
Entrepreneurship, institutions, and economic dynamism: lessons from a comparison of the United States and Sweden

Pontus Braunerhjelm^{*,†} and Magnus Henrekson^{**}

The purpose of the research endeavor published in this Special Section is to further our understanding of the extent, character, and orientation of entrepreneurial activity in today's wealthy countries. This is done by means of several detailed studies of institutions of particular importance for entrepreneurship and innovation-based firm growth, and its impact on the economy. All coauthors are renowned specialists in the area with deep knowledge of the pertinent institutions in Sweden and the United States, the two countries compared.

JEL classification: O43, O57, H30, K30, L26, L53, G28.

1. Introduction

To accurately picture the modern economic history of today's wealthiest countries, one has to highlight the central role businesses and companies have played in their development. An entrepreneur is always a strong driving force behind the names of these companies. When the United States overtook Britain as the global technology leader at the turn of the previous century, this was to a large extent associated with achievements by entrepreneurs such as Dale Carnegie and Henry Ford and by

^{*}Pontus Braunerhjelm, Swedish Entrepreneurship Forum and Department of Industrial Economics and Management, Royal Institute of Technology, Kungsgatan 33, 7th floor, S-111 56 Stockholm, Sweden. e-mail: pontus.braunerhjelm@entreprenorskapsforum.se

^{**}Magnus Henrekson, Research Institute of Industrial Economics (IFN), PO Box 55665, S-102 15 Stockholm, Sweden. e-mail: magnus.henrekson@ifn.se

[†]Main author for correspondence.

innovators such as Thomas Edison and Alexander Graham Bell. Similarly, Swedish industrialization at the end of the 19th century is associated with specific companies and entrepreneurs such as Lars Magnus Ericsson, Gustaf de Laval, and the Nobel brothers.

Virtually the same story can be told today, where specific individuals can be tied to companies that have made a great difference in the postwar period. Salient examples include Bill Gates and Microsoft, Steve Jobs and Apple, Sam Walton and Walmart, the Rausing brothers and Tetrapak, Ingvar Kamprad and Ikea, and Stefan Persson and H&M. All of them, or their heirs, figure prominently on the list of the wealthiest persons on the planet.¹

We side with scholars such as North (1990), Rodrik *et al.* (2004), and Acemoglu *et al.* (2005) in the view that cross-country differences in long-term economic performance are ultimately caused by differences in the rules of the game in society or the broader institutional setup. The accumulation of factors of production is just a proximate cause of growth, whereas the ultimate causes reside in the incentive structure that encourages individual effort, entrepreneurship, and investment in physical and human capital and in new technology.

Baumol (1990) pioneered the role of institutions for entrepreneurial behavior, namely, how “the social structure of payoffs” channeled entrepreneurship to different activities—some of which are productive, some unproductive, and some destructive or predatory. If institutions are such that it is beneficial for the individual to spend entrepreneurial effort on circumventing them, the individual will do so, rather than benefiting from institutions that reduce uncertainty and enhance contract and product quality. The outcome in this case is expected to be one where corruption and predatory activities prevail over socially productive entrepreneurship.

More generally, we agree with scholars like Baumol (2010), Holcombe (1998), Lazear (2005), and Carree and Thurik (2010) that entrepreneurship or the entrepreneurial function can fruitfully be seen as a distinct factor of production. The entrepreneur often “creates” the capital of the firm by investing in tangible and nontangible assets that in time create a return, such as developing a product and building firm structures. This capital requires a continued commitment on the part of the entrepreneur. The entrepreneur is rewarded for both effort and for postponing the consumption of firm equity into an uncertain future. Successful entrepreneurial firms need several components that are hard or nearly impossible to purchase externally: product or business ideas, sufficient managerial skills to implement innovations, and commitment to exert time and effort to realize an uncertain outcome.

In reality, the interaction between various dimensions of the institutional setup and the type and level of entrepreneurial activity is highly complex and, therefore,

¹Sanandaji (2011).

difficult to disentangle. A comparison of the United States and Sweden—which is our concern here—illustrates the fact that each country has its own bundle of formal as well as informal institutions that have evolved over time. The efficiency of an institutional setup hinges on the *complementarity* of its various constitutive elements (Freeman *et al.*, 1997; Schmidt and Spindler, 2002). Moreover, the entrepreneur is not the only agent that is of consequence for economic progress. Successful entrepreneurs who identify and exploit new ideas—thereby creating and expanding businesses—depend on a number of complementary agents, such as skilled labor, industrialists, venture capitalists, and agents in secondary markets. High-impact entrepreneurship becomes impossible without these complementary competencies and inputs. Thus, focusing solely on entrepreneurship abstracts from other factors necessary for an economy to prosper. Still, entrepreneurship is crucial; a lack of entrepreneurs cannot be fully offset by an ample supply of skilled labor or an extensive capital market.

Within the group of wealthy countries, the factors customarily identified as crucial for development—the rule of law, reasonably secure private property rights, and well-functioning financial markets²—are at hand. Thus, dwelling further on these factors is unlikely to substantively advance our understanding of the effects of institutions on entrepreneurship and innovation-based firm growth in a comparison of the United States and Sweden. Yet, substantial differences prevail between Sweden and the United States, as well as between developed countries more generally, differences that can be expected to influence the level and type of entrepreneurial activities.

The purpose of the research endeavor published in this Special Section of *Industrial and Corporate Change* is to further our understanding of the extent, character, and orientation of innovation-based entrepreneurial activity in today's wealthy countries. This is done by means of detailed studies of particular aspects of the rules of the game deemed to be of particular importance for entrepreneurship and innovation-based firm growth.

Such studies cannot be successfully carried out without detailed and in-depth expertise on the particular institutions and institutional differences studied. Therefore, our strategy has been to compose teams of two (in one case three) researchers who are highly knowledgeable both on their subject matter and the pertinent institutions in their respective home countries. Mostly, but not exclusively, the analyses focus on differences between Sweden and the United States, but we hope that our conclusions have wider relevance and may be used to set the stage for detailed analyses of economic programs and policies by delineating what is unique to a particular country with respect to economic institutions and economic performance.

²See Rodrik *et al.* (2004) and Levine (2005), respectively.

2. Economic performance and entrepreneurship: Sweden versus the United States

By the late 1960s the United States and Sweden were arguably—together with Switzerland—the wealthiest countries in the world. At around that point, Sweden began to lag behind the OECD average, and after a gradual decline lasting for a quarter of a century, Swedish PPP-adjusted growth per capita slid down to 17th place among OECD countries (Henrekson, 1996; Lindbeck, 1997).

Eventually, the long-term decline resulted in an acute crisis in the early 1990s, when public sector expansion could no longer offset the lack of dynamism and growth in the business sector. Roughly 15% of all jobs were lost between 1990 and 1994, open unemployment skyrocketed from <2% to 9%; and, as the number of persons receiving government aid of various sorts also exploded, government finances went into an acute crisis, with total outlays around 70% of GDP in 1992–93 and a budget deficit exceeding 10% of GDP.

Twenty years later, the roles are largely reversed. After the burst of the real-estate bubble and the collapse of Lehman Brothers and several other financial institutions in 2008, the US economy fell precipitously, and the recovery has been sluggish at best. In 2012, the employment rate still stood >5 percentage points below the 2007 level, and the budget deficit was some 10% of GDP. In fact, the US job machine that appeared so formidable until the IT crash has been sputtering for more than a decade. The average number of hours worked per person of active age (15–64 years) is down 11.6%—from 1,361 hours at its peak in 2000 to 1,190 hours in 2011.

