På den tillväxtpolitiska agendan

On the Growth Policy Agenda

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itps INSTITUTET FÖR TILLVÄXTPOLITISKA STUDIER

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Förord

Med skriften *På den tillväxtpolitiska agendan* vill ITPS öka kunskaperna om de allmänna förutsättningarna för ekonomisk tillväxt och möjligheterna att bedriva tillväxtpolitik.

De politiska utmaningarna associerade med innovationer är många. Skatter, företagsvillkor, regelverk, forskning och utveckling, samverkansmöjligheter, kunskaps- och teknikspridning, immaterialrätt och incitamenten för risktagande behöver ständigt ses över för att främja den ekonomiska tillväxten i Sverige.

Internationellt framträdande forskare har hjälpt oss att belysa vad de pågående omvärldsförändringarna kan betyda. Vi vill här passa på att rikta ett tack till dem för deras respektive bidrag. Slutsatserna är författarnas egna.

Skriften inleds respektive avslutas med att jag ger min syn på artiklarnas bidrag i ett svenskt sammanhang. Dessa avsnitt är skrivna på både engelska och svenska medan skriftens huvudbidrag enbart publiceras på engelska.

Redaktörer för skriften har varit Göran Hallin och Anders Östhol, där den senare också varit projektledare.

Östersund, augusti 2004

Sture Öberg
Generaldirektör

Foreword

By publishing *On the growth policy agenda* ITPS wishes to increase the understanding about the general requirements for economic growth and opportunities to pursue growth policies.

There are many political challenges associated with innovation. Taxes, general conditions for firms, rules and regulations, research and development, the dissemination of knowledge and technology, intellectual property rights and incentives for risk taking, need to be constantly reassessed in order to promote economic growth in Sweden.

Leading international researchers have helped us shed light on the significance of ongoing changes taking place in the world today. We want to take the opportunity to extend our gratitudes to them for their respective contributions. The conclusions are those of the authors alone.

The book starts out with a prologue and is concluded by an epilogue where I present my own view on the contributions in a Swedish context. These parts of the book are written in both English and Swedish while the main chapters are presented only in English.

Editors of the book have been Göran Hallin and Anders Östhol, the latter has also been project manager.

Östersund, August 2004

Sture Öberg
Director-General

Innehåll / Contents


How can
we create
growth?
digitalvision

Prolog

Olympiska spelen i Aten! 245 tävlande från 14 länder gör upp om segern i ett fyrtiotal olika grenar. En amerikan vinner höjdhoppet på knappa 1 meter och 80 centimeter. Nej detta är inte OS 2004, utan Aten 1896.

Spelen symboliserar mänskligt syskonskap över nationsgränserna. Men det symboliserar i lika hög grad viljan till utveckling. Höjdhoppssegraren i Aten 2004 kommer att hoppa mer än en halvmeter högre än segraren 108 år tidigare. Vår förmåga att prestera utvecklas ständigt – både för oss som individer och sett i ett samhällsperspektiv. En av de viktigaste frågorna både för oss som enskilda och för samhället är hur denna utveckling går till, vilka är dess viktigaste beståndsdelar och hur kan vi stimulera framsteg och utveckling.

De tekniska förändringarna bakom utvecklingen från 180 cm till 240 har naturligtvis varit många. Mjuka mattor har gjort det mer inbjudande att hoppa högre. Bättre skor har bidragit med några centimetrar, eller kanske till och med decimetrar. Utvecklingen av hopptekniken är kanske den viktigaste enskilda tekniska faktorn. Utrustning och hoppteknik hänger dock ihop. Det var med de mjuka mattorna som dykstilen kunde ersätta de tidigare saxhoppen. Minst lika viktigt som den banbrytande idén att hoppa baklänges över ribban har varit alla de små förbättringar som olika hoppare gjort – genom att räkna stegen fram till ribban, genom att öka anloppshastigheten, genom att använda armarna på ett annat sätt etc. Även i de små förbättringarna samspelar teknik med träning – detaljutvecklingen av ansatser och hoppstilar hade inte kunnat ske utan film- och videokamerans hjälp.

Det finns ytterligare förklaringar till de 60 centimetrarna. Ingen hade blivit elithöjdhoppare om det inte funnits en ”efterfrågan”. Att underkasta sig den träning som krävs fordrar en enorm motivation. OS har på 108 år utvecklats från en lek för några hundra amatörers kraftmätning till en världsomspännande mångmiljardindustri. Antalet åskådare – tv-tittarna inräknade – uppgår 2004 till miljarder. Det är människor som efterfrågar prestation och utveckling. De betalar genom att konsumera flygresor, hotell, polisskydd, inträden och andra produkter – skor, kläder, chips, läsk och öl, ja allt sånt som ingår i den kommersialiserade idrottens utkanter. All denna efterfrågan bidrar till drivkraften hos den som ska hoppa. Att bli bättre, att vinna och att utvecklas kan betalas med pengar, men det ger också ersättning i form av berömmelse, uppskattning och erkännande. Att vinna är att möta andra människors glädje. Detta är i sig en mänsklig drivkraft.

Det som sagts hittills ger lätt intrycket av att utvecklingen drivs framåt av individer, och så är det naturligtvis också. Samtidigt ska man vara tydlig med att individuella prestationer i flertalet sammanhang är så mycket mer än en människas ansträngning. De mest framgångsrika stjärnorna växer inte upp isolerade från andra. De utvecklas genom att mäta sig mot andra idrottare, äldre och duktigare, får ta del av andras kunskaper, får uppskattning och erkännande först i den lilla gruppen och sedan i en större. Det har också inneburit en lagom blandning av att vara sporrad av möjligheterna att lyckas och att vinna och samtidigt kunna känna tryggheten i att det är ok att förlora och att misslyckas. Världen går inte under för det. Plantskolor för världsklass måste också vara tillåtande. Det är oftast inte möjligt att redan i tolvårsåldern avgöra vilken av två ungdomar som kommer att vara bäst tio år senare.

Utveckling driver inte bara idrottsvärlden. Hela samhället är beroende av utveckling. Utveckling och tillväxt innebär resurser – till exempel till vård, skolor, omsorg och mycket annat som ger oss ett längre och mer meningsfullt liv. Ser vi till perioden mellan de två olympiaderna i Aten så har även samhällets utveckling varit otrolig. Varje svensk har idag mer än tio gånger så mycket resurser att förfoga över under sin livstid som 1896 när den förra olympiaden hölls i Aten. Vi mäter utvecklingen i tillväxt och den del av tillväxten som består i att vi med samma ansträngning får ett ökat utbyte kallar vi produktivitet. Analogin med höjdhoppet handlar om produktivitetsutveckling.

Under senare tid svarar produktivitetsutvecklingen för merparten av tillväxten. Framöver blir det till och med så att produktiviteten ensam måste stå för tillväxten, när utbudet av arbetskraft sjunker med en åldrande befolkning. Produktivitetsutveckling handlar om förändring och om förändringens drivkrafter och kontexter.

Den tekniska utvecklingen är en grundförutsättning för att vi som samhälle ska prestera mer. Det är lätt att förstå produktivitetsutvecklingen när man fokuserar på en enskild aktivitet. En gruvarbetare sitter idag i en kontorsliknande miljö och bryter malm med hjälp av fjärrstyrda robotar. Malmen fraktas upp ur berget med jättelika hjullastare i en takt som 1896 års gruvarbetare med hästdragna vagnar inte kunde drömma om.

Att följa och förstå den samlade produktivitetsutvecklingen är mer komplicerat. Teknikutvecklingen inom ett yrke, ett företag eller en bransch ökar naturligtvis produktiviteten, men den gör också människor överflödiga. Ny teknik omformar alla yrken och branscher. Samtidigt innebär ny teknik att yrken, företag och branscher både försvinner och kommer till. Tillväxt i ekonomin kräver att de överflödiga resurserna på sikt kan användas någon annanstans.

Den tekniska utvecklingens betydelse för tillväxten är omdebatterad. I synnerhet debatteras hur teknisk utveckling går till, och vad som i sin tur driver denna. Under senare tid har teknisk utveckling nära nog kommit att bli synonymt med utveckling genom forskning.

I *Maryann Feldmans* kapitel i denna bok visas på innovationernas betydelse för framgång. Innovationer är basen för utvecklingen av företags, branschers och länders konkurrensförmåga. Det finns anledning att stötta kunskapsintensiva och innovativa företag för att höja förändringstakten. Problemet är att kunskapsproduktion är svår att skydda vilket hämmar viljan att göra privata investeringar. Får företagen ut för lite av sina investeringar bromsas deras utvecklingsmöjligheter och därmed tillväxten. Innovationer förefaller vara ett område där den offentliga politiken har möjligheter att påverka konkurrenskraften. Feldman uppehåller sig mycket vid vilken roll det immateriella, intellektuella ägandeskyddet har för ekonomisk tillväxt. Policyutmaningen ligger i att både stimulera spridningen av ny kunskap och ibland skydda den.

Roy Thurik tar fasta på att den tekniska utvecklingens villkor har förändrats under de senaste decennierna. Thurik beskriver förändringen som en övergång från en förvaltad (managed) till en entreprenöriell ekonomi. En sådan förändring kan sedd från en snäv teknisk synpunkt tyckas märklig. Om det stämmer att teknikutveckling blivit alltmer komplicerad och forskningsnära, ligger det nära till hands att tro att också storskalighet innebär en än större konkurrensfördel. Men det som Thurik pekar på handlar snarast om att både den tekniska utvecklingen och marknadens eller efterfrågans dynamik har ökat i sådan utsträckning att de stora företagen blivit för långsamma. Detta har givit små och medelstora företag nya möjligheter samtidigt som man också kan hävda att de stora företagen själva söker efterlikna de små, man ”outsourcar” och koncentrerar sig till kärnverksamheten – inte sällan intimt förknippat med att utveckla och vårda globala varumärken. Allt detta pekar mot att förändringen i hög grad handlar om att se och utnyttja möjligheter och att detta kräver snabbhet, rörlighet och flexibilitet. Det är detta som Thurik kallar den entreprenöriella ekonomin.

Om Thurik betonar entreprenören, så betonar *Henrekson och Johansson* de omgivande institutionerna. Institutionerna skapar ramarna för entreprenören och dessa är avgörande för våra möjligheter att skapa tillväxt menar författarna. Men även om perspektiven är olika så är budskapet inte på något sätt väsensskilt. De institutioner som Henrekson och Johansson identifierar som centrala är alla förknippade med förändring. Det är institutioner som genom sin uppbyggnad bidrar till förändring. Här möts stabilitet och dynamik. Stabila ramverk, menar författarna, är helt

nödvändiga för att förändringens drivkrafter ska få spelrum. Det som skapar förändring är ett antal aktörer som kompletterar varandra i så kallade kompetensblock. Detta leder till en syn på ramverken som flexibla, uppbyggda av både regler och aktörer. I likhet med Thurik ser författarna att de nya och små företagen har viktiga roller i utvecklingen, men att de diskrimineras av de nuvarande institutionella ramarna.

Allen Scott belyser förändring från ett annat perspektiv. Var de olympiska spelen ska äga rum beslutas genom omröstningar bland Internationella Olympiska Kommitténs ledamöter. Men bara stora världsstäder kan komma ifråga. Länge kan man säga att tillväxtens motorer också var geografiskt begränsade i liknande grad. Men, hävdar Scott, tillväxtens geografi är inte längre lika förutsägbar. Förändring i sig skapar en dynamik som vi tidigare inte har sett. Vi ser att nya delar av världen blir centra för utveckling och tillväxt. Inom de olika delarna är det nya orter och städer som tar vid som motorer. Drivkrafterna är samma som för nya branscher eller nya entreprenörer. Tillfälle och möjligheter samt förmågan att ta tillvara dem. De faktorer som begränsat tillväxtens geografi betyder allt mindre. De länder och aktörer som förstår att utnyttja denna situation har ett försprång framför dem som inte gör det.

Sture Öberg
Generaldirektör

Prologue

The Olympic Games in Athens! 245 competitors from 14 countries meet to determine the winner in some forty different disciplines. An American wins the high jump with a leap of just one metre 80 centimetres. No, it is not the 2004 Games, but the previous Olympic Games in Athens in 1896.

The Olympic Games symbolise human fellowship across national borders. But it is equally symbolic of the desire for growth and development. The high jump gold medallist in Athens 2004 will jump over half a metre higher than his counterpart 108 years earlier. Our capability and performance are constantly advancing – both for us as individuals and also from a social perspective. One of the most important questions we face both as individuals and society in general is how this development should proceed, which are the most important elements of this and how can we stimulate advances and development.

Naturally, there have been numerous technical changes behind the advance from 180 cm to 240 cm. Soft cushioned landings have made it more inviting to jump higher. Better footwear has added several centimetres, or maybe even decimetres. Developments in high-jumping technique are possibly the most important single factor. However, high-jumping technique and equipment are interlinked. It was the soft mattresses that enabled the Fosbury flop style to supersede the earlier scissoring style. The tiny improvements that have been made by different high jumpers, such as counting the steps in the run up to the bar, increasing the approach speed, using their arms differently etc, have been just as important as the revolutionary brainwave to leap head first backwards over the bar. Even here with these incremental improvements, technology and training go hand in hand – detailed analysis of the run up and jumping style would not have been possible without the aid of film and video.

There are other, additional explanations for the 60 cm. No one would have become a top class high jumper if there were no 'demand'. You have to be enormously motivated to subject yourself to the intensive training required for modern athletes. In 108 years, the Olympic Games have developed from being games to test the powers of a few hundred amateurs to a worldwide multibillion-dollar industry. The number of spectators – including TV audiences – will reach billions in 2004. And these people demand performance and progress. As consumers they pay for this through flights, hotel rooms, police protection, stadium tickets and other products – footwear, clothing, snacks,

soft drinks and beer, in fact everything that is on the fringes of commercialised sport. All this demand helps to spur the athletes who compete in the high jump. To improve, to win, and to develop can bring financial rewards and other compensation in the form of fame, appreciation and recognition. Winning is receiving the joy of others. This in itself is a driving force for humans.

What we have said so far can easily give the impression that development is mainly driven by individuals, and naturally this is also the case. At the same time, we must make clear that there is often far more to individual performances than individual effort – even if this can be under favourable circumstances. The most successful stars do not grow up in isolation from each other. They progress by testing themselves against other older and more skilful athletes. They have had to share the know-how of other athletes. They gain initial appreciation and recognition in a small group and subsequently in a larger one. This has also entailed a suitable combination of being spurred on by the possibilities of winning and at the same time being able to have the security of knowing it is OK to lose and to not succeed. It will not be the end of the world if you do. A nursery for world class talent must also be accessible. More often than not, it is impossible to say which of two twelve year olds is going to be the better in ten years time.

As a driver, development is not confined to the world of athletics alone. The entire society is dependent on development. Development and growth means resources for everything we want – such as healthcare, schools, care and a great many other things that give us a longer and more meaningful life. If we look at the period between the two Olympiads in Athens, there have been incredible social developments. Today Swedes have ten times more resources at their disposal over the course of their lifetime than in 1896 when the previous Athens Olympiad was held. We measure development in terms of growth and the element of growth that consists of the additional output we obtain with the same effort we call productivity. The analogy with the high jump is about the development of productivity.

In recent years, developments in productivity have been mostly responsible for growth. In the future, productivity alone will be responsible for growth, as the labour available falls with an ageing population. Advances in productivity will be about change, and about the driving forces and contexts of change.

Developments in technology are a fundamental necessity if we as a society are to perform better. It is easy to understand developments in productivity when you focus on a specific activity. Modern miners now sit in an office-like environment and mine ore with the aid of remote controlled robots. The ore is transported from the rockface

by giant trucks at a rate 19th Century miners with horse-drawn wagons could never dream of.

To follow and understand the development of productivity as a whole, is more complicated. Technological developments within a profession, a company or an industry naturally increase productivity, yet they also make people superfluous. New technology reshapes all jobs and industries. At the same time, new technology also means jobs, companies and industries both disappear and come into being. Economic growth demands that these redundant resources can eventually be re-deployed elsewhere.

The significance of technological developments for growth is much debated. What is debated in particular, is how developments in technology come about, and in turn, what drives this. In recent years, technological development has become virtually synonymous with research.

The importance of innovation for success is demonstrated in *Maryann Feldman's* chapter in this book. Innovations are the platform for the development of a company/industry/country's ability to compete. There are strong reasons to support knowledge-intensive and innovative companies. It is part of the process of increasing the speed of change. The problem is that it is difficult to protect knowledge production. This inhibits a willingness to provide private investment. If the companies get too little out of their investments this impedes their opportunities for development and with it their prospects for growth. Innovation appears to be an area where public policies can have opportunities to influence competitiveness. Feldman is mainly occupied with the role protection for intangible, intellectual property rights has for economic growth. The political challenge lies in both stimulating the dissemination of new knowledge and sometimes in protecting it.

The starting point for *Roy Thurik* is how the conditions for technological development have changed in recent decades. Thurik describes the change as a transition from a managed to an entrepreneurial economy. Viewed from a narrow technology perspective, such a change can seem striking. If it is the case that developments in technology have become increasingly complex and research-based, it is easy to believe that scaling up also offers a greater competitive advantage. But what Thurik is indicating is mostly that the development of technology and the dynamics of the market or demand have both increased to such an extent that large companies have become too slow in their actions. This has given small and medium sized companies new opportunities while, at the same time, one can argue that the large companies themselves are seeking to resemble small companies by outsourcing and concentrating

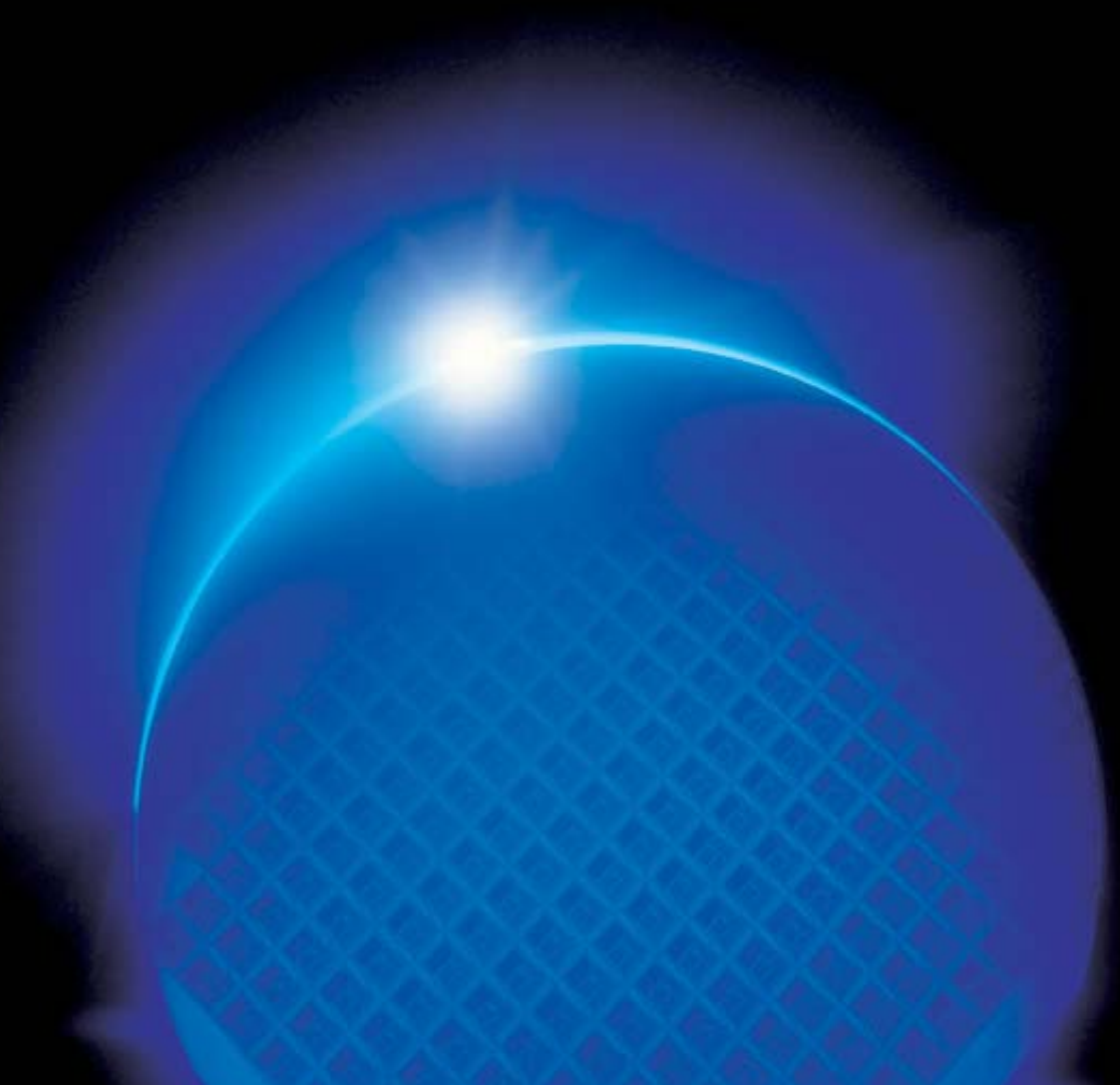
on core activities – not infrequently intimately linked with developing and nurturing global brands. All this tends to suggest that change is very much about spotting and exploiting opportunities and that this demands speed, flexibility and fluidity. And it is this that Thurik label as the entrepreneurial economy.

