unexpectedly well. A bank loan always generates the same amount of profit for the bank provided that the borrower makes payments, whereas a company's assets can be extremely profitable (Gomper & Lerner 2001).

That said, VC companies have high transaction costs arising from their scrutiny of the businesses that they are financing. They need to analyse the companies that seek funding and assess those companies' prospects for success. This process requires both skill and time, which means that companies that want only a limited amount of funding cannot turn to a VC company because the VC company's costs to evaluate them are substantial. Therefore, VC funding is better suited for companies that have made some progress; it is less suitable for newly started companies that need the limited funding known as seed financing (Svensson 2014).

Another way of financing a company that does not involve banks or VC companies is through direct loans or grants from private individuals. These people may be professional investors—known as business angels—who have long experience of making a profit by

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funding enterprises. However, they also can be what are known as F-F-F: family, friends and fools. Family and friends may contribute to financing a company when they know and trust the entrepreneur. Fools provide funding because they are bad at assessing risks and believe that they can make easy money. The problem in Sweden is that, in general, the country has an even distribution of wealth, which means there are relatively few people who can allocate large amounts of capital to risky investments. Therefore, there is less room for F-F-F funding in Sweden than, for example, in the USA.

Incomplete capital markets, asymmetric information and an even distribution of wealth therefore give theoretical support to the argument that the State has a role to play in funding (most importantly) SMEs. Assuming that the State decides to support innovative businesses, the next question is how it should do so. One important issue is to identify which businesses should be given support. Optimally, the State should only subsidise innovations that can be expected to be profitable but will not be able to find funding on the ordinary credit market. If the State supports investments that would have been made anyway, there is a risk of crowding out because companies will replace private capital with State capital (Lerner 2009).

In summary, the optimal method of subsidising innovations can be compared to the military medical care system, *Triage*, which was introduced by Napoleon. Wounded soldiers were divided into three groups: those who would survive without any care, those who would survive if given care, and those who would not survive even if they were given care. Only the group that would survive if given care were given assistance. Helping the first group was unnecessary, whereas caring for the third group would have been ineffective. Creating such a categorisation for wounded soldiers is in itself a challenge; identifying the businesses that will only survive if given support and that are therefore sustainable in the long term is even more difficult. Generally speaking, RD&I in private companies is not subsidised via direct support measures; instead, support is given through different forms of tax subsidies. Some examples are deductions for R&D staff, advantageous deduction rights for R&D and patent boxes (Svensson 2014).

2.1.2   Positive externalities

A positive externality means that an action taken by a company has positive effects on other stakeholders without the company itself being affected. A classic example is the beekeeper, who is not compensated when his bees pollinate his neighbour's apple trees. A more modern example is a company that develops technical solutions for a product that can be used by other companies (Arrow 1962). In the contemporary globalised economy, there are many opportunities for both positive and negative externalities.

Because a company that produces positive externalities does not receive payment for doing so, too few goods or not enough of a service are produced. This is particularly true of companies' investments in R&I, which can be difficult to finance through private means. New knowledge and positive externalities are closely linked to one another because they are partially collective and are not consumed when they are used. It is a well-known fact that it is difficult to protect knowledge and ideas and that new knowledge "leaks out" to other companies, giving rise to a positive externality often called "spillovers". The problem here is: What happens if all of the knowledge that a company generates becomes accessible to the general public? If knowledge were completely free and impossible to protect, the chances of recovering the costs of a development project would decrease, as would private R&D (Romer 1990). Thus, there is a conflict between intellectual rights and the benefit of

making knowledge freely accessible. Here, the State plays an important role in establishing well-functioning systems that create good preconditions for R&D, the dissemination of knowledge and the commercialisation of innovations.

The positive external effects that result from innovative activities can be used to justify both general and selective innovation support. Even at present, research performed at universities and other higher education institutions is largely funded by the State on the grounds that companies will not invest in such research because it cannot be expected to generate a sufficiently large profit. The same argument can be used for projects that are of a more commercial nature but are not sufficiently profitable because, for example, either the risk is too great or it will take too long for the product to reach the market.

2.1.3 The system perspective

In recent years, innovation policy has shifted towards "the system perspective". In Sweden, one factor that has contributed to this shift is the claim that Sweden devotes relatively considerable funding to R&D and innovation-promoting activities but that there is little evidence of that investment in terms of high-technological exports and innovations. A broader perspective is needed to explain such complex questions. The system perspective has also been developed as a criticism of the linear approach (Edquist 2014).

The system approach is not a uniform doctrine; instead, it can be viewed as a cluster of ideas that are all intended to increase our understanding of the interaction between stakeholders in the innovation process. Different researchers in this sphere emphasise different processes and suggest different policy measures. The focus is on individual factors; instead, there is an emphasis on the interplay among various stakeholders in the innovation system, from collaboration with clients to universities and higher education institutions. Just as there are market failures, there are also system problems. There may be insufficient coordination among various stakeholders. There is also a risk that companies or sectors will bind themselves to old forms of technology with the result that their innovation capability will stagnate. One advantage of the system perspective is that it increases understanding of the complexity of the innovation process. Through its broad approach, the system perspective enables more arguments in favour of an active business and innovation policy. The system perspective therefore tends to give the State a stronger role as coordinator of the innovation system.

Mariana Mazzucato is a recent example of an advocate for the State taking on a stronger role. In her 2013 book, Mazzucato (2013) used examples from the USA to explain why the State should take on a more active role in innovation. The book attracted considerable attention because Mazzucato's approach differed from how the matter is normally described. Mazzucato describes numerous cases in which the State has played a major role in developing innovations, not only by correcting market failures but also by actively promoting and controlling the technical development of an idea into a product that is so well-developed that the market can take over its further development without any risk. Mazzucato mentions, for instance, that American military R&D was the basis of phenomena such as the iPhone and the Internet; she also argues that these innovations would not have come about without State support (Mazzucato 2013).

Accordingly, Mazzucato maintains that the State's role cannot simply be limited to rectifying market failures; instead, the State must take a more active role in the entire process—from basic R&D to development of a more applied nature—before a private company can take over and sell the product or service. From roughly the same perspective,

Porter and Linde (1995) describe how the State can increase an economy's growth rate by making stringent technical environmental demands on products, thereby stimulating both technical innovation and new business models. According to the system perspective, a State that is active can therefore cultivate more growth than a passive State.

The system perspective has had a relatively high impact in Sweden and many other countries; however, it has also been criticised for being ad hoc and more similar to a historical narrative than to a theory of innovation (Sandström 2015). One disadvantage of the system perspective is that it often problematises in a commendable way, but it is less lucid with respect to what measures or specific forms of support should be prioritised. Moreover, it is difficult to draw any far-reaching conclusions based on the types of individual projects and interventions that Mazzucato describes. If the State invests large sums of money into R&D and makes different grants to companies, then at least one of all of the projects will work, naturally, but that does not mean that the intervention overall is socio-economically viable. As described below, there are more examples of problematic effects when the State takes an active role with the help of directed instruments of trade and innovation policy.

2.2   Arguments against State intervention

There are numerous theoretical arguments against the notion that the State should engage in active business policy. In addition many empirical studies have found that stimulating business research and development indicate that for every dollar of increased business research, one spends more than a dollar of tax payer money (Jaffe 2015). It is often noted that some parts of such policy are not intended to rectify market failures and have undesirable side effects. Some examples of counter-arguments that are described below are rent seeking, the knowledge problem, the "picking winners" problem, and the distortion of competition.

Rent seeking

Economics research on political factors such as public choice reveals how it is possible for groups and businesses to gain access to State resources. This phenomenon is known as rent seeking, and it means that tax revenue may sometimes be paid out to businesses or stakeholders not because it yields the maximum socio-economic benefit but because it will affect policy in some way. For instance, through lobbying, opinion formation or selective support, organisations can obtain access to money, special regulations or something else through which they can make a larger profit than would otherwise have been the case (Mueller 2003).

Because the State actively provides economic support in the form of subsidies, loans and tax exemptions, there is a risk that this money will not go to the companies that need it the most; instead, it will go to companies that are skilled at applying for funding and influencing politicians or that are working with some form of technology that is currently regarded as worthy of support.

If business policy is based primarily on general rules, there is less risk that special interest groups will be able to exploit interventions for their own profit. Conversely, if policy is primarily focused on directed measures, subsidies and selective rules, the risk of rent seeking will increase. There will then be more opportunities for businesses and interest groups to apply for support. Skilled businesses will be able to eliminate or block

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companies that are less adept at applying for support, thereby gaining an advantageous position with respect to their competitors (Stigler 1971).

Therefore, the danger is that companies will shift their activities from productive work to applying for support. This problem is especially pronounced in the context of selective support. Let us consider the example of innovation support (Growth Analysis 2014), in which approximately one out of ten of the companies that applied were given support. That means that nine of the ten companies set aside time and resources to apply for support instead of working—to no avail. This does not necessarily mean that those companies wasted their time: The process may result in lessons learnt and new perspectives that can be used in future business development. That said, the point is that if a selective support measure is to be socio-economically viable, the profit that is generates must cover not only the successful company's costs of applying but also the costs that other companies invest in the process.

2.2.1   The knowledge problem and the "picking winners" problem

The strength of a market economy is that it efficiently passes on and coordinates knowledge from many individuals to provide extremely complicated goods and services. In a famous essay, Leonard E. Read describes how a single person cannot even construct something as simple as a lead pencil. In Douglas Adams' book "The Hitchhiker's Guide to the Galaxy", the protagonist quickly realises that when he ends up on an uninhabited planet, on his own he "cannot even make a toaster". The point being made in both of these cases is that it would be very difficult for an individual planner to coordinate information in the same way that the market does.

This is an example of the well-known problem that it is difficult for the State to know exactly where and when it should intervene to improve the operation of the market. It is also difficult to provide a theoretical explanation of why the State would perform better than the private market in identifying potentially profitable investments and businesses. One example in this field could be that of VC companies. These companies devote a significant amount of resources to identifying persons and enterprises that have potential and are worthy of investment. When these companies do their job well, there is less scope for State intervention; this also means that companies that were not privately funded similarly do not deserve State funding because they will not be competitive in the long term. The information problem does not simply concern the difficulty of picking winners; it can also be difficult for policy-makers to address asymmetric information and externalities. As discussed in Baumol (2002), for instance, even in theory, policy-makers normally also lack access to the information that markets are believed to lack. With this in mind, there is a risk that State interventions will not have the desired effect; therefore, they risk wasting tax revenue (Lerner 2009).

2.2.2   Distortion of competition

Another problem is the distorting effects that business support in general, and selective policies in particular, can have on companies' competitiveness. The scope of these crowding-out effects has been discussed and some examples from the labour market show both that the phenomenon does exist and that it can be of significance. The report Direkta undanträngningseffekter på arbetsmarknaden (Crowding-out effects on the labour market) (Dahlberg & Forslund 1999) provides an example of this problem. It shows that measures such as working life development (ALU), workplace development (API) and public work programmes have had major crowding-out effects. For example, it has been established

that for every 100 API places created, 95 ordinary jobs were crowded out. Another report by the Small Enterprise Delegation (Småföretagsdelegationens rapport 7 1998) shows that business support can lead to a distortion of competition. The (2000:283) Regulation[2] also emphasises that measures that distort competition must be avoided; support must not be given if it distorts local market competition.

The mechanism underlying distortion is that if selective policies reward one business, there is always a risk that a less productive company will be able to outrank a business that is more productive than the supported one. Therefore, selective business policies may be associated with distortionary effects and reward-seeking actions such as rent seeking.

2.3   Other arguments

In addition to these arguments against State intervention, there are numerous challenges to be considered when introducing and assessing business support in general and selective support in particular. These challenges are described in various publications (Growth Analysis 2014; Feldstein 1999; Barkman & Fölster 1995; Konkurrensen i Sverige 2013).

Administrative costs

All schemes have an administration cost. For small and selective support schemes, administration may constitute a relatively large part of the budget because substantial administrative time may be required to select the companies to be subsidised, to pay out grants, and to engage in programme administration.

Incorrect investments

Business support may tempt companies to make inappropriate long-term investments. This is especially true if the support is given for particular purposes or projects.

Tax wedges

There are losses in socio-economic effectiveness when taxes are raised to finance support. This is because the profit from work and investment is reduced. In the ESO report *Företagsstöd*: *Vad kostar det egentligen?* (Business subsidies: what do they actually cost?), this loss is calculated to be 30-50 per cent of the tax levy.

Structural change

There is also a risk that business support impedes long-term essential structural change. If companies are surviving because of business support, they will lock resources into an unfavourable structure. In other words, we may have to weigh higher employment rates today against structural adaptation and growth tomorrow.

Political arguments

In addition, there are incentives for politicians to give special support to important businesses or regions to gain popularity and votes. Politicians may also want to provide funding to their own home region to show their voters that they are "delivering" something in return for votes (Segerfeldt 2012).

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[2] The (2000:283) Regulation expired in May 2015 and has been replaced by F(2015:210), which addresses State support to promote SMEs on a regional basis.

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However, we must not forget that support measures may be established because, for various reasons, politicians and decision makers want to support businesses either in disadvantaged regions or in specific sectors. For example, the basis for regional support is the compassionate aspect of supporting businesses in particularly disadvantaged regions. Such programmes make it easier for people to continue to live in places that would otherwise have stagnated; they give citizens more freedom of choice (Dahlin 1996; Pettersson 1999). Such support measures can therefore be justified and should be evaluated on grounds other than socio-economic efficiency.

3 A historical review of selective policies in Sweden: From mercantilism to triple helix

Summary, Chapter 3

Attitudes towards State support for businesses have varied over time. As early as the 18th century, governmental support schemes were introduced to protect Swedish businesses from foreign competition, and until the early 1900s, State support was mostly related to customs duties.

For Sweden, 1965 can be considered a turning point in attitudes towards governmental support for trade and industry. In 1965, regional localisation grants were introduced. Until then, the existence of regional support schemes and business support had been a disputed issue; after the introduction of the regional localisation grant, however, the tide turned and the discussion returned to how various support schemes should be designed rather than addressing their existence.

In the 1970s, the focus of State support was rescuing companies in the crisis-ridden Swedish steel and shipbuilding industries. The aim was to decrease negative effects on employment and to bridge crises. During the 1980s, this rescue-driven trend lost ground, and the new direction was to rely on the market and reduce governmental influence.

When Sweden joined the EU in 1995, regional support schemes again became the focus. One reason for the return of regional policies is that regional support is an important part of EU policy and activities. During the 2000s, the direction of support changed once again and became focused on selective R&DI programmes for innovation and growth. The idea was to stimulate collaboration between the business and academic communities.

Summarising the road to today's policies, one thing is clear: The route to the current policy focus has been anything but linear. Business support has been seen as something to avoid during some periods, only to be followed by other periods during which attitudes to selective policies have been positive. The underlying motives for selective policies have also shifted over time: During certain periods, the aim has been to slow the decline of shrinking industries and disadvantaged regions; during other periods, the objective has been to support young, fast-growing companies in promising industries.

3.1 1900s: Regional schemes and a rescue package for employment

During the first half of the 20th century, business support played a limited role in Swedish politics; its existence was not even self-evident. During the 1950s, however, industrial growth became a priority, thereby laying the foundation for new industrial policy. However, the shift towards prioritising industrial growth was rather expressed as a less regulated credit markets than in an expansion of State support systems (LO 1961).