Sweden, by contrast, although by no means unscathed by the global recession, stood much stronger: the unemployment rate was lower than in the United States, the aggregate employment rate was higher, and the government was running a surplus. Moreover, Sweden could look back at almost 2 decades of strong long-term growth, with average per capita growth significantly exceeding the growth rates in the OECD, the United States, and the European Union (EU). As a result, PPP-adjusted GDP per capita is up to sixth–eighth place in the OECD, the government budget is balanced, and total government outlays as a share of GDP are almost 20 percentage points lower than in the early 1990s. The average number of hours worked per person of active age was unchanged between 2000 and 2011 at 1,220 hours, basically on par with the United States.³

Taking a longer-term perspective, i.e. holding acute crises aside, both countries have managed to become two of the wealthiest and technologically most advanced economies in the world. Still, at least until recently, the United States and Sweden were polar cases in many pertinent respects: product-market regulations,

³The data presented in this and the two preceding paragraphs come from the June 2012 issues of *OECD Economic Outlook* and *OECD Employment Outlook*.

wage-setting institutions, employment security provisions, the tax treatment of business income, and the size of the public sector (Freeman *et al.*, 1997).

But where does Sweden stand in terms of entrepreneurial activities as compared with other countries and in particular compared with the United States? Country-level comparisons of entrepreneurial activities are associated with multiple measurements difficulties. Further we use the data provided by the Global Entrepreneurship Monitor (GEM) project, which are based on a carefully designed and standardized questionnaire administered in approximately 60 countries.⁴

A first observation is that the level of Swedish entrepreneurship has been comparatively low for some time, with a few exceptions, such as the IT hype in the late 1990s. According to the most recent GEM study, Sweden ranks 19 of 23 developed countries in 2011, whereas the United States firmly holds the first position. Throughout the period 1999–2011, rank stability has been high, with few sizable shifts over the years.

To capture the motives for becoming an entrepreneur, an increasingly used categorization refers to opportunity- or necessity-based entrepreneurship. The former refers to pull-effects due to the identification of an entrepreneurial opportunity, whereas the latter implies that individuals are pushed into entrepreneurship due to high levels of unemployment. An overwhelming majority of Swedish entrepreneurship is claimed to be of the opportunity-based type (close to 90%), whereas the corresponding share is somewhat smaller for the United States (approximately 75%).

New knowledge is obviously one source that can be expected to yield new and extended entrepreneurial opportunities. Although knowledge is an elusive and multifaceted concept, R&D is a typical measure of knowledge creation. Sweden is among the countries most heavily investing in R&D relative to GDP (3.6% in 2009), only surpassed by Israel (and occasionally by Finland). Such extensive investments in R&D can thus be expected to spill over into investment opportunities in knowledge-intensive and technologically advanced operations by incumbent firms, but should also constitute a base for new technology-based ventures. However, as shown in Figure 1, a simple correlation between R&D expenditures and total entrepreneurial activity does not suggest a positive relationship between these variables. The much higher total entrepreneurial activity in the United States compared with Sweden is not matched by a larger knowledge base, as measured by R&D. Hence, although opportunity-based entrepreneurship dominates in both Sweden and the United States, there seems to be a weak correlation between knowledge investments and entrepreneurship.

A related—and from a policy perspective highly relevant—issue concerns the performance and the entrepreneurs' expected future payoff of setting up a new

⁴See www.gemconsortium.org for the latest reports by Kelly *et al.* (2012) and Bosma *et al.* (2012).

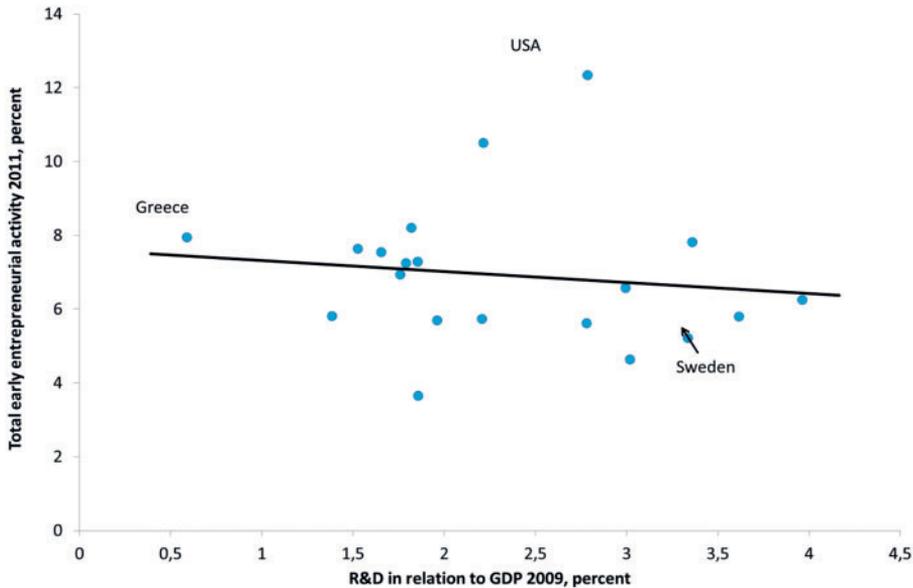


Figure 1 The relationship between the share of population (aged 20–65) involved in entrepreneurship and R&D relative to GDP, 2009.

firm. Regarding growth ambitions, measured as expected increase in employees 5 years ahead, Swedish entrepreneurs report modest plans, whereas the US entrepreneurs have the most expansionist plans of all developed countries. In terms of other performance variables, such as innovative activities and the degree of internationalization, the countries are ranked similarly (Bosma *et al.*, 2012). This may seem surprising considering the larger R&D investments in Sweden and the much smaller domestic market.

Do the differences reported previously at the aggregate level also translate into similar divergences at a more detailed and disaggregated level? Some answers to this question will be given when we review the various studies later in the text.

3. Is Sweden still an institutional outlier?

According to several scholars, there exist distinct types of market economies. Hall and Soskice (2001) identify different “varieties of capitalism.” They distinguish between coordinated market economies (CMEs) and liberal market economies. Both types may have high incomes and similar growth rates, but CMEs have more social insurance and less inequality. Esping-Andersen (1990) instead identifies “three worlds of welfare capitalism,” with the liberal US type welfare state as one extreme

and the Social-Democratic/Scandinavian type at the other end of the spectrum (and the Continental European corporatist model in between).