Henrekson and Johansson put emphasis on the institutions around the entrepreneurs. Institutions create the frameworks for entrepreneurs and it is these that are decisive for our opportunities to create growth, the authors argue. But even if they have different perspectives, there is no discernible difference in the message. Institutions identified by Henrekson and Johansson as central are all associated with change. These are institutions that through their very structure play a role in change. They are the point where the stable meets the dynamic forces. Stable frameworks, the authors argue, are absolutely vital if the driving forces of change are to have room to operate. Institutions provide the opportunity for the various players that are required to turn innovations into growth. These players are active within the framework of so-called knowledge blocks where they complement each other. This leads to a view of frameworks as flexible, built up of both rules and players. Like Thurik, the authors appreciate that new and small companies have important roles to play in development, but that they are discriminated against by the current institutional frameworks.

Allen Scott illuminates change from another perspective. Who will host the Olympic Games is determined by a vote of International Olympic Committee members. But only major world cities can be considered. For a long time, you could have said that the engine of growth was also geographically restricted to the same extent. But, Scott argues, the geography of growth is no longer so predictable. Change in itself creates a dynamic that we have not seen before. We are seeing new parts of the world become centres for growth and development. Within these different parts, new areas and cities are starting to become engines. The driving forces for these are the same as for new industries or new entrepreneurs. Openings and opportunities and the ability to take advantage of them. Those factors that restricted the geography of growth are becoming less and less significant. The countries and players that understand this and exploit the situation have an advantage over those who do not.

Sture Öberg
Director-General

Significance of innovations



Economic Growth and Innovation

by ***Maryann Feldman***

Innovation is fundamental to economic growth. This chapter provides an introduction and overview of innovation and its relationship to economic growth. Firms, industries and countries compete on the basis of innovation. A critical issue is the nature of the relationship between investments in resources, like R&D and realized innovative output and how innovation subsequently affects performance in terms of economic growth. This chapter frames these issues, provides definitions of the various types of innovation and show how innovation and its economic impact is measured. Drawing on recent advances in the literature, the chapter provides an introduction to how economists study innovation.

The ability to create economic value by introducing new products to the market, redesigning production processes, or reconfiguring organizational practices is critical to competitive advantage and growth for firms, industries and countries. The question then becomes how to best organize resources to create, diffuse and sustain innovation and, moreover, how to leverage investments made in science and technology, research and development and related capabilities with the ultimate goal of reaping rewards in terms of wealth creation and increased standards of living.

The purpose of this chapter is to describe how economists think about and define innovation and to clarify the role of innovation in economic growth and development. Economic growth is the traditional purview of macroeconomists yet innovation is fundamentally about microeconomics. Sound fiscal policy and stable macroeconomic conditions are certainly important to economic growth but microeconomic concerns such as the role of government to promote innovation relies on addressing market failures that inhibit the accumulation of knowledge and aligning incen-

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tives for economic agents to commercialize that knowledge and realize economic value.

Economic growth is most commonly measured using changes in the total value of goods and services produced by a country's economy or what is known as Gross Domestic Product (GDP). Of course, since the size of countries varies this number is adjusted for the size of the population which provides a crude measure of the average individual's well-being. Appendix 1 presents GDP per capita estimates for several countries for comparison. GDP per capita is highest in the United States compared to any of the other major industrial nations shown. The consensus is that these differences in levels and in trends is driven by increased productivity that comes from innovation and technological change.

The study of innovation and economic growth began in earnest in the late 1950s with the work of Robert Solow (1959) for which he subsequently was awarded the Nobel Prize. Of course, like any idea that gains currency the foundations had been provided by earlier scholars (notably Joseph Schumpeter (1934, 1939, 1942). What was important about Solow's work was that he empirically demonstrated that 87 percent of economic growth in the American economy from 1909 to 1949 was accounted for by an unspecified factor or residual that he described as technological change. Other studies have refined these estimates and provided more elegant theoretical models. Most importantly, as a point of departure, the basic results hold and have been replicated for other countries: the largest single factor explaining economic growth is not increases in factor inputs but the ability to extract greater economic value from advances in science and technology. The ability to extract economic growth from advances in knowledge is the essence of innovation.

Yet Solow's models treated technological change as exogenous – something that was outside of the model and thus not subject to economic forces. This is not very satisfying since we expect that economic growth should be a function of factors that we can describe, enumerate and model. Ever since then, economists have focused on trying to understand the underlying economic attributes of technological change, specifically innovation in new products, processes and organizational forms. While innovation is important to the performance of countries harnessing the potential of innovation is the domain of microeconomic and there is an increased acceptance of the need to understand innovation as a process that relies on individual agents, be they firms or individuals, who recognize and respond to new opportunities, organize resources and add economic value and increase productivity.

Clarifying Terms

When an issue is significant the popular discussion may easily become muddled, terms may be used interchangeably and without precision and as a result the debate becomes superficial. To avoid this, a series of definitions that discriminate between the components of innovation will be provided in order to advance the discussion and enrich the choice of policy options.

In daily conversation, terms like *invention* and *innovation* as well as *science* and *technology*, among others, are often used interchangeably. However, for academics and policymakers there are important distinctions between these terms and these distinctions give each term a unique meaning and enrich discussion. Invention is about discovery and the creation of something novel that did not previously exist. Innovation, on the other hand, carries invention further with the commercial realization of the value of the invention or the receipt of an economic return. This is a subtle but important distinction. Thus, patents, the legal protection of an idea reveals an invention while, for example, the marketing and consumer acceptance of a new drug is evidence of an innovation.

Commercialization is the process that turns an invention into an innovation and involves defining a concept around who is willing to pay for the new idea, what attributes they value and how much they are willing to pay for the added value. Through commercialization economic value is realized from new ideas and inventions. The economic profits earned are the rewards. Appendix 2 demonstrates the weak relationship between economic growth and patenting for the same countries previously considered in Appendix 1.

While patenting measures invention, commercialization requires the additional steps of translating inventions into consumer needs and product markets. At its earliest stages, before applications are easily described or generally appreciated, realizing the potential of an invention requires a sophisticated understanding of consumer needs, existing markets for product innovation and factor inputs. Commercialization, even when ideas are abundant, may not be completed because outcomes are highly uncertain and risk aversion may cause projects to be delayed or abandoned. Policy mechanisms such as R&D tax credits or stock options decrease costs and may mitigate the inherent risk of innovation. Venture capital investment, where the investors are knowledgeable about the science and the potential market may also serve to reduce uncertainty.

Realizing the commercial benefit of innovation relies on a variety of inputs. The most notable knowledge input is embodied in skilled human capital, scientists,

engineers and managers who appreciate and can implement new ideas. *Entrepreneurs* are the individuals who organize resources to create value from commercialization. Entrepreneurs are typically associated with new firm start-ups, and individuals who work in large firms are sometimes known as *intrapreneurs*, people who work in the public sector or in non-profit organizations are often referred to as *'social entrepreneurs'*. Whatever the nomenclature, these terms demonstrate the ways individuals act as agents of change in economic systems.

Science, in a broad sense, is the unfettered search for knowledge for the sake of understanding. That search is based on observed facts that may be replicated through experimentation or theory. Thus, science begins with conventional preliminary conditions and searches for some unknown results to address fundamental questions related to hypothesis about the world. The process of investigation is known broadly as research and research may be *basic* with the intention of advancing science or *applied* with the orientation towards some practical end. These are two ends of a continuum of problem solving as basic research suggests avenues of inquiry that are advanced by applied research. Likewise, research is enriched, made more complex and significant as applied work creates the need for more theoretical work and suggests new avenues for further basic research. In addition, and most critically, while science is classified by disciplines that define traditions of inquiry, and scientists are trained within these specific traditions, applied problem-solving frequently creates the need for multidisciplinary teams or even creates new disciplines to colonize the frontiers of knowledge. Examples would be the rapidly evolving fields of biochemistry and biomedical engineering or the emerging field of nanotechnology.

In contrast, industrial *Research and Development* (R&D) is the systematic augmentation or deepening of knowledge by applying it to some practical problem or new context with the idea of generating a commercial return. While science is typically conducted by universities and institutes of higher learning, R&D is typically conducted by private firms. An important distinction is that private firms have a responsibility to earn returns for their shareholders. In general, the more basic the science involved in a research project the more difficult it is to appropriate the resulting returns. This is due to particular characteristics of the knowledge that research creates. A variety of government incentives and public-private partnership programs have evolved over time from government's desire to steer private investment towards more basic types of scientific activity and to stimulate the development of new technologies that private firms would not consider attractive investments in the absence of some incentives such as direct grants, R&D subsidies or other programs that encourage firms to conduct projects with universities or government laboratories.

Knowledge has characteristics such as being nonrival and nonexcludable that classify it as a public good. *Nonrival*, in the economists' terminology, indicates that one person's use of knowledge does not impede another's use of it. Consider the example of a mathematical formula. Knowledge is created when the formula is first derived and formal proofs are demonstrated. The result is most likely a scholarly publication which would codify the knowledge, rendering it easy to diffuse and put into practice. Once the formula is known, the fact that one scientist uses it does not diminish its usefulness or utility to other scientists. In fact, the value of the formula may actually increase as a result of its more diffuse use and acceptance. Thus, knowledge, once created, is nonrival in that many economic actors may enjoy it simultaneously. *Nonexcludability* refers to the fact that once knowledge is discovered it is difficult to contain or to prevent others from using that knowledge. Once an idea is known it frequently seems obvious to others and can be simply replicated at what is known as zero marginal cost.

As a result of these two conditions, the social value of knowledge is greater than the value that the creator may be able to capture, a classic case of an externality. Private firms are likely to under-invest in knowledge production since the returns to the firm are smaller than the returns to society. Patents and copyrights, which extend property rights to knowledge and ideas, are one way, although imperfect, to create markets for the use of new ideas.

Innovation is subtly different from *technology*, which is the embodiment of knowledge into a physical form. *Technological change* is the rate at which new knowledge is put into physical forms and diffused for use in the economy. Major technological advances, such as the steam engine or microprocessors are known as *general purpose technology* as they have broad applications and productivity-enhancing effects in a number of different sectors. As a result, general purpose technologies induce dramatic economic changes by creating innovation that rejuvenates existing sectors and, in the process, create new industries and services. A historical example is the steam engine, the Internet is a more recent example. The Dot-Com bubble notwithstanding, the Internet has fundamentally changed the way business transactions take place, creating efficiencies and productivity growth for existing firms as well as new opportunities for entrepreneurs. Alan Greenspan attributes the expansion of the Information Technology (IT) sector as accounting for at least one-third of the total growth of the United States' economy since 1992. In 1999, the IT sector became the largest commercial sector in the U.S., with job growth six times the average rate.

Yet it is important to remember that innovation also encompasses incremental improvements to existing products or processes. Indeed, the vast majority of innovation

may be attributed to minor improvements, adjustments and refinements to existing products, manufacturing process and organizational practices. While not particularly glamorous these activities add economic value and, in sum, provide a basis for sustained competitive advantage. In addition, while science is important to innovation, new ideas are frequently suggested by individuals who work on the shop floor, who use products and who supply machinery or materials. Indeed, innovation spans the spectrum of industrial activity. The view that innovation is limited to new science-based or so called high technology industries is a myopic as it ignores the equally transformative nature of innovation in existing mature industries that are already in place. Consider Proctor and Gamble's new product innovation, the *Swiffer,* which revolutionized household floor care in the very mundane product category of brooms and mops. Within six months of introduction, *Swiffer* had captured one-quarter of the market, the total size of which was estimated at $436.5 million in 2002. Thus, innovation may be profitable in mature industries.

As mentioned earlier, *economic growth* is, most simply, increases in wealth as measured by indicators such as Gross National Product (GNP) or Gross Domestic Product (GDP) for countries. For sub-national or local jurisdictions, increases in employment or in the tax base are a measure of growth. The corollary for firms is output measures such as sales or profits or market share. In contrast, *economic development,* in the case of a country, is associated with structural evolution such as the development of industries that create higher value-added activities. An example of structural transition for a country is the evolution from an economy dependent on agriculture to one with substantial manufacturing and presumably a large share for export. Most critically, causality between economic growth and economic development is uni-directional: while economic development likely leads to economic growth, continued economic growth does not necessarily imply economic development. What is needed for economic development is the addition of new infrastructure and complementary human capital. While new ideas and innovation may guide industry evolution, government as an agent of collective action guides economic development.

The corollary to economic development for firms is the evolution of the product line towards more sophisticated, higher value added products as, for example, Intel became a microprocessor firm instead of a semiconductor manufacturer. Andy Groves, in a book provocatively entitled *Only the Paranoid Survive,* describes how Intel recognized that it couldn't compete with Asian firms in the DRAM market and instead strategically moved into the more knowledge intensive and profitable product line of integrated circuits. To succeed at such a transition requires a firm to recognize new opportunities and develop new capabilities. Many firms do not make this transition in what has

become widely popularized through Clayton Christensen (2002) as the *Innovator's Dilemma* – where successful firms become captive to their customers and existing markets and fail to recognize that radically new disruptive technologies are changing market opportunities.

In simplest terms, a country's economy is the sum of the collection of firms located there. The fortune of the firms and their respective industries will determine the growth and development of the country's economy. Firms will innovate when there is a profit incentive to do so, but government has a significant role in both providing incentives and correcting market failures. Our emphasis on policy underscores the role of government in promoting commercialization.

The Role of Government in Innovation

Like firms, governments are socially constructed entities that can raise funds, organize resources and live on in perpetuity or at least do these things better than individuals can. Following this logic, government is a legitimate tool by which individuals can further their shared interests by acting in common. Certainly, governments have more complex objective functions overall than do firms. However, when we think about economic growth and development specifically within the context of innovation and industrial competitiveness, the analogy is instructive. For firms, the overarching goal is to gain and maintain competitive advantage, which translates into above average returns for shareholders. For government, the shareholders are citizens.

For firms, the way to achieve competitive advantage is to create a competitive strategy that is consistent with trends in the firm's industry and appropriate to the firm's resources and capabilities (Porter 1996). Feldman and Martin (2004) argue that governments may engage in a similar exercise that considers the unique and not easily replicated assets, resources and skill set contained in a jurisdiction and the position of the jurisdiction relative to the hierarchy of cities in the regional, national and world economy.

At the national level, it will be increasingly important to understand the role of individual cities or regions in constructing competitive advantage and economic growth. If a nation is comprised of individual jurisdictions that each attempt to attract the currently fashionable industries (e.g. biotechnology or nanotechnology) and compete against one another, then the overall nations' prosperity potential may be diminished. Just as there is multiplicity of outcomes of corporate strategy, there are likely to be many different models that emerge with respect to how government and firms may work together to foster innovation and economic growth.

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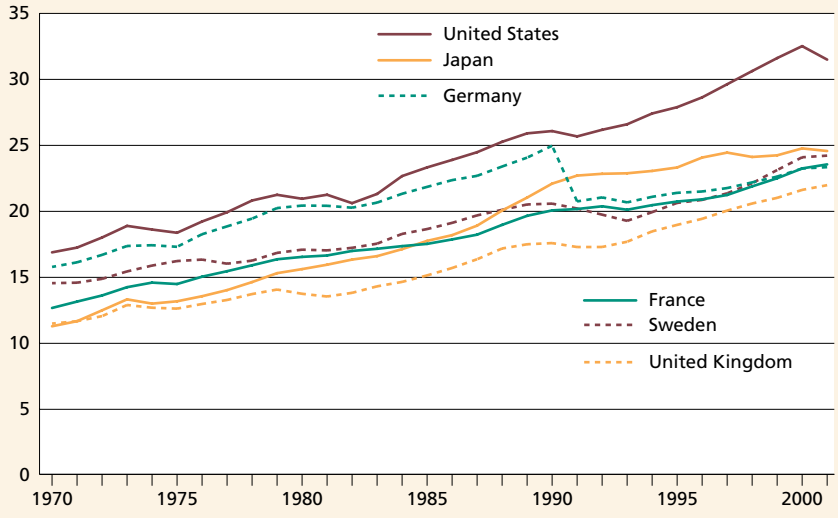
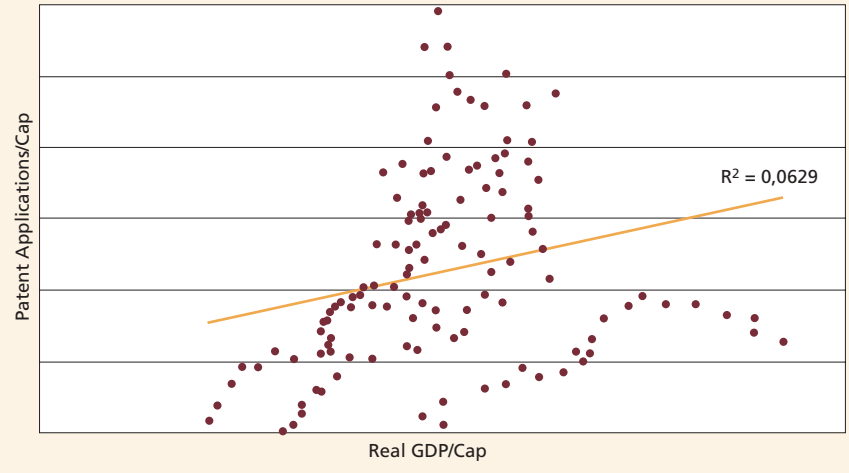
APPENDIX 1 Real GDP per Capita for Selected Countries, 1970–2001 (PPPs of 1995 USD)



Source: OECD, Statistical Compendium via Internet 2003-10-09 (National Accounts Vol. 1) and Statistical Compendium via Internet 2003-10-09 (OECD Economic Outlook).

APPENDIX 2 Correlation between Real GDP per Capita and Patent Applications per Capita 1981–2001



Source: Patent Application: OECD.org, Science, Technology and Patents Database 2004-02-23. Additional Calculations by Benny Borgman, SNS (Center for Business and Policy Studies)


Who is
making it
possible?

