

Thurik, A. Roy

Working Paper

Entrepreneurship, economic growth and policy in emerging economies

WIDER Research Paper, No. 2009/12

Provided in Cooperation with:

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

Suggested Citation: Thurik, A. Roy (2009) : Entrepreneurship, economic growth and policy in emerging economies, WIDER Research Paper, No. 2009/12, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki

This Version is available at:

<https://hdl.handle.net/10419/45107>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



UNITED NATIONS
UNIVERSITY

UNU-WIDER

World Institute for Development
Economics Research

Research Paper No. 2009/12

Entrepreneurship, Economic Growth and Policy in Emerging Economies

Roy Thurik

March 2009

Abstract

Entrepreneurship has emerged as an important element in the organization of economies. This emergence did not occur simultaneously in all developed countries. Differences in growth rates are often attributed to differences in the speed with which countries embrace entrepreneurial energy. This led to the political mandate to promote entrepreneurship. Hence, a clear and organized view is needed of what the determinants and consequences of entrepreneurship are. The present contribution tries to provide this view with a particular view on emerging economies. Entrepreneurship, its drivers and its consequences can be best understood using the model of the *entrepreneurial economy* which explains the functioning of the modern economy. This model differs from that of the earlier *managed economy*. Policies in emerging economies should aim at combining the two models.

Keywords: entrepreneurship, small firms, economic growth, economic development, policy

JEL classification: L26, M13, O10, P5

Copyright © UNU-WIDER 2009

* Erasmus University Rotterdam, Rotterdam, email: thurik@few.eur.nl

This study has been prepared within the UNU-WIDER project on Entrepreneurship and Development (Promoting Entrepreneurial Capacity), directed by Wim Naudé.

UNU-WIDER gratefully acknowledges the financial contributions to the project by the Finnish Ministry for Foreign Affairs, and the financial contributions to the research programme by the governments of Denmark (Royal Ministry of Foreign Affairs), Finland (Finnish Ministry for Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida) and the United Kingdom (Department for International Development).

ISSN 1810-2611

ISBN 978-92-9230-181-4

Acknowledgement

Madeleine Kemna and Matthijs van der Loos provided useful comments.

Acronyms

GEM Global entrepreneurship Monitor

SEZs special economic zones (China)

SMEs small- and medium-sized enterprises

TEA total entrepreneurial activity

The World Institute for Development Economics Research (WIDER) was established by the United Nations University (UNU) as its first research and training centre and started work in Helsinki, Finland in 1985. The Institute undertakes applied research and policy analysis on structural changes affecting the developing and transitional economies, provides a forum for the advocacy of policies leading to robust, equitable and environmentally sustainable growth, and promotes capacity strengthening and training in the field of economic and social policy making. Work is carried out by staff researchers and visiting scholars in Helsinki and through networks of collaborating scholars and institutions around the world.

www.wider.unu.edu

publications@wider.unu.edu

UNU World Institute for Development Economics Research (UNU-WIDER)
Katajanokanlaituri 6 B, 00160 Helsinki, Finland

Typescript prepared by Liisa Roponen at UNU-WIDER

The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

1 Introduction

Capital and labour are the essential input factors of large-scale production that dominated the business world in modern developed economies until the late 1980s. The increasing level of transaction costs (Coase 1937) incurred in large-scale production dictated increasing firm size over time. This went together with the predictable development of technology, consumer preferences, and procurement of resources. Indeed, statistical evidence points towards an increasing role of large enterprises in the economy in this period (Caves 1982; Teece 1993; Brock and Evans 1989). This development towards large-scale activity was visible in most modern developed economies. In this same period, the importance of self-employment and small business seemed to be waning. Although it was recognized that the small business sector needed to be protected for both social and political reasons, there were few that made this case on the grounds of economic efficiency. Small wonder that, while exploring the sources of economic growth, Robert Solow (1956, 1957) proposes a model where capital and labour are the main drivers.

Romer (1986, 1990), Lucas (1988), and in a later phase Jones (1995) and Young (1998) discover and clarify that the traditional production factors of labour and capital are not sufficient in explaining long-term growth. Knowledge becomes a vital factor in endogenous growth models. Technological development is seen as exogenous in the earlier neoclassical growth theory. That is why the long-term growth of labour productivity remains unexplained. Endogenous growth theory provides models explaining this long-term growth using knowledge. Knowledge has typically been measured in terms of R&D, human capital, and patented inventions. Many scholars have predicted that the emergence of knowledge as an important determinant of growth and competitiveness in global markets would render self-employment and small firms even more futile. How could they generate the means and insights to exploit R&D activities, to employ highly trained knowledge workers, and to bring their efforts to the patent or even the commercial stage? Basically, scholars conclude that with the arrival of knowledge as a production factor the world of business becomes dominated by exporting giant firms.¹ This is the world of global markets, global products, and global players. Small firms were thought to be at a disadvantage vis-à-vis larger firms because of the fixed costs of learning about foreign environments, communicating at long distances, and negotiating with national governments. Consolidation seems to have become a law of nature, while the number of global players declines continuously.