Hence, the United States is seen by many as the country where outcomes most closely approximate an unfettered market economy, whereas the Scandinavian countries, and Sweden in particular, are seen as the prime examples of CMEs. This alleged paradigmatic difference between the United States and Sweden/Scandinavia also provides the motivation for Acemoglu *et al.*'s (2012) discussion of “cuddly” versus “cutthroat” capitalism as responses to increased economic integration and more rapid technology transfer across countries.⁵

Still, there is reason to doubt that these distinctions are as sharp as they used to be. A major reason behind the strong Swedish growth in the past 2 decades was important reforms in the late 1980s, undertaken about a decade earlier in the United States, and the far-reaching policy responses to the deep crisis in the early 1990s (see Bergh, 2011 and Bergh and Erlingsson, 2009 for details):

- 1985–93: Deregulation of the credit and foreign exchange markets; removal of all barriers to foreign ownership of Swedish firms.
- 1990: The initiation of a deregulation of markets with a state monopoly: electricity, postal services, telecommunications, railroads, taxi, and domestic airways.
- 1990–91: A major tax reform lowering the top marginal tax rate from 75% to 50% and cutting the corporate tax rate in half.
- 1990–97: Central bank independence and a new macroeconomic policy.
- 1991–2000: A partial or full privatization of several state-owned enterprises.
- 1992: Introduction of school choice through a voucher system; vouchers are increasingly also used for child care, elderly care, and other tax-financed social services.
- 1993: Private for-profit employment agencies allowed.
- 1994–98: The introduction of a new partially funded pension system with automatic balancing.
- Early 1990s: Free radio and television.
- 1995: Sweden joins the EU.
- 1997: The introduction of a new budgetary process with upper spending limits and a law stipulating that every spending proposal must be accompanied by a matching financing proposal (a tax increase or a cut of some other spending).
- 1997: Temporary employment contracts allowed.
- 2001: Firms with no more than 10 employees allowed to exempt two employees from the “last-in-first-out” rule in case of redundancies.

⁵Hicks and Kenworthy (1998) identify Sweden as the most (and the United States as the least) neo-corporatist of all OECD countries in the mid-1980s.

- 1992–: The sickness insurance, disability pensions, and unemployment benefit levels have been capped at fairly low levels, and qualification criteria have become more stringent through a series of changes.

Labor markets have also been thoroughly decorporatized:

- After the demise of centralized bargaining, wage dispersion began to increase among blue- and white-collar workers (Edin and Topel, 1997; Davis and Henrekson, 2005).
- The rate of unionization is down by some 20 percentage points for blue-collar workers since the mid-1980s.⁶
- Labor market actors have traditionally been major participants in political decision making, but since the 1990s, representatives of “the social partners” are no longer members of important government agency boards (Öberg and Svensson, 2005).

The distribution of disposable income has become substantially more uneven. The Gini coefficient has increased by almost 50% and the P90/P10 ratio by a third, a combined effect of increased wage dispersion, a less progressive tax system, and a more uneven distribution of hours worked across households (Freeman *et al.*, 2010). Still, Sweden has among the most even income distributions among developed economies.

In fact, Sweden together with the United Kingdom were the two countries that increased their degree of globalization and economic freedom the most from 1970 to 2000 (Figure 2).

To conclude, the Swedish economy (and many other mature economies that have performed well in recent years) has been thoroughly reformed in the last quarter century, which makes the often used dichotomous characterizations of Sweden as a CME or a “cuddly” form of market economy as opposed to a liberal/“cutthroat” market economy less relevant than before and perhaps even misleading.

This is not to deny that there are important institutional differences between the United States and Sweden, differences that potentially have significant effects on entrepreneurship and innovation-based firm growth, which is our prime focus here.

4. R&D, growth, and entrepreneurship

Following the seminal contributions by Lucas (1988) and Romer (1986, 1990), knowledge investment—measured as R&D and education expenditure as a share of GDP—is customarily seen as the prime driver of economic growth. This

⁶Kjellberg (2001) and National Mediation Office (2012).

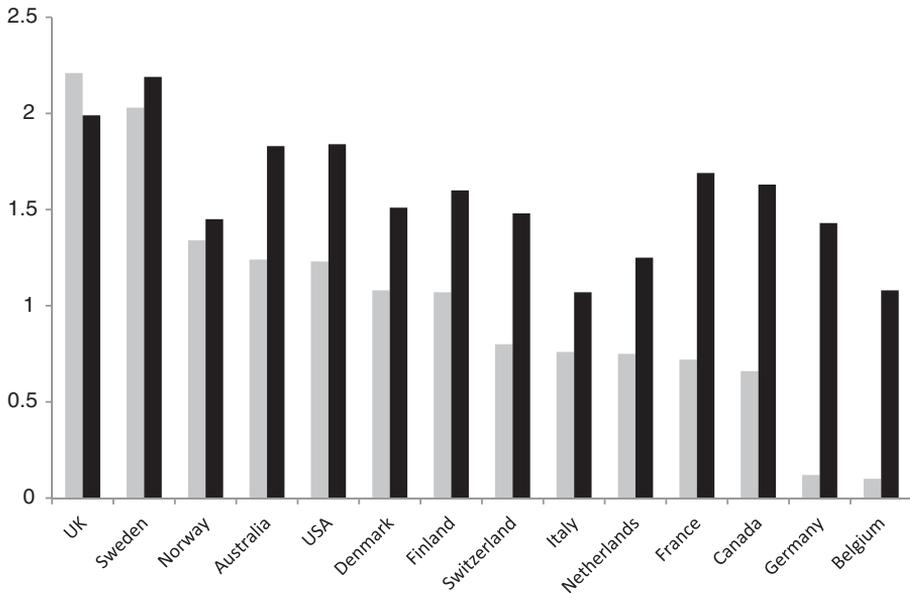


Figure 2 Increases in economic freedom (grey) and globalization (black) between 1970 and 2000 in selected countries. *Source:* Own calculations based on data from <http://globalization.kof.ethz.ch> och <http://www.freetheworld.com/>. See Gwartney and Lawson (2009) and Dreher (2006) for further details.

knowledge-based growth model has also greatly influenced policymaking. No doubt, the great leaps in well-being since the Industrial Revolution are largely based on new knowledge, new technology, and revolutionary innovations. It is still the case that econometric studies of the effect of investments in new knowledge—as measured by spending on R&D or education—do not unequivocally indicate that the effect is positive. A simple correlation between relative R&D spending and economic growth for the OECD countries since 2001 rather suggests a negative relationship, see Figure 3. As shown in Figure 4, it is also not possible to detect a positive relationship between an aggregate measure of innovation (in this case, the EU innovation performance index) and the annual rate of growth, albeit the period is too short to draw any firm conclusions.

Thus, neither the creation of new knowledge through R&D nor innovative activity *per se* seems sufficient to achieve economic growth and increased welfare. First, a large part of new knowledge is not of potential economic value. Second, and more importantly, some agent(s) must distinguish the subset of economically relevant knowledge, while filtering out the rest (Braunerhjelm *et al.*, 2010), and use the new knowledge in combination with other inputs to efficiently produce valuable goods and services. But the development of a successful firm requires a number of

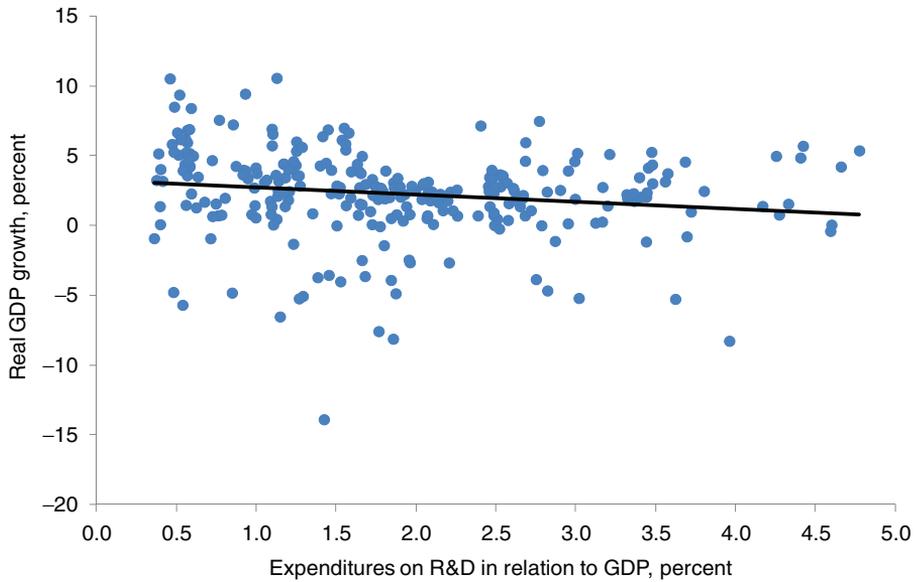


Figure 3 R&D expenditures relative to GDP and annual growth in 33 OECD countries, 2001–2009. *Source:* Braunerhjelm (2012).