Entrepreneurship, Economic Growth and the Shift from the Managed to the Entrepreneurial Economy

by ***Roy Thurik***

Introduction

Robert Solow (1956) identified capital and labour as the main sources of growth. These were factors best utilized in large-scale production. Throughout the first three-quarters of the last century, the increasing level of transaction costs (Coase, 1937) incurred in large-scale production dictated increasing firm size. Statistical evidence points towards an increasing presence and role of large enterprises in the economy in this period.[1] This development towards large-scale activity was visible in most of the OECD countries. In this the same period, the importance of entrepreneurship and small business seemed to be fading. Although it was recognized that the small business sector was in need of protection for both social and political reasons, there were few that made this case on the grounds of economic efficiency.

Entrepreneurship and small business are related but certainly not synonymous concepts. On the one hand, entrepreneurship is a type of behaviour concentrating on opportunities rather than resources (Stevenson and Gumpert, 1991). This type of behaviour can occur in both small and large businesses but also elsewhere. On the other hand, small businesses can be a vehicle for both Schumpeterian entrepreneurs introducing new products and processes that change the industry and for people who simply run and own a business for a living (Wennekers and Thurik, 1999). The latter group includes many franchisees, shopkeepers and people in professional occupations. They belong to what Kirchhoff (1994) calls 'the economic core'. That

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[1] Caves (1982); Teece (1993); Brock and Evans (1989).

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both entrepreneurship and small businesses matter is not a new observation. In particular, they are important where they overlap. This is in the area of new, small, and often fast growing businesses. However, the way in which they matter has evolved over time. During the first decades of the last century, small businesses were both a vehicle for entrepreneurship and a source of employment and income. This is the era in which Schumpeter (1934) conceived his *Theory of Economic Development*. Here Schumpeter emphasizes the role of the entrepreneur as the prime cause of economic development. He describes how the innovating entrepreneur challenges incumbent firms by introducing new inventions that make current technologies and products obsolete. This process of creative destruction is the main characteristic of what has been called the Schumpeter Mark I regime.

During the post-war years small business still mattered less on the grounds of economic efficiency but more for social and political purposes. In a time when large firms had not yet gained the powerful position of the 1960s and 1970s, small businesses were the main supplier of employment and hence of social and political stability. Scholars, such as Chandler (1977), Galbraith (1967) and Schumpeter (1942), had however convinced the economists, intellectuals and policy makers of the post-war era that the future was in the hands of large corporations and that small business would fade away as the victim of its own inefficiencies. Policy in the United States was divided between allowing for the demise of small business on economic grounds, on the one hand, and preserving at least some semblance of a small-enterprise sector for social and political reasons, on the other. Small business, it was argued, was essential for maintaining American democracy in the Jeffersonian tradition. Certainly, the passage of the Robinson-Patman Act (Foer, 2001), which has been accused of protecting competitors and not competition (Bork, 1978), and the creation of the United States Small Business Administration were policy responses to protect less-efficient small businesses and maintain their viability. These policy responses are typical for a Schumpeter Mark II regime. In *Capitalism, Socialism and Democracy*, Schumpeter (1942) focuses on innovative activities by large and established firms. He describes how large firms outperform their smaller counterparts in the innovation and appropriation process through a strong positive feedback loop from innovation to increased R&D activities. This process of creative accumulation is the main characteristic of what has been called the Schumpeter Mark II regime.

In Audretsch and Thurik (2001) the two Schumpeterian regimes are used in the framework of two broader concepts of economic organization: the Managed and the Entrepreneurial Economies. They introduce the concept of the Managed Economy that flourished for most of the last century. It was based on relative certainty in outputs,

which consisted mainly of manufactured products, and in inputs, which consisted mainly of land, labour and capital. The twin forces of globalisation and the telecommunications and computer revolutions have drastically reduced the cost of shifting not just capital but also information out of the high-cost locations of Europe and into lower-cost locations around the globe. This means that economic activity in a high-cost location is no longer compatible with routine tasks. Rather, globalisation has shifted the comparative advantage of high-cost locations to knowledge-based activities, and in particular search activities, which cannot be transferred without cost around the globe. Knowledge as an input into economic activity is inherently different from land, labour and capital. It is characterised by a high degree of uncertainty, high asymmetries across people, and is costly to transact. The response to the trend establishing knowledge as the main source of comparative advantage is the Entrepreneurial Economy. Audretsch and Thurik (2001) identify fifteen characteristics that differ between the Entrepreneurial and Managed Economies and provide a framework for understanding how the Entrepreneurial Economy fundamentally differs from the Managed Economy.

The aim of the present contribution is to show that since the 1970s the world has changed considerably, and that this change has had consequences for the current policy debate. It deals with some aspects of the recent scientific literature on the relation between entrepreneurship and small business, on the one hand, and economic growth, on the other. It provides a concise listing of the distinction between the models of the Managed and Entrepreneurial Economy. It refers to scientific analyses which are showing that countries that are lagging behind in the process of restructuring will pay a penalty in terms of forgone growth. See Carree and Thurik (2003) for an extensive survey of the literature on the relation between entrepreneurship and economic growth.

Small business as a vehicle for entrepreneurship

In today's world, small businesses, and particularly new ones, are increasingly seen more than ever as a vehicle for entrepreneurship contributing not only to employment and social and political stability, but also to innovative and competitive power (Wennekers and Thurik, 1999). In brief, the focus has shifted from small businesses as a social good that should be maintained at an economic cost, to small businesses as a vehicle for entrepreneurship. With this shift came the renewed perception of the important role of entrepreneurship. Indeed, recent econometric evidence suggests that entrepreneurship is a vital determinant of economic growth.[2] According to

[2] Audretsch and Thurik (2000); Audretsch, Carree, van Stel and Thurik (2002); Carree and Thurik (1999); Carree, van Stel, Thurik and Wennekers (2002); Audretsch, Carree and Thurik (2001).

Audretsch, Carree, van Stel and Thurik (2002), a cost in terms of forgone economic growth will be incurred from a lack of entrepreneurship. The positive and statistically robust link between entrepreneurship and economic growth has now been verified across a wide spectrum of units of observation, spanning the establishment, the enterprise, the industry, the region, and the country.

Thus, while small business has always mattered to policy makers, the way in which it has mattered has drastically changed. Confronted with rising concerns about unemployment, job creation, economic growth and international competitiveness in global markets, policy makers have responded to this new evidence with a new mandate to promote the creation of new businesses, i.e., entrepreneurship. See Reynolds, Hay, Bygrave, Camp and Autio (2000). Initially, European policy makers were relatively slow to recognize these links but since the mid-1990s they have rapidly built up momentum in crafting appropriate approaches. See EIM/ENSR (1993 through 1997) and Audretsch, Thurik, Verheul and Wennekers (2002). Yet, without a clear and organized view of where and how entrepreneurship manifests itself, policy makers are left in unchartered waters without an analytical compass. This explains the variation in their responses (European Commission, 2000 and 2001 and Audretsch, Thurik, Verheul and Wennekers, 2002). The so-called Green Paper (European Commission, 2003) is the first EU document that extols the virtues of entrepreneurship as the most important driver in the economy, and paving the way for Union-wide stimulation programmes.

Five stages of policy reactions in the European Union

The general assumption is that the United States has been much quicker to absorb the virtues of entrepreneurship than Europe. Given that entrepreneurship is a vital determinant of economic growth, the idea is that much of the excess growth of the United States when compared to European countries is due to this lead. The European countries have been relatively slow to follow suit. Clearly, the European response varied among the countries. Nevertheless, by and large five distinct stages can be discerned of the evolution of the European stance towards the Entrepreneurial Economy (Audretsch, Thurik, Verheul and Wennekers, 2002, p. 4–6).

The first stage was denial. During the 1980s and early 1990s, European policy makers looked to Silicon Valley with scepticism and doubts. Europe was used to looking across the Atlantic and facing a competitive threat from large multinational corporations, such as General Motors, U.S. Steel and IBM, and not from nameless and unrecognisable start-up of firms in exotic industries such as software and biotechno-

logy. The emerging firms such as Apple Computer and Intel seemed interesting but did not have any sufficient relevance for the incumbent businesses in the automobile, textile, machinery and chemical industries, which were then the obvious engines of European competitiveness.

The second stage, during the mid-1990s, was recognition. Europe recognized that the high performance of the Entrepreneurial Economy in Silicon Valley did deliver a sustainable long-run performance. The theory of comparative advantage typically evoked during this phase was that Europe's most important economy, Germany, would provide the automobiles, textiles and machine tools. The Entrepreneurial Economy of Silicon Valley, Route 128, and the Research Triangle would produce the software and microprocessors. Each continent would specialize in its comparative advantage and then trade with each other. Thus, Europe held to its traditional institutions and policies and continued to channel resources into traditional moderate technology industries.

The third stage, during the second half of the 1990s, was envy. As Europe's unemployment soared into double digits and growth stagnated, the capacity of the American Entrepreneurial Economy to generate both jobs and higher wages became the object of envy. The United States and Europe seemed to be on divergent trajectories. The separate but equal doctrine of the concept of comparative advantage yielded to the different but better doctrine of dynamic competitive advantage. As the Entrepreneurial Economy continued to diffuse across the United States, most policy makers, particularly in large countries such as Germany and France, despaired that European traditions and values were simply inconsistent and incompatible with the Managed Economy.

The fourth stage, during the final years of the last century, was consensus. European policy makers reached a consensus that – in the terminology of Audretsch and Thurik (2001) – the new Entrepreneurial Economy was superior to the old Managed Economy. Moreover, in their opinion a commitment had to be forged to create a new Entrepreneurial Economy. Rather than despairing that the United States had what Europe could not attain, a broad set of policies were instituted to create a new Entrepreneurial Economy. These European policy makers looked across the Atlantic and realized that if places such as North Carolina, Austin, and Salt Lake City could implement very conscious deliberate and targeted policies to create the Entrepreneurial Economy, European cities could as well. After all, Europe had a number of advantages and traditions favouring the emergence of the Entrepreneurial Economy, such as a highly educated and skilled labour force, world-class research institutions and its variety in cultures and hence innovative approaches to new products and organizations. These phe-

nomena would provide a perfect framework for absorbing the high levels of uncertainty inherent to the Entrepreneurial Economy (Audretsch and Thurik, 2001).

The fifth stage is attainment. There are cautious signs that an Entrepreneurial Economy is finally emerging on the old continent. Consider the Green paper on Entrepreneurship of the European Commission[3] presented in the spring of 2003. It aims to stimulate debate amongst policy makers, businesses, representative organisations, journalists and experts on how to shape entrepreneurship policy for the future. It analyses a range of policy options and asks, within the proposed framework for entrepreneurship policy, a number of questions suggesting different options on how to achieve progress. See Audretsch, Thurik, Verheul and Wennekers (2002) for further information on the five stages and some country studies on the determinants of entrepreneurship.

The era of the Managed Economy

Throughout the first three-quarters of the last century, large enterprise was clearly the dominant form of business organization (Schumpeter, 1934). The systematic empirical evidence, gathered from both Europe and North America, documented a sharp decreased in the role of small business in the post-war period. This was the era of mass production when economies of scale seemed to be the decisive factor in dictating efficiency. This was the world described by John Kenneth Galbraith (1956) in his theory of countervailing power, where the power of 'big business' was balanced by that of 'big labour' and 'big government'.[4] Stability, continuity and homogeneity were the cornerstones of the Managed Economy (Audretsch and Thurik, 2001). Large firms dominated this economy.

Small firms and entrepreneurship were viewed as a luxury, as something Western countries needed to ensure a decentralization of decision making, obtained only at the cost of efficiency. A generation of scholars, spanning a broad spectrum of academic fields and disciplines, have sought to create insight into the issues surrounding this perceived trade-off between economic efficiency on the one hand and political and economic decentralization on the other (Williamson, 1968). These scholars have produced a large number of studies that mainly focus on three questions: (i) What are the benefits of size and large-scale production? (ii) What are the economic and welfare implications of an oligopolistic market structure? and (iii) What are the public policy implications?

[3] http://europa.eu.int/comm/enterprise/entrepreneurship/green_paper/

[4] This was the era of the man in the grey flannel suit and the organization man, when virtually every major social and economic institution acted to reinforce the stability and predictability needed for mass production (Piore and Sabel, 1984; Chandler, 1977).

This literature has produced a series of stylised facts on the role of small business in the post-war economies of North America and Western Europe:

- *Small businesses were generally less efficient than their larger counterparts*. Studies from the United States in the 1960s and 1970s revealed that small businesses produced at lower levels of efficiency than larger firms (Weiss, 1976 and Pratten, 1971).
- *Small businesses were characterized by lower levels of employee compensation.* Empirical evidence from both North America and Europe found a systematic and positive relationship between employee compensation and firm size (Brown, Hamilton and Medoff, 1990; Brown and Medoff, 1989).
- *Small businesses were only marginally involved in innovative activity*. Based on R&D measures, small businesses accounted for only a small amount of innovative activity (Chandler, 1990; Scherer, 1991; Acs and Audretsch, 1990; Audretsch, 1995).
- *The relative importance of small businesses was declining over time in both North America and Europe* (Scherer, 1991).

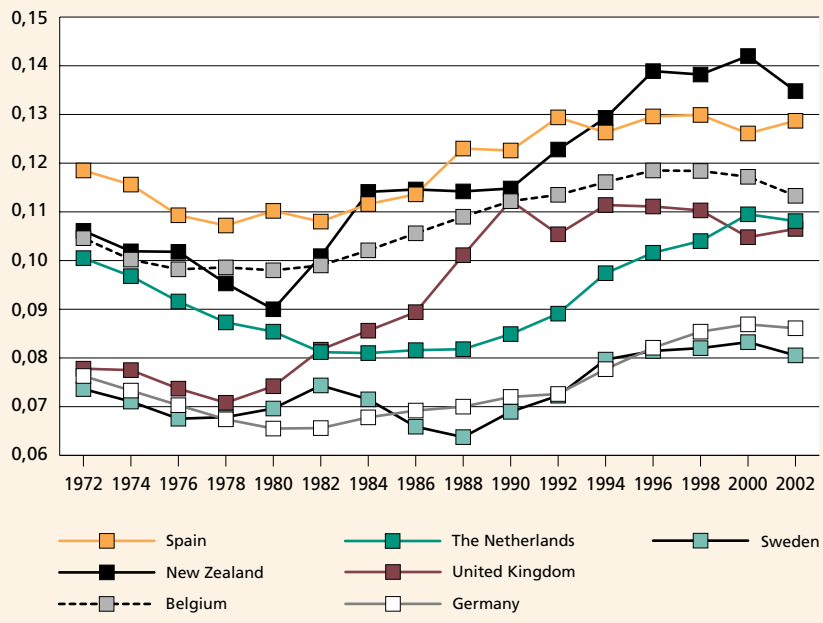
The emergence of the Entrepreneurial Economy

Given the painstaking and careful documentation that large-scale production was driving out entrepreneurship, it was particularly startling and seemingly paradoxical when scholars first began to document that the inevitable demise of small business, began to reverse itself from the 1970s onwards. Loveman and Sengenberger (1991) and Acs and Audretsch (1993) carried out systematic international analyses examining the re-emergence of small business and entrepreneurship in North America and Europe. Two major findings emerged from these studies. First, the relative importance of small business varies largely among countries, and, secondly, in most European countries and North America the importance of small business has increased since the mid-1970s.

The reversal of the trend away from large enterprises towards the re-emergence of small business was not limited to North America. It was also seen in Europe. For example, in the Netherlands the business ownership rate (business owners per workforce) fell during the post-war period, until it reached the lowest point at 8.1 percent in 1984 (Verheul et al., 2002). The downward trend was subsequently reversed, and a business ownership rate of 10.4 percent was reached by 1998 (Verheul et al., 2002). Similarly, the employment share in small manufacturing firms in the Netherlands increased from 68.3 percent in 1978 to 71.8 percent in 1986. In the United Kingdom this share increased from 30.1 percent in 1979 to 39.9 percent in 1986; in

(Western) Germany from 54.8 percent in 1970 to 57.9 percent by 1987; in Portugal from 68.3 percent in 1982 to 71.8 percent in 1986; in the North of Italy from 44.3 percent in 1981 to 55.2 percent in 1987, and in the South of Italy from 61.4 percent in 1981 to 68.4 percent in 1987 (Acs and Audretsch, 1993). A study of EIM (2002) documents how the relative importance of small firms in Europe (19 countries), measured in terms of employment shares, has continued to increase between 1988 and 2001. See Figure 1 for the development of the entrepreneurship rates (=business ownership rates) in a selection of countries taken from van Stel (2003). A distinct U-shape can be observed for these countries. The upward trend of the entrepreneurship rate is levelling off in such countries such as the UK and the US.[5] In the UK this may be due to policy measures favouring incumbent growth businesses rather than start-ups (Thurik, 2003). In the US this may be due to the high level of economic development and to the shake out of industries that are in a more advanced stage within modern OECD countries.[6]

FIGURE 1 Entrepreneurship rates (business owners per workforce) in six OECD countries



[5] See van Stel (2003) or Verheul et al. (2002) for data and figures of the US development.

[6] See also Kwoka and White (2001) who observe that despite its importance in absolute and relative terms the small business sector accounts for a diminishing share of US private sector activity. In van Stel (2003) it can be observed that the entrepreneurship rate in countries like Japan and France has dropped over a long period including the 1990s.

As the empirical evidence documenting the re-emergence of entrepreneurship increased, scholars began to look for explanations and to develop a theoretical basis. Acs and Audretsch (1993) and Carlsson (1992) provide evidence concerning manufacturing industries in countries in varying stages of economic development. Carlsson advances two explanations for the shift toward smallness. The first deals with fundamental changes in the world economy from the 1970s onwards. These changes relate to the intensification of global competition, the increase in the degree of uncertainty, and the growth in market fragmentation. The second explanation deals with changes in the character of technological progress. Carlsson shows that flexible automation has various effects resulting in a shift from large to smaller firms. The pervasiveness of changes in the world economy, and in the direction of technological progress, has resulted in a structural shift that is affecting the economies of all industrialized countries. Also Piore and Sable (1984) argue that the instability of markets in the 1970s resulted in the demise of mass production and promoted flexible specialization. This fundamental change in the path of technological development led to the occurrence of vast diseconomies of scale. Early explanations (Brock and Evans, 1989) revolved around six hypotheses regarding the increased role of small firms:

- Technological change reduces the importance of scale economies in manufacturing.
- Increased globalisation and the accompanying competition from a greater number of foreign rivals render markets more volatile.
- The changing composition of the labour force, towards a greater participation of women, immigrants, young and old workers, is more conducive to smaller than larger enterprises, due to the greater premium placed on work flexibility.
- A proliferation of consumer demand away from standardized and mass-produced goods towards tailor-made and personalized products facilitates small producers serving niche markets.
- Deregulation and privatisation facilitate the entry of new and small firms into markets previously protected and inaccessible.
- The increased importance of innovation in high-wage countries reduces the relative importance of large-scale production, fostering entrepreneurial activity instead.