The rapid pace of industrialisation resulted in a move from rural areas to towns that began to be perceived as an impoverishment of the rural areas. During the early 1960s, Sweden began to implement an active localisation policy. This culminated in the introduction of numerous regional political support measures. Here, a distinct dividing line can be seen: 1965, when localisation grants were introduced. From that point on, the debate was no longer a matter of whether support should be given but of how it should be designed (Pettersson 1991). This point in time is considered the beginning of the current system, and

some of the support measures introduced during the middle and end of the 1960s remain in place (Statskontoret 2003).

Regional localisation grants were introduced to promote industrial development in certain parts of northern Sweden. Today, the name given to this type of programme is regional investment support; it is intended to promote sustainable growth in assisted businesses and regions. Regional support has thus been repackaged as promoting growth rather than simply as support. Even today, investment support is paid out as selective business support to applicants in certain regions (Growth Analysis 2012:12).

In the early 1970s, Sweden experienced numerous economic setbacks. During the 1970s, there were two oil crises (OPEC 1, 1973 and OPEC 2, 1979), a recession and three major devaluations (in 1976-77); during those crisis years, State support increased. Some examples of such measures include government rescue packages and support to rescue businesses in industries such as steel and shipbuilding. This was known as the "bridging policy" (Statskontoret 2003). Thus, the purpose of both the supports and the policy was to reduce the effects of the crises (Larsson 1993). Freight grants were introduced in 1971 as an experiment intended to support businesses in sparsely populated areas; this form of support remains in place. Its primary purpose is to compensate businesses for the added costs associated with long transport distances and to stimulate a higher degree of refinement in the assisted area (Growth Analysis 2012:12). Employment grants were another product of the regional policies of the 1970s. However, this measure has been altered over the years and was changed in 1998 from a general form of business support to a selective measure (ITPS 2003).

The 1980s can be characterised as a period of liberalisation; during the 1980s, several markets were deregulated. In addition, direct involvement by the State in trade and industry decreased somewhat. In other words, crises were to be solved by the market, not through State funding (Statskontoret 2003). Nevertheless, in the 1980s, a new regional support scheme was introduced with the aim of reducing social security contributions. In 1984, this programme was also introduced on an experimental basis for businesses in the northern county of Norrbotten; it was later made permanent and extended to more regions. The purpose of this scheme remains to stimulate small enterprises and contribute to a high level of services in the assisted area (Growth Analysis 2012:12)[3]. The most significant events of the early 1990s were the bank crisis and macroeconomic issues. After Sweden joined the EU, regional issues returned to the agenda. One reason for the return of regional policies is that regional support is an important aspect of EU policy and activities. One example of a regional support measure that was formally introduced during the 1990s was the regional grant for business development. Although this intervention was introduced in 1994, it was simply a substitute for similar support measures that had existed previously (Growth Analysis 2012:12).

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[3] This support was intended to stimulate small enterprises and to help provide a high level of services in the assisted area. The reduction of social security contributions means that businesses that are entitled to support can deduct 10 per cent of their employer payroll contributions, up to SEK 852,000 per year. That means the maximum amount of support a business can receive per year is SEK 85,200. In recent years, the amount of support paid out has been approximately SEK 500 million per year.

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Historical fact sheet: From the 18th century onwards

The first governmental support scheme for business can be traced back to mercantilism and 18th-century Sweden. During the mercantilist period, business policy was strongly protectionist; manufacturers were protected from foreign competition, which led to the creation of wealthy wholesalers in Stockholm, known as Skeppsbroadeln (the Skeppsbron nobility).

During the 1800s, liberalism replaced mercantilism, and with the fall of mercantilism, high customs duties were abolished.

The deregulation trend of the late 19th century continued into the early 20th century. However, the outbreak of the First World War in 1914 was the first of many events that were to radically change this process. During the interwar period, Sweden once again focused on customs duties and quotas. The 1930s was also the beginning of the rise of regional politics, a trend that began in England. In the early 1930s, Sweden decided to give loans and subsidies to crisis-ridden businesses to prevent mass unemployment. This support was intended to be temporary, but several measures remained for a long period. In 1934, Sweden's parliament established that business support could be given to start-up companies and small enterprises. State support to newly established and small enterprises first appeared.

When the Second World War broke out, State control of trade and industry and the credit markets increased; after the war, the government's control of credit markets and business was further strengthened (Larsson, 1993, 2014).

Towards the end of the 1940s, the agricultural sector was actively supported to create fewer but larger units, and industrial growth did not become a priority until the 1950s.

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3.2 The 2000s: Focus on innovation and growth

During the 2000s, the policy debate came to focus on innovation and growth, and as a consequence, there was yet another change in policy direction. A series of government agencies such as Vinnova, Nutek and ITPS (Institute for Growth Policy Studies) was created. These agencies' purpose was to promote the development of national, regional and local trade and industry. The schemes that were introduced were primarily designed to promote innovation, entrepreneurship and skills development within businesses (Statskontoret 2003). Selective policies that previously had focused on cushioning the fall of declining companies or offering compensation to businesses in remote areas changed character and became an instrument of growth policy. The intention was to boost businesses, which would then (hopefully) boost the surrounding community.

With the arrival of the new millennium, the idea that the State, academic community and trade and industry need to collaborate and work together to generate new knowledge became stronger. The term "triple helix" was coined. Collaboration among education, research and innovation was high on the agenda, where it remains. Currently, there is consensus that society develops through innovation. Many of the challenges that we are experiencing, from climate change to an ageing population, demand innovative solutions to create a brighter future. This faith in innovation as a driving force is reflected in both national and international business and innovation policy.

3.3 EU and Swedish policies for trade and industry

Sweden's approach to business support is also shaped by the EU's framework. Formally, the EU only allows selective business support that develops disadvantaged regions; promotes small and medium-sized enterprises, research, technical developments,

education, employment or culture; or protects the environment. The reason that support further along the production chain (for example, export support) is not permitted is that the EU believes that supported companies would have an unfair advantage over other companies located in the EU. The WTO's competition legislation is based on the same approach. To be lawful, State support must therefore be in the interest of the general public and beneficial to society and the economy overall.[4] Therefore, it is hardly surprising that support to regions and innovative businesses characterises domestic trade and industry policy.[5]

An overview of contemporary schemes and goal statements shows that in many cases, the aim of support measures is no longer to cushion a fall; instead, they are intended to act like an injection of helium that makes a balloon rise to even greater heights. This issue and the possibilities and limitations of some of the selective growth policy support measures will now be explored more closely.

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[4] http://ec.europa.eu/competition/consumers/government_support_sv.html
[5] There is an important exception to the general rules for business support. The de minimis regulation stipulates that small support amounts can be assessed more liberally. This regulation is discussed in Chapter 4.

4 Stakeholders, amounts and rules in promoting innovation

Summary, Chapter 4

This chapter describes the stakeholders, money flows and rules of the Swedish innovation system.

The Swedish innovation system, like those of many other countries, consists of the following stakeholders: the government and parliament, universities and research institutes, the EU, and a series of other private and public stakeholders. However, one particular characteristic of the Swedish innovation and policy system is that despite Sweden's small size, many actors are involved. This phenomenon has been noticed by both the Commission and the OECD, both of which claim that the Swedish system is fragmented and its interventions are small scale and have short time horizons. Denmark received the same criticism; however, partly as a response to the criticism of the system, Denmark has reduced the number support instruments.

The amount of money paid out pursuant to Sweden's selective policies is not trivial: In 2011 money paid to trade and industry corresponded to 3.1 per cent of the State Budget. This amount does not, however, include agricultural support, EU support, or a number of minor support measures (so-called de minimis grants).

Setting aside the issue of domestic rules and regulations, we note that both the WTO and the EU limit States' ability to provide support to businesses. Most forms of support must be reported to the EU Commission. However, support amounts of less than EUR 200,000 over three fiscal years—known as "negligible support" or "de minimis support"—are exempt. In 2011, these small grants amounted to approximately SEK 800 million.

4.1 The stakeholders

As described in previous chapters, the current forms of Swedish business and innovation policy measures have emerged from the idea that a well-functioning innovation system is needed to promote innovation and growth. The innovation system embraces a wide range of policy areas. In addition to education policy and research policy, which influence the production of knowledge, the innovation system includes business policy, tax policy, trade policy, labour market policy and several other policy areas that determine the prerequisites for transforming knowledge into commercially viable goods and services.

A potential innovation may not be realised because of a weakness in any part of the innovation system. Therefore, innovation policy should also be able to influence the entire chain. This means that an efficient innovation policy embraces not only the traditional fields of knowledge creation but also areas such as education, taxes, and environmental issues.

Instead of discussing the objectives of innovation policy and how innovation policy is manifested in each policy field, we will describe the central stakeholders in the Swedish innovation system, along with the amounts and forms of various selective polices.

A four-level structure

Figure 4.1 shows the most important public stakeholders in the Swedish innovation system[6]. The figure identifies four different levels of activity:

1. Government and Parliament.

2. Government agencies that finance research and innovation.

3. Universities and higher education institutions.

4. Stakeholders that help commercialise new knowledge by supporting business development and the funding of new enterprises.

The primary government stakeholders are the Ministry of Enterprise and Innovation, the Ministry of Education and Research, the Ministry of Defence and the Ministry of Finance, but innovation issues also affect most of the other ministries.

With respect to funding, there is a set of large research councils: *Vetenskapsrådet* (Swedish Research Council), Forte and Formas. These actors allocate funding for research in accordance with scholarly criteria. Other major stakeholders are FMV (Swedish Defence Material Administration), SIDA (Swedish International Development Cooperation Agency) and the Swedish Board of Agriculture. Industry-related research is initially supported by Sweden's Innovation Agency "Vinnova", the Swedish National Space Board and the Swedish Energy Agency. In addition, there are numerous research foundations that were created when the wage-earner funds were discontinued. These foundations include SSF (Swedish Foundation for Strategic Research), Mistra (Swedish Foundation for Strategic Environmental Research), KK-stiftelsen (Knowledge Foundation), STINT (Swedish Foundation for International Cooperation in Research and Higher Education), Vårdalstiftelsen (Foundation for Caring and Allergy Research) and Östersjöstiftelsen (Foundation for Baltic and East European Studies).

Beyond the domestic public sector, the EU plays a major role as a source of funding for pure research, measures to support regional and business development, and measures that are eligible for EU structural funds. In recent years, innovation promotion has become an increasingly important component of the structural funds.

Most State-funded research in Sweden is performed at publicly funded research institutes, universities and by individual research and education providers. Enhancing increased interaction between the academy and industry has been an increasingly important policy objective. In this process, Innventia, Swerea (Swedish Research Institute for Industrial Renewal and Sustainable Growth), Swedish ICT Research, the Knowledge Foundation, Swedish Energy Agency and SP Technical Research Institute of Sweden all play important roles.

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[6] Figure 4.1 is an updated version of a figure produced by SNS (2007) that shows the stakeholders who determine and implement Swedish innovation policies.

LEVEL 1 — Policy formulation

- Swedish Parliament (*Riksdag*)
- Government Offices of Sweden
- *Forskningsberedningen* (Research Advisory Council),
  Innovationspolitiska rådet (Innovation Policy Council),
  Tillväxtanalys (Swedish Agency for Growth Policy Analysis)

- EU
- Other stakeholders

LEVEL 2 — R & D funding

- Swedish Research Council (VR), Swedish Research
  Council for Health, Working Life and Welfare (Forte),
  The Swedish Research Council Formas
- Vinnova (Sweden's Innovation Agency),
  Rymdstyrelsen (Swedish National Space Board),
  Energimyndigheten (Swedish Energy Agency)
- FMV (Swedish Defence Material Administration)
- Strategic research foundations
- Municipalities and county councils

- EU
- Business sector

LEVEL 3 — Research and Development

- Universities and institutes of higher education
- Industry-related research institutes
- FOI (Swedish Defence Research Agency)

- Business sector

LEVEL 4 — Business sector development and funding (+300 stakeholders)

- Local and regional stakeholders
- Tillväxtverket (business development, regional
  development)
- Business Sweden (foreign direct investment)
- *ALMI Företagspartner,* (regional business development),
  Industrifonden (venture capital investors)

- Venture capital companies
- Stock market

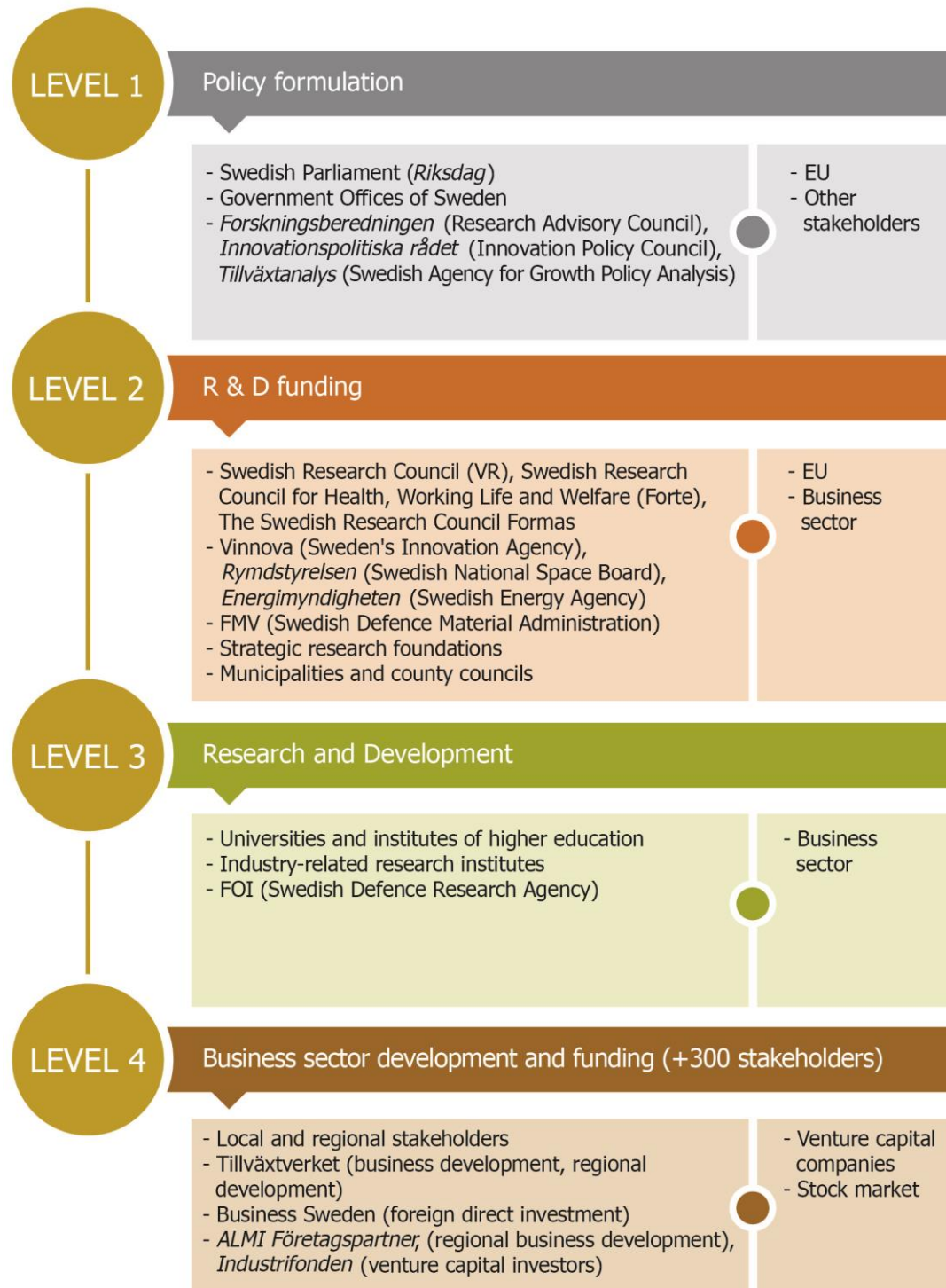Figure 4.1 Central stakeholders in the Swedish innovation system

At the bottom level in Figure 4.1, we find stakeholders who both assist in the commercialisation of new knowledge and fund new enterprises. This is the largest group of stakeholders. According to the EU (2006), in 2005 more than 300 government agencies and organisations in Sweden provided public funding to support entrepreneurship and new

businesses. Some of the largest stakeholders are Vinnova (Sweden's Innovation Agency), Tillväxtverket (Swedish Agency for Economic and Regional Growth), Almi Företagspartner and Industrifonden, which finance innovations, new enterprises and business development. In addition, there are numerous private stakeholders who primarily contribute funding via VC companies, banks and "business angels".