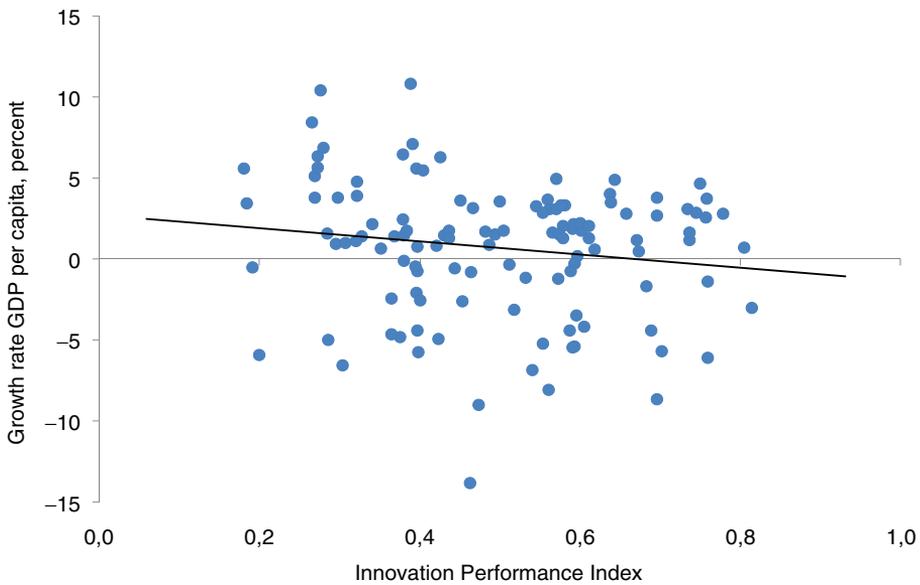


Figure 4 EU's innovation performance index and annual growth, 2006–2010. *Source:* Braunerhjelm (2012).

key actors with complementary competencies that interact to generate, identify, select, expand, and exploit new ideas to satisfy consumer preferences more efficiently.⁷ The entrepreneur is of course a prime agent, but also other types of agents are crucial: innovators, venture capitalists, industrialists, skilled labor, competent customers, and agents in secondary (exit) markets.⁸

It is particularly noteworthy that the introduction of new ideas into the economy and the subsequent development of the original innovations into large-scale businesses generally require two separate competencies (Baumol, 2004). Sometimes, the original entrepreneur evolves into an industrialist and continues to head his/her firm as it becomes larger, but more often than not, the entrepreneur will cede the top executive position to somebody with the requisite experience and competence to manage a large firm.

Successful entrepreneurship and firm growth is a function of how well these actors—with their differing skills and competencies—acquire and use their competencies in ways that make it possible to reap the benefits of the complementarities. This requires appropriate institutions that harmonize the incentives of the different types of actors. Hence, different types of skills and expertise, together with an institutional setup conducive to risk taking and experimentation, are required to foster successful entrepreneurial ventures.

5. Summary of special section articles

Different aspects of entrepreneurship and entrepreneurial opportunities are addressed in eight articles presented in this Special Section, comparing the welfare state-oriented and the more genuinely market-oriented economy as represented by Sweden and the United States, respectively. Despite covering heterogeneous topics, the articles can be classified into two broader categories.

The first four contributions relate to institutions and their impact on entrepreneurship, their character is more theoretical. More precisely, these contributions zero in on how institutions regarding competition, intellectual property rights (IPRs), venture capital, commercialization of university-based inventions, and, finally, taxes influence the extent and type of entrepreneurship that is undertaken. Some of the articles also contain empirical analyses, but the main thrust is theoretical.

The second set of articles is empirical, deploying unique data down to the individual level. Initially, a comparative study of the extent and performance of spinoff

⁷To our knowledge, the idea of the importance of complementary competencies to generate growth was first recognized by Gunnar Eliasson (e.g. Eliasson and Eliasson, 1996). Henrekson and Johansson (2009) explicitly use this framework to analyze the effects of a wide array of policies on high-growth firms. See also Phelps (2007, p. 553) for a discussion in conformity with our analysis.

⁸There are several types of actors in secondary markets, notably portfolio investors in publicly listed companies, private equity firms, and management buy-ins.

firms in the private business sector is undertaken, followed by a similar analysis of spinoffs from the university sector, i.e. academic entrepreneurship. The latter study focuses on the payoff for academics that transcend into entrepreneurship. The subsequent article compares and contrasts billionaire entrepreneurs with a broader sample of the self-employed. While the final article looks at high-impact firms, and their societal contributions compared with firms serving primarily as a means of self-employment.

5.1 Specific institutions and their effects

In the article “Entrepreneurial Commercialization Choices and the Interaction between IPR and Competition Policy,” Joshua Gans and Lars Persson (Gans and Persson, 2013) start out from the fact that the role of the individual entrepreneur for the commercialization of inventions and innovations is increasingly emphasized in the economics literature. Entrepreneurial startups are said to offer a more innovative environment than large incumbent firms. At the same time, it has been well documented that inventions, innovations, and small innovative firms are sold to larger more mature firms. The owners of the sold firm then tend to use the proceeds from the sale to start new innovative ventures.

Gans and Persson show that stronger IPRs increase the likelihood that the entrepreneur will sell his firm. Moreover, they show that competition law then becomes even more important in protecting the entrepreneurs from prospective large incumbent buyers who may exercise their potentially stronger negotiation position. Patent intrusion and power demonstration due to impotent competition law would also weaken incentives to invent and innovate. Thus, the protection of IPRs and competition law are complements, i.e. an increased legal protection of IPRs requires a more stringent competition law.

Their finding, that the strength of intellectual property protection law and competition law may be complements from the perspective of increasing the rate of entrepreneurial innovation indicates that the strong position of competition law in the United States, and the strengthening of the US intellectual property protection law over the past decades, have contributed to the strong US productivity growth of recent decades. Gans and Persson’s analysis also provides support for the joint strengthening of competition law and intellectual property protection law that has been instituted in the EU. These changes give hope for a productivity increase in the EU over the coming decades as well. Yet, their analysis also shows that the devil is in the details, which makes it difficult to draw more general conclusions due to the intricate interaction between IP law and competition law, and their effect on the incentive to innovate.

The article “Institutions and Venture Capital” by Josh Lerner and Joacim Tåg (Lerner and Tåg, 2013) notes that in recent years, a local venture capital market for equity investments in small entrepreneurial firms has emerged in a number of

countries. The authors survey the literature on the connection between institutions and the functioning of local venture capital markets and also provide a case study comparing the development of local venture capital markets in the United States and Sweden.