This shift away from large firms is not confined to manufacturing industries. Brock and Evans (1989) show that this trend has been economy-wide, at least in the United States. They provide four more reasons why this shift has occurred: the increase of labour supply leading to lower real wages and coinciding with an increasing level of

education; changes in consumer tastes; relaxation of (entry) regulations and the fact that we are in a period of creative destruction. Loveman and Sengenberger (1991) stress the influence of two trends of industrial restructuring: that of decentralization and vertical disintegration (the breaking up of large plants and businesses) and that of the formation of new business communities. These intermediate forms of market coordination flourish owing to declining costs of transactions. Furthermore, they emphasize the role of public and private policies promoting the small business sector. Audretsch and Thurik (2000) point at the necessary shift towards the knowledge-based economy as being the driving force behind the move from large to smaller businesses. In their view globalisation and technological advancements are the major determinants of this challenge of the Western countries.[7]

Audretsch and Thurik (2001) explain the re-emergence of entrepreneurship in Europe and North America on the basis of increased globalisation, which has shifted the comparative advantage towards knowledge-based economic activity. They discuss the consequences for economic performance: entrepreneurship capital may be a missing link in explaining variations in economic performance (Audretsch and Keilbach, 2003). An alternative and wider view of this missing link may be that it is the institutional fabric that makes the difference between high and low performance. For example, Saxenian (1994) attributes the superior performance of Silicon Valley to a high capacity for promoting entrepreneurship. While the traditional production factors of labour and capital, as well as knowledge capital, are important in shaping output, the capacity to harness new ideas by creating new enterprises is also essential to economic output.

While entrepreneurs undertake a definitive action, i.e., they start a new business, this action can not be viewed in a vacuum devoid of context. Rather, as Audretsch et al. (2002) show, entrepreneurship is shaped by a number of forces and factors, including legal and institutional factors as well as social factors. The study of social capital and its impact on economic decision-making and behaviour dates back to classic economics and sociology literature where it is argued that social and relational structures influence market processes (Granovetter, 1985). Thorton and Flynne (2003) and Saxenian (1994) argue that entrepreneurial environments are characterized by thriving supportive networks that provide the institutional fabric linking individual entrepreneurs to organized sources of learning and resources. Studying networks located in California's Silicon Valley, Saxenian (1990, p. 96/7) emphasizes that it is the

[7] See Loveman and Sengenberger (1991), Acs, Carlsson and Karlsson (1999) and Carree, van Stel, Thurik and Wennekers (2002) for a further documentation of industrial changes and their causes.

communication between individuals that facilitates the transmission of knowledge among agents, firms, and industries, and not just a high endowment of human capital and knowledge in the region. Contexts generating a high propensity for economic agents to start new firms can be characterized as being rich in entrepreneurship capital. Other contexts, where the start-up of new firms is inhibited, can be characterized as being weak in entrepreneurship capital.[8]

Contrasting the Entrepreneurial and Managed Economy Models

The era of the Managed Economy is being supplanted by the emergence of the Entrepreneurial Economy. This suggests two contrasting models with a differing role for entrepreneurship. The model of the Managed Economy revolves around the links between stability, specialization, homogeneity, scale, certainty and predictability on the one hand, and economic growth on the other. By contrast, the model of the Entrepreneurial Economy focuses on the links between flexibility, turbulence, diversity, novelty, innovation, linkages and clustering on the one hand, and economic growth on the other. The models of the Managed and the Entrepreneurial Economy can be compared by making a distinction between different groups of characteristics, including underlying forces, external environment characteristics, internal or firm characteristics and policy characteristics. See Table 1.

The first group of characteristics contrasts the forces underlying the models of the Entrepreneurial and Managed Economy: localization *versus* globalisation; change *versus* continuity; and jobs and high wages *versus* jobs or high wages. The second group of characteristics contrasts the external environment characteristics of the models of the Managed and the Entrepreneurial Economies. Turbulence, diversity and heterogeneity are central to the model of the Entrepreneurial Economy. By contrast, stability, specialization and homogeneity are the cornerstones in the model of the Managed Economy. The third group of characteristics contrasts firm behaviour of the models of the Managed and the Entrepreneurial Economy: control *versus* motivation; firm transaction *versus* market exchange; competition and cooperation as substitutes *versus* complements; and scale *versus* flexibility. The final group of contrasting dimensions of the models of the Entrepreneurial Economy and the Managed Economy refers to government policy, including the goals of policy (enabling *versus* constraining), the target of policy (inputs *versus* outputs), the locus of policy (local *versus* national) and financing policy (entrepreneurial *versus* incumbent).

[8] While this may seem like a like tautology, we use the concept of entrepreneurial capital to characterize locations exhibiting a high degree of entrepreneurial capital.

TABLE 1 Fourteen dimensions of the difference between the model of the Entrepreneurial and the Managed Economy

Category	Entrepreneurial Economy	Managed Economy
Underlying forces	Localization	Globalisation
	Change	Continuity
	Jobs **and** high wages	Jobs **or** high wages
External environment	Turbulence	Stability
	Diversity	Specialization
	Heterogeneity	Homogeneity
How firms function	Motivation	Control
	Market exchange	Firm transaction
	Competition **and** cooperation	Competition **or** cooperation
	Flexibility	Scale
Government policy	Enabling	Constraining
	Input targeting	Output targeting
	Local locus	National locus
	Entrepreneurial	Incumbent

The fourteen dimensions that span the difference between the models of the Entrepreneurial and Managed Economies are dealt with in detail in Audretsch and Thurik (2004). Building upon Audretsch and Thurik (2001) these contrasting models provide a lens through which economic events can be interpreted and policy formulated. Using the wrong lens leads to the wrong policy choice. For example, under the model of the Managed Economy firm failure is viewed negatively, representing a drain on society's resources. In the model of the Managed Economy resources are not invested in high-risk ventures. In the model of the Entrepreneurial Economy firm failure is viewed differently, i.e., as an experiment, an attempt to go in a new direction in an inherently risky environment (Wennekers and Thurik, 1999). An externality of failure is learning. In the model of the Entrepreneurial Economy the process of searching for new ideas is accompanied by failure. Similarly, the virtues of long-term relationships, stability and continuity under the model of the Managed Economy give way to flexibility, change, and turbulence in the model of the Entrepreneurial Economy. What is a liability in the model of the Managed Economy is, in some cases, a virtue in the model of the Entrepreneurial Economy.

Consequences of the change

The causes of this shift are one thing. Its consequences cover a different area of research. Acs (1992) began the discussion. He distinguishes four consequences of the increased importance of small firms: a vehicle for entrepreneurship, routes of innovation, industry dynamics and job generation. His claims are that small firms play an important role in the economy, serving as agents of change by their entrepreneurial activity, being the source of considerable innovative activity, stimulating industry evolution and creating an important share of the newly generated jobs. Baumol (1993) amply deals with the role of entrepreneurial activities and the different effects it may have. The role of smallness in the process of innovative activities is investigated extensively by Acs and Audretsch (1990) and Audretsch (1995). The discussion of the relation between the role of small firms and industry dynamics is spread out: examples can be found in Audretsch (1995). Cohen and Klepper (1992) focus on the role of the number of firms and diversity for achieving progress.[9] Audretsch and Thurik (2001) observe that the change is of major importance and talk about the shift from the Managed to the Entrepreneurial Economy. See also Audretsch and Thurik (2004) where basically three impacts of entrepreneurial capital are distinguished.

Entrepreneurship capital exerts a positive impact on competitiveness and growth in a number of ways. The *first* way is by creating knowledge spillovers. Romer (1986), Lucas (1988 and 1993) and Grossman and Helpman (1991) established that knowledge spillovers are an important mechanism underlying endogenous growth. However, they shed little light on the actual mechanisms by which knowledge is transmitted among firms and individuals. Insight into the process of knowledge diffusion is important, especially since a policy implication commonly drawn from new economic growth theory is that, due to the increasing role of knowledge and the resulting increasing returns, knowledge factors (e.g., R&D) should be publicly supported. It is important to recognize that also the mechanisms for spillovers may play a key role and, accordingly, should serve as a focus for public policy enhancing economic growth and development.

[9] Clearly, there are many more consequences of the increased share of small firms than the four mentioned by Acs (1992). For instance, an increase in the share of small firms may lead, ceteris paribus, to a lower orientation towards exports, a lower propensity to export employment, a qualitative change in the demand for capital and consultancy inputs, more variety in the supply of products and services or in the manner and aims of conducting research and development. The literature of the consequences of smallness is complemented by some empirical exercises by Carree and Thurik (1998 and 1999) for some European countries. They show that a rise in the share of smallness in a certain economy, respectively a high share of smallness in a certain industry generates additional output in the entire economy, respectively industry. Schmitz (1989) provides a theoretical model with a similar result. Audretsch and Thurik (2000) show that an increase of the rate of entrepreneurship (number of business owners per labour force) led to lower levels of unemployment in 23 OECD countries in the period 1984 through 1994.

The literature identifying mechanisms creating knowledge spillovers is sparse and remains underdeveloped. However, entrepreneurship is an important area where transmission mechanisms have been identified.[10] Cohen and Levinthal (1989) suggest that firms develop the capacity to adapt new technology and ideas developed in other firms and are therefore able to appropriate some of the returns accruing to investments in new knowledge made externally (i.e., outside the own organization). This view of spillovers is consistent with the traditional knowledge production function, where firms exist exogenously, and then make (knowledge) investments to generate innovative output. Audretsch (1995) proposes a shift in the unit of observation away from exogenously assumed firms towards individuals, such as scientists, engineers or other knowledge workers, i.e., agents with endowments of new economic knowledge. When the focus is shifted from the firm to the individual as the relevant unit of observation, the issue of appropriation remains, but the question becomes: How can economic agents with a given endowment of new knowledge best appropriate the returns from that knowledge? Hirschman (1970) argues that if voice proves to be ineffective within incumbent organizations, and loyalty is sufficiently weak, a knowledge worker may leave the firm or university where the knowledge is created in order to create a new company. In this spillover process the knowledge production function is reversed. Knowledge is exogenous and embodied in a worker and the firm is created endogenously through the worker's effort to appropriate the value of his knowledge by way of innovative activity. Hence, entrepreneurship serves as a mechanism by which knowledge spills over from the source to a new firm in which it is commercialised. There is a large history of people who only started their firms after large firms failed to become interested in the innovation. This applies particularly to competence-destroying industries.[11]

A *second* way in which entrepreneurship capital generates economic growth is through augmenting the number of enterprises and increasing competition. Jacobs (1969) and Porter (1990) argue that competition is more conducive to knowledge externalities than is local monopoly. By local competition Jacobs (1969) does not refer to competition within product markets as has traditionally been envisioned in the industrial organization literature, but rather to the competition for new ideas embodied in economic agents. Not only does an increase in the number of firms enhance the competition for new ideas, but greater competition among firms also facilitates the entry of new firms specializing in a particular new product niche. This is because the neces-

[10] As Audretsch and Feldman (1996) point out knowledge spillovers occur in the context of networks and clusters.

[11] Chester Carlsson started Xerox after his proposal to produce a new copy machine was rejected by Kodak. Steven Jobs started his Apple Computer after his proposal to produce a new personal computer was turned down by Xerox.

sary complementary inputs are more likely to be available from small specialist niche firms than from large, vertically- integrated producers. Feldman and Audretsch (1999) as well as Glaeser et al. (1992) found empirical evidence which is supporting the hypothesis that an increase in competition in a city, as measured by the number of enterprises, is accompanied by higher growth performance by that city.[12]

A *third* way in which entrepreneurship capital generates economic output is by providing diversity among firms (Cohen and Klepper, 1992). Not only does entrepreneurship capital generate a greater number of enterprises, it also increases the variety of enterprises in a certain location. A key assumption of Hannan and Freeman (1989) in the population ecology literature is that each new organization represents a unique formula. There has been a series of theoretical arguments suggesting that the degree of diversity, as opposed to homogeneity, will influence the growth potential of a location.

The theoretical basis for linking diversity to economic performance is provided by Jacobs (1969), who argues that the most important sources of knowledge spillovers are external to the industry in which the firm operates and that cities are a source of considerable innovation because here the diversity of knowledge sources is greatest (Audretsch and Feldman, 1996; Jaffe et al., 1993). According to Jacobs (1969) it is the exchange of complementary knowledge among diverse firms and economic agents that yields an important return on new economic knowledge. Jacobs (1969) develops a theory emphasizing the argument that the variety of industries within a geographic environment promotes knowledge externalities and, ultimately, innovative activity and economic growth. In this environment entrepreneurship capital can contribute to growth and development by injecting diversity and serving as a conduit for knowledge spillovers, leading to increased competition. The Entrepreneurial Economy is characterized by a high degree of reliance on this third role of entrepreneurship capital.

The empirical investigation of the relationship between economic growth and entrepreneurship has been shrouded with ambiguity. There is assumed to be a two-way causation between changes in the level of entrepreneurship and that of the level of economic development: a “Schumpeter” effect of entrepreneurship enhancing growth, particularly in the economically most advanced countries, and a “refugee” or “shopkeeper” effect of low growth rates stimulating self-employment, particularly in countries with less generous social security schemes. Audretsch, Carree and Thurik (2001) try to reconcile the ambiguities found in the relationship between unemployment – as the inverse of economic growth - and entrepreneurship. In Reynolds, Hay, Bygrave,

[12] See also Acs (2002) who hints at the dual causality between the growth of cities and that of the number of firms.

Camp and Autio (2000) a more direct approach is taken that correlates growth and entrepreneurial activity. The latter approach is simpler in a methodological sense but more sophisticated in that a wider variety of countries are observed and that entrepreneurial activities are measured appropriately. Despite their entirely different approaches both studies show a positive correlation between entrepreneurship and economic growth. See Carree and Thurik (2003) for a survey of the literature on entrepreneurship and economic growth. One has to be cautious of too simplistic views on the relation between entrepreneurship in the sense of business start-ups and subsequent economic growth: push effects as well as low entry barriers due to generous policy measures may lead to start-ups that are successful in that at least the employment of the business owner/founder is secured (mom-and-pop stores) but no employment growth is generated, let alone economic growth (Van Stel and Storey, 2003).

In short, a series of studies has identified that the industry structure is generally shifting towards an increased role for small enterprises. However, the extent and timing of this shift is anything but identical among countries. Rather, the shift in industry structures has been heterogeneous and apparently shaped by country-specific factors (Carree, van Stel, Thurik and Wennekers, 2002). Apparently, institutions and policies in certain countries have facilitated a greater and more rapid response to globalisation and technological change, along with the other underlying factors, by shifting to a less centralized industry structure than has been the case in other countries (Audretsch, Thurik, Verheul and Wennekers, 2002). An implication of this high variance in industry restructuring is that some countries are likely to have industry structures that are different from “optimal”.

But what determines this “optimal” structure? It is beyond the scope of the present paper to define or discuss this (Audretsch, Carree, van Stel and Thurik, 2002). For an indication we have to refer to the field of industrial organization. There is a long-standing tradition in this field devoted towards identifying the determinants of industry structure. As early as 1948, Blair (1948) stated that technology is the most important determinant of industry structure. Scherer and Ross (1990) and Chandler (1990) expand the determinants of optimal industry structure to include other factors as well as the underlying technology. Dosi (1988, p. 1157), in his systematic review of the literature concludes that: “Each production activity is characterized by a particular distribution of firms.” When the determinants of the underlying industrial structure are stable, the industry structure itself would not be expected to change. However, a change in the underlying determinants would be expected to result in a change in the “optimal” industry structure. Certainly, Chandler (1990) and Scherer and Ross (1990) identified a shift in optimal industry structure towards increased centralization and

concentration throughout the first two-thirds of the previous century as a result of changes in the underlying technology along with other factors.

While the evidence suggests that the restructuring paths of industry vary considerably across countries, virtually nothing is known about the consequences of lagging behind in this process. Do countries with an industry structure that deviates considerably from the "optimal" industry structure forfeit potential economic growth in comparison with countries deviating less from the "optimal" industry structure? This question is crucial to policy makers, because if the opportunity cost, measured in terms of forgone growth, of a slow adjustment towards the optimal industry structure is low, the consequences of not engaging in a rapid adjustment process are relatively trivial. However, if the opportunity cost is high the consequences are more alarming. Audretsch, Carree, van Stel and Thurik (2002) try to identify the impact of deviations in the actual industry structure from the optimal industry structure on growth. They use a data-base linking industry structure to growth rates for a panel of 18 European countries spanning five years to test the hypothesis that deviations from the "optimal" industry structure result in reduced growth rates. They find that deviations from the "optimal" industry structure, measured in terms of the relative importance of small firms, have had an adverse effect on economic growth rates. This evidence suggests that those countries that have shifted industry structure towards a larger share of small firms in a more rapid fashion have been rewarded by higher growth rates.

Conclusion

Government policy in the Managed Economy was largely about control. The high degree of certainty with respect to technology and the stability of mass consumer markets dictated that it was known what to produce, how it should be produced, and who would produce it. This led to a predominance of scale economies. The role of government was to constrain the power of large corporations, which were needed for efficiency under mass-production, but posed a threat to democracy through their concentration of power. Under the Managed Economy the policy debate aimed at competition policies (antitrust), regulation and public ownership of business. In the Entrepreneurial Economy these constraining policies have become increasingly irrelevant. The central role of government policy in the Entrepreneurial Economy is enabling in nature. The focus is to foster the production and commercialisation of knowledge. Rather than focusing on limiting the freedom of firms to contract through antitrust, regulation and public ownership, government policy in the Entrepreneurial Economy targets education, increasing the skills and human capital of workers, facilitating the mobility of workers and their ability to start new firms, lowering admini-

strative burdens for small business and promoting knowledge transfer to innovative new enterprises.

Europe is bogged down in stagnant economics growth and structurally high unemployment. This high unemployment coupled with stagnant growth in Europe has triggered a plea by policy makers for rethinking the policy approach that ushered in European prosperity during the post-war era. Entrepreneurship is a crucial element for achieving the political objectives set at the European Council Meeting in Lisbon in 2000, where the European Union committed itself to becoming, within a decade, the most competitive and dynamic knowledge-based economy in the world. Entrepreneurship is seen as a driver for economic growth, competitiveness and job creation. Furthermore, it can be a vehicle for personal development and can help resolve social issues. At the Barcelona Council in 2002 the Council endorsed the Commission's intention to present a Green Paper on Entrepreneurship as a contribution to reaching these ambitious goals (European Commission, 2003).

In other words, the empirical evidence, as well as the clear European policy initiatives to move toward an Entrepreneurial Economy, shows the importance of initiatives such as the Global Entrepreneurship Monitor and the EIM/CASBEC research programme in supporting the policy debate to focus more and more on the role of entrepreneurship for economic growth. Despite various research initiatives "remarkably little is known about the relationship between entrepreneurship and economic growth, including how it works, what determines its strength and the extent to which it holds for diverse countries" (Reynolds, Hay, Bygrave, Camp and Autio, 2000, p.11). The richness of the new data material in terms of the variety of countries, the variety with which entrepreneurship can be measured and the large amount of explanatory variables will eventually provide policy makers with indispensable insights supporting up-to-date macroeconomic policies and instruments needed to foster solid economic growth in the present era.