The table is not a comprehensive mapping of all of the stakeholders in the Swedish innovation system. The purpose of this presentation is instead to describe the system's overall structure. However, it should be obvious that it is a complex system with many stakeholders and interest groups. Despite the number of stakeholders, it seems that Sweden's innovation system and policy work rather well. In terms of RD&I as a share of GDP, Sweden is highly ranked, thus indicating that Sweden is a relatively good location for research and innovative activities. Sweden also has a high ranking with regard to research findings, whether they are measured as the number of scholarly articles per capita, the share of the population with a high level of education, research collaboration, or the share of new innovative businesses (Growth Analysis 2014).

Simultaneously, it is clear that Sweden is now experiencing challenges. Sweden's PISA ranking in the field of mathematics has fallen. Sweden has also deteriorated with respect to R&D as share of GDP from its peak position in the early 2000s, when the intensity of R&D was just over 4 per cent, to 3.4 per cent in 2012. Attention has also been drawn to the large number of stakeholders and the complexity of Sweden's innovation system (OECD 2012).

As early as in 2006, the EU Commission stated in a report (EC 2006) that Sweden's innovation policy suffered from deficiencies. It was said that coordination was poor and that the responsibility of the involved ministries was not always clear. Consequently, the overall political picture indicates that Sweden's innovation policies can be described as fragmented and short-term. The OECD (2012) also notes that although Sweden is a relatively small country, it has a relatively large number of government agencies and public organisations involved in innovation policy. In brief, the OECD claims that Sweden has too many small and medium-sized financiers and that a fragmented system can easily become difficult to survey, which in turn can lead to efficiency losses (OECD 2012). Similar thoughts concerning the need for a more integrated approach to innovation policy have been advanced by, among others, Andersson et al (2002), Edquist (2001, 2002), Granath Thorslund et al (2006) and SOU (1993:84).

The innovation system of Sweden's neighbour to the south, Denmark, has also been criticised for being fragmented. After an evaluation of the preconditions for research in Denmark (Danish Research Commission 2001), a reform was introduced to assign all responsibility for innovation policy to one ministry. The new Ministry of Science, Technology and Development not only assumed responsibility for innovation policy from the Ministry of Finance and Enterprise but also became the principal of Denmark's universities. The coordination of the Danish innovation system has continued, and in April 2014, the Danish Innovation Fund, IFD, was formed. It is charged is to condensing the number of stakeholders in the Danish innovation system and to focus more on the needs of trade and industry. The change in the new innovation fund has meant, for instance, that the former system of 24 support measures was replaced by one with three support measures (IFD 2015).

Finland, Sweden's neighbour to the east, has had an explicit system approach since the 1990s. In 1987, the Finnish Research Council became the SRVT (Finnish Science and Technology Council), which is led by the Prime Minister; other members include ministers

from the Ministry of Trade and Industry, the Ministry of Finance, the Ministry of Education, the Ministry of Employment and the Economy, the Ministry of Culture, and representatives from trade and industry, industrial organisations, Tekes, the Academy of Finland, and environmental organisations. The Council monitors Finland's competitiveness and innovation capability every third year and presents an overview of the country's R&I policy. The Council identifies the main challenges and offers suggestions and recommendations. These suggestions often relate to how State R&D funding should be used, but they can also concern coordination, investment and suggestions for changes in legislation. In Sweden, the creation of a Minister for Strategic Development, a strategy for industrial renewal and an Innovation Council can be seen as similarly oriented measures.

4.2 The money

As described above, many stakeholders are involved in the funding of research and innovation and business development in Sweden. This section examines the amounts of business support but does not limit that examination to pure innovation support. One reason is that growth is an important target variable for types of support beyond those focused on innovation.

In 2011, the amount of State support paid to Swedish trade and industry was just over SEK 27 billion, which is approximately 3.1 per cent of the total State Budget. If one also includes measures taken in the wake of the financial crisis, the amount increases to SEK 49 billion and 5.6 per cent of the State Budget (Growth Analysis 2012). These amounts are based on information from the 22 agencies and organisations that were responsible for the 68 schemes that were required to report to the EU Commission in 2011. Compared to other EU countries, Sweden ranks relatively high in non-crisis State aid, as share of GDP. 2013 Sweden ranks as number nine out of 28 EU-countries where the countries with the largest share of GDP devoted to State aid is dominated by the relatively poor EU countries such as; Malta, Slovenia, Hungary and Greece, see Figure 4.2.

Some of the support that is not categorised as directly aimed at trade and business and that therefore is *not* included in the SEK 27 billion cited above consists of the following items:

- EU structural funds;
- Agricultural policy support;
- Certain support schemes involving only small amounts (de minimis support);
- Support that is of a cultural policy nature;
- Procurement of traffic services by Rikstrafiken (now Trafikverket (Swedish Transport Administration));
- Support provided by Luftfartsstyrelsen (now Swedish Transport Administration) to private airports;
- Labour market policy programmes that promote employment levels via unemployment insurance funds (including labour market policy support to enterprises);
- Subsidised information services;
- Administrative costs for running support organisations;
- Housing subsidies; and
- Support that is paid to the public sector.

Non-crisis state aid, excluding railways – million EUR, % of GDP
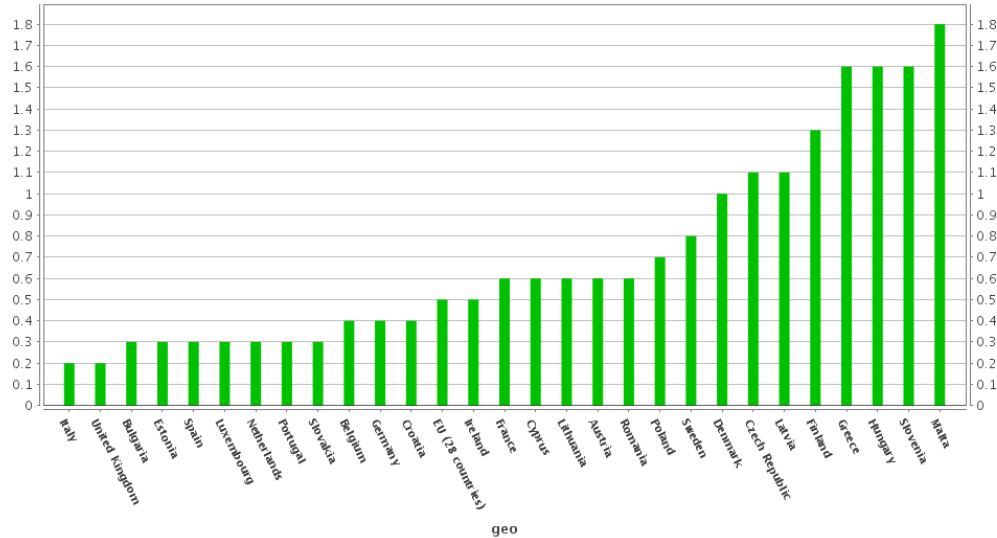*Percentage of gross domestic product (GDP)*

Figure 4.2 Non-crisis state aid, share of GDP, EU28, 2013

Source: Eurostat.
http://ec.europa.eu/eurostat/tgm_comp/graph.do?tab=graph&plugin=1&pcode=comp_ncr_xrl_01&langua
ge=en&toolbox=sort

To determine a new total amount of total state aid, including some of the previously left out items, we added the amounts that we could find for these measures in 2009. When some of the excluded measures were added to the total amount presented by Growth Analysis, the amount of money spent by the State on business support and resources in 2009 was SEK 33.5 billion (excluding crisis measures). The figures for these measures have been taken from Growth Analysis, IPREG2 (2011). It can also be seen that approximately SEK 16 billion of this funding was partially financed by the EU.

Table 4.1 shows how support to trade and industry is divided among different agencies and schemes. As the table shows, in 2009, approximately SEK 27 billion was paid by 22 different agencies via 63 different schemes.[7]

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[7] According to Johnson (2002), the administration of Swedish support schemes is estimated to employ approximately 10,000 people.

Table 4.1 Swedish state support to businesses, 2009

Organisation	Programme	Type of aid	Target group	Amount
Almi	Loans to SMEs	Loan	SMEs	142.5
Almi	Consultancy	Skills development	SMEs	278
Arbetsförmedlingen	Hiring subsidies	Grant	SMEs & Businesses	1,140
Arbetsförmedlingen	Entry level jobs	Grant	SMEs & Businesses	325
Arbetsförmedlingen	Labour market training programmes	Skills development	SMEs & Businesses	1,191
Arbetsförmedlingen	Start-up of businesses	Grant	SMEs/Job-seekers	288
Arbetsförmedlingen	Start-up of businesses	Grant	SMEs/Job-seekers	28
National Board of Housing, Building and Planning	Investment aid	Grant	SMEs & Businesses	550
National Board of Housing, Building and Planning	Solar heating	Grant	SMEs & Businesses	0.1
National Board of Housing, Building and Planning	Interest subsidies	Grant	SMEs & Businesses	408
Exportkreditnämnden (EKN)	Consultancy	Skills development	SMEs	18
Swedish Trade Council	Industries and markets	Skills development	SMEs & Businesses	39
Swedish Trade Council	SME services	Skills development	SMEs	28
Swedish Trade Council	Market analysis	Skills development	SMEs	30
Swedish Trade Council	Public procurement	Skills development	SMEs & Businesses	2
Swedish Trade Council	Basic export	Skills development	SMEs	72
Swedish Board of Fisheries	EU:s fishing fleet	Grant	SMEs	60
Swedish Board of Fisheries	Waters and inland fishing	Grant	SMEs	20
Swedish Board of Fisheries	Common measures	Grant	SMEs	3.4
Swedish Board of Fisheries	Sustainable fishing	Grant	SMEs	0.2
Swedish Board of Fisheries	Technical support	Skills development	SMEs	1.4
Swedish National Agency for Higher Education	Entrepreneur education	Skills development	Students/SMEs	220
Industrifonden	Investment, loans and capital	Financial aid	SMEs	43
Innovationsbron	Loans	Loan	SMEs	27
Innovationsbron	Consultancy	Skills development	SMEs	6.4
Swedish Board of Agriculture	Agricultural aid	Grant	SMEs & Businesses	12,300
Swedish Board of Agriculture	Modernisation	Grant	SMEs	382
Swedish Board of Agriculture	Vocational training	Skills development	SMEs	204
Swedish Board of Agriculture	Start-up support	Grant	SMEs	54
Swedish Board of Agriculture	Higher value products	Grant	SMEs within agriculture	45
Swedish Board of Agriculture	Development cooperation	Support	SMEs	2.2
Swedish Board of Agriculture	Diversification	Support	SMEs	52
Swedish Board of Agriculture	Business development	Grant	Microbusinesses	70
Swedish Board of Agriculture	Training and information	Skills development	SMEs	27
Kammarkollegiet	Economics, law and admin.	Skills development	SMEs	10
Swedish Environmental Protection Agency	Climate investments	Grant	SMEs	48
Swedish Environmental Protection Agency	Filling stations	Grant	SMEs & Businesses	58
Norrlandsfonden	Loans	Loan	SMEs	16.5
Rikstrafiken	Nationwide traffic aid	Grant	SMEs & Företag	860
Seventh Framework programme	Various support measures for SMEs	Grant	SMEs	141
Swedish National Agency for Education	Entrepreneurship	Skills development	SMEs	8.7
Swedish Energy Agency	Soft loans	Loan	SMEs	4.6
Swedish Energy Agency	Various forms of grants	Grant	Businesses, univ. etc.	1,215
Swedish Energy Agency	Various forms of grants	Skills development	SMEs etc.	85
Swedish Arts Council	Production grants	Grant	SMEs & Businesses	1,218
Swedish ESF Council	Social fund	Skills development	SMEs & Businesses	118

29

Organisation	Programme	Type of aid	Target group	Amount
Swedish Agency for Economic and Regional Growth	Non EU aid	Grant	SMEs & Businesses	1,272
Swedish Agency for Economic and Regional Growth	Transport grants	Grant	SMEs & Businesses	376
Swedish Agency for Economic and Regional Growth	Regional investment aid	Grant	SMEs & Businesses	331
Swedish Agency for Economic and Regional Growth	Regional business devel.	Grant	SMEs	199
Swedish Agency for Economic and Regional Growth	Commercial service	Grant	SMEs & Businesses	30
Swedish Agency for Economic and Regional Growth	Employment grants	Grant	SMEs & Businesses	17
Swedish Agency for Economic and Regional Growth	Seed funding	Grant	SMEs	36
Swedish Agency for Economic and Regional Growth	Regional structural funds	Grant	SMEs & Businesses	3,200
Swedish Transport Agency	Operational grants airports	Grant	SMEs	103
Vinnova	Forska & Väx	Grant	SMEs	120
Vinnova	VINN NU	Grant	SMEs	5.5
Vinnova	Eurostars	Grant	SMEs	20
Vinnova	EUREKA	Grant	SMEs	19
Vinnova	Health	Grant	SMEs	5.4
Vinnova	Designed materials	Grant	SMEs	13
Vinnova	VarDagsIT	Grant	SMEs	22
Vinnova	VINN EXPORT	Grant	SMEs	0.9
TOTAL AMOUNT				**27,614**

Note: Small and medium-sized enterprises (SMEs) Source: Growth Analysis (2012); Svenskt Näringsliv (2014).

Growth Analysis has also provided a mapping of the financiers under the responsibility of the Ministry of Enterprise, Energy and Communications: Vinnova, the Swedish Agency for Economic and Regional Growth, Almi, the Swedish Energy Agency, the Swedish Patent and Registration Office (PRV) and the Research Institute of Sweden (RISE). The overall picture was supplemented by the support paid by university innovation offices, along with the innovation support in some large regions such as Västra Götalandsregionen, Region Skåne and Stockholm. Figure 4.3 shows how the total budget was divided among a large number of different instruments in 2011. The figure shows that research and innovation projects account for nearly two thirds of the budget and the remaining share of the budget is divided among sixteen other instruments.