They find that a developed venture capital market is important for providing financing for fast-growing entrepreneurial firms that typically contribute substantially to innovation and growth in a country. Venture capitalists' advantage lies in their expertise in solving agency conflicts and information asymmetries that often arise in the financing of innovative, but high-risk, entrepreneurial firms. The venture capitalists' experience also provides them with knowledge of how to grow firms and an extensive network of connections useful for small firms.

Lerner and Tåg stress that an active and highly competent venture capital market cannot evolve without the appropriate institutional framework. Research has identified the following factors as relevant for the development and functioning of local venture capital markets:

1. A legal environment ensuring that efficient contracts between venture capitalists and entrepreneurs can be written and enforced.
2. A well-developed stock market that provides good exit opportunities for venture capital firms.
3. A tax system that favors entrepreneurial effort.
4. Labor market regulations that do not increase the cost for small firms to hire and dismiss workers.
5. A good interface between advanced university research and the business sector, including public support to academic research, protection of IPRs, and professional technology transfer.

They apply these findings on the local venture capital market in Sweden and the United States. The market emerged approximately 30 years later in Sweden. The reasons behind this late development likely included the lack of stock markets for small firms, a tax policy that disfavored equity investments in small firms (real effective taxes exceeding 100% on entrepreneurial income), and a labor market policy making it hard for small firms to hire and fire workers. Despite the late start of the local venture capital market in Sweden relative to the United States, the Swedish market really took off in the mid-1990s and has developed into one of the most active in the world. The market is still, however, small relative to the buyout market focusing on investments in later stages, which is the second most active in Europe (Tåg, 2012).

In "University Entrepreneurship and Professor Privilege," Erika Färnstrand Damsgaard and Marie Thursby (Färnstrand Damsgaard and Thursby, 2013) examine how inventions by university faculty are commercialized in two different institutional settings: the US system, where the Bayh Dole Act gives universities the right to own inventions from publicly funded research, and the Swedish system, where the

so-called Professor Privilege gives the university faculty this right. In a theoretical model, they show that these institutional differences are likely to give rise to more startups in Sweden, whereas the US system is likely to increase the rate of successful commercialization.

Contrary to the Swedish case, several European countries have in recent years given universities the right to own inventions. Thus, the US and Swedish systems differ from each other in several substantive ways. In the United States, universities have developed so-called Technology Transfer Offices (TTOs) with the objective of promoting the commercialization of the inventions the university owns and to maximize revenue from these inventions. Any revenue is shared between the university and the inventor. In Sweden, on the other hand, it is up to the faculty inventor to decide whether and how (s)he wants to commercialize the invention. The inventor has the full responsibility for the commercialization and is the sole beneficiary of any revenue.

In the model, it is shown that these differences in ownership may influence how an invention is commercialized and the likelihood and extent of a commercial success. Färnstrand Damsgaard and Thursby find that if incumbent firms have more experience and know-how in commercialization than startup firms, TTOs at US universities are more inclined to license the invention to an incumbent firm instead of letting the inventor start his/her own firm. In Sweden, on the other hand, inventors are more likely to start their own business. The model shows that if this is the case, the likelihood of a successful commercialization will be greater in the United States than in Sweden.⁹ In contrast, if it is easier for the inventor than for the university TTO to find an incumbent firm willing to license the commercialization of the invention, the likelihood of success may instead be greater in Sweden. This could be so, as inventors in Sweden have more property rights than their US counterparts.

Given the institutional tax setup in Sweden, Karin Edmark and Roger Gordon (Edmark and Gordon, 2013) in “The Choice of Organizational Form by Closely-held Firms in Sweden: Tax Versus Non-tax Determinants” derive the effective tax rates that apply to income from closely held corporations (CHCs) and sole proprietorships, respectively. They find that owners of CHCs often face lower tax rates than sole proprietors, especially starting from the year 2006, when more generous tax rules for CHCs were implemented. The results of an empirical analysis suggest that this tax difference has made business owners more prone to choose to organize as CHCs.

⁹The empirical results in Braunerhjelm and Svensson (2010) are in line with this theoretical result. Based on an extensive survey covering Swedish patents granted to individuals and small firms, they find better commercialization performance when the patent is licensed or sold to an entrepreneur, or if the inventor is employed in an entrepreneurial firm, compared with commercialization in the inventor’s own firm.

The Swedish small-business tax rules are complicated. The main reason for this is that the policymakers want to prevent income from labor, which is normally subject to higher tax rates, being converted into capital income, which is taxed at lower rates.¹⁰ However, since 2006, a number of measures have been taken that enable entrepreneurs to have a larger share of their income taxed as capital income. In addition, the tax rate on such income was lowered from 30% to 20%.

Edmark and Gordon show that these changes have dramatically reduced the effective tax rates for owners of CHCs, in particular for higher-income firms with high levels of capital and/or wage payments. Sole proprietors are not affected by these tax reductions, and as a consequence, it has become more advantageous, tax-wise, to run a business as a CHC instead.

Their empirical analysis suggests that this tax advantage has induced more business owners to choose to organize as a CHC instead of as a sole proprietorship. It is estimated that a 1% higher net-of-tax income from choosing CHC, instead of sole proprietorship, gives rise to an almost 1 percentage point increase in the share of business owners who organize as CHC instead of sole proprietorship. The effect is stronger for firms with higher levels of capital and weaker for service sector firms.

One clear advantage of a CHC relative to a sole proprietorship is that a CHC is a better platform for expansion, should the entrepreneur discover such potential along the way. Change of ownership is also easier when the business is in the form of a CHC, in particular if it contains an IPR of some sort.

5.2 Empirical articles

The first empirical article, “Characteristics and Performance of New Firms and Spinoffs in Sweden” by Martin Andersson and Steven Klepper (Andersson and Klepper, 2013), centers on private-sector spinoffs. The purpose is to explore the characteristics of individuals and spinoff firms and their performance as compared with other firms. Sweden is one of the countries in the world where such information has been compiled in a dataset that matches employees to their employers, providing rich information on all establishments and firms in the economy and the individuals they employ. The authors exploit this dataset to identify all new firms in the private sector in Sweden for the period 1993 to 2005, as well as new establishments created by existing firms. The analysis is carried out in a way that closely follows previous studies in other countries. Hence, an additional objective is to examine the extent

¹⁰For closely held firms, there are particular restrictions on the payment of dividends, the so-called 3:12 rules. These rules were introduced in 1991 to prevent owners of profitable small businesses from saving on taxes by paying themselves dividends taxed at 30% rather than wages taxed at the marginal tax rate for labor income. Therefore, the scope for dividend payments was restricted to a relatively small percentage of the equity capital paid in by owners. The 3:12 rules also raised the capital gains tax on small businesses.

to which country differences can be detected. Country-specific characteristics may have influenced the creation and performance of spinoffs.

The distribution of new firms suggests that the patterns in Sweden are broadly in line with those observed in other countries; annually, the average number of pushed and pulled spinoffs together is 1,161 in Sweden. Most of these (70%) entered the private service sector, and a major share of spinoffs can be categorized as opportunity-based (pull) ventures. The authors provide evidence on institutional changes and differences that tend to influence the rate and performance of spinoffs, such as labor market tenure rules and the tax system, but also the dominance of large multinational firms in the Swedish economy. Moreover, substantial differences across different categories of new firms are shown to prevail, where spinoffs systematically outperform other categories, both with regard to survival and employment growth. Spinoffs are larger on average and initially employ more advanced and experienced workers than other types of new firms. This corroborates previous results.