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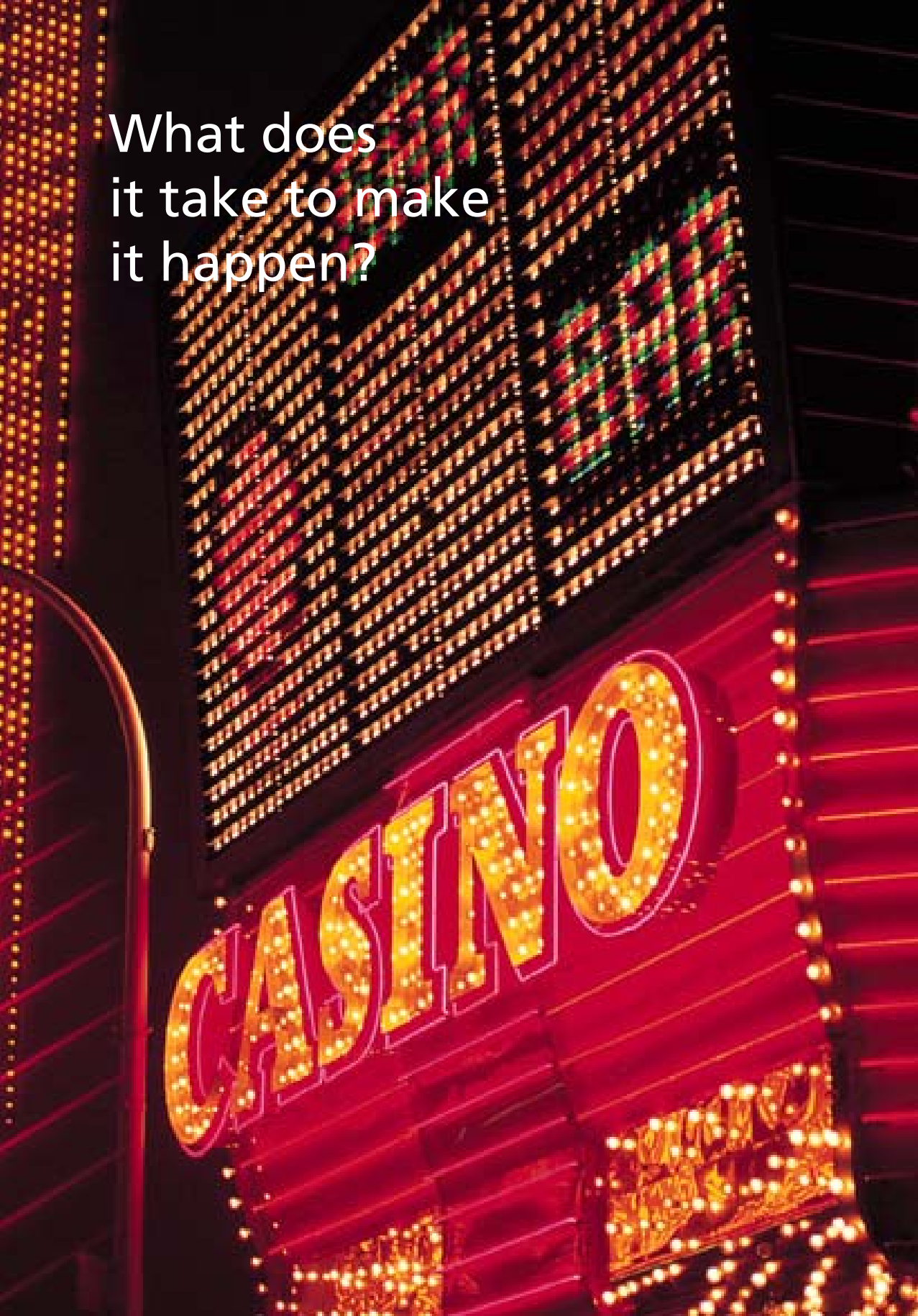
What does
it take to make
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CASINO

Taxation, Institutions and the Agents of Economic Growth

by ***Magnus Henrekson and Dan Johansson***

The introduction and protection of private property rights has been crucial for the success of a country in creating economic growth and general prosperity. However, the mechanisms through which private property rights lead to growth have not been fully elucidated. We present a theory of competence blocs that links growth to property rights. According to this theory growth is a result of the perpetual creation and use of new productive knowledge, i.e. innovations. This chapter contains an analysis of the ways in which the tax system can be expected to influence the incentives for innovations, entrepreneurship and firm growth.

Why are some countries rich and others poor? This question has been analyzed by economists ever since the founder of modern economics, Adam Smith, posed it in 1776, over 200 years ago. Smith answered the question chiefly by giving prominence to the division of labor. Productivity in a country increased if individuals specialized in performing different tasks. This had the effect that each individual became increasingly skilful in performing his/her work and therefore could produce an ever-increasing amount in the same period of time. Productivity and prosperity increased.

Current research has, in the first place, supplemented this explanation with an emphasis on knowledge and the acquisition of knowledge in a wider sense of the term, for example research and development. Secondly, research and practical experience has shown that the emergence (and protection) of private property rights is a prerequisite for sustained economic growth (North and Thomas 1973; Rosenberg and Birdzell 1986; Mokyr 1990; Jones 2001; de Soto

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2001; Baumol 2002). The countries (or civilizations or regions) in which private property rights have been protected and respected have prospered, while other countries have become or have remained poor. According to this research, this explains why Western Europe, which was lagging behind, took the economic, technical and political lead over the Chinese and Muslim empires, which were much more advanced in terms of knowledge and technology in the Middle Ages. These conclusions have been reinforced with the demise of the Soviet Union and the collapse of the planned economies.

Institutional theory draws the conclusion that economic growth is a result of entrepreneurial acquisition of knowledge and action conditioned by the rules of society – its institutions in the wide sense of the term (Kaspar and Streit 1998). In this paper growth is analyzed as a process of acquisition of knowledge and entrepreneurial action guided by the rules governing the agents in the economy. First, we present the theory of the competence bloc, which extends the analysis to include agents other than entrepreneurs, notably industrialists and venture capitalists. Then we examine how the Swedish tax system affects the incentives for labor, entrepreneurship, business formation and firm growth. We focus on taxes since they have a major influence on the rate of return on investment and human actions, particularly in a high tax country, and therefore can be expected to have important effects on economic growth and renewal.

Economic growth and the competence bloc

It is well known that economic growth can arise as a consequence of increased use of production factors, such as labor and capital, increased productivity or a combination of these (Solow 1956). History has shown that increased productivity is the main driver of economic growth. In turn, higher levels of productivity result from the creation and use of new knowledge – knowledge of the ways in which the goods and services demanded by consumers can be produced more and more efficiently (Hayek 1937, 1945; Romer 1990).

Identifying and implementing a business idea in a market economy means applying new knowledge about ways in which productivity can be enhanced. All else equal, a productivity increase boosts the return to the factors of production. The increase in returns accrues to the production factor or factors that are residual claimants, i.e. as a rule the equity owners. This provides a signal to expand and further develop the activity in question. Expansion also leads in turn to a situation in which remuneration to labor (and other production factors) is driven up. In the long term, all factors of production obtain a share of the increase in productivity.

In the Schumpeterian tradition, for example, a distinction is made between having a new idea (an invention) and introducing it into the economy (an innovation).[1] Schumpeter distinguishes between five different types of innovations (Schumpeter 1911/1934, p. 66):

1 The introduction of a *new good* or of a new quality of a good.

2 The introduction of a *new method of production*, i.e. one not yet tested by experience in the industry concerned.

3 The opening of a *new market*, i.e. a market into which the particular industry of the country in question has not previously entered, whether or not this market has existed before.

4 The introduction of a *new source of supply* of raw materials or intermediate inputs, irrespective of whether this source already exists.

5 The carrying out of *a new mode of organization* of an industry, like the creation of a monopoly position.

Technical innovations are usually emphasized as being particularly important for growth. Therefore, economic policy often focuses on directly stimulating these innovations. This is likely to be insufficient from the perspective of economic growth. Technological development is a result of human creativity and thus a result of the ways in which individuals are organized in enterprises and communities. Organizational innovations may dominate technological innovations and in those cases they become a prerequisite for the latter. Naturally, there is a form of interplay here – technological innovations and scientific breakthroughs with commercial potential make it necessary for the institutions of society to be sufficiently flexible so that they can be adapted to new circumstances (Myhrman 1994, chapter 2). The studies of economic history referred to above lead to the same conclusion. Despite the fact that China was considerably more technically advanced than Europe 1000 years ago, the West not only caught up, it also took the lead. The crucial institutional factor behind this reversal of technological and economic leadership was the (gradual and by no means complete) introduction of private property rights in Western Europe. The introduction of private property rights was thus an organizational innovation of extraordinary material significance.

According to the theory of the competence bloc, the creation and application of new knowledge that increases the productivity of enterprises (and, in extension, the growth

[1] Thus, an innovation can be regarded as an introduction of new knowledge into the economic system.

of nations) is a complex process. If knowledge gives rise to large-scale industrial and economic growth, it is essential to have a network of agents who possess different but complementary competencies that interact in order to generate, select, exploit and expand innovations. This network may be called a *competence bloc* and contains at least eight types of economic actors:

1 *Competent customers*. In order to produce a product that customers are prepared to buy, it is necessary to have information on customer needs. Competent customers assist in designing the product in such a way that it becomes attractive. They can assist in both product development and financing. It is important that enterprises collaborate with the "right" customers – a product will never be better than the customers' demand. One common error in economic policymaking is when the government tries to stimulate firms and technological change by means of subsidies. This increases the tendency among entrepreneurs and firms to develop commodities that satisfy the government agency granting the subsidy rather than satisfying the needs of the customers (cf. Rylander 1995).

2 *Inventors.* Inventors solve individual (technical) problems.

3 *Innovators.* Innovators hold major projects together and integrate different technical solutions into a workable product. The innovators can largely be regarded as administrators and as having the main responsibility for major projects.

4 *Entrepreneurs*. Entrepreneurs identify different business ideas and organize their introduction on to the market.

5 *Industrialists.* They manage the expansion of enterprises and further develop original innovations into large-scale activities. They are therefore of key importance for the growth of both individual firms and the economy as a whole. The competence bloc thus makes a distinction between the entrepreneurial competence of identifying and introducing innovations and the industrial competence of developing the original innovation into a large-scale business. Compared to Schumpeter this is an extension based on empirical experience, which has shown that starting up an activity and its subsequent development generally requires two separate competencies. The entrepreneurs certainly have the ability to identify new business ideas and to establish new firms, but often lack the ability to develop the activity into a large-scale enterprise.

6 *Skilled labor.* This is a prerequisite for all economic activity. Rapidly growing activities are often inhibited in their expansion by the lack of certain professional categories. The educational system is of decisive importance for the supply of labor with the right professional skills.

7 *Venture capitalists.* They fill several important functions. First and foremost they put a price on projects and enterprises in early stages of development. This involves setting a price that is neither too high (which would lead to an excessive return on poor projects) nor too low (which creates poor incentives for good projects). One important part of this function is to make an assessment of the skills of entrepreneurs and management – venture capitalists can be said to identify and make selections between different entrepreneurs. Moreover, they contribute not only by financing, but also by management skills, marketing expertise, sector-specific knowledge and networks. They supply the enterprise and the entrepreneur with *competent* capital. Incompetent capital, on the other hand, often has devastating effects on enterprises and economic growth. If the financiers lack economic competence, the firms may be harmed by their influence. In this respect, a market economy is self-regulating, since incompetent financiers receive low returns on their capital and are therefore put out of business in the long run. Mismanagement on a large scale thus requires actors that are not subject to the normal rules of a liberal market economy. The most common example of this is when the state acts as the financier and decisions on financing are governed more or less by political motives.[2]

8 *Actors on secondary markets.* These actors have similar skills and fill functions similar to venture capitalists. The actors on secondary markets enter the picture at a later stage in the development process of a business, when the venture capitalists want to exit their investment. They make assessments of the value of enterprises, supply capital and evaluate the owners' skills in different enterprises. If an enterprise is mismanaged, or if it can be more skillfully managed, actors on the secondary market will buy the enterprise and appoint a new management better equipped to lead it.

Since the number of possible innovations is extremely large and each actor or group of actors in the competence bloc is "boundedly rational",[3] no one can have perfect information, i.e. know everything about everything that is relevant in the context (a

[2] In line with this it has been shown that the state has been one of the largest suppliers of incompetent capital. For example, the state financed companies in the shipbuilding industry with *negative* value added with tens of billions of Swedish kronor (Carlsson 1983). Bergström (2000) found that government regional support had a *negative* effect on the employment and productivity of firms that received the support. ITPS (2004) report similar negative effects from the EC's regional support schemes. Svensson (2004) finds that government loan financing granted to owners of patents reduced the probability of commercialisation.

[3] The concept *boundedly rational* was coined by Herbert Simon, see for example Simon (1955, 1990). It is based on the fact that the human brain has limited capacity to analyze and act on the basis of information. No matter how intelligent a person may be, her ability to process information is extremely limited. This has the effect that only a very small amount of existing knowledge may be handled. Instead of acting as rational calculators with perfect knowledge, which at that time was a standard assumption in the choice-theoretic model, people tend to let their behavior be governed by rules of thumb, customs and habits and generally the outcome of this is relatively good. See also Martens (2004).

standard assumption in the earlier basic economic decision-making model). In other words, it is impossible to be able to assess the value of an innovation with certainty *ex ante* (before it is implemented). Every innovation can thus be described as a business experiment that is tested by the market (Eliasson 1996).

A competence bloc can be regarded as complete when the risks for type 1 and type 2 errors are minimized (Eliasson and Eliasson 1996). In this context a type 1 error means that potentially successful projects are eliminated and a type 2 error means that poor projects receive financing for an excessive period of time. This requires both "breadth" (that all the requisite actors in the competence bloc are involved) and "depth" (a critical mass of actors to fulfill each function). Economic growth can be looked upon as a chain of events from the original invention, its introduction on the market, to large-scale industrial activity emanating from the invention. The actors in the competence bloc play a decisive role in each link in the chain. Like the chain, growth is no stronger than its weakest link. It is sufficient that one of the functions in the competence bloc is lacking or functions poorly for growth to suffer.

Tax wedges on labor and capital

The decisive factor for the emergence and operation of different competence blocs is the incentives given to its respective agents. The incentives determine whether a sufficient number of individuals acquire the skills that are necessary for the competence bloc to be complete. The incentives also determine how the actors function in the competence bloc and thus the effectiveness of the competence bloc. In this respect the tax system plays an important role, since it is of considerable importance for the returns on the activities of the different actors.

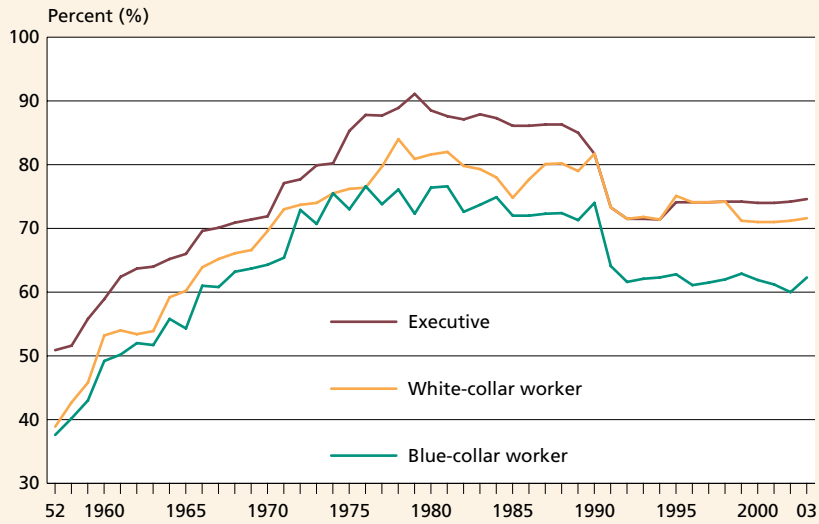
The scope of this paper is too limited to provide a comprehensive study of how the tax system has impacted on the incentives of all agents in the competence bloc. We have therefore limited our study to the tax wedges on labor (labor tax wedges) and on individually-owned enterprises (capital tax wedges), and, following that, to a discussion on the effects of the tax system on the actors in the competence bloc.

The tax wedge on labor income describes the total effect of taxes and other mandatory contributions on the income earned from work on the margin. It includes both employers' contributions and the employee's income tax. The capital tax wedge measures the proportion of the return on an investment that is paid in tax. The labor tax wedges were calculated for the period 1952–2003; the capital tax wedges for the period 1970–2003. We have chosen to use tax wedges instead of more conventional tax measures such as the highest marginal tax rate or the nominal corporate tax rate.

The reason for this is that the effect of the tax system can be expected to depend on the combined effect of all types of taxes. The tax wedge is an unusually good, if still imperfect, indicator of the combined effect.

Figure 1 shows the labor tax wedge for an industrial worker, a white-collar worker and an executive for the period 1952 to 2003. The tax wedge of the blue-collar worker and the white-collar worker was less than 40 percent at the beginning of the period. It then increased substantially and in the 1970s and 1980s it was roughly 75 percent for the blue-collar worker and 80 percent for the white-collar worker. The tax reform of 1990/91 reduced the tax wedges and at the end of the period they amounted to slightly more than 60 percent for the blue-collar worker and slightly more than 70 percent for the white-collar worker.

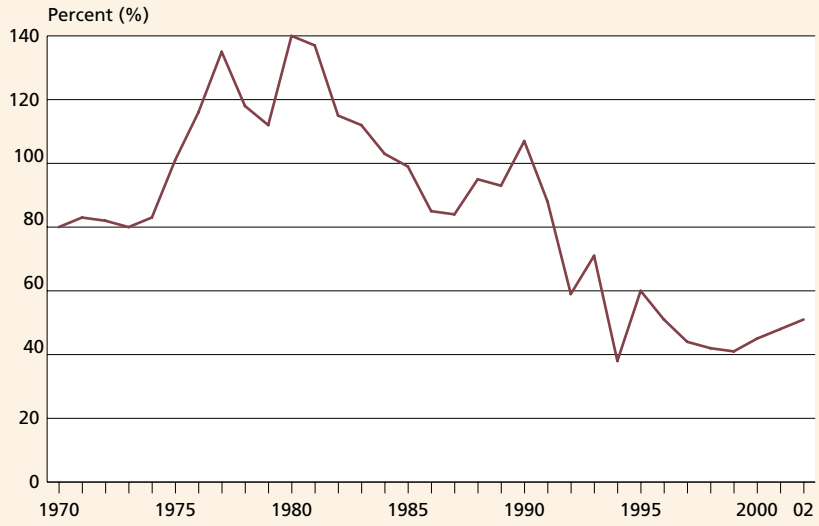
FIGURE 1 Labor tax wedges in Sweden, 1952–2003



Note: The blue- and white-collar worker are defined, respectively, as an average male blue- and white-collar worker in the private sector. The executive is the director of finance in a large firm (median salary for position type 9002 up to 1990). After 1990 it is assumed that the salary of an executive increased at the same pace as that of the white-collar worker. The marginal taxes refer to single persons without children and employers' contribution refers to all mandatory contributions apart from those pertaining to the executive where account has been taken of previous ceilings on contributions (abolished in 1976 and 1982). Indirect taxes are gross excluding property tax. The calculations include average deductions granted for debt service and other tax-deductible expenses: 11 percent for the white-collar worker, 16 percent for the executive and 0 percent for the blue-collar worker for all years. Travel expenses have been calculated at 1.5 percent of the salary, and other tax-deductible expenses at 0.5 percent. No account has been taken of the value of fringe benefits for tax assessment purposes in the employers' contributions. The tax wedge is defined as $1 - [(1 - t_e)(1 - t_m)(1 - t_i)/(1 + t_a)]$; in which t_e is the pension contribution, t_m is the marginal tax in the income tax (excluding national insurance contributions), t_i is the consumption taxes defined as the total of value added tax and selective excise taxes as a percentage of the price of the good or service and t_a is the employers' contributions.

Source: Calculations made by Gunnar Du Rietz, see Johansson (2004).

FIGURE 2 Capital tax wedge in Sweden, 1970–2002



Comment: See main text for a definition of the capital tax wedge.
Source: Calculations made by Gunnar Du Rietz, see Du Rietz and Johansson (2003).

The executive's tax wedge has exceeded that of the blue-collar worker throughout the period, and considerably so during the latter part. In 1952 it was slightly more than 50 percent. It then increased steadily up to the beginning of the 1980s when it reached a peak of more than 90 percent. Thereafter it decreased slightly and it was 85 percent at the end of the 1980s. The tax reform of the 1990s reduced the tax wedge to just over 70 percent. A raise of the highest marginal tax rate in the mid 1990s then increased the tax wedge to approximately 75 percent.