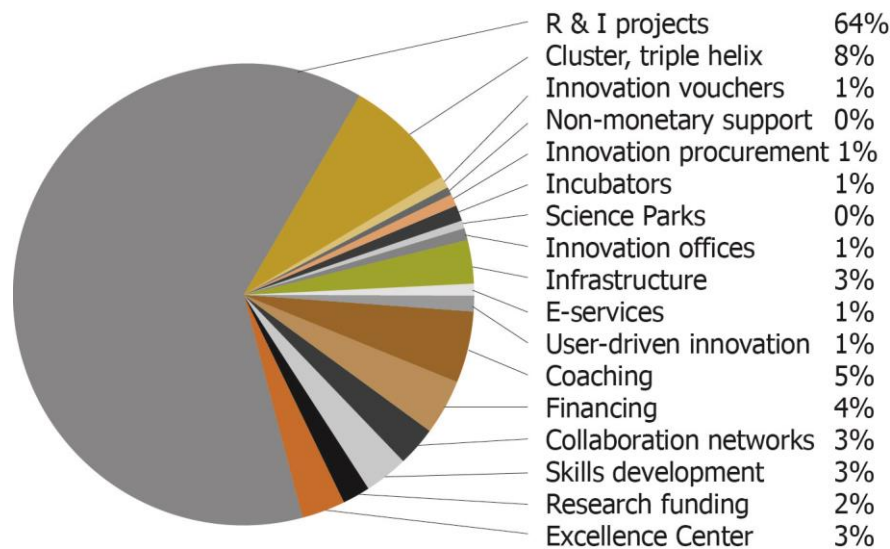| R & I projects | 64% |
Cluster, triple helix	8%
Innovation vouchers	1%
Non-monetary support	0%
Innovation procurement	1%
Incubators	1%
Science Parks	0%
Innovation offices	1%
Infrastructure	3%
E-services	1%
User-driven innovation	1%
Coaching	5%
Financing	4%
Collaboration networks	3%
Skills development	3%
Research funding	2%
Excellence Center	3%

Figure 4.3 Budgetary distribution of the Swedish policy instruments for selective support instruments under the responsibility of the Ministry of Enterprise, Energy and Communications, 2011

4.3   The "De minimis" exception

The responsibility for business policy support does not lie with the Swedish State alone. There are laws and regulations at several levels. The Local Government Act limits the powers of municipalities and county councils to take action on business policy, one reason being to prevent or minimise municipal competition.[8] Sweden's options from providing support are also limited by international agreements. The most important factor in this context is the EU's rules for State support to trade and industry and the WTO's competition legislation.

The EU's regulatory framework limits a Member State's ability to provide business support that could affect competition on the common market. Arguably, in an effort to limit tax competition and the distortion of competition, the EU wants to determine the purposes for which support should be given.

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[8] In practice, municipal support does exist, even support for individual operators, which is only permitted for exceptional reasons. Local Government Act, SFS 1991:900, Chapter 2, Section 8. Unemployment and guaranteeing access to certain commercial services can, in some circumstances, be invoked as exceptional reasons, RÅ 1993:98 and RÅ 1995:98.

4.3.1 Selective business policy measures and State support

Selective business policy measures are interventions that involve giving State funds to individual companies to develop their businesses, thereby stimulating economic growth. These measures can be divided into three sub-categories:

1. "Non support" does not give the recipient any economic benefit.

2. "Support of lesser importance" gives the recipient an economic benefit.

3. "State support" both gives the recipient an economic benefit and affects common trade.

The definition of State support means that some large business policy interventions are not considered support that must be reported to the Commission. Government VC amounts to approximately SEK 38 billion and comprises some of the largest selective business policy measures.[9] However, VC occupies a somewhat unclear position. Depending on whether the capital is given pursuant to market conditions, the question of whether the capital constitutes an economic benefit for the receiving company is a matter of interpretation. Because of these exemptions, there is a checklist of conditions that must be fulfilled for the intervention to be regarded as consistent with EU rules. If the measure fulfils these conditions, the support is considered compatible with the internal market and the question of whether the VC is support is thereby avoided (Zetterdahl 2010; EC 2014a). The provision of different types of services at low or no cost is also not classified as State support, if the measure does not involve any transfer of State funds. Two main areas of selective business policy—business counselling and State VC—are therefore embraced by the State support rules, depending on the form of the support given (proposition 2009/10:148).

4.3.2 Reporting and the de minimis rules for insignificant support

Member States are required to report any forms of support to the Commission, so that it is possible to confirm those States' adherence to State support regulations. The Commission scrutinises the conditions for the support and can then determine whether the support is consistent with the rules and exceptions in the treaty. However, not all forms of support must be reported to the Commission. To facilitate matters and reduce bureaucracy, there are numerous exceptions that render permissible various forms of support. One such exception is the rule that support of lesser importance need not be reported. In this paper, we call such forms of support "insignificant support". These forms of support are subject to the de minimis rules and thus are also known as "de minimis support" (Blauberger 2008).

Business support that is less than EUR 200,000 over three fiscal years is considered insignificant. This support can be given to SMEs, research and development, environmental protection, employment, or vocational training; moreover, it can also be regional support (EG 1998). Member States must report a summary of the rules for these support measures as soon as they begin to be applied; in addition, they must register and compile all of the information concerning the applied exception and, if requested, they must submit a document in which they report that they are applying the rule that exempts them from reporting insignificant support.

Thus, the Commission has delegated power to the Member States for support that fulfils the criteria. Each Member State is free to design various types of support interventions

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[9] The State VC that is distributed via Almi Företagspartner AB, Fouriertransform AB, Inlandsinnovation AB, Stiftelsen Industrifonden, Stiftelsen Norrlandsfonden, and Sjätte AP-fonden amounts to nearly SEK 38 billion, according to Riksrevisionen (2014:1) Statens insatser för riskkapitalförsörning – i senaste laget.

provided they remain within the criteria for insignificant support. The Member States must only monitor whether an individual recipient receives multiple amounts of insignificant support from different sources, and the total amount of support must not exceed the limit.

In practice, with respect to small, selective interventions, it is of course very difficult to define "State" support to trade and industry. There are no complete and easily accessible lists of the forms of support that have been established and that come under the insignificant support rules. Therefore, it is impossible to provide reliable information on the scope of such support, the number of support measures, or the total amount of support paid out within the framework of the various support interventions. It is also difficult to assess the credibility of the claim that there are no systematic and regular follow-ups of what type of support interventions exist. If someone has been accused of providing unlawful support, a check is made to ensure adherence to the rules for insignificant support.

In 2012, however, the Commission asked the Member States to report the amount of support that came under the insignificant support rules. These reports are summarised in Table 4.2. According to this compilation, the amount of support paid out in Sweden in 2011 was approximately SEK 800 million.

Table 4.2 Business support classified as negligible support under the report-back rules to the EU Commission in 2012

	2007	2008	2009	2010	2011	Total (million SEK)
PU-programmet (Swedish Agency for Economic and Regional Growth)	52.9	73.4	60.9	58.8	88.7	335
Leverantörsprogrammet (Swedish Agency for Economic and Regional Growth)	19.5	21	16	17.5	27.5	101
Environment-driven markets (Swedish Agency for Economic and Regional Growth)			20.5	20.5		40.1
Development vouchers for the nursing and care sectors (Swedish Agency for Economic and Regional Growth)					18.2	18.2
Regional grants for business development (Swedish Agency for Economic and Regional Growth)	200.8	267.5	243.5	245.4	209.6	1,167
Aid to start-up businesses (Arbetsförmedlingen)	456	317	262	605	398	2,038
Function test (Swedish Board of Agriculture)	1	0.4	0.2	0.6	0.4	2.6
Aid for certain interventions within forestry (Swedish Forest Agency)					2.1	2.1
Translation (Swedish Arts Council)						18
Aid to cinemas (Swedish Film Institute)					13.3	13.3
Planning grants (Vinnova)					54	54

Note: Almi's loans are not included in this presentation.

Source: Sweden's reply to the consultation regarding negligible aid in 2012:

http://ec.europa.eu/competition/consultations/2012_de_minimis/sv_ministryindustry_sv.pdf

Growth Analysis has produced a more recent summary (January 2013) that classifies a few more schemes as business support subject to the rules for insignificant support.[10]

4.4   Summary

We summarise the foregoing as follows: Compared with other OECD countries, selective policies represent considerable sums in the Swedish national innovation system.

To evaluate all types of selective policies and programmes, information on which businesses have received support is needed. As shown in this chapter, to create a complete database of the recipients, many stakeholders involved in the process must be involved. Growth Analysis' micro database (MISS) of State support to trade and industry is a starting point for this work. Accordingly, Chapter 5 describes and discusses numerous evaluations, which have attempted to measure the impacts of various forms of selective policies on growth and innovation capability.

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[10] Some examples are the Swedish Energy Agency's grants for technology procurement and planning, the Swedish Export Council's *Affärschansprojekt* and *Startpaket och stöd inom exportfrämjande av livsmedel* (Food from Sweden), the Swedish Institute of Assistive Technology's support within the *Teknik för äldre* (Technology for the elderly) scheme (2007–2012), and grants for pilot studies and projects on physical and regional planning. *Innovationsbron* gives follow-up loans to businesses that have previously been given support, along with support in the form of loans or grants to build up innovation counselling. The Swedish Board of Agriculture has made numerous interventions to develop rural areas. Growth Analysis has established numerous new schemes. For example, a business development campaign within the framework of the *Främja kvinnors företagande* (Promote female entrepreneurship) programme, development vouchers for cultural and creative industries, internationalisation vouchers and planning grants and support to demonstration projects within DemoMiljö 2012-2013. List of negligible support: http://www.tillvaxtverket.se/download/18.5a5c099513972cd7fea31c1f/1369958994962/F%C3%B6rsumbara+st%C3%B6d+f%C3%B6rteckning+2013-01-16.doc

5 An overview: Did selective policies cause growth?

Summary, Chapter 5

Focusing on Sweden, this chapter summarises the existing literature that analyse the impact of various types of State support of firm performance.

Since the new millennium, governmental support schemes designed to promote innovation in SMEs have become increasingly common. Evaluations of these programmes show both positive and negative impacts; typically, however, they reveal no effects. Overall, the impacts are unclear. Several international studies of innovation support have reported similar results.

It is likely that one of the reasons for the contradictory results is linked to the various methods used. We find that qualitative, interview-based and quantitative econometric methods are both used to evaluate the impact of the programmes. When interviews and questionnaires are used to evaluate the real impact of a programme, there is a risk of positive bias: That is, the respondents may have incentives to provide overly positive feedback (Growth Analysis 2015). When using quantitative methods, there is no problem of interview design; instead, one important question is how to create a control group to which the assisted companies can be compared.

5.1 Schemes designed to promote innovation

In both the EU and in Sweden, it has been increasingly common for decision-makers to suggest that the State play a more active role in stimulating innovations and business growth. In this vein, many strategies and instruments are the subjects of experiments. One strategy is to support innovation-driven SMEs. The idea is simple: It is more difficult for small enterprises than for large companies to find VC, even if their underlying ideas are equally good. This is a market failure that the State can rectify. Moreover, innovative activities generate positive externalities that benefit other companies, which is why the market solution results in fewer innovative activities than would be optimal for society (European Commission 2010; Mazzucato 2014; Shane 2009). Therefore, there are clear arguments in favour of innovation support.[11]

In Sweden, various forms of innovation programmes have been administered by, e.g., Vinnova. We shall now more closely examine two interventions directed at innovation-driven SMEs, namely, VINN NU and Forska & Väx (Research & Growth). The question is how to analyse these interventions' effects on employment, productivity and growth.[12]

5.1.1 Two examples of innovation support: VINN NU and Forska & Väx

VINN NU was initiated in 2002 and focuses on supporting young companies. The aim of the scheme is to give new, innovative companies better preconditions to commercialise innovations, attract external capital and eventually become successful companies. To receive support, the company must have developed a product, method or service that has yet to be released on the market. The overarching goal of the programme is to promote

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[11] A more detailed review of the theoretical arguments for and against support can be found (in part) in the chapter on the role of the State and (in part) in the final chapter.

[12] The VINN NU and Forska & Väx schemes were analysed in Growth Analysis (2014), which is why this account is relatively similar to Growth Analysis (2014).

future growth. Companies can be given a maximum of SEK 300,000 (i.e., approximately 30,000 EUR) (Vinnova 2013). This programme therefore falls under the de minimis rule (see Chapter 4), which means that in principle, the grant can be used for any of the company's costs, provided that the money received over three fiscal years does not exceed EUR 200,000.

During 2002-2011, 1,309 businesses (i.e., an average of 131 businesses per year) applied for support from VINN NU. From 2005-2010, an average of 16.5 companies per year were accepted. That means that just over 10 per cent of the applicants received support (Growth Analysis 2014).

The other, and larger, scheme is Forska & Väx, which was initiated by Vinnova in 2006 and targets SMEs that engage in R&D[13]. Support is given to both development projects and pilot studies, but most of the support paid out goes to development projects. The objective of the scheme is to generate innovation-driven growth for the assisted companies (Vinnova 2014a). According to Svensson (2011), approximately 20 per cent of the applicants are granted support, and support is given primarily to established companies. The maximum amount of support is SEK 5 million and is normally paid out during a project period of 6-18 months. A smaller part of the Forska & Väx (Research and Growth) scheme consists of grants for pilot studies. The purpose of this grant is to give the company the opportunity to produce a plan for conducting an R&D project that has the potential to succeed (Growth Analysis 2014).

Prior to 2014, there were 125 support interventions within VINN NU and 546 within Forska & Väx. Overall, from 2002-2012 Vinnova paid out SEK 37 million in support through VINN NU and SEK paid out 527.5 million through the Forska & Väx scheme (Growth Analysis 2014).

5.1.2   The unclear effects of innovation programmes

Study 1
What are the lessons learned from Forska & Väx and VINN NU? Bergman et al (2010) conducted the first evaluation of the VINN NU scheme. The study was commissioned by Vinnova and based on interviews with 34 businesses that had received support from the programme. The results from the interviews indicate that the programme was a crucial factor for several R&D projects being started up at all. A large number of respondents also said that the programme helped increase the scope of the R&D projects and that the projects were able to start up earlier or had been executed more quickly than otherwise would have been the case. They also stated that the funding from Vinnova served as a quality indicator for third parties, which they claimed had been important for attracting more funding.

Let us take a brief break and reflect on the lessons of VINN NU. When attempts have been made to measure effects on the basis of interviews, it is a well-known fact that there may be a difference between the outcome reported by the respondent and the actual outcome (List & Gallet 2001). This is the core of the self-evaluation problem, which is sometimes called hypothetical or positive bias. Hypothetical bias arises when the respondent has some form of incentive to provide an overly positive report of the effects of the intervention. Basing evaluations of business support on interviews can be a problem because entrepre-

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[13] Forska & Väx has changed name and is now labeled Innovationsprojekt i företag (Innovation projects in companies).

neurs may wish to embellish the effects of the support they have received. The person who conducts the investigation is another source of hypothetical bias. If the interviewer is somehow dependent on the money-providing agency, the risk of hypothetical bias increases further. The conclusion is therefore that the risk of hypothetical bias increases when both interviewer and respondent pull in the same direction (Crisculo et al 2012). For this reason, we perceive advantages in using quantitative methods for impact evaluations, whereas questionnaires and in-depth interviews are effective instruments for process evaluations, i.e., for understanding what worked well (or less well) with respect to the contacts between agencies and support recipients (Vedung 2009). This evaluation problem is discussed in greater detail in Chapter 6.