However, there are also marked deviations compared with other countries. First, the propensity to start firms for individuals with a degree in Science and Engineering seems weaker in Sweden, although not dramatically so. Moreover, compared with Denmark, tenure is shown to have an inhibiting effect on labor mobility and hence on entrepreneurial spinoffs, which may reflect stricter labor protection rules in Sweden. Third, US data reveal that the larger the firms from which the spinoffs emanate, the worse their performance, whereas the opposite is true for Swedish firms.

The subsequent article, “Does Academic Entrepreneurship Pay?” by Thomas Åstebro, Pontus Braunerhjelm and Anders Broström (Åstebro *et al.*, 2013), examines the private financial returns to academic entrepreneurship, focusing on high-tech sectors (Health, Natural Science, and Engineering). Pecuniary reward should be an important motivator for employment choices, but empirical research is scarce due to a lack of income data at the individual level. According to the authors, there exists only one previous study on this topic. The current study benefits from having access to Swedish employment and tax records, which allows the authors to capture returns previously unrecorded. These data are pooled with the exceptionally detailed matched employer–employee database mentioned previously.

Åstebro *et al.* identify 478 individuals aged ≤ 60 working at Swedish universities who quit to become full-time owner–entrepreneurs or were employed in a small startup between 1999 and 2008. Approximately 0.9% of all academics become full-time entrepreneurs every year in Sweden. Earnings data include tax filings on wages, business income, dividends, and capital gains. The average annual (total) earnings are by and large unchanged as faculty staff turn to entrepreneurship. If any, the difference is negative, but only marginally significant, and the significance disappears after controlling for covariates. There seems to be negative selection into entrepreneurship; those with lower pre-entry earnings are more likely to become entrepreneurs. Less than 1% obtain capital gains higher than half the average

pre-entrepreneurship earnings. A large fraction, >60%, quit full-time entrepreneurship within 2 years, and 66% of those return to academia. In addition, the academics also take on substantially more risk: the standard deviation of earnings is more than three times larger after becoming an entrepreneur compared with before.

Why would rational individuals choose to leave a (often) tenured position at universities, take on more risk, and reduce their earnings? There are a number of conceivable explanations, one being that the investigated period is too short or that personal consumption partly takes place within the firm.¹¹ Overoptimism may be part of the story, which is corroborated by the slow growth of firms founded by academics. Alternatively, nonpecuniary rewards weigh more heavily than economic ones. Still, it seems a fact that within a 10-year period, there are no discernible economic rewards to leaving academia for entrepreneurship. The results are largely in line with previous findings for US academic entrepreneurship, but the negative effect seems larger. The authors point to conceivable future research avenues to further penetrate these intriguing results.

For an egalitarian society like Sweden, the focus of the article by Tino Sanandaji and Peter Leeson (Sanandaji and Leeson, 2013), “Billionaires,” referring to the subset of high-performing entrepreneurs, may be of particular interest. Self-made billionaire entrepreneurs are compared with a much wider and more heterogeneous group of the self-employed. More precisely, they investigate the relationship between economic development, institutions, and these two contrasting kinds of entrepreneurs. As shown by the authors, the contribution by billionaires is remarkable. In the United States, 234 billionaires in 2009 are estimated to be worth USD 718 billion collectively.

Pooling data from *Forbes Magazine*’s list on billionaires with country-level data from official sources (such as the International Labour Organization (ILO), IMF, and OECD), the authors’ analysis leads to the following policy conclusions. First, self-employment may be a negative indicator of whether a country’s institutional arrangements leverage entrepreneurship for economic progress. The prevalence of billionaires may be a better benchmark for policymakers considering reforms. Second, their analysis suggests that policymakers interested in promoting entrepreneurship as a means of fostering economic development may do best to focus their attention on the overarching institutions rather than on entrepreneurship *per se*. And, finally, in the absence of well-protected property rights and light-handed state intervention in markets, policymakers’ efforts to encourage entrepreneurial activity, such as subsidizing business startups, business training/education, or subsidizing small business growth, may create a worse state of affairs from the perspective of economic development than doing nothing at all.

¹¹This should be controlled for by the numbers provided by Statistics Sweden, but it is hard to tell how well this is captured through the procedure of upgrading entrepreneurs’ income by a factor of 1.6.

In “Local Multipliers and Human Capital in the United States and Sweden” by Enrico Moretti and Per Thulin (Moretti and Thulin, 2013), the effect of an entry on local employment is compared for Sweden and the United States. The objective is to quantify the long-term total change in the number of jobs in a region that can be attributed to an exogenous increase (entry) in other sectors. More precisely, the empirical analysis shows how growth of local employment in the nontradable sector (services locally produced and consumed) is influenced by an increase of local employment in the tradable sector (manufacturing and tradable services). Furthermore, evidence is provided on how these effects vary with average levels of human capital and degree of technological sophistication of the entering unit. Also, this analysis takes advantage of the detailed matched employer–employee dataset used in two of the previously described articles. Irrespective of local specificities in terms of productivity determinants, the longitudinal nature of the data allows the authors to control for such permanent differences between metropolitan areas, both in the traded and nontraded sector.

The empirical findings point to similarities as well as dissimilarities between Sweden and the United States. First, sizable multiplier effects are shown to exist in Swedish local labor markets (in particular in dense city areas), albeit the average effect is smaller than for the United States. Second, and consistent with US evidence, the multiplier effect in Sweden is particularly large for employers with many well-educated workers and for employers in the high-tech sector.

From a policy point of view, this article relates to numerous initiatives by local and national government to engage in activities to attract businesses to their respective jurisdictions. It is then important to know the effect on local communities of a new establishment, conceivable differences across industries, and how such policies can be justified on economic grounds. A comparison between Sweden and the United States also highlights the effect of differences in the institutional setup, e.g. lower labor mobility, more compressed wage dispersion, and more generous public unemployment subsidies in Sweden. This is important because the magnitude of the multiplier effect crucially depends on the elasticity of labor supply at the local level.

6. Concluding remarks

Today, it is fair to say that the view that good institutions are the key to growth and prosperity is the new “received wisdom.”¹² This does not mean that all puzzles are

¹²Acemoglu, with various coauthors, has solidified this view in recent years, in particular with the monumental book *Why Nations Fail* (Acemoglu and Robinson, 2012). See also Sachs (2012) for a critical review of the book, and Glaeser *et al.* (2004) who claim that economic growth and human capital accumulation precede institutional improvement.

dissolved and that we know what to do to make any country more prosperous. It is fairly straightforward to identify what has gone wrong and how institutions ought to be improved in today's very poor countries, where average income is an order of magnitude lower than in the richest countries, although it is still exceedingly difficult to implement these improvements.¹³ However, the matter is much more complicated when it comes to the wealthiest countries. Per capita income is more than 50 times higher in the United States than in Sierra Leone and Haiti, but if we compare the United States to countries like Sweden, Switzerland, and the Netherlands, differences in per capita income are far smaller.¹⁴

For anyone who follows the policy debate in even the wealthiest of countries, it is immediately obvious that people harbor concerns about a number of aspects where their own country is said to have weak spots. It is tempting to look for a country that is perceived to do very well on that particular aspect and argue that a certain institutional element, which allegedly causes this felicitous outcome, should be imported. Here, things become more complicated; each country has its own bundle of formal and informal institutions that have evolved over time. The efficiency of an institutional setup hinges on the complementarity of various elements, and therefore, an isolated and ill-conceived change in a certain element can lead to inconsistencies, making the system as a whole less efficient.