The executive's tax wedge is the most relevant one if we want to examine the incentives for acquiring a high-quality education, improving one's situation at work, taking on more responsible tasks etc. It is clear that the tax system has weakened the incentives for these purposes for a long period of time. The high taxes on labor have also reduced the scope for increased division of labor. It is difficult for a person to buy personal services when labor taxes are high. It is therefore difficult to commercialize many services, and entrepreneurial product and organizational development, particularly in many service sectors, will be seriously hampered or never even considered (Davis and Henrekson 2004; Du Rietz 2004).

The capital tax wedge has been calculated for an "entrepreneur-led" family enterprise (i.e. a closely held company) with eight employees, which had a capital value of SEK 13 million in 2003. The salary paid by the enterprise to the entrepreneur has been set to SEK 450,000, which corresponds to the annual income of an executive. The real rate of return before tax is assumed to be 10 percent per year. This means that the nominal rate of return varies between 10 and 24 percent. 30 percent of the profits are distributed while the remainder, after payment of corporate tax, is reinvested in the enterprise (with a 10 percent real rate of return). The capital value and the salary paid to the entrepreneur are assumed to be unchanged in real terms during the period.[4] The calculations also take into consideration wealth tax, tax on dividends, tax on capital gains, corporation tax and inflation. The purpose of the calculations is to analyse how changes in taxes and inflation affect the return on an identical family enterprise during the period (see Du Rietz and Johansson 2003 for a more exhaustive description and explanation for the assumptions selected).

At the beginning of the period the capital tax wedge was some 80 percent. In the mid 1970s it increased considerably. For a number of years in succession it exceeded 100 percent by a wide margin. A peak was reached at the beginning of the 1980s when it was approximately 140 percent. The high tax wedges arose as a consequence of tax increases, a strong degree of progressiveness, high inflation and nominal taxation. During a few years at the end of the 1980s it fell under 100 percent but in 1990 it returned to approximately 100 percent. The tax reform at the beginning of the 1990s, together with a low rate of inflation, reduced the tax wedge substantially. In 2002 it amounted to approximately 50 percent. However, this is still high in an international perspective (see Henrekson and Sanandaji 2004). Accordingly, the tax system has provided weak incentives over a long period of time for entrepreneurs who are active within the framework of privately owned companies.

The tax system and the agents in the competence bloc

In this section we will analyze the effects of (high) taxes – partly on labor and partly on returns on individual company ownership – on the incentives for the different actors in the competence bloc.

High taxes on labor income, taxation on ownership that has favored large, capital-intensive enterprises (Davis and Henrekson 1997) and a large public sector can be

[4] Inflation, however, has the effect that the nominal value of capital increases. This gives rise to a latent capital gain. Prior to 1991 this has been taken into consideration by calculating the capital gains tax for each year on the nominal increase in the value of capital on the basis of tax on three-year possession. The tax rates for each year and the standard exemption from capital gains taxation have also been applied. Since 1991 the capital gains tax for entrepreneurs has been calculated on the basis of the so-called 3:12 rules (SOU 2002:52).

expected to have a substantial effect on access to *competent customers* and the ways in which they act. High taxes on labor reduce the scope for private consumption of sophisticated and differentiated products, particularly if these products have a large degree of service content. It is therefore logical that Sweden has relatively few firms that focus on production of this type. On the other hand, there are strong incentives for entrepreneurs to attempt to develop business ideas that are based on low prices and a low degree of service content, and in which the customers do much of the work themselves. During the post-war period several successful Swedish enterprises have been based on this principle: H&M, Clas Ohlsson and IKEA are perhaps the leading examples. Otherwise the competent customers have been the large enterprises, particularly in the engineering industry, which have been able to create a market for a large number of sub-contractors. For a long period of time the public sector was also a competent customer, and cooperation between The National Electricity Board (Vattenfall) and Asea, Televerket and Ericsson, the Swedish Armed Forces and Bofors/Saab are often mentioned (see, for example, Edquist 2002) as major examples of the ways in which the government, in its role as purchaser, stimulated the development of new Swedish products and sectors that became important export industries at a later stage.

Where access to competent customers is concerned, the government and the large enterprises cannot play this role as effectively any more. There is a risk that Sweden is now too small for private enterprises to be able to develop products and services where a government body makes the specification of requirements. Today new complicated products must normally be developed for a larger market from the very outset. Likewise the major enterprises have become more global concerning their purchases. There is also a great danger that many of them will move key operations abroad, which will reduce the presence of locally competent customers. Braunerhjelm (2004) has found in his extensive interviews and questionnaires that personal income tax rates affects the location of the head office of multinational enterprises.

However, access to competent *inventors* and *innovators* has hitherto been good in Sweden. It is well known that Sweden has been a world leader for a long time in terms of the number of patents per capita (EU 2001).

By contrast, where the supply of productive *entrepreneurs* is concerned there is reason to believe that the tax system has constituted a restraining factor. A potential or existing entrepreneur is facing a number of important choices. Once an individual has chosen to be an entrepreneur instead of employed there are important choices to be made regarding the focus of activities and the rate of expansion. Firstly and most

obviously, the tax system should not encourage people to pursue their business completely or partly in the informal (black-market) sector. Nor should it encourage unproductive entrepreneurship (Baumol 1990).[5] As shown elsewhere (see Henrekson and Sanandaji 2004 and references contained therein) the Swedish taxation of firm ownership is still designed in such a way that the relative return on becoming an entrepreneur is lowered and the expected return on expansion is likewise reduced. This increases the likelihood that only few enterprises eventually become large businesses. With high taxes on both salaried employment and entrepreneurship, the profitability of running a business (partly) in the black-market sector increases. Likewise potential growth sectors such as health care, education, child care and care of the elderly are not favored, since these activities are largely locked into the public sector. This is due both to the financing and the *de facto* monopolization of production or the overall rules for private producers.

The tax system can also be assumed to have a negative effect on the supply of *industrialists.* The work they perform is (or should be) demanding, and their competence and work inputs are instrumental for the development of firms – to make them grow from small to large. At the same time their function is often risky, since they often work in enterprises with uncertain future prospects, such as enterprises at an early stage of development where it is still uncertain whether the business idea will be successful; rapidly expanding enterprises where the revenues are still not stable; or enterprises that are being reconstructed where the outcome of the reconstruction is uncertain. If taxes are very high compensation for this work and risk-taking becomes low.

Stock option schemes are often an effective method of rewarding entrepreneurs and industrialists who do not have sufficient capital to finance their own ventures. In Sweden the use of this instrument is made difficult by taxation; profits on stock options are treated as labor income in cases where the allocation of the stock options is linked to employment in the enterprise. Accordingly profits made on stock options are subjected to both social security contributions and marginal tax rates of up to 57 percent, which means a total tax rate of roughly 68 percent. The issuer of the options, i.e. the enterprise, does not pay social security contributions until the stock options are exercised. Therefore the enterprise cannot calculate how much a stock option plan will cost. The only way of ensuring that the return on stock options are treated as capital income, and thus taxed at 30 percent, is to be taxed for the assessed value of

[5] Unproductive entrepreneurship means that the return on entrepreneurship, which for the entrepreneur can be at least as large in this case, comes from wealth redistribution rather than from wealth creation. In that case the entire return on the entrepreneur's activities is provided at the expense of others and therefore gives no contribution to national prosperity.

the granted stock options (as labor income) at the point of time when the options are issued. However, an arrangement of this kind has two obvious disadvantages: (i) it cannot be utilized by employees who are wealth-constrained or who are risk averse, and (ii) the employee takes a considerably larger risk since the tax payable on the assessed value of the benefit can prove to be larger than the actual realized gains on the stock options.

Historically, the large Swedish enterprises have been an important nursery for the development of business executive skills. Now that the large enterprises have become less Swedish and, in many cases, have become foreign-owned, it becomes even more important to stimulate the emergence of industrial competence in other enterprises, primarily in new, small and rapidly expanding enterprises.

If the tax system weakens the incentives for entrepreneurs and industrialists, this constitutes a weakening of two of the most important mechanisms for commercialization of knowledge. According to our analysis it is reasonable to seek important parts of the explanation why the large number of Swedish patents and the successful Swedish research sector have given rise to so few successful businesses and have thus not delivered the expected return in the form of economic growth and employment. This is often referred to as the Swedish paradox (see, for example, Andersson 2002 and Gustavsson and Kokko 2003).

The return on education and experience, i.e. skilled labor, decreased for a long time in Sweden, even before tax (Palme and Wright 1998; Arai and Kjellström 2001). High rates of labor taxation reinforce this effect. Over time there is a danger that a low rate of return on education, on-the-job learning and self-reliance will lead to a situation where fewer people acquire highly valued professional skills.

The consequences of high marginal effects are multidimensional since they influence the choice of work, the volume of market work, the degree of effort, the inclination to assume duties with a higher level of responsibility, the inclination to invest in physical capital and human capital, and so on.

The supply of *venture capital* is of particular importance for the opportunities for growth available to small companies. Inputs by venture capital companies have been found to be of key importance for the success of new, technology-based enterprises (Lindström and Olofsson 1998). However, in the very earliest stages of the innovation process the major sources of capital are often "the three Fs" – *friends*, *families and fools*. As a consequence of high taxes on labor income and savings, access to this type of financing is reduced. In Sweden, venture capital companies are also at a dis-

advantage relative to producing firms from a tax perspective. This is due to the fact that returns are taxed three times (28 percent at both the enterprise and venture capital company and 30 percent at the owner's level). From 2003 this has been reduced in most cases to double taxation, provided that the venture capital company holds at least 10 percent of the equity or voting rights in the firm. As a result of the rules for closely held firms in Sweden there is also the totally counterproductive effect, whereby a venture capitalist who takes active part in the management of the firm is taxed much more heavily than a passive financier (Henrekson and Rosenberg 2001).[6]

Also, where the emergence of an effective VC sector is concerned, the taxation of stock options is of great significance. In the U.S. stock options have been taxed at a rate of 20 percent since 1981 and no tax is payable until the shares in question are sold (Zackrisson 2004). This institutional change stimulated the emergence of the entire VC sector, which has proved to be an effective institution for harmonizing the incentives of entrepreneurs, investors and investment managers (Zider 1998; Gompers and Lerner 2001). However, the Swedish tax rules make it extremely difficult in practice for a highly competent VC sector – legally domiciled in Sweden – to emerge (Henrekson and Rosenberg 2001).

The high taxes on both labor and capital can be expected to have negative effects on the functioning of the *secondary market*. In combination with the organization of the social insurance system, the high taxes have considerably weakened the incentives for individual saving. As mentioned above, this creates difficulties especially for the financing of projects in the first phase of development.

Another effect is that redistribution "washes the competence out of the money" (Eliasson 1996). The fact that some entrepreneurs, industrialists and venture capitalists earn money on their endeavors and investments proves that they have considerable capacity to generate high rates of return on their activities. Many of these persons choose to become agents on the secondary market at a later stage and to use their skills to invest in and to develop firms founded by others. The Swedish policy vis-à-vis endeavors of this type was characterized for a long time – and is possibly still partly characterized – by a vision of creating an economic system that could be described as "capitalism without capitalists" (Johansson and Magnusson 1998).

Entrepreneurs and industrialists will then, in practice, often be replaced by bureaucrats and fund managers (of which the largest ones are often government-owned or

[6] Research indicates that US enterprises backed by venture capital companies are more likely to succeed than other enterprises (Hellman and Puri 2000, 2002; Kortum and Lerner 2000). However, this does not appear to be the case in Europe; there is little evidence that enterprises backed up venture capital companies grow more rapidly or are more successful in other respects than other enterprises (Botazzi and Da Rin (2002).

corporatist) with less experience and competence to manage companies. In cases where the funds are controlled by the government or by corporatist interests, there is also a greater risk that political considerations gain weight in investment decisions (Henrekson and Jakobsson 2004).

If it is risky to grow, it is also rational for existing entrepreneurs to develop stronger preferences for control (see, for example, Davidsson 1989; Saemundsson 1999; Wiklund, Davidsson and Delmar 2003). With strong preferences for control, fewer enterprises will be interested in resorting to the secondary market to obtain capital and requisite competence by extending the circle of owners.

Taken together, the effects of the tax system on the competence bloc can be expected to have had a number of negative effects on productivity and growth. High tax wedges on labor have impeded a further division of labor, investment in human capital and the supply of skilled labor. High tax wedges on capital have most probably hampered the establishment of new and small firms and reduced the number of fast-growing firms. In particular, the progressivity of the tax system has reduced the expected rate of return on risky investments. Since there are large risks associated with investments in radically new innovations with high economic potential, this is expected to have had a profound negative effect on the development of new profitable technology. This is probably reinforced by high taxes on entrepreneurial effort, industrialists and active venture capitalists, weakening the link between research and development and commercialization.

Final remarks

Conditions for production and development have undergone extensive changes in recent years. To understand this it is sufficient to point out a few phenomena of fundamental importance: the breakthroughs in information and communication technology and biotechnology; the ongoing process of global integration; the challenges resulting from demographic change; and the need for growth that is sustainable for society and the environment.

Today the development potential of the economy holds center stage in the discussions of future economic growth and prosperity in the rich countries. The outcome depends crucially on the interplay – through competition as well as cooperation – between individual actors.

In this paper we have argued that the successful commercialization of an innovation requires an entire chain of actors with complementary competencies, what we have

called a competence bloc. The requisite actors must be given sufficient incentives to take action and, given that they act, the social incentive structure must be such that the actions of the different actors are harmonized into a well-functioning whole.

We have concentrated on the effects of the tax system on this incentive structure. This does not mean that there are not a number of other institutions that can be important. For example, it is important that job security mandates and labor market regulations promote rather than impede productive change and individual adjustments to new conditions.

Since there is a diversity of actors with, to a great extent, non-codifiable (tacit) decentralized knowledge that is highly dependent on the efficient functioning of the local environment in all its complexity, no central planner can acquire the requisite overview to "steer" these activities in a rational way. Instead, the main objective of government policies should be to provide appropriate institutions and reward structures that make whatever is socially beneficial profitable also from the perspective of the individual.

Creating appropriate conditions for organic growth based on an effective competence bloc places greater demands on government policies. Not least there is a need for appropriate legal structures (including tax rules) that encourage the spontaneous emergence of effective solutions from the bottom up.

It is the perpetual search by economic agents for profits that exceed the risk-adjusted rate of return available for passive investors that leads to a situation in which entrepreneurship, talent and ownership skills are channeled to the right areas and supplied in optimal quantities.[7] This increases the probability that new business opportunities will be developed and exploited to their full potential. This process creates the organizational and structural capital that is an indispensable component in all successful enterprises. The potential entrepreneur can always refrain from using his/her skills and remain an employee with a fixed salary; the venture capitalist can choose to remain passive instead of supplementing his financial investment by supplying management skills and so on.

The small, entrepreneurial enterprises fill a special role as a force for renewal in the economy (Baumol 2002; Audretsch 2002), but our analysis suggests that they are affected particularly negatively by the current system for taxation of labor and capi-

[7] The profits that *exceed* the rate of return available through a passive investment on the capital market are called *economic rents*. To a great extent it is the pursuit of these returns exceeding the market rate that motivate firms and entrepreneurs to finance new innovations (Schumpeter 1911/1934; Benhabib and Spiegel 2002) which in turn gives rise to economic growth. This is discussed more fully by Henrekson and Sanandaji (2004).

tal. We deem that this can be a major explanation behind the lack of rapidly growing firms, the unsatisfactory degree of commercialization of Swedish research and development, and the low rate of economic growth.

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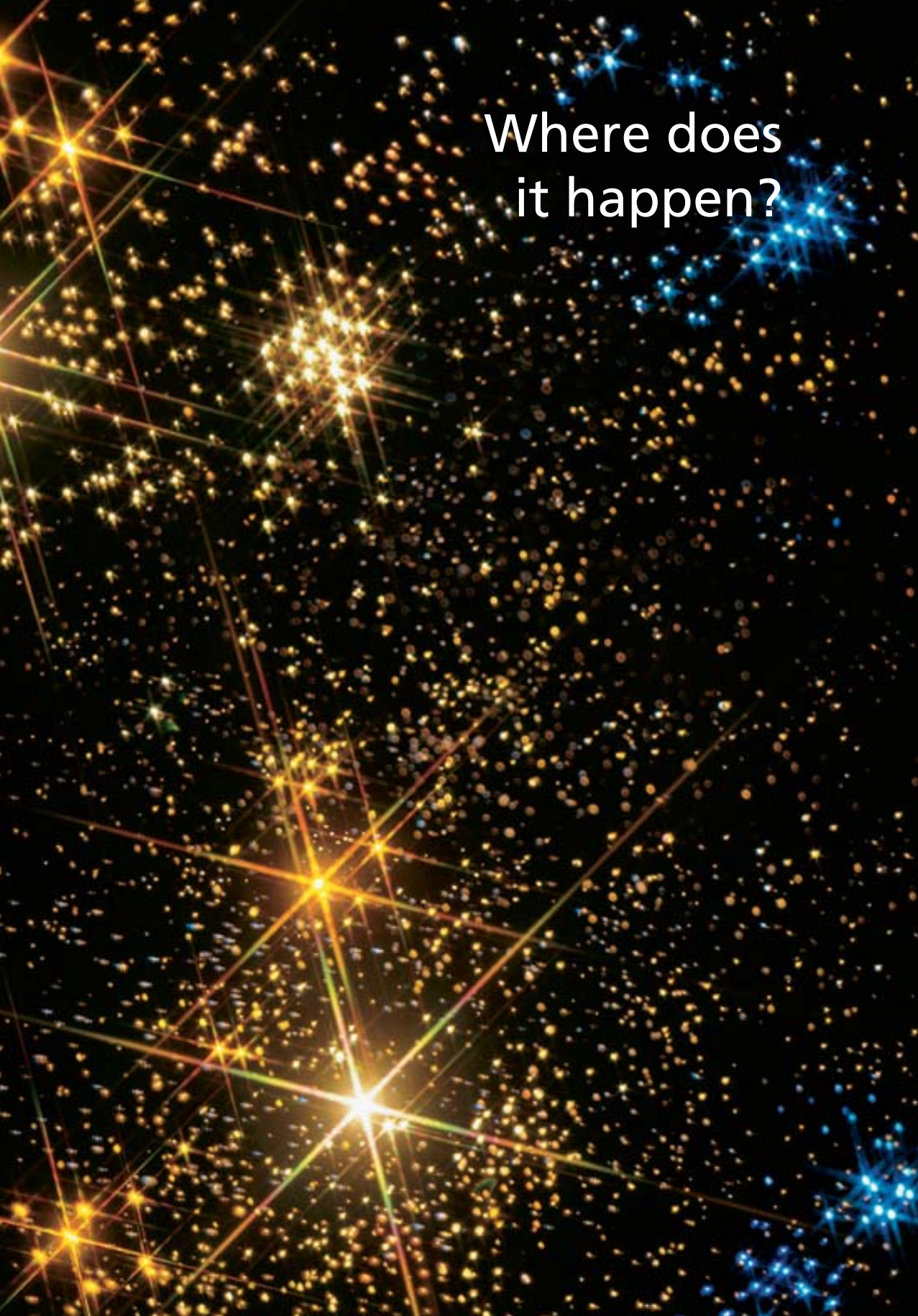
Where does
it happen?