Study 2
VINN NU was studied in a quantitative analysis by Samuelsson and Söderblom (2012). This study, funded by Vinnova and Handelsbanken, examined the differences between the businesses that had received support from Vinnova and the businesses that had been rejected in the final round, i.e., those that "almost" received support (the control group). Samuelsson and Söderblom did not find any significant differences between the assisted companies and the control group with respect to survival, absolute change in turnover or tax payments, whereas the companies that had been given VINN NU funding had a statistically significantly lower net result compared with businesses in the control group. Samuelsson and Söderblom found that one of the advantages of the VINN NU programme was that the support had probably led to increased employment, higher-value intangible fixed assets and higher equity. They interpret this as indicating that the VINN NU programme has additional positive effects. The authors conclude that the VINN NU scheme, given its levels of support, is an inexpensive way to promote growth in new, innovative companies. However, the positive effects of the support only arose 3-7 years after the support period ended.

The study described above and how it was conducted is interesting, but the results demand reflection. First, the analysis is based on the assumption that there are no systematic differences between the treatment group and the control group. This assumption would have been fulfilled if there had been a lottery in the final round that determined which companies were to be given support, but that was not the case. In the event, the final selection was made after an interview, which means that the results cannot be interpreted as an effect of the support. Second, it is worth noting how the amount of time required before any effect was observed after a company received support. For small enterprises, 3-7 years is considered a relatively long period for development and commercialisation. Most of the studies in this area suggest that the impact of an R&D subsidy materialises 1-3 years after programme implementation (Growth Analysis 2014). Moreover, it can be difficult to establish a causal link between what is happening today and an intervention of SEK 300,000 that was paid out up to 7 years ago. Over the course of 5-7 years, many things that are difficult for the evaluator to control for can affect the outcome.

Study 3
Vinnova (2014b) conducted a self-evaluation of Forska & Väx. The analysis was based on questionnaire responses from the assisted companies, and the results indicate that the support led to substantial growth effects. These results are based on self-assessment, which means that they should be interpreted with caution. The report includes an impact evaluation by Statistics Sweden (SCB) that created a control group with the help of propensity score matching (PSM) (Rosenbaum & Rubin 1983). The result of this analysis indicates that growth in the number of employees and in the added value per employee in the assisted

company was not significantly different from developments in the control group. Thus, the Forska & Väx scheme does not seem to have had any measurable effect on these outcome variables. One may note that the qualitative and quantitative analyses came to different conclusions, with a more positive response in the interview-based analysis. This difference is consistent with the likely result when the interview response is influenced by positive hypothetical bias.

Study 4

Finally, a study was conducted by Growth Analysis, which was commissioned by the government to evaluate the impact of business support in Sweden. In Growth Analysis (2014), the impacts of VINN NU and Forska & Väx were studied with regard to sales, sales growth, number of employees, productivity and demand for highly skilled workers.

The Growth Analysis (2014) study was performed using firm-level register data for the entire population of Swedish firms. These data were complemented by information on the identity of supported firms and the amount of money received. The econometric evaluation was performed using three control groups: (i) treated versus all other firms; (ii) treated versus a CEMS-matched control group; and (iii) structural trend breaks among treated firms. The preferred estimator was the CEMS-matched group. Regardless of the method used, the results were largely the same.

The overwhelming result from Growth Analysis (2014) was that the programme had no impact on number of employees, labour force productivity, the share of highly skilled workers or the share of researchers in the businesses that received support, whether during or after the programme. The only positive effect that could be observed was that support led to an increase in turnover. However, a closer inspection of the results showed that the effect was limited to small enterprises (fewer than six employees) and was observed only during the first year after the support ended. In addition, a negative effect on sales and employment during the programme period was detected. A representative sample of regression results from Growth Analysis (2014) is given in Table 5.1 below.

The conclusion drawn from this study is that there is no convincing support for the argument that the State should pay out selective business support to innovation-prone SMEs to stimulate growth. The report also notes that the lack of positive effects is worrisome considering the costs associated with selective business support, for example, the direct administrative costs, the emergence of rent-seeking behaviour, tax wedges and the distortion of competition. Thus, to increase welfare, the programme must not only generate positive effects on the treated firms but also have an effect that is large enough to cover the costs associated with programme administration, rent seeking, crowding out, and distortion of competition. However, if the programme gives rise to positive externalities, these benefits will counterbalance the negative effects.

Table 5.1 The impact of R&D grants to SMEs on employment, productivity, relative demand for skilled labour, and sales.

Dependent variable → Independent variable ↓	Employment [A]	Productivity [B]	Relative demand for skills [C]	Sales
$ln(L)_{t-1}$	0.2522 (29.0)***			
$ln(L)_t$		-0.0863 (-6.34)***		0.7401 (37.8)***
$ln(VA)_t$	0.1578 (7.58)***			
$ln(K/L)_t$		0.0576 (13.1)***		
$ln(K)_t$				0.0920 (11.6)***
$\Delta ln(K)_t$			-0.0007 (-1.86)*	
$\Delta ln(Sales)_t$			-0.0006 (-0.32)	
$ln(w)_t$	-0.3982 (-28.8)***			
(Share skilled workers)$_t$	0.0016 (0.04)	0.0133 (0.50)		-0.0206 (-0.45)
(Share R&D workers)$_t$	-0.0205 (-0.63)	0.0151 (0.27)		0.0215 (0.40)
(Profit margin)$_t$	-2.2e-05 (-1.23)	0.0306 (2.19)**	0.0000 (-5.27)***	0.0004 (2.71)***
(Grant/sales)$_t$	-2.6e-06 (-4.92)***	3.9e-07 (0.59)	-1.87e-07 (-1.14)	-1.3e-05 (-6.73)***
Post-support dummy [D]	0.0249 (1.08)	0.0057 (0.18)	-0.0053 (-1.27)	0.0912 (2.01)***
R^2		0.04	0.001	0.34
Firm level fixed effects	Yes	Yes	Yes	Yes
Period dummies	Yes	Yes	Yes	Yes
Obs	544,381	562,515	769,144	556,734
AR(2) test: p-val	0.481			
Sargan test: p-val	0.000			

Note: *, **, ***, indicates significance at the 10, 5, 1 per cent level, respectively. Robust standard errors. All models are matched difference-in-differences estimates. CEMS matching performed. Regressions are weighted using CEMS matching weights. For details, see Growth Analysis (2014). [A] Estimated using sys-GMM. AR(2) test: p-val = 0.481. Sargan test: p-val = 0.000. [B] Dependent variable, labour productivity L/VA. [C] Share skilled workers defined as share of workers with post-tertiary education. (D) Post-treatment dummy spans 1-5 years after programme end.

Source: Growth Analysis (2014)

5.1.3   Conclusions on the effects of innovation support

In conclusion, summarising all of the studies, it seems to be as common for innovation grants to have no measurable effects as it is for such grants to have significant negative or positive effects on performance indicators such as employment, production and productivity. Nevertheless, we have seen that the number of forms of such support schemes has grown over time.

In a world in which economic growth has increasingly become associated with innovations and technical development, support directed at innovative activities seems to be an attractive way of generating growth. As noted above, other forms of support schemes that do not directly target innovative activities have also been labelled growth promoting, but the growth objective is most explicit within the field of innovation support. Despite this, we see that it is impossible to show a robust positive link between the VINN NU and Forska & Väx interventions and the growth of the assisted businesses. It can also be noted that the outcome in Sweden, with weak and diffuse evidence, is consistent with the results of international studies. The lessons learnt from innovation support in general—and VINN NU and Forska & Väx in particular—can be summarised in three bullet points:

- There is seldom a clear picture of the effects of different support schemes. In certain studies, positive effects have been found; in others, no effects were found, and in some, negative effects were found. This is true not only for studies in Sweden but also for studies abroad. In other words, designing successful schemes seems to be a difficult task.

- Different evaluations of the same programme can arrive at different conclusions. There is also reason to believe that questionnaire-based studies give a more positive outcome than quantitative methods do. Results can also be influenced by which evaluator was chosen to do the study. The risk of hypothetical bias cannot be ignored.

- Unlike many other studies, the analyses of VINN NU and Forska & Väx did not contain any criticism concerning access to data. This is probably because Growth Analysis compiled a microdatabase with register data for all Swedish businesses; that microdatabase was then linked to information on the support that those companies had received. This type of collated information on business support is, to the best of our knowledge, a unique phenomenon that provides good opportunities to conduct detailed counterfactual evaluations.

How do the Swedish results compare with similar international studies? Numerous international studies have evaluated various forms of business-support schemes. The results from these studies are mixed, making it difficult to draw a general conclusion. Here, we mention some examples. Bronzini and Iachini (2010) use a "regression discontinuity design" (RDD) to assess the effects of receiving an investment grant for R&D. They find that such grants had positive effects on R&D for small enterprises, whereas while large companies did not seem to be affected. Gonzales et al (2005) evaluated the effect of R&D support on Spanish production companies' private R&D investments. Like Bronzini and Iachini (2010), they found that support had a greater impact on small enterprises than on large companies. Koski and Pajarinen (2013) analysed three types of business support in Finland and their effects on employment. The forms of support that they analysed include R&D support, hiring support and other investment support. R&D support seemed to lead to an increase in the number of employees during the period when support was given but not after the funding ended. Moreover, none of the support interventions had any further

effects on employment for the fast-growing companies (gazelle companies), the growth of which seemed to be independent of the support.

5.2   Regional support schemes

Many of the systems that are part of the Swedish welfare State were created during the post-war period or in conjunction with the large expansion of the public sector during the 1960s. During that time, a seed was sown to expand the State's role in the field of business interventions. As mentioned in Chapter 2, the introduction of localisation grants in 1965 is generally considered the main turning point in Sweden's attitude towards business subsidies in general and regional schemes in particular.

The purpose of this section is to attempt to describe the structure and impacts of regional support schemes by studying five regional interventions representing two general and three selective forms of support. This presentation forms the basis for a general discussion (in Chapters 6 and 8) on the problems that characterise the evaluation of selective support.

Within the Swedish regional support system, there are numerous forms of regional instruments. In essence, these instruments can be divided into general and selective interventions. In 2009-2013, the total amount of State regional business support was approximately SEK 2 billion per year (Swedish Agency for Economic and Regional Growth 2014). However, that amount does not include all forms of support, only regional investment support, regional grants for business development, employment grants, seed funding, support for commercial services, transport grants and different project funding. Funding from the EU has not been included, nor have Sweden's share of agricultural subsidies or other forms of EU support. The small amounts of support termed "de minimis support" have also not been included.

5.2.1   General regional schemes: Reduced social security contributions and transport grants

The two most common general forms of regional support are reduced social security contributions and transport grants. To stimulate new jobs and increase employment in Norrbotten, in 1984 a regional support scheme for reduced social security contributions was introduced. This support scheme was later made permanent and was expanded to more regions. Companies that fulfil the requirements and operate within support "area A" qualify for the reform (see Figure 5.1). Currently, the formulated objective of the reduced social security contributions is to stimulate small enterprises and to help provide a good level of service in the assisted area.[14] This goal can be interpreted as the purpose of the support being more a matter of supporting disadvantaged businesses in sparsely populated areas than being a growth policy instrument. The total amount of support paid out in recent years has been approximately SEK 500 million (Growth Analysis 2012:12).

Transport grants are another type of general regional support. The primary objective of transport grants is to compensate for the cost disadvantages experienced by companies with long transport distances and to stimulate a higher degree of refinement among businesses and trade and industry within the assisted area (SFS 2000:281). Transport grants replace the freight grants that were introduced in 1971 (Growth Analysis 2012:17). In 2013, SEK 359.7 million was paid out in transport grants (Swedish Agency for

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[14] Up to 10 per cent of employer contributions can be deducted, but the total amount of support paid to a business must not exceed SEK 85,200 per year.

Economic and Regional Growth 2014). To receive compensation for road, rail or sea transport within Sweden, the business must be located in the counties of Västernorrland, Jämtland, Västerbotten or Norrbotten. As with reduced social security contributions, transport grants come under the category of early regional support, the purpose of which was more to support businesses than to focus on growth.

Figure 5.1 Regional assisted areas

Source: Swedish Agency for Economic and Regional Growth[15]

5.2.2   Selective regional support: Regional investment support, employment grants, and grants for business development

The regional support measures consist of both general and selective support measures. Regional growth is the clear focus of the selective support measures. The idea is that support will have a greater impact if it is directed at specific companies. The selective regional support interventions explored in greater detail here are regional investment support, employment grants and grants for business development.

Although these interventions focus on different aspects, they are linked by a common overall objective, namely, to "promote sustainable growth in the assisted companies and thereby sustainable regional growth" and "to help to fulfil the national sustainability objectives" (SFS 1998:996).

This is an ambitious goal. In other words, the aim is both to strengthen companies' long-term growth and to fulfil national sustainability goals for the environment, equality and

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[15] http://www.tillvaxtverket.se/huvudmeny/ansokaochrapportera/jagvillansokaomstod/pagaendeansokningsom gangar/ regionaltinvesteringsstod.5.e8f46b8140a162b4fe2b70.html

diversity. In addition, enterprises that receive support must be run in accordance with market principles (SFS 2007:61; SFS 1998:996; SFS 2000:283).[16]

Investment support and grants for business development both target SMEs. They can help—albeit in different ways—to facilitate investments in, e.g., machinery, buildings, training and skills development. Both forms of support are administered in the first instance by the county administrative boards or the regions/county councils, whereas in some cases, they are handled by the Swedish Agency for Economic and Regional Growth (Tillväxtverket).[17] In 2013, SEK 250.7 million was granted in regional investment support and SEK 226.2 million was allocated to business development (Swedish Agency for Economic and Regional Growth 2014).

The employment grant has undergone substantial reform over the years, and in 1998, its form changed from that of a general intervention to that of a selective business support measure (ITPS 2003). The grant may only be paid out if it is intended to increase the number of permanent employees. The grant must also be deemed to be a prerequisite to increasing the number of employees. Because of the manner in which this support has been designed, any evaluator can expect to find positive effects on employment, as that support was "built into" the system. Here, we are very interested in the aspect of whether employment declined again after the support ceased. A counterargument to this reasoning is that the grant has an upper limit of approximately SEK 80,000 per year, which reduces expectations related to this support. People who are hired under assistance from this grant must be either unemployed or on the verge of losing their jobs, and the employer is obligated to provide relevant training or a work placement for the employee during the period of support (SFS 1998:996). The grant money is paid out over a five-year period. At present, the use of employment grants is modest. In 2013, no employment grants were given, but in 2012, SEK 23.9 million was awarded (Tilllväxtverket 2014).

To measure how well business support fulfils its objectives, impact evaluations are needed. In the case of regional support, surprisingly few such studies have been conducted in Sweden. The evaluations that have been performed have arrived at different conclusions. The following section summarises the most important lessons learnt from these studies and endeavours to draw some general conclusions from them.

5.2.3   Evaluations of non-selective regional support

Reduced social security contributions were most recently evaluated in a 2012 report by Growth Analysis (2012:01). In that report, the authors emphasise both that regional heterogeneity can influence the impact of reduced social security contributions on businesses and that this impact justifies the use of analytical models that can identify region-specific factors. Those authors write that in the short term, reduced social security contributions result in increased turnover, higher salaries and more profit, but as with most other impact evaluations, these results are more uncertain in the long term. One matter of concern is that the study, like other studies of reduced social security contributions, does not show any significant impact on employment. After all, the purpose of this support

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[16] Regional investment support was replaced by a new regulation in May 2015 (2015:11).