Despite these forces, small and young firms have returned as the engine of economic and social development in highly developed economies. This return required a dramatic economic switch. Audretsch and Thurik (2001a, 2004) call this the switch from the managed economy to the entrepreneurial economy. The model of the *managed economy* is the political, social, and economic response to an economy dictated by the forces of large-scale production, reflecting the predominance of the production factors of capital and (mostly unskilled) labour as the sources of competitive advantage. By contrast, the model of the *entrepreneurial economy* is the political, social, and economic response to

¹ Vernon (1970) predicts increased globalization to present an even more hostile environment to small business. Caves (1982) argues that the additional costs of knowledge activity constitute an important reason for expecting foreign investments to be mainly an activity of large firms. Chandler (1990) concludes that one has to be big in order to compete globally.

an economy increasingly dominated by knowledge as the production factor, but also by a different, yet complementary, factor that had been overlooked: entrepreneurship capital, or the capacity to engage in and generate entrepreneurial activity. Without new and young firms it is not straightforward that knowledge or R&D always spills over to an environment where it leads to tangible products.²

This distinction between the models of the managed and entrepreneurial economy applies to both developed and emerging economies although it has been set up to better understand the role of entrepreneurship, its drivers, its consequences and its policy requirements in the framework of developed economies. For instance, a complicating factor in many emerging economies is the high degree of business informality. This phenomenon is often caused by a tax system which places heavy administrative and financial burdens on entrepreneurs and by stringent regulations with regard to labour, products and services. It is not only the state who loses through informality by way of missed revenue. Businesses miss the opportunity to take part in programmes to stimulate innovation and employee training. They have no access to formal credit and enjoy no legal protection. An important step forward would be to extend government programmes to stimulate innovation or training of employees to all small and medium enterprises (SMEs) including those operating informally under the condition that they start participating in the formal system (OECD 2007b).

The purpose of this paper is to present the distinction between the models of the managed and entrepreneurial economies and to explain why the model of the entrepreneurial economy is a better frame of reference than the model of the managed economy when explaining the role of entrepreneurship in contemporary, developed (Thurik 2009) and emerging economies. The first I will do by showing the relation between a measure for entrepreneurship capital (the prevalence of early stage entrepreneurial activity) and two measures of economic development. It suggests that there are two different economies. The second I will do by contrasting the fundamental elements of the managed economy model with those of the entrepreneurial economy model. Following Audretsch and Thurik (2001a; 2004) and Thurik (2009), fourteen characteristics are identified as the basis for comparing models of the entrepreneurial and the managed economy. The common thread throughout these characteristics is the important role of new and small enterprises in the entrepreneurial economy model (as compared to that of the managed economy). Understanding the distinction between the models of the entrepreneurial and managed economies is vital for explaining why the causes and consequences of entrepreneurship differ in the managed and the entrepreneurial economies (Thurik, Wennekers and Uhlaner 2002; Wennekers, Uhlaner and Thurik 2002). Insight in the causes and consequences of entrepreneurship is indispensable for shaping and justifying policy measures (Audretsch, Grilo and Thurik 2007). An economy based upon managing production requires totally different conditions than one where entrepreneurship capital needs to be stimulated (Audretsch 2007b). It can even be that policies and institutions which made the managed economy successful are counterproductive in the entrepreneurial economy. The challenge of

² This process is known as ‘breaking the knowledge filter’: entrepreneurs are willing to spend costs to use existing but outside knowledge for their own production process. They provide a vital link between knowledge and productivity gains. See Acs et al. (2009) and Audretsch, Aldridge and Oettl (2006). Erken, Donselaar, and Thurik (2008) show that entrepreneurship, next to R&D, plays a role explaining ‘total factor productivity’ for OECD countries in a recent period.

emerging economies is harder since they are a mixed model of the two economies where both the managed element and the entrepreneurial element have to be encouraged while the challenge of developed economies is rather on the transition from the managed to the entrepreneurial one. The role of entrepreneurship in the typical mixed model of emerging economies is an under-researched phenomenon (Naudé 2008), not only because the role of entrepreneurship for economic development is complex and in a mixed economy even more, but also because the typical model of mixed emerging economies does not exist. Emergence or non-emergence has many faces like that of success (East Asia, Eastern Europe) and that of failed or collapsing states (Africa).