Economic Prospects for Less-developed Regions: Theoretical and Policy Issues

by ***Allen J. Scott***

Introduction

The role of regions as engines of economic development and growth has been widely recognized in recent years, and an abundant documentation now exists of many of the most successful instances of this phenomenon in different parts of North America, Western Europe and East Asia. The present discussion is focused on the more problematical case of regional development in relatively backward areas, above all in low- and middle-income countries, but also in peripheral parts of high-income countries. I hope to demonstrate, in particular, the relevance of a region-based approach to practical policy-making in these areas, and its potential for improving their developmental prospects. At the same time, the discussion provides an opportunity for pinpointing a number of areas where regional economic theory in general might be strengthened.

At the outset, five main propositions may be articulated about the logic of economic development at the present time, and especially about the critical stage characterized by Rostow (1960) as take-off, when a given social formation starts to emerge from stagnation into the early phases of economic growth. These propositions are:

a. Many countries (and regions) are caught in vicious circles as represented by chronic labor surplus situations (Lewis 1954), low-level equilibrium traps (Leibenstein 1954), critical shortages of entrepreneurial talent and skilled labor, over-dependence on primary products, and so on. In such cases, take-off is unusually hard to achieve, though growth can sometimes be initiated by push effects that open up promising developmental pathways, (Murphy et al. 1989; Rosenstein-Rodan 1943).

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b. Whatever the initiating factors of take-off may be, processes of cumulative causation will often begin to set in as industrialization advances. As this occurs, an intensifying flow of externalities (or inter-firm spillover effects and untraded interdependencies) and increasing returns effects helps to propel development forward.

c. These externalities and increasing returns effects are apt to result in the concentration of economic growth in just a few regions, especially in take-off situations. Geographic concentration is consolidated by the locational strategies of producers who cluster together in order to translate latent effects of these sorts into the realizable form of agglomeration economies.

d. Market coordination is essential for efficient resource allocation in cases like these, though externalities and increasing returns effects significantly limit its powers of reach. Joint or collective action, therefore, is also required in order for rapid growth to be achieved.

e. In a globalizing world, national economic autarchy becomes less significant than it once was, especially where vigorous export-orientation policies are in place. In these circumstances, small countries can afford to pursue strategies of specialized national/regional development to a degree that greatly exceeds what was once thought possible or advisable.

These propositions can be summarized in the remark that economic development is critically dependent on the formation of dynamic industrial regions and cities, and that appropriate policies can greatly intensify the beneficial outcomes of this relationship. In recent years, numerous econometric studies have been published providing confirmation that economic growth and urbanization are indeed persistently and positively intertwined with one another. Even in low- and middle-income countries much evidence of this type has been forthcoming in recent years, as exemplified by studies by Becker et al., (1992), Chen (1996) Henderson (1988), Henderson and Juncoro (1996), Lee and Zang (1998), Mills and Becker (1986), Mitra (2000), and Shukla (1988), among many others.

Toward a market-and-policy-friendly approach

For the sake of argument, we begin by examining an extreme but influential set of suggestions about how economic development can be – or ought to be – achieved. I am referring here to the so-called Washington Consensus (cf. Stiglitz 2002). This is a body of ideas and political advocacies regarding economic development whose main thrust revolves around claims about the virtues of markets, the need for clear pro-

perty rights, and the importance of sound macroeconomic policies (but otherwise limited government interference in the sphere of the economy). In this view of things, the market is above all the instrument that will ensure orderly growth and development, because with properly functioning markets, capital and labor will be appropriately mobilized and outputs priced for efficiency. To be sure, the Washington Consensus is explicitly directed to low- and middle-income countries, but it is of very general significance in that it is symptomatic of a wider, global, neoliberal thrust to assert the virtues of markets and the vices of government interference in economies at every stage of development.

By way of seeing what this formula might offer in practice, let us now break the actual process of development down into some of its detailed components, on the ground, so to speak. Thus, a minimum of urban and regional infrastructure needs to be provided and basic services organized; a cadre of entrepreneurs must be on hand in order to set production in motion; investment funds must be raised, and specific technological and organizational solutions to the problems of production resolved; input-output relations need to be established and structures of interaction between individual producers and subcontractors set on foot; information about wider sales outlets must be obtained, and customers appropriately cultivated; a labor force with the requisite skills and know-how is needed in the vicinity of production units, and some minimal standards of social reproduction must be established in the local community (for example, disruptive behavioral interactions in the work-place need to be reduced as far as possible); an ability to learn and adapt should also, ideally, be inculcated in the labor force; political collisions between employers and workers must be managed and appropriate institutional frameworks for orderly negotiation of conflicting interests established. We might multiply the number of items in the list a hundredfold.

I should state at the outset that markets, property rights, and macroeconomic order certainly do provide powerful frameworks for efficient integration of these system elements. Do they, however, offer all the conditions under which they will spring forth spontaneously in the right amounts, in proper sequence, and in mutual synergistic interrelationship with one another? Of course, some of the necessary underpinnings of regional development, such as education, large-scale infrastructure, and the like, are technically public goods that even most conscientious supporters of the Washington Consensus would recognize as requiring some sort of collective supply mechanism. But even abstracting away from this aspect of the problem, the answer to the question must still be in the negative, as I now briefly argue.

First, markets, property rights, and macroeconomic order provide critical incentives for industrial development, but they certainly do not offer necessary and sufficient conditions for the requisite mobilization of all the designated system elements in situations of high risk, limited private resources, and incomplete acculturation into the norms of capitalist performance. Second, industrialization involves virtuous circles based on increasing-returns effects and massive systems of externalities – notably in regional contexts – as was well recognized by early theorists like Gerschenkron (1962), Hirschman (1958), Kaldor (1970), Lewis (1954), Myrdal (1959), Nurske (1959), and Rosenstein-Rodan (1943). Virtuous circles of these types are replete with market failures, and competitive economies are constitutionally prone in these circumstances to assume sub-optimal equilibrium. Third, and in any case, markets, capitalistic property relations, and macroeconomic order are themselves endogenous to the entire process of industrialization-cum-modernization (cf. Polanyi 1944). These phenomena are not independent variables that precede development as such, but are one of its contingent outcomes. The case of Russia after the collapse of the Soviet Union dramatically illustrates the point that competitive markets do not come about ready formed, even in the presence of massive capital assets, but only make their historical appearance as appropriate institutional infrastructures are put together and human expectations socially rebuilt.

A further point may be added to the above by reference to the infant industry argument of List (1977; 1841). One side of this argument invokes the fragility of developing economies in relation to competition from more robust producers and the concomitant need for protective measures. The other (and even more important) side points to the social externalities of industrial development, and to the practical experience of industrialization as a prerequisite for building skills, know-how, technological competencies, etc., that would otherwise lie dormant. In the absence of such experience, economic development options will tend to remain persistently truncated.

It follows that in addition to the role of markets, property rights, and the macro economy in developmental processes, we must also insist on the importance of collective action as a means of mobilizing resources (both human and natural), of resolving market failure problems, and of institution building, above all in economies at the take-off stage. Small wonder, in view of the manifold difficulties these economies face as they embark on the early stages of industrialization and modernization, that they so readily take to peculiar extra-market coordinating mechanisms-cum-conventions like zaibatsu, chaebols, protestant or Confucian ethics, extended family relationships, ethnic networks, mafias, and, of course, government controls and indicative planning. Moreover, there is no single formula for success, and many opportunities for failure. Hong

Kong is often, and correctly, pointed out as an impressive example of almost purely market-led economic development, but then, Hong Kong's rise to prosperity was preceded by a lengthy historical period of specialized adaptation to international commercial culture. The World Bank (1993) has claimed that the East Asian experience confirms the importance of "market-friendly" methods of development, but the formula might more accurately have been expressed in terms of the efficacy of market-and-policy-friendly approaches.

The region as a locus of development and growth

These arguments assume added force in view of the frequent tendency for industrial activity to occur in the shape of regional aggregates of producers. At the same time, regions are not just passive receptacles of industrialization. Any region where industrial investment is initiated has some definite chance of developing as a nexus of positive externalities and increasing returns effects, i.e. as a system of agglomeration economies and localized competitive advantages. In turn, these outcomes will greatly enhance regional productivity and growth (though disabling negative externalities may also come into being if policy-makers fail to act). In low-income countries, the regional expressions of this process are particularly insistent because the restricted availability of capital for infrastructural investment means that development is all the more likely to be confined to a limited number of locations.

The contemporary literature ascribes the agglomeration economies and localized competitive advantages typically found in regionalized industrial systems to three main sets of socio-economic relations:

First, the networks of specialized but complementary producers are commonly to be found at the core of any burgeoning economic complex typically abound with external economies of scale and scope. For example, the presence of many different providers of goods and services in the local area means that producers can rapidly satisfy critical but unpredictable input needs. Equally, a high level of proximity between many different interrelated firms makes it possible for them to adjust their input schedules frequently in response to market vagaries.

Second, dense local labor markets invariably come into being in the vicinity of employment centers, and they too generate multiple increasing returns effects. Thus, the presence of many workers in a given place enhances job-matching activities, reduces search costs, and facilitates the emergence of joint training efforts. Processes of socialization and acculturation into local industrial norms and routines are also facilitated by the presence of a stable community of workers.

Third, processes of creativity, innovation, and learning are often quite intense in regions marked by production networks and local labor markets of these sorts. Such processes are most likely to occur in transactions-intensive complexes, especially where interaction is based on frequent face-to-face contact combined with active exchange of information. Creativity, learning, and innovation then help to induce further streams of competitive advantages.

The literature on how these three main sources of agglomeration economies operate in practice is immense. More detailed accounts can be found, e.g., in Cooke and Morgan (1998), Porter (2001), Scott (1988) and Storper (1997). A note of special importance here is that agglomeration economies, thus identified, are purely social creations. More to the point: development at any given location is not necessarily contingent on the existence of some exogenously given *comparative* advantage. On the contrary, development can also occur – and increasingly does occur – on the foundation of endogenously built up *competitive* advantages, even in situations where no prior resource base exists.

In an older version of development theory and practice based on growth pole and growth center analysis à la Perroux (1961) and Boudeville (1966), regions were seen above all as focal points for capital-intensive industrialization based on large lead plants. The propulsive effects flowing from these plants, in combination with import substitution à la Prebisch (1959) and Singer (1950) were then expected to be the vehicle for eventual national economic independence. In today's world, where export orientation is generally taken to be a preferred pathway to economic expansion, developing regions advance on the basis of a great diversity of sectors with widely varying profiles in terms of skills requirements and technological intensity. Thus, industries like domestic appliances and electronics, whose products are in high demand on global markets, are common foci of regional development efforts; but so, too, are many small-scale labor-intensive industries, of sorts that were previously thought to be the very antithesis of modernization, like shoes, jewelry, or furniture (cf. Cadène and Holmström 1998; Cawthorne 1995; Schmitz 1995; Scott 1994). Development strategies today are less and less concerned with the establishment of an autarchic and balanced national economy, than they are with the search for niches within the global division of labor. By the same token, one of the principal problems that developing areas face is to find and maintain market outlets in the global economy that are not already dominated by producers with early-mover advantages. A successful strategy of export orientation offers the particular advantage that by boosting final sales it also brings in its train widening circles of increasing returns effects, and hence an intensification of cumulative causation processes in industrializing regions.

Once any regional economy enters into a spiral of cumulative causation, further forward evolution occurs in a path-dependent process where all elements of the system become mutually constitutive of one another in round after round of growth and development. To select just one illustration: a supply of entrepreneurs is essential for economic advances to continue. Invariably, individuals can be found in the local area with distinctive personal features that equip them at the outset for the task of entrepreneurship. But contrary to purely behaviorist theories, entrepreneurs are also in part *made* within the evolving economic system as fresh structural spaces open up and as advantageous new prospects appear on the horizon. Irrespective of their personal attributes, individuals who are already caught up in the regional economy are intrinsically well positioned to perceive and to seize these opportunities.

In the same way, region-based economic growth and development are deeply dependent on complex socio-cultural processes of human mobilization and transformation. Regional production systems and their associated communities of workers often function as instruments of socialization helping to equip workers with personal characteristics that facilitate relations in the work-place. To be sure, socialization is a highly unreliable process, and many dysfunctional outcomes may also occur. In low- and middle-income countries, moreover, the coming together of many underemployed individuals in dense urban settlements frequently results in costly social pathologies, particularly where hyper-urbanization occurs (cf. Wheaton and Shishido 1981). In contrast to anti-urbanist views, however (e.g. Lipton 1977), the arguments already laid out suggest that the high road to development and growth is still most likely to pass through the admittedly troublesome way-station of rapid urbanization, no matter whether it be in low- or high-income countries.

Policies for development and growth in lagging regions

Dense regional production systems are major elements of the development process in general, and are critical engines of industrial productivity in particular. Markets are essential moments in this dynamic, but so too is the joint extra-market generation of virtuous circles, positive externalities, and competitive advantages. Because of these latter features, there is always and necessarily a collective set of interests at stake (as well as purely individual interests) in local economic development and growth. This means, in turn, that a tissue of institutional arrangements and an apparatus of policymaking are crucial for success. The urgency of effective collective action to promote development is nowhere as great as it is in less developed countries where markets and market psychology have not yet fully formed, and where the emergence of negative externalities is likely to be especially damaging to local economic pros-

pects. These problems are no doubt less urgent in the backward regions of more advanced economies, but to the degree that they may be present they need to be attended to.

As we have already noted, appropriate collective action can greatly magnify the agglomeration economies of developing regions. One obvious opportunity for such action is presented by the need to rationalize the systems of externalities that proliferate in dense industrial clusters. One other flows from the dysfunctional effects of any social breakdowns that may occur in the local area as economic development moves ahead. Yet another – above all in take-off situations where markets are often weakly developed – is based on the need to ensure some degree of functional balance in the regional economy in order to foster accelerated growth. We may perhaps borrow from the ideas of Rosenstein-Rodan (1943) about the merits of the "big push" by suggesting that a geographical perspective leads to the notion that "regional push" effects are also (or alternatively) a critical issue in development (Scott 2002). The prime objective of such effects is not just to secure static efficiency levels, but more importantly to set virtuous circles of cumulative causation in motion.

In more specific terms, coordinating and steering mechanisms must be constructed in order to deal with such difficult issues as the efficient programming of infrastructural investments, the provision of capital-lending facilities (especially for small firms), the enhancement of information flows (in both production networks and local labor markets), agglomeration-specific training and research programs, social welfare, and so on. There is also an important part to be played by local institutions in helping to imbue producers with useful norms of trust and collaboration, and, in situations where production units are too small or too unqualified to take the initiative themselves, to provide what Brusco (1992) calls "real services," including the gathering of intelligence about export markets. Additionally, institutional guidance of the path-dependent process of cumulative causation can sometimes help to avert lock-in of the local economy to clearly undesirable configurations.

In many less developed or economically-stagnant regions, important contributions to growth can sometimes occur when large corporations (often multinationals) establish branch plants in the local area. Direct investments of this sort often bring many beneficial regional spillover effects in their train. These effects multiply as branch plants put down roots, and in certain cases, new entrepreneurial ventures may appear nearby in the guise of dependent subcontractors and input suppliers. Positive spillover effects can also occur via the employment of local residents, at least where some sort of skills enhancement is involved, though benefits of this type are far from being universally the rule. In some countries, branch plants are encouraged to congregate

together in export processing zones, and, especially in East and Southeast Asia, these zones often come to anchor dynamic foci of indigenous entrepreneurial activity and growth. An earlier literature derived from dependency theory tended to deny that these positive effects of direct (especially foreign) investment could occur, but much empirical research over the last couple of decades has shown that they are in fact frequently present, especially where policy-makers engage in strenuous efforts to promote up-grading of branch operations in their jurisdictions (Ernst and Kim 2002; Gorg and Strobl 2002; Scott 1987).

Market relations, capitalist forms of property, and macroeconomic stability provide a framework that potentiates success in take-off situations, though it bears repeating that these phenomena themselves are part and parcel of the overall developmental process. In particular, at the regional level, a finely balanced and mutually sustaining mix of emerging market relations and institutional order is indispensable. And not just any institutional order will do. Depending on their precise design, institutions can significantly promote or hinder development, and hence issues of institutional quality (transparency, accountability, flexibility, competence, etc.) call for very careful attention (Rodrik 1999). Among other things, institutions need to be sensitive to local idiosyncrasies, and they need to be continually readjusted as the economic system (both local and national) evolves through time. In view of the earlier discussion of the detailed mainsprings of regional economic development, it is also fairly evident that centralized top-down policy-making in support of regional development is likely to be of rather limited efficacy. A proliferation of relatively small-scale interventions at the grass-roots level would seem to offer a more viable and workable approach to the problem, above all where they are directed to promoting and sustaining agglomeration economies and competitive advantages for all (as opposed to providing support for a few regional champions).

A concluding comment

I have argued that much important new light can be thrown on development theory and practice by taking the regional question seriously. This proposition holds for economies at every level of per capita income, but it is especially pertinent to the case of economies poised at the stage of take-off where resources are scarce and competitiveness is limited. I have also argued that a market-and-policy friendly approach offers the best line of attack on economic backwardness and slow growth, though finding exactly the right mix of arrangements to fit any concrete situation obviously presents enormous challenges. Certainly, blunt boilerplate approaches are unlikely to be successful in any long-run perspective.

Above and beyond these issues, the argument presented here points ultimately in the direction of a global economy that is also in part an ensemble of local economies, or, in its most dramatic form, a worldwide network of city-regions (Scott et al. 2001). The old post-war international order with its developmental geography rooted in a core-periphery system seems more and more to be giving way to a new geography in the shape of a far-flung mosaic of regional economies. Likewise, the dynamics of economic take-off and development in many countries increasingly revolve around regional concentrations of production and work, and the orientation of markets to export opportunities. If this analysis is correct, it suggests that selected regions currently on the margins of world capitalism are likely eventually to emerge as vigorous nodes of economic activity within the wider global economy. In recent decades, places like Seoul, Taipei, Hong Kong, Singapore, Mexico City, São Paulo, have already moved far along this developmental pathway. There is every reason to suppose that many other places, both large and small, will follow similar trajectories in the future.