[17] A comparison of these schemes shows that the two most distinct differences are as follows: (1) investment support is only given to costs that are linked to new investments, and (2) the maximum amount of support is larger for investment support than for the development grant (SEK 25 million and SEK 1.2 million respectively, over three years). There are also differences in how the maximum permitted amount of support is calculated and the activities for which businesses can apply for support. For example, only investment support gives compensation for marketing, whereas the development grant covers consultancy services.

measure is to reduce labour cost. The fact that companies can use support in whatever manner they prefer implies that it is important to measure variables in addition to employment, a need that is clearly shown in the study.

With respect to transport grants, the effects are highly uncertain. The evaluation of this regional policy support measure indicates that transport grants increase businesses' turn-over and added values; however, no effect is noticeable when observable and unobservable properties of the assisted companies and control groups are considered. The conclusion then is that it is uncertain whether there is any effect or whether the effects are too small to be noticed (Growth Analysis 2012:17).

5.2.4   Evaluations of selective regional support

Growth Analysis (2012:16) has analysed the effects of investment support granted during 2000-2007. The analysis shows that investments and employment initially increased and that this rise in employment increased over time. Towards the end of the study period, a rise in productivity could also be seen. Somewhat surprisingly, employment, measured as the number of employees, is the variable that was the most affected by the investment support. As reduced social security contributions did not have any noticeable impact on employment, these results seem to be relatively difficult to explain. Thus, reduced social security contributions have no effect on employment, whereas investment support increases it.

The effects of investment support also seem to vary from county to county. However, the reason for this variation has not been specified, nor has it be analysed more closely in the various studies on the topic. Bergström (1998) also found an initial positive productivity effect of investment support that later subsided and then became negative at the end of the four-year follow-up period. Ankarhem et al (2007, 2010) also studied the effects of regional investment support. They found that, in general, the support only had limited effects and that only a few of the businesses that received support differed from similar companies that had not received support. However, in the cases in which an impact was noticeable, it was positive for one or more of the main variables: investment, employment, added value, and return on total capital.

As mentioned above, increased employment is a common goal. Bohm and Lind (1989, 1993) investigated employment subsidies in Sweden over the period 1984-1986, when a local reduction in employer contributions was imposed in Norrbotten. Those authors revealed that it is impossible to find any effect that the subsidy had on employment. A similar outcome can be seen in ITPS (2003), in which the effect of the employment grant proved to be either unclear or non-existent. Here, it should be remembered that reduced employer contributions can only be granted if the aim is to increase the number of permanent employees. To study the dynamics of employment more closely, it would therefore be interesting to analyse employment at the company level both during and after the duration of the scheme.

The final selective form of support described here is the regional grant for business development. Growth Analysis (2012:02) has evaluated the outcome of consultancy vouchers targeting investments in product development, marketing and skills development. Increased added value can be seen in the analysis when the control group is composed of all of the other companies that were not given a consultancy voucher. If the control group is altered such that it is composed of similar companies that also indicated a desire to invest, no effect is seen. Growth Analysis (2012:02) reasoned that the impact of the

support that can be seen is more attributable to efforts to grow and an increased input of work and capital than to the direct impact of the consultancy voucher. Here, too, attention is drawn to the lack of data and goal formulation, which makes it even more difficult to conduct an impact evaluation. Evaluations conducted in other countries also note a lack of data (Harris & Robinson 2005). In the impact evaluations of regional support another recurring issues is the risk that companies have been given support in addition to the support measure that is being analysed. How can one be certain that the effects of one form of support were not caused by another form of support? Lack of data is a serious problem that limits the ability to conduct high-quality impact evaluations. Accordingly, it may then be difficult to draw any major conclusions from the research findings in the field.

5.2.5   Summarizing

Summing up the experiences of selective innovation and regional support schemes, one thing is clear, the experiences and estimated impact of various selective innovation and regional industrial policies vary. In some cases it appears successful, whereas in others we see no effects; occasionally, the schemes even appear harmful to supported firms. It is therefore also difficult to tell whether selective instruments tend to have the intended impact on the defined target variables. In all, the mixed evidence, or mismatch between theory and empircs, makes it difficult to draw any evidence based policy conclusions. We consider this as unfortunate and that a better understanding of the real effects of selective policy measures is needed.

In this chapter, focus has been on measuring and discussing the real effects on economic performance rather than the more common analysis of looking at effects on R&D invest-ment or innovation output. The idea is simple, in the end, policy makers want to see results in terms of increased employment, more productive firms and increased competitiveness. Thus, an important question is why it seems to be more common to find evidence that R&D project grants tend to boost innovation input, and most likely also innovation output, but not economic performance? In a recent paper Jaffe & Le (2015) suggest several possibilities for this. First, the link between innovation and economic performance is genuinely difficult to detect. This has also been discussed in the above analysis of some of the Swedish programmes. Second, it might be that imitations will follow so quickly that the returns accrues to original innovators are not higher than to imitators. Thirdly, the innovation measures used may be poor proxies for true innovations so that the link cannot be followed. Fourthly, the lag between innovation and economic performance complicates the causal analysis.

With this as a background, the next chapter will discuss the evaluation challenge. Understanding the evaluation challenge not only help us to conduct a well performed analysis, a well-executed evaluation also enhance a learning process such that earlier mistakes can be rectified during the next round allowing for improvements in future program design.

6   The evaluation challenge

Summary, Chapter 6

In this section, we will discuss evaluation of selective innovation policies. This chapter address the need for clearly stated goals, an understanding of processes, access to relevant data, and methodological issues.

One important aspect of evaluation is to establish an outcome that actually can be linked to the intervention and to confirm that that outcome would not have happened in the absence of the intervention. This is the goal of contra-factual evaluations

While contra-factual impact evaluations are focused on analysing the real impact of a program, process evaluations play an important role in understanding what worked well versus what worked less well. Therefore, process evaluations naturally involve people who have participated in a project. That is, while processes benefit from being performed by individuals that has been directly involved in the program, counterfactual impact evaluations should be conducted by external evaluators. The reason for the use of external evaluators in the evaluation of the real impact of a program is to minimise the risk of positive bias, i.e., bias caused by an interest in providing a positive evaluation of the scheme, for example, by presenting non-representative results. Therefore, we regard qualitative and quantitative methods as complementary. This method is also known as a mixed-methods approach.

Finally, we show how randomised field experiments, in which participation in an intervention is decided by a lottery, could result in more knowledge on the impacts of a support programme. In the field of evaluation theory, randomised field experiments are regarded as perhaps the most reliable evaluation method. The method has been used to evaluate both labour market policy interventions and foreign aid to developing countries. Currently, it is also being used to evaluate selective business-support measures. A shift in this direction with respect to evaluating relatively small selective business interventions could result in new insights that otherwise might be difficult to achieve.

Ultimately, evaluations are a matter of investigating not only whether support achieves the intended goals as efficiently as possible but also whether it gives rise to both positive and negative effects. We can already see that policy evaluation is experiencing major challenges, which have been concisely expressed by the British organisation Nesta:

> *"But the truth is that no one knows whether they (business support interventions) have any real impact. The civil servants do not know. The ministers do not know. And the businesses themselves do not either."*
> (Bakhshi et al 2013).

What method should be chosen to ensure that evaluations will provide as much knowledge as possible? To more closely investigate the problems of evaluation, this chapter will focus on three aspects:

- The need for clear goals;

- Process evaluation; and

- Data and counterfactual impact evaluations.

The main focus will be on the need for correct data and counterfactual impact evaluations. However, for an evaluation to lead to new suggestions and improved programme design, the motivation and formulation of both goals and process understanding must be discussed. In the next chapter, we will discuss in some detail how policy adaptation based on lessons learnt can be achieved.

6.1 The need for a counterfactual impact evaluation

The first thing to consider is what causal effects and counterfactual evaluations really are. This may appear a banal task, but because both impacts and evaluations are terms that are used in a wide range of contexts, they have tended to become, as noted by Vedung (2009), semantic magnets. The Swedish National Financial Management Authority (ESV) has defined a causal effect as follows (ESV 2006):

> *"a change that has taken place as a result of a certain measure and which would not have taken place otherwise"*

In other words, to identify an impact or a causal effect caused by an intervention, it is insufficient to simply detect a change; the change must also be shown to stem from the actual measure. This is difficult because there may be many other circumstances that cause the change. To identify the impact of a particular measure, we ultimately would have to compare the change after the intervention with what would have been the outcome if the support had not been provided. To do so, we would need to be able to travel through time or have access to a carefully controlled laboratory environment. In social sciences, laboratory experiments are rare. Despite these problems, efforts are made to perform counterfactual analyses, which enable impact evaluations to show causal effects. The discussion here will primarily describe how the research community has successfully improved and broadened its arsenal of available tools to estimate causal effects as accurately as possible through counterfactual analyses. However, specific econometric regressions techniques are omitted from this discussion.

6.1.1 Explicit goals are easier to evaluate

The point of departure for a counterfactual evaluation is the programme description and what it aims to achieve. What is the purpose of the intervention, and what impact is it expected to have? In Sweden, the government issues a brief letter of intention that formulates the programme's overarching goals. These letters are relatively short and explicit. Otherwise, as Vedung notes (2002), goals linked to State activities can be notoriously diffuse and disjointed and can have several conflicting goals. What seems to be a relatively simple task at first glance, namely, to investigate whether goals have been achieved through an intervention, can rapidly become difficult. There may be conflicting goals, and it may be difficult to break down those goals into indicators that can be examined or measured. Some typical examples include terms such as "quality of tuition" or "good medical care". In cases such as these, it is very difficult to identify indicators that can assess whether activities have achieved their goals, which also makes it difficult to conduct effective evaluations.

However, there is every reason to adopt a positive attitude towards evaluating the impact of business support schemes and grants. The reasons for providing business support are often linked to measurable indicators. For example, the appropriation to Vinnova (2013) explicitly states that the agency is to report changes related to turnover, number of employees and value added. These variables are easily measurable and have a clear link to

why the State is prepared to provide support. If one of a programme's goals is to increase the number of employees, reporting changes thus provides a good opportunity to assess whether the goal has been achieved. The problem is no longer conceptual; instead, it makes information accessible.

However, it is rare for all objectives to be easily broken down into indicators. Some examples of the elusive, negative side effects that were discussed in Chapter 3 include spillover effects, rent seeking, tax wedges, and distorted competition. For example, we wonder about the best way to obtain the most accurate possible measurement of the impact of business support on a business's ability to develop new knowledge, which is then passed on to other businesses. Here, a "chain of impact " will emerge in which one impact is assumed to give rise to another (ESV 2006). To enable an evaluation of this impact chain, a programme theory should be established that explains the cause-and-effect relationship between the intervention and the expected impact (Figure 6.1).

As the Swedish National Financial Management Authority (2006) has noted, it is important to make explicit the assumptions underlying the intervention such that if an evaluation is conducted, it will be possible to detect whether the failure to achieve a goal was caused by an incorrect assumption or something else. A similar comment was made by Nesta, who has written that "many evaluations and academic contributions do not make the logic chart of an intervention explicit, i.e., they do not explain, conceptually, through what kind of multi-step mechanisms, impact, outcome and outputs are intended to be achieved and what other variables interfere with the process" (Nesta 2013: June).

Figure 6.1 shows an example of an impact chain. This example stems from a research project that is to be conducted through collaboration between universities and businesses and administered by the Swedish Knowledge Foundation.

University-business collaborations are often difficult to evaluate. However, a well-thought-out programme theory (a closely related and frequently used term is "effect logic") can provide useful guidance concerning which impacts can and should be examined. If the programme does not have the desired effects, effect logic can also provide insight into where future interventions should be directed to obtain results that are more satisfactory.
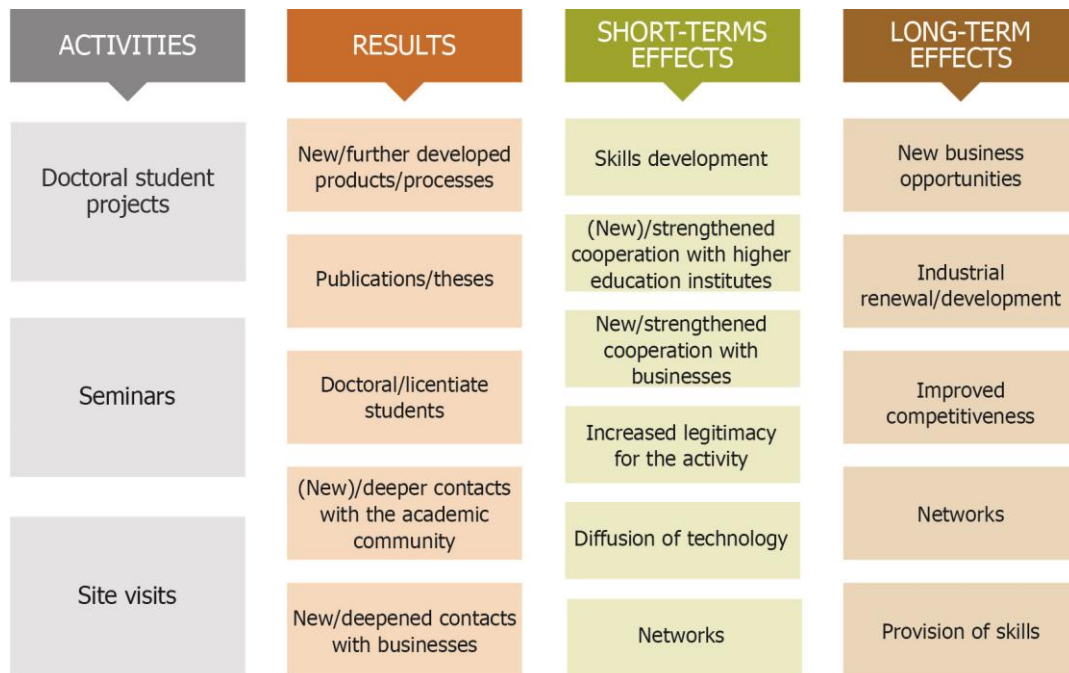
ACTIVITIES	RESULTS	SHORT-TERMS EFFECTS	LONG-TERM EFFECTS
Doctoral student projects	New/further developed products/processes	Skills development	New business opportunities
	Publications/theses	(New)/strengthened cooperation with higher education institutes	Industrial renewal/development
Seminars	Doctoral/licentiate students	New/strengthened cooperation with businesses	Improved competitiveness
	(New)/deeper contacts with the academic community	Increased legitimacy for the activity	Networks
Site visits		Diffusion of technology	
	New/deepened contacts with businesses	Networks	Provision of skills

Figure 6.1 Programme theory for research projects in collaboration between universities and businesses.