2 The managed economy

Until the late 1980s the large enterprise is the dominant form of business organization (Schumpeter 1942; Chandler 1990). The decrease in the role of small business in developed countries after the Second World War is well documented. This is the era of mass production where economies of scale become the decisive factor in dictating efficiency. In this era John Kenneth Galbraith (1956) proposes his idea of countervailing power, where the power of ‘big business’ is balanced by that of ‘big labour’ and ‘big government’. There is no mention of ‘small businesses’. The corporatist organization of societies goes very well together with the managed economy. Whyte (1960), Chandler (1977), Piore and Sabel (1984), and many others show that stability, continuity, and homogeneity are the cornerstones of the managed economy. Large firms dominate this economy while Taylorism, Fordism, and Keynesianism are central concepts. One of the best descriptions of the large enterprise and its domination of the managed economy is given in *The Economist* (22 December 2001: 76):

They were hierarchical and bureaucratic organizations that were in the business of making long runs of standardized products. They introduced new and improved varieties with predictable regularity; they provided workers with life-time employment; and enjoyed fairly good relations with the giant trade unions.

Also until late in the 1980s small firms are viewed as a luxury, as something western countries need to ensure the infrastructure and safety of inner cities, to absorb parttime and low skilled labour, to help decentralization of decisionmaking, to safeguard the oldest of all business models, the family firm, etc. One took for granted that they survived only at the cost of efficiency. It is not surprising that many scholars from many academic disciplines have sought to create insight into the issues surrounding this perceived trade-off between economic efficiency and political and economic decentralization (Williamson 1975).³ The alleged success of the communist, centrally-led economies plays a huge role in the prevailing way of thinking of that era. These economies thrived on uniform, stable mass production. It is straightforward that

³ These scholars have produced a large number of studies focusing mainly on three questions: (i) What are the gains to size and large-scale production?, (ii) What are the economic and welfare implications of an oligopolistic market structure, i.e., is economic performance promoted or reduced in an industry with just a handful of large-scale firms?, and (iii) Given the overwhelming evidence that large-scale production and economic concentration is associated with increased efficiency, what are the public policy implications?

entrepreneurship is viewed as behaviour hostile to the communist system and declared criminal. How ironic that these economies broke down in the late 1980s due to a total lack of decentralized, experimental, free, risky and small-scale economic activities.

3 The emergence of the entrepreneurial economy

While business schools thrive training young people for jobs in large-scale operations, these same schools house researchers establishing a revival of small-scale operations. In the late 1980s and early 1990s, fascinating data material is published: the share of smallness varies in modern economies, but increases everywhere.⁴ In the United States the average real GDP per firm increased by nearly two-thirds between 1947 and 1989—from US\$150,000 to US\$245,000—reflecting a trend towards larger enterprises and a decreasing importance of small firms. However, within the subsequent seven years it had fallen by about 14 per cent to US\$210,000, reflecting a sharp reversal of this trend and the re-emergence of small business (Brock and Evans 1989). Similarly, small firms accounted for one-fifth of manufacturing sales in the United States in 1976, but by 1986 the sales share of small firms had risen to over one-quarter (Acs and Audretsch 1993).

Such a U-shaped relation between number of firms and time, or inverse U-shaped relation between average firm size and time, seems to be ubiquitous. There is much debate about its meaning, but two things seem evident: the trough, or the summit, is not determined by the calendar year but by the level of economic development of a country. It is as if the trough, or the summit, marks a regime switch. The first can be best illustrated using the material of the Global Entrepreneurship Monitor (GEM). The second is documented by Audretsch and Thurik (2001a, 2004) distinguishing between the managed and the entrepreneurial economy.

Table 1 shows the results of a linear regression estimation where the total entrepreneurial activity (TEA) index is ‘explained’ using the level of economic development of countries. The TEA index is the number of ‘nascent’ and new entrepreneurs as a percentage of the population between 18 and 65 years of age.⁵ Following Wennekers et al. (2005), two measures of the level of economic development are used: per capita income (in purchasing power parities) and the innovation index as computed by the authoritative World Economic Forum (WEF 2007).⁶ We test for the presence of a U-curved relation by including the ‘squared’ level of economic development. Using the 2007 observations from 42 countries we observe that the results are similar to those of the 2002 data used in Wennekers et al. (2005): there is a strong U-shaped relation between entrepreneurship and level of economic development. The U-shape seems somewhat stronger in the case of per capita income (t-value is 2.8) than in the case of the innovation index (t-value is 1.9). The stability of the U-shape over the years (the relation is established both in 2002 and 2007) provides support for

4 Birch (1987), Brock and Evans (1989), Loveman and Sengenberger (1991), and Acs and Audretsch (1993).

5 Nascent entrepreneurs are busy setting up a business and have taken important steps. New entrepreneurs have businesses of less than three and a half years old.