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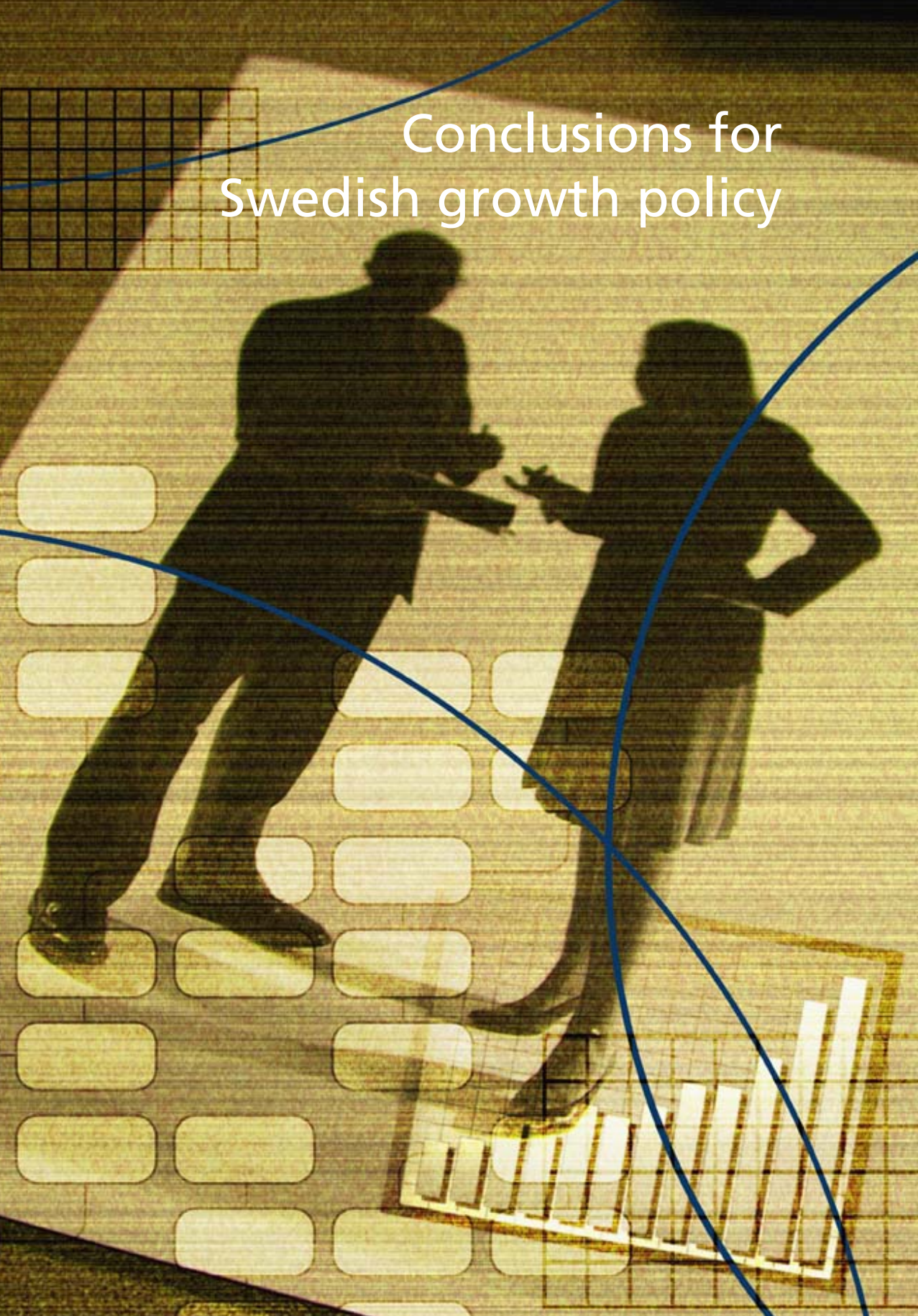
Conclusions for Swedish growth policy



Epilogue

This book addresses change and the significance of change for growth and development. History has tought us that development takes place at different paces seen over various time periods, sometimes disruptive. Many people argue that ruptures between slower and more rapid rates of change are caused by crises. And crises in themselves often entail dramatic transformation – extremely rapid changes.

The contributions in this book all address change. One approach we have adopted to reflect change has been to compare the Olympic Games in Athens 2004 with the corresponding Games in the same city 108 years ago. Everything from the playing fields to the technology and other conditions has changed fundamentally during that period of time. Only the geography is the same. Or maybe not even that, for where the geographic focal point of the economy can be found, also changes. In that Athens does not occupy the same position in the world economy in 2004 as it did in 1896.

The challenge for growth policy is firstly to understand the significance of change for growth and welfare, secondly to understand the drivers behind change, and thirdly to understand the role politics may play in this context.

The book demonstrates that change is necessary for growth. It can even be claimed that change *is* development and growth. As an analogy to this, innovations are probably playing an increasingly important role as a driving force for development and growth. It is innovations that make companies competitive. However, innovations are far from synonymous with inventions, research, or new technology for that matter. There is much more to the concept of innovation that is slowly gaining ground with researchers, analysts and politicians worldwide, than this. Here, it seems innovations are related to change rather than to research. Innovations are changes that lead to development of the economy.

Innovations address new approaches with regard to the products that are the fruits of our efforts, about new approaches to how we manufacture them – applications of technology or how we structure production – or about new approaches to the way we can market our products. It is also important that innovations and new approaches do not always entail a radical new approach because totally new knowledge is developed or adopted which replaces or renders existing knowledge obsolete. Far more often, innovations are about applying existing knowledge in a new way, combining it with other knowledge or in a new context.

When viewed in this way, innovations are much more closely linked with entrepreneurs. An entrepreneur is someone who can spot and take advantage of the opportunities for a new approach inherent in the innovation. It is probable that innovations are more significant for development and competitiveness today than they have been in a long time, entrepreneurs seems also more important today. Companies develop their competitiveness by being innovative and entrepreneurial. It is these kinds of companies that spot and exploit changes.

Maryann Feldman highlights the opportunities that innovations offer for growth, while also demonstrating that this requires advanced systems that protect the development of knowledge enabling companies to play a part in both the development and dissemination of new knowledge. If companies get too little out of their investments this restricts their development opportunities.

Thurik is adamant that a paradigm shift has occurred. More than anything else, the experiences from the U.S which is able to combine high economic growth with a high number of entrepreneurs willing to take risks, has persuaded the EU to move in the direction of promoting an entrepreneurial economy. This policy is geared more towards enabling rather than seeking to govern the development of large companies. The focus has been shifted towards more clearly favouring the production of knowledge and the capacity to commercialise innovations. With this kind of policy smaller, fast growing companies are able to take centre stage. Entrepreneurial companies require systems of players. Being successful demands a playing field that stimulates necessary risk taking – in the form of the provision of adequate incentives. The rules of the game also have to be fair and stable and moreover designed in such a way that change is not jeopardised.

Henrekson & Johansson starts by looking at the demands new conditions place on production and development. The starting point is that an entire chain of actors with complementary skills and knowledge, so-called competence blocs, must be offered decent terms and conditions if they are to be more effective as a whole. The institutional framework conditions and in particular tax system incentives are most probably crucial for development according to Henrekson and Johansson. It is risk taking over and above the risks and returns that will accrue to passive investors that make up the fertile soil that sets entrepreneurship, human capital and ownership free. This increases the likelihood of new business opportunities being developed, exploited and reaching full potential. The authors point out a number of taxes levied on the members of competence blocs; the innovators, entrepreneurs, skilled labour, industrialists, adventure capitalists etc and that in combination hampers the growth of effective solutions coming from below.

Scott describes a globalised world characterised by a worldwide network of city-regions. There has been a shift from a post world war order with its roots in the division between centre and periphery in favour of a global mosaic of regional economies that competes with each other. The dynamic is found in regions with large concentrations of production and labour. Selected urban concentrations on the previous peripheries of the world will probably be successful in becoming growth nodes in the expanding global networks that link together large cities, for instance Seoul, Taipei, Singapore, Hong Kong, São Paolo and Mexico City are all advancing. Regions in all economies both in those growing slowly and the ones that are lagging behind are exposed to stiff competition and need to meet the challenge. In global competition with growth concentrated to a number of competitive regions, the level of GNP is not particularly important. What we are witnessing is the emergence of a global division of labour.

The growth policy issue will then be what can and what should politicians do to stimulate the growth of a competitive commercial sector and society in Sweden. A dynamic economy requires a policy that, rather than holding back change, stimulates it. Politics cannot create technological development, innovations or change in its own right; neither could it have brought improvement in high-jump performance from 180 to 240 cm. On the other hand, it is the job of politics to create the best possible conditions that enables such a development.

When it comes to research and development, there are reasons to suppose that political action is desirable. Naturally it is the role of politicians to provide the resources for the initial stages furthest from commercialisation. It is also natural to provide government resources to support the type of research that offers socio-economic rather than purely commercial gains. At the same time, we know that basic scientific research is so internationalised today that, from a national perspective, we can hardly expect to see a 'social' return on the resources invested.

As a whole, this would appear to suggest that a policy promoting renewal, development and growth in a small economy should bear in mind a few central starting points.

Firstly, the policy must clearly put development and renewal at the centre. The goal should be change and development rather than preservation and protection. In specific terms, this means a number of policy areas need to be reoriented – away from actions of a conserving nature and towards efforts that may lead to, and as a rule supports changes. This applies to both labour market policy and regional policy areas for example.

Secondly, policy needs to stimulate renewal in a broad sense. The sources of growth are not concentrated to high technology sectors alone. An increasingly globalised economy means that the concept of sectors in itself will have less significance and that renewal must take place everywhere instead in order to attain and continue to develop global competitiveness. In specific terms this means that we have to take an interest in more than a handful of high technology sectors. In other words we have to think more about processes, organisation and the market and less about the technology itself. But, as will be argued, it is by no means certain that all this is also a matter for politics.

Thirdly, greater awareness is needed about where the scope for the political lies, its limitations and opportunities. One example is how we view so-called market failures. A very large part of the Swedish growth policy has been formulated with regard to a desire to do away with different types of perceived market failures. It is not uncommon that a poorly functioning market has been used to justify political intervention. Naturally, an alternative view would be that a poorly functioning market should be seen as a yet untapped business opportunity.

To a certain extent we have policies actively geared towards actions that stimulate and promote renewal and development today. For example, this is one of the aims of government agencies like Nutek, VINNOVA and ALMI. At the same time, we have a policy that to some extent restricts the opportunities for private players to supply at least some of these tasks under market conditions. Bearing in mind the government's finite resources it is important that these are concentrated in areas where private capital cannot play a part and that incentives are used to support private initiatives where it is possible. Specifically, this means, for instance, moving resources to early stage research and development work and with the aid of better incentives, attract sound capital and other players for the later stages. In other words: a well laid table is sufficient!

Sture Öberg
Director-General

Epilog

Denna bok handlar om förändring och dess betydelse för tillväxt och utveckling. Historien har lärt oss att utveckling sker med olika snabbhet sett över ett antal tidsperioder, ibland även språngvis. Många menar att det är kriser som skapar brytningar mellan långsammare och snabbare omvandlingstakt. Kriserna innebär i sig ofta stor dramatik i omvandlingen – extremt snabba förändringar. Även i den mindre dramatiska vardagen är det förändringar av olika slag som skapar tillväxt.

Bidragen i denna bok har alla handlat om förändring. Ett sätt för oss att spegla förändring har varit att jämföra de olympiska spelen i Aten 2004 med dem i samma stad för 108 år sedan. Såväl spelplanen som tekniken och förutsättningarna har förändrats i grunden. Bara platsen är den samma. Eller kanske inte ens den, för var ekonomins geografiska tyngdpunkt kan återfinnas skiftar också. I den meningen är inte Atens position i världsekonomin den samma 2004 som den var 1896.

Utmaningen för tillväxtpolitiken är för det första att förstå förändringens betydelse för tillväxt och välfärd, för det andra att förstå vad som driver förändring och för det tredje att förstå politikens roll i detta sammanhang.

I denna bok visas att förändring är nödvändig för tillväxt. Det kan till och med hävdas att förändring *är* utveckling och tillväxt. I analogi med detta spelar innovationer sannolikt en allt viktigare roll som drivkraft för utveckling och tillväxt. Det är innovationer som gör företag konkurrenskraftiga. Innovationer är dock långt ifrån synonymt med uppfinningar, forskning eller för den delen ny teknik. Den syn på innovationer som långsamt vinner fäste hos både forskare, analytiker och politiker världen över är långt vidare än så. Här är innovationer snarare mer besläktat med förändring än med forskning. Innovationer är förändringar som leder till utveckling.

Innovationer handlar om förnyelse ifråga om de produkter som är resultatet av våra ansträngningar, hur vi producerar dem, hur vi organiserar produktionen eller hur vi kan sälja våra produkter. Viktigt är också att innovationer och förnyelse inte alltid innebär radikal förnyelse i så motto att helt ny kunskap utvecklas eller tas i bruk och ersätter eller gör gammal kunskap obsolet. Innovationer handlar långt oftare om att gammal kunskap tillämpas på ett nytt sätt, kombineras med annan kunskap eller i ett nytt sammanhang.

Sett på detta sätt blir innovationer nära sammankopplat med entreprenören. Entreprenören är den som kan se och dra nytta av de tillfällen till förnyelse som ligger i innovationen. Sannolikt är det så att om innovationer betyder mer för utveckling och konkurrenskraft idag än på länge, så är också entreprenörerna viktigare idag. Företag utvecklar sin konkurrenskraft genom att vara innovativa och entreprenöriella. Sådana företag ser och utnyttjar förändringar.

Maryann Feldman lyfter fram de möjligheter som innovationer ger för tillväxt, men visar också att detta kräver avancerade system som skyddar kunskapsutveckling så att företag kan medverka till att både utveckla och sprida ny kunskap. Får företagen ut för lite av sina investeringar bromsas deras utvecklingsmöjligheter.

Thurik är tydlig med att ett paradigmskifte skett. Framför allt erfarenheterna från USA med kombinerad hög ekonomisk tillväxt och många entreprenörer som är villiga att ta risker, har fått EU-länderna att gå i riktning mot att främja den entreprenöriella ekonomin. Denna politik är inriktad på möjliggörande snarare än på att söka styra storföretagens utveckling. Fokus har förflyttats i riktning mot att tydligare gynna produktion av kunskap och förmåga att kommersialisera innovationer. Med en sådan politik hamnar de mindre och snabbväxande företagen i centrum.

Entreprenöriella företag kräver system av aktörer. För att vara framgångsrika fordras en spelplan som stimulerar till det nödvändiga risktagandet – i form av att ge tillräckliga incitament. Det är vidare så att spelreglerna behöver vara rättvisa och stabila i så motto att förändringen inte äventyras. *Henrekson & Johansson* tar fasta på de krav som nya betingelser för produktion och utveckling ställer. Utgångspunkten är att en hel kedja av aktörer med kompletterande kompetenser, så kallade kompetensblock måste ges bra villkor för att åstadkomma en effektivare helhet. De institutionella ramvillkoren och då särskilt skattesystemets effekter för incitamenten är sannolikt avgörande för utvecklingen menar Henrekson och Johansson. Det är risktagande utöver de risker och den avkastning som passiva placerare kommer i åtnjutande av som utgör grogrunden för att lösgöra entreprenörskap, humankapital och ägarkompetens. Det ökar sannolikheten för att nya affärsmöjligheter utvecklas, tillvaratas och når full potential. Författarna pekar på en rad skatter som läggs på aktörerna i kompetensblock; innovatörer, entreprenörer, kompetent arbetskraft, industrialister, riskkapitalister etc och som sammantaget hämmar framväxten av effektiva lösningar underifrån.

Scott beskriver en globaliserad värld som präglas av världsomspännande nätverk av stadsregioner. Det har skett ett trendskifte från efterkrigstidens världsordning

med dess rötter i en uppdelning mellan centrum och periferi till förmån för en global mosaik av regionala ekonomier som konkurrerar. Dynamiken finns i regioner med stora koncentrationer av produktion och arbete. Utvalda urbana koncentrationer också i världens tidigare utkanter kommer sannolikt att lyckas bli tillväxtnoder i de expanderande globala nätverk som knyter samman stora städer, exempelvis Seoul, Taipei, Singapore, Hong Kong, São Paolo och Mexico City är alla på frammarsch. Regioner i alla ekonomier, såväl långsamt växande som eftersläpande, är konkurrensutsatta och behöver möta utmaningen. I den globala konkurrensen med tillväxten koncentrerad till ett antal konkurrenskraftiga regioner spelar inte nivån på BNP någon större roll. Vad vi ser är början på en global arbetsdelning.

Den tillväxtpolitiska frågan blir då vad kan och vad bör politiken göra för att stimulera framväxten av ett konkurrenskraftigt svenskt näringsliv och samhälle. En dynamisk ekonomi kräver en politik som inte hindrar utan stimulerar till förändring. Politiken kan inte skapa teknisk utveckling, innovationer eller förändring i sig, lika lite som man på politisk väg kan åstadkomma de förändringar som fört höjdhopparna från 180 till 240 centimeter. Däremot är det politikens uppgift att skapa de förutsättningar som gör en sådan utveckling möjlig.

När det gäller forskning och utveckling finns skäl som talar för att man bör agera politiskt. Naturligt är att politikens roll är att tillföra resurser till skeden som ligger längst ifrån en kommersialisering. Naturligt är också att med samhälleliga resurser stödja den typ av forskning som har samhällsekonomiska och inte snäva företagsekonomiska vinster. Samtidigt vet vi att den vetenskapliga grundforskningen idag är så internationaliserad att vi knappast utifrån ett nationellt perspektiv kan förvänta oss att få samhällelig ”avkastning” på satsade resurser.

Sammantaget talar detta för att en politik för förnyelse, utveckling och tillväxt i en liten ekonomi bör ta fasta på några få men centrala utgångspunkter.

För det första krävs att politiken tydligt sätter utveckling och förnyelse i centrum. Målet bör vara förändring och utveckling framför att värna, bevara och skydda. Konkret innebär detta att en rad politikområden behöver riktas om – bort från insatser av konserverande karaktär och mot insatser som innebär och stödjer förändring. Detta kan sägas gälla både inom exempelvis arbetsmarknadspolitikens och regionalpolitikens områden.

För det andra krävs en politik som stimulerar till förnyelse i bred mening. Tillväxten är inte koncentrerad till högteknologiska branscher. En allt mer globaliserad

ekonomi innebär att branschbegreppet i sig blir allt mindre betydelsebärande och att förnyelse istället måste ske överallt för att man ska nå och utveckla global konkurrenskraft. Konkret innebär detta att man behöver intressera sig för fler än ett litet antal högteknologiska branscher, att man behöver tänka mer på processer, organisation och marknad och mindre på tekniken i sig. Men, som hävdas i nästa punkt, det är inte säkert att allt detta är politikens uppgift.

För det tredje krävs en ökad insikt om var politikens gränser och möjligheter finns. Ett exempel är hur vi ser på så kallade marknadsmisslyckanden. Mycket av den svenska tillväxtpolitiken har utformats utifrån en strävan efter att upphäva olika slag av sådana misslyckanden. En dåligt fungerande marknad har inte sällan tagits som intäkt för politiska ingrepp. En alternativ syn vore naturligtvis att en dåligt fungerande marknad sågs som en ännu outnyttjad affärsmöjlighet.

Idag har vi en politik inriktad på att aktivt arbeta med att stimulera och främja förnyelse och utveckling. Detta är till exempel uppgiften för organisationer och myndigheter som Nutek, VINNOVA och ALMI. Samtidigt har vi en politik som till delar begränsar möjligheterna för privata aktörer att på marknadens villkor svara för åtminstone några av dessa uppgifter. Det är viktigt att med statens begränsade resurser koncentrera dessa till de områden där privat kapital inte kan engageras och att istället med incitament stödja privata initiativ där sådana är möjliga. Konkret innebär detta till exempel att flytta resurser till tidiga faser av forsknings- och utvecklingsarbete och att med förbättrade incitament locka kompetent kapital och andra aktörer till de senare skedena. Med andra ord: Det är tillräckligt att duka bordet fint!

Sture Öberg
Generaldirektör

På den tillväxtpolitiska agendan

On the Growth Policy Agenda

Tillväxt och utveckling drivs av förändring. I en värld som präglas av konkurrens, globala nätverk och sekundsnabb kunskapsspridning blir förmågan att hantera och nyttja förändringskraften helt avgörande.

Innovationerna har ändrat karaktär och betydelse, de finns överallt och är inte begränsade till teknisk utveckling. Innovationer handlar också om att bättre förstå och skapa efterfrågan av det som produceras. För att utnyttja denna kraft behövs att både människor och system är inriktade på och anpassade till förändring.

På den tillväxtpolitiska agendan ger ett kunskapsunderlag till en politik som utgår från sådana insikter. Politiken behöver riktas om till att utgå från ständig förändring. Detta kräver också en ökad medvetenhet om politikens roll i förhållande till marknaden. Marknadsmisslyckanden behöver inte ses som skäl för politiken att ingripa, utan kan istället vara en ännu outnyttjad möjlighet. Politiken kan ge ramarna och bidra med att utveckla drivkrafterna till förändringen. Men däremot kan det faktiska utvecklingsarbetet kanske överlåtas på marknadens aktörer i mycket högre grad än vad som sker idag.

Fem internationellt framträdande forskare har hjälpt oss att belysa vad de pågående omvärldsförändringarna kan betyda.

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