Source: KKS (2014)

6.1.2   The mixed-method approach

A process evaluation of a scheme or intervention can be conducted continuously during a programme; however, such evaluations are more commonly conducted after the programme has ended. Regardless of whether a programme has had the desired effect, it is important to consider its design, weaknesses and strengths. As Bamberger et al (2010) have noted, there is a risk that an evaluation that does not show any significant impact can cause interpretation problems. How can we know why there are no results? Were the measures implemented incorrectly? Alternatively, was there some fault in the design of the intervention that led to the lack of impact? Without valuable information from people who were in some way involved in or affected by the intervention, it is difficult to draw any far-reaching policy-related conclusions. If we do not understand the actual process, there is a risk that the process may become a "black box" with possible explanatory models that can be used to explain the outcome of an impact evaluation. Accordingly, we ask the following question: How are high-quality process evaluations designed?

To understand the effectiveness of program administration, interactions between involved agents and other programme-related interactions, qualitative evaluations are preferable. By using surveys and soft data, it is possible to examine terms and processes that could otherwise be difficult to quantify. For example, if in-depth interviews or questionnaires are used, it will also be possible to investigate whether the stated programme theory is sustainable. If several entrepreneurs who have received support claim that little knowledge have been disseminated to other businesses, a limited spillover effect is indicated. These methodological tools are therefore important for the interpretation of the impacts of the goals and objectives that were initially stated. This is perhaps particularly true with respect to the goals that were more difficult to break down into individual indicators.

However, the literature suggests that one should be aware of the limitations of survey-based studies in the context of counterfactual impact assessment. The reason for these limitations is that most non-quantitative evaluations tend to result in a systematic affirmative outcome, known as a hypothetical or positive bias. The explanation for this bias is the risk that the person conducting the study will primarily consult with people directly involved in the intervention: Such respondents may have incentives to paint an overly positive picture of the programme. As the American economist Milton Friedman often warned, one evaluates the intervention on the basis of its intentions rather than its results. It is also possible that the evaluator himself/herself has a personal interest in speaking favourably about a project and its outcomes. The problem of hypothetical bias is so serious that even the possibility that it will occur is problematic (Bamberger 2009; List & Gallet 2001; Criscuolo et al 2012).

Accordingly, we suggest assigning a clear role to the qualitative part of an evaluation, the main purpose of which is to complement the quantitative results and generate an understanding of both the process and the process logic. This approach is consistent with the "mixed methods" approach that has been advanced by, e.g., the World Bank (Bamberger et al 2010). Our conclusion therefore is that neither qualitative nor quantitative methods alone are sufficient tools for evaluating the impact of business support.

6.2 How to conduct a counterfactual analysis: Pitfalls and challenges

A common starting point for analysing a programme's causal effects is to design a counterfactual analysis. The counterfactual state can be seen as an ideal state: and so it is. It is impossible to allow a person or business to both participate and not participate in an intervention scheme (Imbens 2004) and then to identify the difference in outcomes. However, this is the only method that guarantees identification of the intervention scheme's causal impact. Other methods perform either better or worse at managing the impossibility of a person both participating and not participating in an intervention scheme. In the social sciences, however, one typically must create a control group that is as similar as possible to the group that participated in the programme, i.e., the treatment group.

Numerous methods have been used to address the problems associated with control groups. With respect to research on the impact of business support, a set of methods has been developed with the aim of creating well-designed control groups. Because business support is paid out following an application and selection process, companies that receive support likely have characteristics that differentiate them from those that do not receive support. How, then, can a suitable control group be created? Samuelsson and Söderblom (2012) attempted to solve this problem by constructing a control group containing the companies that had been weeded out at the last possible stage of the application process. Specifically, Samuelsson and Söderblom studied the companies that were candidates until the final stage of the selection process, during which the companies were interviewed to determine which would receive support. Samuelsson and Söderblom then compared the outcomes of those companies that received support with those that were denied support in the last round. It is possible that this approach may shed some light on the results of the assisted companies; however, this method of comparison has weaknesses. Undoubtedly, the companies that received business support must have had traits that distinguished them from the companies in the control group. If, the interview process chooses, e.g., "robust" enterprises, then the comparison will be problematic. Only if the selection in the last round were conducted through a lottery would it be possible to avoid the selection bias that

probably arose. Thus, it is impossible to perform a causal interpretation of the results. According to this reasoning, even when a control group initially appears carefully chosen, it can still be problematic.

At present, there are two predominant methods for constructing a control group. The first method uses statistical approaches to create a synthetic control group that is as similar as possible to the treatment group. The second method randomises participation in the treatment. The strengths and weaknesses of these methods will now be described in greater detail. First, however, allow us to examine the basic problem of quantitative evaluations: access to good data. Without good data that contain relevant information, evaluation is rendered more difficult or even impossible. Therefore, we will begin with a brief discussion of data.[28]

6.2.1   The importance of good data

A common observation found in the international literature on the evaluation of business support schemes is that there is a lack of data. With better and more information on businesses and support interventions, such evaluations would have been better. We have also noted this type of observation in Swedish evaluations (Swedish Agency for Economic and Regional Growth 2009). Critical views on data include the risk of arbitrariness in reported figures, a lack of relevant information, insufficient coverage, and aggregated data. To estimate the causal effect, there must be information on which businesses receive support, what types of support they receive, and the amount of money involved. Then, it must be possible to link this information with other information about the firms. Until recently, this information has not been available in Sweden, thus making it impossible to conduct more extensive studies of the effects of business support schemes.

To rectify this deficiency, Growth Analysis has gathered data from the MISS database regarding different forms of State support for trade and industry. This database contains information on business support that has been paid out by four large government agencies: Vinnova, the Swedish Agency for Economic and Regional Growth, the Swedish Energy Agency and Almi. In the future, it is likely that the database will be expanded. Many of Sweden's selective business support interventions are already in the database, but there is still no information on many of the support measures distributed by, e.g., Norrlandsfonden and Industrifonden. To the best of our knowledge, this type of collected information is relatively rare from an international perspective.[18]

We have been able to link data on support measures to other company-specific information, such as data on exports, imports, investments and results. These latter data cover all of the firms in the economy, thus enabling the design of well-defined control groups. The broad coverage is secured through the Official Statistics Act (SFS 2001:99 and 2001:100), which obligates Swedish companies to provide information to Statistics Sweden.

To estimate causal effects, it is also necessary to obtain information—including post-intervention information—for the companies that have received support. This information is needed because it can take some time for support to have any real impact. The problem is to determine how long it should be possible to trace a business after support has ended (i.e., to determine the minimum length of time). Different lines of business and different companies have different views on this issue. As a general rule, larger companies operate

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[18] There are similar databases in Norway, Denmark and Finland.

longer, more expensive development projects, whereas small and medium-sized enterprises are characterised by shorter development times.

Earlier studies have shown that the development time for an innovation project is normally 6-26 months. Longer innovation processes are dominated by larger companies and the development of genuinely new technologies, whereas shorter processes are dominated by development-focused SMEs (Griffin 2002; Growth Analysis 2014). The average commercialisation time after the development of a new product (or process) is approximately four months (Griffin 2002), whereas the product's life cycle varies from 1-10 years (Bilir 2013). Even in this case, we can see that the expensive projects run by large businesses are found in the upper time span. Overall, this means that when we study SMEs, it is beneficial to trace the companies for at least three years after the scheme has ended. After three years it is likely that the impact of the program starts to fade out. It should also be remembered that as more time passes between the end of a scheme and evaluation, the more difficult it is to be certain that a specific change can be tied to a specific intervention. The discussion will now turn to evaluations and how statistical methods can be used to create a relevant control group.

6.2.2   Synthetic control groups and propensity score matching (PSM)

Perhaps the most commonly used method for creating a synthetic control group is propensity score matching (PSM). A PSM analysis is conducted in two stages. First, the sample is divided into two groups: those that have received support and all other potential control companies. The task at stage 1 is to select and identify "twin companies" from the large number of non-participating companies. These twin companies will comprise the control group and are identified via a matching process. To obtain the best possible impact evaluation, the selection must be based on variables that predict both a company's programme participation and its results. In brief, the control group must be as similar as possible to the programme participants in as many relevant ways as possible. Matching (the propensity score) is normally calculated via a logit or probit model in which an artificial probability for programme participation is derived.[19] This is the core of PSM. A multi-dimensional problem is reduced to a one-dimensional figure (a propensity score), which can be used as a comparison norm.

At stage 2, the properties of the created control group are tested. The first test, which assesses the quality of the matching, involves comparing the mean values and medians for the various control variables for all of the non-participating companies, the control group and the treatment group. We want to ensure that the control group is closer to the treatment group than to all of the other companies that did not participate in the programme. The key issue is whether there is a good balance between the control group and the treatment group. The most famous PSM test is the balance test, which verifies that the treatment and control group are similar to one another, not only in relation to the entire population but also within smaller groups (Rubin 2001; Rosenbaum & Rubin 1983).

One of the disadvantages of PSM is that it cannot provide a simple guarantee that the control and treatment groups are similar to one another with respect to every included matching variable. This means, for instance, that if we match the number of employees, a company in the control group may not necessarily have the same number of employees as a company in the treatment group. Instead, PSM focuses on a similar total score. In practice,

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[19] Alternative matching methods within the framework of PSM can be found in Lee et al (2010) and Bai and Pan (2015).

this means that a better balance in one variable (covariate) may lead to a worse balance in other variables. The only way to know whether one has a balanced dataset in PSM is to estimate a correct propensity score. Because we only know that we have a correct propensity score if the data test is balanced, this leads to what Ho et al (2007) have called "the propensity score matching tautology". In theory, PSM can only be justified as follows: "it works when it works, and when it does not work, it does not work (and when it does not work, keep working at it)" (Ho et al 2007, p. 219).

However, one advantage of PSM is its flexibility when we wish to create a control group. The following are different methods of selecting a control group using PSM matching:

- One twin company per treatment company;

- Numerous companies that have a score sufficiently similar to that of the treatment company; and

- All non-participating companies, where businesses with a large deviation in score are given less weight than close twins with similar scores.

Finally, once we have created a control group, the outcomes for employment, productivity, profit, etc. are compared for the two groups. Next, any differences are interpreted as an effect of the programme. Currently, the control and treatment groups are typically compared through a regression analysis, which allows the evaluator to control for non-matching factors that may influence the outcome (Heckman et al 1998; Rosenbaum & Rubin 1983).

6.2.3 Synthetic control groups and coarsened exact matching (CEM)[20]

The best matching method is exact matching, in which the treatment companies and the control companies have exactly the same values for their covariates (variables that are also crucial for programme participation and outcome). If exact matching is possible, it is sufficient to compare a programme's average outcome to determine whether the difference between the groups is significant. Unfortunately, such ideal preconditions are rare in practice.

In a series of articles (Iacus et al 2011, 2012; Blackwell et al 2009), a new category of matching methods called monotonic imbalance bounding (MIB) is discussed. MIB has numerous attractive properties. First, the entire population's balance can be improved through better balance in a single covariate, which makes it easier to match businesses that are part of a programme with businesses that are not part of a programme. Next, we will provide a detailed description of an MIB procedure that is called coarsened exact matching (CEM).

As stated above, the CEM method is based on each included matching variable being "as similar as possible" in the control and treatment groups. The total overlap between the groups is treated nearly akin to a residual. Accordingly, this approach differs from PSM, which is focused on aggregate balance rather than on the similarity of each included variable.

Because exact matching is not possible, CEM is based on a rougher categorisation of each variable in which instead of being identical, they are "sufficiently like one another". Let us provide an example (Growth Analysis 2014). Assume that a company with a high profit has a higher probability of obtaining support than a company with a lower profit. Profit is

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[20] The CEM description set forth below is a shortened version of the presentation in Growth Analysis (2014).

therefore a dimension that we want to use to identify a control group. In the best of worlds, we would like to find a group of control companies with profits that are as similar as possible to the treatment group's profits (i.e., identical). However, because profit is a continuous variable, for a company with a profit of 24.335 per cent, we would have to find a control company that also has a profit of 24.335 per cent—not, say, 24.356 per cent. It is seldom possible to achieve this level of precision.

In this example, it would be more feasible to search for companies with a 20-25 per cent profit, and that is exactly what CEM does. By making a variable coarser and by placing all observations in different strata intervals, the covariates are then matched with the corresponding variable for the treatment group. Unlike PSM, the balance of the data set is decided in advance. Because of its simplicity and its good statistical properties, CEM is increasingly being used.

CEM's advantages include the following:

* One advantage of CEM compared with PSM is that CEM guarantees that the control and treatment groups are similar with respect to each matching variable.

* When CEM is used, weights are generated that can be used to better balance the control and treatment groups.

* CEM matching examines not only the average but also the higher moments of the distribution, such as the standard deviation or skewness of the distribution.

6.2.4   Randomised field experiments

The third and final method of finding a control group included in this discussion is that of randomised field experiments. These have long been used in, e.g., medicine and psychology, and are increasingly employed in economics. This is especially true for researchers who are interested in development economics and support, and numerous reports have attempted to provide an overview of this trend (Bamberger et al 2014). A report produced by EBA, the Expert Group for Support Studies, emphasises that although it is often better to use randomised controlled experiments as an evaluation method (provided that the circumstances are suitable), it is also beneficial to use such experiments in combination with a mixed-methods approach (Olofsgård 2014).

In Sweden, randomised controlled experiments have been used by economics professionals—e.g., IFAU (Institute for the Evaluation of Labour Market and Education Policy)— in the field of labour market policy interventions. Randomised experiments have also been conducted in other countries to evaluate various forms of business support (Bakhshi et al 2013).

There is a clear trend in favour of randomised experiments.[21] The reason for this trend is that randomised field experiments have both high reliability and a simple, intuitive design. In Sweden, however, no field experiments have evaluated business support.

What, then, is a randomised field experiment? In brief, a randomised field experiment entails randomly selecting a treatment group from a pool of potential candidates. The treatment group receives some sort of treatment, but the remaining, non-treated control

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[21] A major programme (Innovation Growth Lab) has been established at Nesta that conducts and evaluates various randomised policy experiments to promote innovation and entrepreneurship. Growth Analysis is a member of the programme.

group does not. The most important aspect, the randomness, enables us to avoid systematic differences between the two groups. This appears to be a simple, easily understandable solution to this problem, which can be regarded as a crucial matter in the evaluation literature. The advantages of randomised field experiments compared with other methods include factors such as the following:

- The random categorisation provides high reliability. It is possible to draw very reliable conclusions concerning how the intervention has actually affected the outcome variable being studied.

- Because of the random categorisation, there is no systematic difference between the two groups.

- Field experiments are easy to interpret and understand.

In what type of circumstances are field experiments particularly suitable? Olofsgård (2014) lists numerous situations in which randomised field experiments are believed to be especially useful:

1. When there are only a few plausible evaluations available and when new information in the field is particularly valuable.

2. When randomisation does not give rise to an unreasonable cost increase.

3. When the intervention was randomised from the beginning and has not yet been implemented, and there is enough time before the decision is made to enable the observation and measurement of impacts.

4. When the intended impact of the intervention can be observed, measured and quantified in a manner that is compatible with the evaluation method.

In addition to being a relatively anonymous tool used in many social sciences, randomised field experiments have numerous deficiencies and challenges that need to be addressed. The following problematic aspects of randomised field experiments have been highlighted by, for instance, Peterson and Woessmann (2010) and Daunfelt and Fölster (2013):

i. Generalisability: Do the results apply to the entire population or only to the sample that has been studied?

ii. The Hawthorn effect: Because the participants in a field experiment are aware that they are participating in an investigation, that knowledge alone may affect their behaviour.

iii. It can be difficult to force people or companies to join the group to which they have been assigned through a lottery.

iv. Randomised participation in a support scheme may conflict with State support rules.

v. Randomised field experiments can be both expensive and labour-intensive.

vi. Not all questions can be addressed through the use of randomised field experiments.