6 The 12th dimension of the so-called Global Competitive Index (WEF 2007: 20) is used.

Table 1
 Relating total entrepreneurial activity (2007) to the level of economic development,
 as measured by per capita income and innovative capacity

	Model 1: U-curved relationship with per capita income	Model 2: U-curved relationship with innovative capacity
Constant	21.4*** (7.2)	57.4*** (3.0)
Per capita income	-1.01*** (3.5)	
Per capita income, squared	0.016*** (2.8)	
GCR innovative capacity index		-21.2** (2.2)
GCR innovative capacity index, squared		2.15* (1.9)
Adjusted R ²	0.335	0.232
Observations	42	42

Note: Absolute t-values between parentheses.

*** Significant at 0.01 level; ** Significant at 0.05 level; * Significant at 0.10 level.

the idea that something fundamental happened in the economy and that this has to do with the role of entrepreneurship capital. I am aware that I attempt to draw conclusions with a time dimension using (cross-section) country data without one. This is allowed because the 42 countries have strongly diverging levels of economic development so that the temporal effect is implicit: countries tend to grow in terms of economic development.

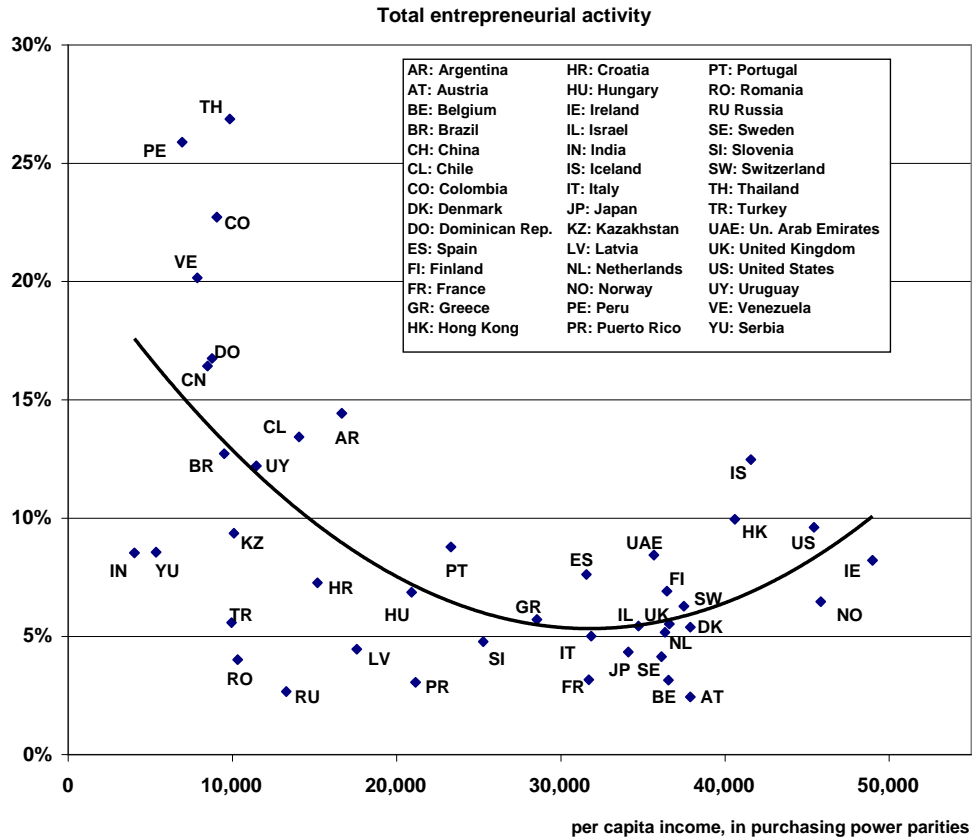
The values of the adjusted R² (0.335 and 0.232) are certainly not low since this measure of ‘explanation’ on the right hand side of the equation is based upon just one phenomenon. However, obviously, there are many more phenomena influencing the relation between the level of entrepreneurship and that of economic development. These phenomena should capture all kinds of economic, technological, demographic, and institutional differences. Wennekers et al. (2005) show that correction for several of these phenomena does not affect the U-shape relation. In Figure 1 a picture is drawn of the data and the estimated relation of model 1 where total entrepreneurial activity (prevalence of early stage entrepreneurial activity) is related with per capita income (GDP per capita, in purchasing power parities).⁷