Therefore, a bit of caution and humility is called for. Still, there is no other way but to learn from the best *and* be aware of the difficulties involved in importing particular policies and institutions from other countries. Hence, although it is naïve to believe that one country can imitate and import ready-made institutions from other countries, there is room for learning, adoption, and adaptation.

The previously described contributions have highlighted a number of important institutional differences potentially important for economic performance and prosperity. First, the effect of institutions on entrepreneurship and innovation hinges on a coherent design over different policy areas. For example, strong IPRs may not yield the expected results unless supported by adequate competition policies. Second, the functioning of venture capital in propelling entry, innovation, and growth is critically dependent on the legal environment, including contract law, taxes, and employment legislation. Tax-transparent organizational forms that large international investors are comfortable with should be introduced in Sweden. Setting up government-backed venture capital (VC) funds is not an alternative to inferior institutional

¹³As shown by North (1990) and Easterly (2001), copying institutions without adapting them to the local context is rarely a successful strategy.

¹⁴US PPP-adjusted income per capita in 2010 was identical to that in Switzerland and 19% and 10% higher than in Sweden and the Netherlands, respectively (OECD, *Main Economic Indicators*, Vol. 2012/2).

conditions. Taxes on stock options are prohibitively high in Sweden, effectively barring their use as an instrument to foster innovation and firm growth.¹⁵

Third, the societal impact of faculty inventions (individually or by the university) stems from how a country's system and complementary institutions have evolved over time, not from whether ownership of inventions belongs to the university or the faculty. In the case of Sweden, complementary institutions need to be developed rather than just transferring property rights to the university. One potential candidate is the tax treatment of stock options referred to previously. Fourth, the type and form of entrepreneurship is heavily dependent on the tax system; tax arbitrage may be one reason to set up a firm. Fifth, the importance of entry in magnifying local demand and beneficial spillover effects implies that the labor market needs to be flexible, housing markets well-functioning, and public infrastructure investments sufficient for society to reap the full potential of agglomeration effects.

Sixth, incentives, but also labor mobility, are important to trigger spinoffs from the business as well as the academic sectors. Finally, high-impact entrepreneurs are important and generate substantial spillover effects. Rather than targeting small firms to compensate for their inherent disadvantages—a motivation for many policies in recent decades—measures should be directed toward providing a framework for fostering a dynamic economy conducive to high-impact entrepreneurship. Focus should thus be on the *bundle* of policies that ensures that people can start new ventures, develop these ventures into high-impact firms, and expand existing ventures to their full potential.¹⁶

Yet, the entrepreneur is not the only agent that is of consequence for economic progress. Successful entrepreneurs who identify and exploit new ideas—thereby creating and expanding businesses—depend on a number of complementary agents, such as skilled labor, industrialists, support services, venture capitalists, and secondary markets. Focusing solely on entrepreneurship abstracts from other factors necessary for an economy to prosper. Still, entrepreneurship is crucial; a lack of entrepreneurs cannot be fully offset by an ample supply of skilled labor or an extensive capital market

The main message of this introduction and the set of articles included in this Special Section is that analyses of entrepreneurship should be conducted through the lens of the institutional setup. Few, if any, societies have managed to completely quell the individual's innovativeness and pursuit of personal gains. However, there are

¹⁵For employees, stock options are taxed as labor income and subjected to mandatory social security (32%). As the marginal tax rate is roughly 57%, this entails a total tax rate of roughly 67%, which is prohibitively high (Bengtsson *et al.*, 2013).

¹⁶This does not preclude the prospect of an entrepreneurial venture being sold to an incumbent fairly quickly. The full potential of a business idea is often more likely to be realized if it is sold to an established business with the requisite know-how and financial strength (Norbäck and Persson, 2009).

large differences as to whether, and to what extent, societies have managed to gain rather than lose from these human traits. Although we may be fairly confident that these differences have a great deal to do with institutional differences, on the more detailed level, we still know fairly little about how these effects are borne out, and how entrepreneurs would react to specific institutional changes, let alone when and how entrepreneurial effort is expended to induce institutional change.

We sincerely hope that the collection of studies in this Special Section gives both inspiration for further research and some guidance for policymakers as to how the economic system could be reformed to reap more benefits from R&D and other knowledge creation.

Acknowledgements

The authors thank Dina Neiman and participants in the June 2011 IFN–Swedish Entrepreneurship Forum Conference Entrepreneurship, Industrial Development, and Growth for helpful comments. They acknowledge financial support from the Torsten and Ragnar Söderberg Foundations.

References

- Acemoglu, D., S. Johnson and J. A. Robinson (2005), 'Institutions as the fundamental cause of long-run growth,' in P. Aghion and S. Durlauf (eds), *Handbook of Economic Growth*. Elsevier: Amsterdam.
- Acemoglu, D. and J. A. Robinson (2012), *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown Publishers: New York.
- Acemoglu, D., J. A. Robinson and T. Verdier (2012), 'Can't we all be more like Scandinavians? Asymmetric growth and institutions in an interdependent world,' *NBER Working Paper No. 18441*. National Bureau of Economic Research: Cambridge, MA.
- Andersson, M. and S. Klepper (2013), 'Characteristics and performance of new firms and spinoffs in Sweden,' *Industrial and Corporate Change*, **22**(1), 245–280.
- Åstebro, T., P. Braunerhjelm and A. Broström (2013), 'Does academic entrepreneurship pay?' *Industrial and Corporate Change*, **22**(1), 281–311.
- Baumol, W. J. (1990), 'Entrepreneurship: productive, unproductive, and destructive,' *Journal of Political Economy*, **98**(5), 893–921.
- Baumol, W. J. (2004), 'Entrepreneurial enterprises, large established firms and other components of the free-market growth machine,' *Small Business Economics*, **23**(1), 9–21.
- Baumol, W. J. (2010), *The Microtheory of Innovative Entrepreneurship*. Princeton University Press: Princeton, NJ.
- Bengtsson, O., M. Henrekson and T. Sanandaji (2013), 'Stock option taxation and the prevalence of entrepreneurial firms,' *mimeo*. Research Institute of Industrial Economics: Stockholm.