Perhaps the most serious drawbacks of randomised field experiments in the framework of business support include the ethical aspect of allowing a lottery to determine whether a company can participate in a programme and (possibly) a conflict with State support rules, equal treatment rules and legal security. That returns us to the de minimis exception and how Sweden selects programme participants.

6.2.5 The easiest randomised field experiments on small numbers of support schemes

Although randomised experiments are becoming increasingly common, hardly any such experiments have been conducted to evaluate Swedish authorities' operations (Daunfelt & Fölster 2013). Recently, we have seen an increased demand for well-conducted evaluations. Here, randomised field experiments can make a difference.

Is it possible to conduct a randomised field experiment within the analytical framework of Swedish business support? Randomised field experiments are considered the most reliable evaluation method. We believe that it is possible to use randomised field experiments to analyse business support: The concept is simple.

Many business-support grants are distributed via a multi-stage application process that includes both an external assessment of the company's business potential and tests by expert groups (Samuelsson & Söderblom 2012). For example, for VINN NU (a Vinnova-administered support scheme that targets innovative small enterprises), the final stage of the application process consists of interviews that weed out the last companies (Samuelsson & Söderblom 2012). If we assume that approximately 200 companies have fulfilled certain criteria and are invited to the final interview, the procedure can be modified in the following way. Instead of choosing some of these companies to support, the procedure could end with a lottery. If we assume that 150 of the companies still have a satisfactory profile after the interview, then the lottery could be used to distribute support to half of them. What is important is that all participants have an equal probability of receiving support. Thus, we would have a relatively homogeneous group for which lots would be drawn. Because this procedure is based on an existing distribution mechanism, the additional cost of performing a randomised controlled experiment would be very small. To facilitate this type of process, it is important for methods that facilitate evaluation to be built into normal operations. If resources must be taken from everyday activities, resistance to evaluation can easily become insurmountable. The British organisation Nesta has already used randomised field experiments to support innovative SMEs in Great Britain (Bakhshi et al 2013).

Returning to the subject of Sweden, it would probably be simplest to conduct a field experiment on the forms of support subject to the de minimis rules discussed in Chapter 4. These small amounts of support are exempt from the EU's reporting obligation and fall outside the regular State support rules. In brief, de minimis support is easy to administrate and has become increasingly popular. Given Sweden's ready access to microdata, this is a field in which Sweden can obtain recognition in the international arena. One small step in this direction is the participation of Growth Analysis in a subprogramme at Nesta; the purpose of that subprogramme is to conduct and learn from randomised business and innovation support provided by various countries worldwide.[22] We believe that further efforts in this direction will be valuable to decision-makers, programme directors, evaluators and the research field overall.

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[22] The subprogramme is called Innovation Growth Lab. More information can be found at https://www.google.se/?gws_rd=ssl#q=nesta+innovation+growth+lab.

7   Conclusions and discussion

Summary, Chapter 7

In recent years, there has been a trend in both the EU and Sweden suggesting that the State should play a stronger role in fostering innovation and growth. The idea is that the State is not necessarily limited to drawing up the general terms for entrepreneurship and enterprise and rectifying market problems. There may also be reasons that the State, by taking responsibility for the entire process from the basic prerequisites for businesses and innovation to development of a more applied nature, can generate more growth. Selective and growth-promoting business policies can be used in that process. However, selective policies are characterised by numerous challenges.

Business and innovation polices in must ultimately be able to demonstrate positive welfare effects. Despite the extensive use of selective policies, too little is known about how different policies really work, which is why schemes should be designed to facilitate evaluation. Thus, from an evaluation perspective, there remains much work to be done. To facilitate well-executed evaluations, it is important to state concrete goals for the interventions, to ensure that there are data and information about the support, to ensure that both quantitative and qualitative evaluations are done, and to report the lessons of the evaluations to decision-makers and programme developers. If these goals are achieved, Sweden will be in a good position to create a carefully considered business and innovation policy.

In recent years, there has been growing interest in innovation-driven growth. One example of this trend is the EU's growth strategy for 2012-2020 (Europa 2020. The concept of innovation-driven growth is fashionable in Sweden, the new government (as of 2014) of which has established a re-industrialisation strategy, a minister for the future and an innovation council. The move towards innovation-driven growth is not limited to the richest high-tech countries: China is also striving to shift from export-oriented growth to innovation-driven growth, thus showing that innovation driven growth is a widespread concept.

Innovation generates new knowledge, which is largely a collective good. Therefore, the State plays an important role in establishing and developing a system that creates good preconditions for R&D, the dissemination of knowledge, and the commercialisation of innovations. However, how to achieve these goals is an issue that has created a struggle for many countries. What means should be used? Should the State focus on rectifying market failures or should it play a more active role? There are different opinions regarding the latter issue. However, we can see that within the framework of the EU's growth strategy, there is a trend towards a more active role for the State. In other words, it has been argued that the State must take responsibility for the entire process, from basic preconditions for enterprise and innovation to development of a more applied nature. The belief is that an active government can create more growth than a passive government.

These ambitions have served as the point of departure for this summary of Swedish evidence. Its primary purpose has been to analyse and evaluate the potential growth effects of selective policies and to discuss the possibilities and limitations of such policies in general and selective policies for innovative businesses in particular. A recurring theme in the report has been to explore how improved evaluations of interventions can help bring

about a learning process in which the goals, means and efficiency of policy measures can be improved. We argue that Sweden's selective industrial and innovation policy must be able to show the socio-economic impacts of various forms of business support that have been paid out to promote the growth of enterprise and innovation capability. However, the investigations that Growth Analysis and other Swedish organisations have conducted, along with the international research literature, show that there is potential for improvement.

In 2011, SEK 27 billion in support was given to trade and industry, a scheme that involved more than 300 Swedish agencies and organisations (EC 2006).[23] Given the amounts invested, one would imagine these activities to be based on well-founded analyses and documented positive experiences. However, when we examine the investigations, analyses and evaluations that have studied the impacts of various support schemes, a fragmented picture emerges. In some cases, such support seems to have been successful; in others, we see no effect at all. Sometimes, it even seems as though the impact on companies' growth and competitiveness is negative.

Evaluation is of crucial importance to understand what underlies these different results. A well-conducted evaluation will enable a learning process such that in the next round, earlier mistakes can be rectified or unsuccessful policy interventions can be eliminated. This is why well-conducted evaluations are essential for both decision-makers and the possibility of constructing effective support schemes to support an overall well-balanced policy mix in which different instruments complement one another.

Here we draw attention to the fact that we have only incomplete evidence of how various types of support promote innovation work. This problem is not unique to Sweden. The British think tank Nesta describes the situation as follows:

> *"But the truth is that no one knows whether they (business support interventions) have any real impact. The civil servants do not know. The ministers do not know. And the businesses themselves do not either." (Bakhshi et al 2013).*

Our intention has been to provide knowledge on the effects of business support, to identify the challenges associated with public support schemes in general and selective policies in particular, and to give recommendations concerning what is needed to facilitate future impact evaluations. These challenges and recommendations are summarised in the following section.

7.1   How can selective innovation policies be more efficient?

In earlier chapters, we described the challenges that selective support measures face and that must be taken into consideration when business support is designed. We also noted that the State has a clear role to play in rectifying market failures such as incomplete capital markets and externalities. However, to fully assess a support scheme's benefit to society, numerous basic problems must be considered, not least because such schemes' socio-economic impacts frequently exceed their direct, measurable impact on the assisted businesses. Nevertheless, it is essential to consider such aspects when a specific form of business support scheme is designed and introduced.

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[23] The SEK 27 billion referenced above does not include items such as agricultural support or EU structural funds.

Basic challenges of selective policies

1. Rent seeking
How high are the rent-seeking costs for companies that have been given support and for companies that applied but did not receive support? During the application process, both the enterprises that are granted support and those that are denied support devote time and resources applying for support instead of doing productive work. This is an expense that should be considered from a socio-economic perspective. Is there a risk of the development of support entrepreneurs? At present, there is limited knowledge of how widespread rent seeking is and the socio-economic costs that it entails.

2. The knowledge problem and the "picking winners" problem
It is difficult to identify tomorrow's winners, and it is particularly so when we want to help small, young enterprises for which little information is available. Normally, policy-makers do not have access to the type of information that markets lack. This is why it may be difficult to explain why the State would perform better than the private market at identifying potentially profitable investments and businesses. In the worst-case scenario, State support can create political failures, i.e., the interventions can cause markets to work less well after the intervention than they did initially.

3. Distortion of competition
Another challenge is the distorting effects that business support in general and selective business support in particular can have on companies' competitiveness. Profitable businesses may lose market shares to State-subsidised competitors. This problem disappears if reforms are general and benefit all companies automatically. This means that selective support measures must be justified particularly carefully.

4. Administration costs
All schemes have an administration cost. For small, selective support programmes, this cost may comprise a relatively large part of the budget because it may require extensive administration to select which companies are to be subsidised, to pay out the grants, and to manage other aspects of programme administration. The costs involved in implementing the scheme must be taken into account.

5. Incorrect investments
Business support may tempt companies to make inappropriate long-term investments. This is especially true if the support is given for particular purposes or techniques.

6. Tax wedges
There are losses in socio-economic effectiveness when taxes are increased to finance support because profits from work and investment are reduced. In the ESO report *Företagsstöd*: *Vad kostar det egentligen?* (Business support: what does it actually cost?), this loss is calculated to be 30-50 per cent of the tax levy.

7. Structural change
There is also a risk that business support impedes necessary long-term structural transformation. If unprofitable companies are kept in business artificially through support interventions, resources are locked into a non-favourable structure.

The recommendations that we have listed below are closely linked to the direct effects of business support, which is not the case for the challenges above. Accordingly, those recommendations are concrete suggestions concerning how support schemes should be designed, not least to facilitate evaluation and learning. Another reason for focusing on the direct impacts is that if we cannot trace any direct effects, there is less likelihood that the

scheme will have any secondary effects. How can knowledge be disseminated if the programme has not created any new knowledge or change in behaviour, even for the assisted companies? We can also see that in many cases, direct, measurable impacts such as employment, productivity and competitiveness are stated as central target variables in the appropriations.

Recommendations for selective innovation policy

1. *The goals of the various innovation policy measures must be made concrete to ensure that the schemes can be followed up and evaluated.*

    Unfortunately, there are still too many cases of policy-makers introducing business support without clearly stating the reasons for the intervention and its goals. When there are different, conflicting goals, there is scope for stakeholders to make different interpretations, thus impeding both evaluation and the possibility of integrated policy adaptation based on the lessons learnt from evaluation. Goals should also be supplemented with a clearly stated programme theory in which both direct and secondary effects are clearly identified. This information is essential for the evaluator. If no direct effects are found, a well-developed programme theory makes it easier to decide whether there are or will be any secondary effects.

2. *More impact evaluations are needed, and the possibility of conducting randomised field experiments should be examined.*

    Studies have repeatedly criticised inadequate data or a lack of vital information, which has limited their ability to conduct an analysis. It is clear that new impact evaluations are needed to allow further lessons to be learnt; for that to be possible, new and better data, along with improved methods, are needed. Currently, randomised field experiments are considered the most reliable evaluation technique, which is why this method should be used more often to evaluate Sweden's business and innovation policy. Consensus on the meaning of the term "effect" is also needed among governments, implementers and evaluators.

    Disagreement on this issue will create a considerable risk of unnecessary misunderstandings. We suggest that the original meaning of the term be used: "a change that has taken place as a result of a certain measure and which would not have taken place otherwise".

3. *All of the bodies in Sweden that finance selective innovation policy must register and provide detailed information on the support that has been paid out to facilitate an evaluation of those programmes' effects.*

    A systematic merging of databases would enable the evaluation of a specific scheme and an analysis of whether various support interventions either have synergy effects or give rise to conflicting goals. It is also important that the small amounts of support that fall under the de minimis rule are not forgotten. Therefore, further development and expansion of Growth Analysis' MISS database is a central aspect of improving policy adaptation based on lessons learnt from programme evaluations.

4. *An analysis of causal effects should be performed by independent reviewers, whereas process evaluations can be conducted by people who have been closely involved in the programme.*

   Access to independent examinations of business support programmes is needed to avoid hypothetical bias and to ensure that impact evaluations are reliable. Here, quantitative methods and randomised field experiments play a central role. However, qualitative studies of the process are also useful to better understand the reason for the results of those studies. This approach is consistent with the mixed-methods approach that is recommended by, among others, the World Bank (Bamberger et al 2010).

5. *Short-lived programmes that are evaluated after the scheme has been concluded impede the learning process.*

   The learning process is based on an evaluation period providing lessons that can influence the design of the scheme in the next round. It is more difficult to learn from short-lived programmes that have already ended. An alternative is to introduce a regular evaluation mechanism that enables a continual review of the scheme's design.

6. *Lessons learnt from evaluation must be reported back to improve policy and decision-making.*

   A well-functioning cycle in which lessons learnt provide feedback to both decision-makers and programme designers is essential to ensure that the learning process will result in improved policy and a higher impact from the various support schemes. By identifying lessons learnt from the evaluations, potential improvements that can contribute to a more cohesive business and innovation policy mix in Sweden will be made visible.

Efficient feedback from evaluators to policy-makers requires a system that is designed to be information compatible; in other words, decision-makers must have access to relevant and reliable information. Well-known barriers that impede the transfer of knowledge and learning include the following: a) The results are difficult to access or are confined to the evaluator, and b), the financier cannot obtain the results. Therefore, it is essential for the results of evaluations to be presented such that the people who work with programme development can understand and use the results to improve the programme. The use of evaluation results to improve support measures is the very basis of an effective evaluation system.

It is also important for the system to be compatible with incentives, i.e., that the decision-makers have an incentive to take action that is consistent with their goals and that the different parts of the system interact with rather than counteract one another. This requires coordination across most of the government offices' policy areas. The more actors and instruments that are involved, the more complicated coordination will be.

In a complex innovation system such as that in Sweden, there is a risk that although each individual part will be effective in itself and in line with the stipulated criteria, the overall efficiency of the system will not as strong as one would wish. With effective feedback from operations to a well-balanced policy mix, both individual instruments and system efficiency can be utilised.

However, Sweden is not the only country where links between evaluations, lessons learnt and policy are weak. An international overview of 200 evaluations of innovation support

and 580 academic articles shows that, like Sweden, most other countries are in need of an efficient evaluation system (Edler et al 2013).[24]

That said, it must not be forgotten that the purpose of an intervention may be, for instance, to support a business in a disadvantaged region or a specific sector. The reason for adopting some forms of regional policies is that there is a compassionate aspect to supporting businesses in disadvantaged regions. Therefore, support programmes that focus on assisting remote regions or declining industries may be assessed using criteria other than socio-economic efficiency. However, this does not mean that the effectiveness of these forms of support is irrelevant. On the contrary, if it has been decided that a certain amount of money will be invested in supporting a region or a specific line of business, it is important that the support scheme has been designed to be as effective as possible. This raises the question of "What do we get for the money?" With this picture in mind, it is clear that evaluation will play an increasingly important role.

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[24] Edler et al (2013) write, "the discussions around instruments… have shown the enormous need for evidence of what works" (page 46).

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