Above, I emphasize the (somewhat complicated) time serial interpretation of the correlation between entrepreneurship and economic development. One can also look at it in a straightforward cross-sectional fashion discriminating between emerging and developed economies. Obviously, emerging economies (<US\$25,000 per capita income) are on the left hand side of Figure 1 while developed economies (>US\$25,000 per capita income) are on the right hand side. We see that the level of development has a

⁷ By reporting the regression results of Table 1, I do not want to suggest that they describe the way entrepreneurship influences economic development. The relation between entrepreneurship and economic development is very complex. There are two causalities, lagged effects, measurement issues, and several opposite effects (Thurik et al. 2008). I just want to emphasize that a regime switch occurred.

different correlation with TEA for both groups of economies. In the first group there seems to be a negative correlation whereas in the second there seems to be a positive one. I am inclined to carefully conclude that while developed economies should concentrate on the switch from the managed towards the entrepreneurial economy, emerging economies should also try and nurture the managed one. See also Naudé (2008) for a discussion of the relation between entrepreneurship and the level of economic development in the opposite poles of the development spectrum.⁸

Figure 1
Total entrepreneurial activity (TEA) and GDP (model 1)



Source: Bosma et al. (2008).

4 Contrasting the entrepreneurial and managed economy models

The occurrence of a regime switch suggests two contrasting models with a differing role of entrepreneurship. The model of the managed economy revolves around the links between stability, specialization, homogeneity, scale, certainty, and predictability on the

⁸ Naudé (2007) also discusses the threefold role of entrepreneurship in economic development: providing a long-run effect breaking Malthusian stagnation, stimulating transformation from a agricultural to a post-industrial economy and generating innovation related productivity gains.

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 distinguishing between different groups of characteristics, including underlying forces, external environment characteristics, internal or firm characteristics, and policy characteristics. I will try and distinguish 14 characteristics.⁹

4.1 Underlying forces

The first group of characteristics consists of three important underlying forces: localization versus globalization; change versus continuity; and jobs *and* high wages versus jobs *or* high wages.

In the model of the managed economy, production labour and capital are the dominant production factors. The more mobile capital moves to where the cheapest labour (software) is or such labour moves towards capital once it is invested in plants (hardware). Knowledge is the dominant factor of production in the model of the entrepreneurial economy. It is more than just hard technical and scientific knowledge. It also comprises soft aspects like creativity, the ability to communicate, emotional intelligence, et cetera. The competitive advantage in the entrepreneurial economy is driven by innovative activity, while knowledge spillovers are an important source of this innovative activity. Hence, in the model of the entrepreneurial economy, local proximity is important, with the region being the most important locus of economic activity, as knowledge tends to be developed in the context of localized production networks embedded in innovative clusters.

The model of the managed economy focuses more on continuity, while the model of the entrepreneurial economy thrives on change and even provokes it. Although innovation is present under the conditions of both change and continuity, the nature and the locus of innovative activity differ. The well-known distinction between incremental and radical innovations is helpful to elucidate this. Innovations are considered incremental when they are compatible with the core competence and technological trajectory of the firm or the industry. By contrast, a radical innovation can be defined as extending beyond the boundaries of the core competence and the technological trajectory of the firm or the industry. In the model of the managed economy change is absorbed within a given technological paradigm: the successful firm excels at incremental innovation. By contrast, in the model of the entrepreneurial economy, the capacity to break out of the technological lock-in imposed by existing paradigms is enhanced by the ability of economic agents to start new firms. Thus, incremental innovative activity along with diffusion plays a more important role in the model of the managed economy. While often requiring large investments in R&D, this type of innovative activity generates incremental changes in products along the existing technological trajectories.

One of the most conspicuous policy options in the model of the managed economy is that unemployment can be reduced only at the cost of lower wages. In the model of the

⁹ See Audretsch and Thurik (2001a, 2004) for more examples and references. Also see Audretsch (2007a) for a brilliant and proficient but less organized account of the switch from the managed to the entrepreneurial economy.

entrepreneurial economy high employment can be combined with high wages and a low wage level does not necessarily imply high employment. An indication of the absence of a trade-off between high wages and employment is the large variance in unemployment rates across OECD countries, although corporate downsizing has been ubiquitous. Small firms in general, and new ventures in particular, are the engine not only of employment creation,¹⁰ but also of productivity (Erken, Donselaar and Thurik 2008). This is not due to the wage differential between small and large firms. On the contrary, the growth of new firms may not only generate greater employment, but also higher wages. New firm growth ensures that higher employment does not come at a cost of lower wages, but rather the opposite—higher wages. Under the model of the managed economy the job creation by small firms is associated with lower wages. Hence, while small firms generate employment at a cost of lower wages in the model of the managed economy, in the entrepreneurial economy model small firms may create both more jobs and higher wages (Acs, Fitzroy and Smith 2002; Scarpetta et al. 2002).