- Bergh, A. (2011), 'The rise, fall and revival of a capitalist welfare state: what are the policy lessons from Sweden?' *IFN Working Paper No. 873*. Research Institute of Industrial Economics: Stockholm.
- Bergh, A. and G. Erlingsson (2009), 'Liberalization without retrenchment: understanding the consensus on Swedish welfare state reforms,' *Scandinavian Political Studies*, **32**(1), 71–94.
- Bosma, N., S. Wennekers and J. E. Amorós (2012), *Global Entrepreneurship Monitor: 2012 Global Report—Extended*. Babson College: Babson Park, MA.
- Braunerhjelm, P. (2012), 'Innovation and Growth,' in M. Andersson, B. Johansson and H. Lööf (eds), *Innovation and Growth: From R&D Strategies of Innovating Firms to Economy-wide Technological Change*. Oxford University Press: Oxford.
- Braunerhjelm, P., Z. J. Acs, D. B. Audretsch and B. Carlsson (2010), 'The missing link: knowledge diffusion and entrepreneurship in endogenous growth,' *Small Business Economics*, **34**(2), 105–125.
- Braunerhjelm, P. and R. Svensson (2010), 'The inventor's role: was Schumpeter right?' *Journal of Evolutionary Economics*, **20**(3), 413–444.
- Carree, M. and A. R. Thurik (2010), 'The impact of entrepreneurship on economic growth,' in Z. J. Acs and D. B. Audretsch (eds), *Handbook of Entrepreneurship Research*. Springer: New York and London.
- Davis, S. J. and M. Henrekson (2005), 'Wage-setting institutions as industrial policy,' *Labour Economics*, **12**(3), 345–377.
- Dreher, A. (2006), 'Does globalization affect growth? Empirical evidence from a new index,' *Applied Economics*, **38**(10), 1091–1110.
- Easterly, W. (2001), 'The lost decades: developing countries' stagnation in spite of policy reform 1980–1998,' *Journal of Economic Growth*, **6**(2), 135–157.
- Edin, P. A. and R. Topel (1997), 'Wage policy and restructuring: the Swedish labor market since 1960,' in R. B. Freeman, R. Topel and B. Swedenborg (eds), *The Welfare State in Transition*. University of Chicago Press: Chicago.
- Edmark, K. and R. Gordon (2013), 'The choice of organizational form by closely-held firms in Sweden: tax versus non-tax determinants,' *Industrial and Corporate Change*, **22**(1), 219–243.
- Eliasson, G. and Å. Eliasson (1996), 'The biotechnical competence bloc,' *Revue d'Economie Industrielle*, **78**(1), 7–26.
- Esping-Andersen, G. (1990), *The Three Worlds of Welfare Capitalism*. Princeton University Press: Princeton, NJ.
- Färnstrand Damsgaard, E. and M. Thursby (2013), 'University entrepreneurship and professor privilege,' *Industrial and Corporate Change*, **22**(1), 183–218.
- Freeman, R. B., B. Swedenborg and R. Topel (eds) (1997), *The Welfare State in Transition: Reforming the Swedish Model*. Chicago University Press: Chicago, IL.
- Freeman, R. B., B. Swedenborg and R. Topel (2010), 'Introduction,' in R. B. Freeman, B. Swedenborg and R. Topel (eds), *Reforming the Welfare State: Recovery and Beyond*. University of Chicago Press: Chicago.

- Gans, J. S. and L. Persson (2013), 'Entrepreneurial commercialization choices and the interaction between IPR and competition policy,' *Industrial and Corporate Change*, **22**(1), 131–151.
- Glaeser, E. L., R. La Porta, F. Lopez-de-Silanes and A. Shleifer (2004), 'Do institutions cause growth?' *Journal of Economic Growth*, **9**(3), 271–303.
- Gwartney, J. and R. Lawson (2009), *Economic Freedom of the World: 2009 Annual Report*. Economic Freedom Network och Fraser Institute: Vancouver, BC.
- Hall, P. and D. Soskice (2001), *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford University Press: Oxford.
- Henrekson, M. (1996), 'Sweden's relative economic performance: lagging behind or staying on top?' *Economic Journal*, **106**(439), 1747–1759.
- Henrekson, M. and D. Johansson (2009), 'Competencies and institutions fostering high-growth firms,' *Foundations and Trends in Entrepreneurship*, **5**(1), 1–82.
- Hicks, A. and L. Kenworthy (1998), 'Cooperation and political economic performance in affluent democratic capitalism,' *American Journal of Sociology*, **103**(6), 1631–1672.
- Holcombe, R. G. (1998), 'Entrepreneurship and economic growth,' *Quarterly Journal of Austrian Economics*, **2**(1), 45–62.
- Lazear, E. P. (2005), 'Entrepreneurship,' *Journal of Labor Economics*, **23**(4), 649–680.
- Kjellberg, A. (2001), *Fackliga organisationer och medlemmar i dagens Sverige*, 2nd extended and revised edn. Arkiv: Lund.
- Lerner, J. and J. Tåg (2013), 'Institutions and venture capital,' *Industrial and Corporate Change*, **22**(1), 153–182.
- Levine, R. (2005), 'Finance and growth: theory and evidence,' in P. Aghion and S. Durlauf (eds), *Handbook of Economic Growth*. Elsevier: Amsterdam.
- Lindbeck, A. (1997), 'The Swedish experiment,' *Journal of Economic Literature*, **35**(2), 1273–1319.
- Lucas, R. E. (1988), 'On the mechanics of economic development,' *Journal of Monetary Economics*, **22**(1), 3–42.
- Lucas, R. E. (2000), 'Some macroeconomics for the 21st century,' *Journal of Economic Perspectives*, **14**(1), 159–168.
- National Mediation Office (2012), *Avtalsrörelsen och lönebildningen 2011*. Medlingsinstitutets årsrapport: Stockholm.
- Moretti, E. and P. Thulin (2013), 'Local multipliers and human capital in the United States and Sweden,' *Industrial and Corporate Change*, **22**(1), 339–362.
- Norbäck, P. J. and L. Persson (2009), 'The organization of the innovation industry: entrepreneurs, venture capitalists, and oligopolists,' *Journal of the European Economic Association*, **7**(6), 1261–1290.
- North, D. C. (1990), *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press: Cambridge.
- OECD (2011), *OECD Science, Technology and Industry Scoreboard*. OECD: Paris.

- Öberg, P. O. and T. Svensson (eds) (2005), *Power and Institutions in Industrial Relation Regimes: Political Science Perspectives on the Transition of the Swedish Model*. National Institute of Working Life: Stockholm.
- Phelps, E. S. (2007), 'Macroeconomics for a modern economy,' *American Economic Review*, **97**(3), 543–561.
- Rodrik, D. (2008), 'Second-best institutions,' *American Economic Review*, **98**(2), 100–104.
- Rodrik, D., A. Subramanian and F. Trebbi (2004), 'Institutions rule: the primacy of institutions over geography and integration in economic development,' *Journal of Economic Growth*, **9**(2), 131–165.
- Romer, P. M. (1986), 'Increasing returns and long-run growth,' *Journal of Political Economy*, **94**(5), 1002–1035.
- Romer, P. M. (1990), 'Endogenous technical change,' *Journal of Political Economy*, **98**(5), S71–S102.
- Sachs, J. D. (2012), 'Government, geography, and growth: the true drivers of economic development,' *Foreign Affairs*, **91**(5), 142–150.
- Sanandaji, T. (2011), 'Essays in entrepreneurship policy,' Doctoral Dissertation in Public Policy. Irving B. Harris Graduate School of Public Policy Studies, University of Chicago, Chicago, IL.
- Sanandaji, T. and P. T. Leeson (2013), 'Billionaires,' *Industrial and Corporate Change*, **22**(1), 313–337.
- Schmidt, R. H. and G. Spindler (2002), 'Path dependence, corporate governance and complementarity,' *International Finance*, **5**(3), 311–333.
- Tåg, J. (2012), 'The real effects of private equity buyouts,' in D. Cumming (ed.), *The Oxford Handbook of Private Equity*. Oxford University Press: Oxford.