The relevance for emerging countries lies in the idea that they have to create incentives for the knowledge embodied in their well-educated citizens to stay in the home country and exploit their knowledge in a (new) business instead of moving abroad. An example of a country which seems to be successful in doing so is India which houses numerous IT specialists doing work for clients across the globe, MBAs involved in number crunching for big investment banks in London and New York and so on. The opposite is true for a country like Poland which has seen a massive exodus of skilled workers which has actually forced local business to in-source labour from countries like Ukraine.

4.2 External environment

The second group of characteristics contrasts the external environment characteristics in 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 of the model of the managed economy.

Note, however, that a part of the entrepreneurial economy can also be ‘exported’ to another economy. Saxenian describes the concept of the ‘new argonauts’ by which she means highly skilled foreign employees who return to their home country to start up their own business exploiting knowledge and ideas that they have obtained in their previous employment (Saxenian 2007). These ‘exports’ can influence this managed economy to become more sophisticated or more entrepreneurial or to create an entrepreneurial economy alongside the managed one.

Stability in the model of the managed economy results from a homogeneous product demand, resulting in a low turnover rate of jobs, workers, and firms. The model of the entrepreneurial economy is characterized by a high degree of turbulence. Each year many new firms are started and only a subset of these firms survive. Nelson and Winter (1982) argue that the role of diversity and selection is at the heart of generating change. This holds for both the managed and the entrepreneurial economy models. However, what differs in these models is the management and organization of the process by

¹⁰ See the 2008 special issue of *Small Business Economics*, 30 (1), and in particular Fritsch (2008).

which diversity is created as well as the selection mechanism. In the model of the managed economy research activities are organized and scheduled in departments devoted to developing novel products and services. The management of change fits into what Nelson and Winter (1982) refer to as the 'firm's routines'. The ability of incumbent businesses to manage the process of change pre-empts many opportunities for entrepreneurs to start new firms, resulting in a low start-up rate and a stable industrial structure. In the model of the entrepreneurial economy the process of generating new ideas, both within and outside of R&D laboratories, creates a turbulent environment with many opportunities for entrepreneurs to start new firms based upon different and changing opinions about different and changing ideas. In short, the innovation process in the managed economy is closed whereas that in the entrepreneurial economy is open.

Several theoretical arguments have suggested that the degree of diversity versus that of specialization accounts for differences in rates of growth and technological development (Acs, Fitzroy, and Smith 2002). Specialization of industry activities is associated with lower transaction costs and, therefore, greater (static) efficiency. Diversity of activities is said to facilitate the exchange of new ideas and, therefore, greater innovative activity and (dynamic) efficiency. Because knowledge spillovers are an important source of innovative activity, diversity is a prerequisite in the model of the entrepreneurial economy where lower transaction costs are preferably sacrificed for greater opportunities for knowledge spillover. In the model of the managed economy, there are fewer gains from knowledge spillovers. The higher transaction costs associated with diversity yield little room for opportunities in terms of increased innovative activity, making specialization preferable in the model of the managed economy.

The trade-off between diversity and specialization focuses on firms while that between homogeneity and heterogeneity focuses on individuals. Modern communication and transport techniques destroyed many barriers. In a heterogeneous population of the entrepreneurial economy, communication across individuals tends to be more difficult and costly than in a homogenous population: transaction costs are higher and efficiency is lower. At the same time, new ideas are more likely to emerge from communication in a heterogeneous than in a homogeneous world. Although the likelihood of communication is lower in a heterogeneous population, communication in this environment is more prone to produce novelty and innovation.¹¹ The lower transaction costs resulting from a homogeneous population in the model of the managed economy are not associated with high opportunity costs, because knowledge spillovers are relatively unimportant in generating innovative activity. However, knowledge spillovers are a driving force in the model of the entrepreneurial economy, offsetting the higher transaction costs associated with a heterogeneous population.

4.3 How firms function

The third group of characteristics contrasts firm behaviour in 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.

¹¹ The concept of 'optimal cognitive distance' is connected to this phenomenon (Nooteboom et al. 2007).

Under the model of the managed economy, labour is considered as indistinguishable from the other input factors. It is considered homogeneous and easily replaceable. Firms organize their labour according to the principles of command and control. Under the model of the entrepreneurial economy, the command and control approach to labour is less effective, as the competitive advantage of the advanced industrialized countries tends to be based on creating and validating new knowledge. This is accomplished by motivating workers to facilitate the discovery process and implementation of new ideas. Management styles emphasize the nurturing of interpersonal relationships, facilitating rather than supervising employees. In the entrepreneurial economy model, the focus of activities is on exploring new abilities, rather than exploiting existing ones.

Transaction-costs economics distinguishes between exchange via the market and intra-firm transactions. Both Coase (1937) and Williamson (1975) emphasize that uncertainty and imperfect information increase the cost of intra-firm transactions. Knight (1921) argues that low uncertainty, combined with transparency and predictability of information, makes intra-firm transactions efficient relative to market exchange. In the managed economy model, where there is a high degree of certainty and predictability of information, transactions within firms tend to be more efficient than market exchange. By contrast, in the entrepreneurial economy, model market transactions are more efficient because of the high uncertainty. Since the mid-1970s the economic arena has become increasingly uncertain and unpredictable (Carlsson 1989), witnessed by a decrease in both mean firm size and the extent of vertical integration and conglomeration.

Models of competition generally assume that firms behave autonomously, whereas models of cooperation assume pervasive linkages among firms. These linkages take various forms, including joint ventures, strategic alliances, and (in)formal networks, et cetera. In the model of the managed economy, competition and cooperation are viewed as being substitutes. Firms are vertically integrated and primarily compete in product markets. Cooperation between firms in the product market reduces the number of competitors and reduces the degree of competition. In the model of the entrepreneurial economy, firms tend to be vertically independent and specialized in the product market. The higher degree of vertical disintegration under the model of the entrepreneurial economy implies a replacement of internal transactions within a large vertically integrated corporation with cooperation among independent firms. At the same time, there are more firms, resulting in an increase in both the competitive and cooperative interfaces. The likelihood of a firm competing or cooperating with other firms is higher in the entrepreneurial economy model.

Under the model of the managed economy, costs-per-unit are reduced through exploiting economies of scale. In product lines and industries where a large scale of production translates into a substantial reduction in average costs, large firms will have an economic advantage, leading to a concentrated industrial structure. Stable and predictable products, consumer tastes, and lines of resource provision contributed to the success of the exploitation of economies of scale. The importance of scale economies has certainly contributed to the emergence and dominance of large corporations in heavy manufacturing industries, such as steel, automobiles, and aluminium (Chandler 1977). The alternative source of reduced average costs is flexibility (Teece 1993), characterizing the entrepreneurial economy model. Industries where demand for particular products is shifting constantly require a flexible system of production that can meet such a whimsical demand.

4.4 Government policy

The final group of contrasting characteristics of the models of the entrepreneurial economy and the managed economy refers to government policy (Audretsch, Grilo and Thurik 2007), 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).

Under the model of the managed economy, public policy towards the firm is essentially constraining in nature. There are three general types of public policy towards business: antitrust policy (competition policy), regulation, and public ownership. All three of these policy approaches restrict the firms' freedom to contract. Under the model of the managed economy, the relevant policy question is: How can the government withhold firms from abusing their market power? The entrepreneurial economy model is characterized by a different policy question: How can governments create an environment fostering the success and viability of firms? Whereas the major issues in the model of the managed economy are concerns about excess profits and abuses of market dominance, in the model of the entrepreneurial economy the issues of international competitiveness, growth, and employment are important. In the managed economy model the emphasis is on constraining market power through regulation, whereas the focus in the entrepreneurial economy model is on stimulating firm—or rather industrial—development and performance through enabling policies.

Striking examples of how not to deal with this topic are abundant in almost every emerging country. The most obvious one is Venezuela which forced foreign investors to accept significantly less advantageous conditions for existing concessions in the oil sector. In addition, it has renationalized oil, cement and steel companies. Bolivia also nationalized its oil and gas industry. Other telling examples are regulation in Mexico pertaining to telecommunication, electricity and oil. Argentina has been trying to prescribe to companies what prices they should ask for their products as witnessed when the former president Kirchner urged Argentineans not to go to the Shell gas stations when the company was trying to pass on higher oil prices. Government intervention and efforts to minimize foreign influence do not only mean that the country foregoes opportunities for knowledge spillovers, but they will also have a negative effect on decisions regarding potential new foreign investments in the country which will adversely impact diversity and heterogeneity. Brazil created independent regulators in many sectors during the privatization boom of the 1990s. Since the current president took office in 2003, a different, more interventionist, approach has prevailed. An important example is the introduction of HD-television in Brazil where the ministry took an active role in the decision which standard the country should adopt. The government decided on the Japanese ISDB standard in return for Japanese investments in the Brazilian semiconductor industry, financing and technology transfers.

Governmental policy can involve targeting selected outputs in the production process versus targeting selected inputs. Because of the relative certainty regarding markets and products in the model of the managed economy, the appropriate policy response is to target outputs. Specific industries and firms can be promoted through government programmes. Whereas in the model of the managed economy production is based on the traditional inputs of land, labour and capital, in the entrepreneurial economy model it is mainly based on knowledge input. There is uncertainty about what products should be produced, how and by whom. This high degree of uncertainty makes it difficult to select

appropriate outcomes and increases the likelihood of targeting the wrong firms and industries. Hence, the appropriate policy in the model of the entrepreneurial economy is to target inputs and in particular those inputs related to the creation and commercialization of knowledge. Government becomes the facilitator creating links and networks, creating forms of social innovation, proposing incentives to firms and knowledge institutes, stimulating special and functional flexibility of labour, et cetera.

The uncertainty associated with the outcomes of a process where knowledge is considered to be an important input means that policymaking is more difficult in this situation. Many emerging countries are lacking the necessary knowledge and experience for proper policymaking. Good examples of a natural way to overcome this problem can be found in Israel, Taiwan and India where highly skilled citizens have returned from abroad to set up new innovative businesses or invest venture capital in other start-ups. These individuals often take on the role of advisors to the government thus spreading the knowledge for input oriented policies (Saxenian 2007).

The locus of policy is a third characteristic where the models of the managed and entrepreneurial economy differ. Under the model of the managed economy the appropriate locus of policymaking is the national or federal level. The most important policymaking institutions tend to be located at the national level, although the targeted recipients of policy may be localized in one or a few regions. Under the model of the entrepreneurial economy, government policy towards business tends to be decentralized and regional or local in nature. This distinction in the locus of policy results from two factors. First, because the competitive source of economic activity in the model of the entrepreneurial economy is knowledge, which tends to be localized in regional clusters, public policy requires an understanding of regional-specific characteristics and idiosyncrasies. Second, the motivation underlying government policy in the entrepreneurial economy is growth and the creation of jobs, to be achieved mainly through new venture creation. New firms are usually small and pose no oligopolistic threat in national or international markets. In the model of the entrepreneurial economy, no external costs—in the form of higher prices—are imposed on consumers in the national economy as is the case in the model of the managed economy. Fostering local economies imposes no cost on consumers in the national economy.

The question is whether local governments are actually equipped to design and implement local policy which stimulates businesses to capitalize on local advantages and mitigate local disadvantages. In addition, it is important to assess whether an appropriate system of checks and balances is in place to ensure that local policymakers act in the most efficient manner.

Numerous illustrative examples can be found. I will mention three of them. Mexico is a country where decentralization has increased rapidly in the last decade although the necessary framework was lacking. As a result the effects of decentralization have not materialized as expected. However, for example, the Universidad Tecnológico de Monterrey in Mexico is cooperating with regional government and (potential) foreign investors to assess skills needed by business in the region and adapt its curriculum and its enrolment procedures in order to provide appropriate skilled labour. In addition, the university works together with the corporate world to create new products and new companies. The second example relates to the Baltic Sea region. After the fall of the Berlin wall, the countries in this area joined forces to study how cooperation between such diverse nations could lead to the development of a highly entrepreneurial region.

Connecting economic actors through networking and information sharing makes it possible to enhance business and foreign direct investment opportunities, thus helping the poorer countries to catch up more quickly and the richer to penetrate a large market more easily (OECD 2007a). However, the emerging countries in the region, such as Russia, Poland and the Baltic states, are still lacking the governance structures to reap the full benefits from this regional initiative despite extensive support from their neighbours which are more advanced in terms of governance.

An interesting example of localization is the phenomenon of the special economic zones (SEZs) in China. These are geographic entities allowed to pioneer the process of opening up to foreign investment since the 1980s. They integrate science with industry and trade. A different governance system and special rules were set up to ensure that local governments to adapt policymaking towards achieving the strategic goals that the central government set for these particular areas.

Finally, financing policies for business vary between the two models. Under the model of the managed economy, the systems of finance provide the existing companies with just liquidity for investment. Liquidity is seen as a homogeneous input factor. The model of the entrepreneurial economy requires a system of finance that is different from that in the model of the managed economy.¹² In the model of the managed economy, there is certainty in outputs as well as inputs. There is a strong connection between banks and firms in their joint efforts to foster growth. In the entrepreneurial economy model, certainty has given way to uncertainty requiring different financial institutions. In particular the venture and informal capital markets, providing finance for high-risk and innovative new firms, play an important role in the model of the entrepreneurial economy. In this model liquidity loses its homogeneous image and is often coupled with forms of advice, knowledge, and changing levels of involvement (business angels, incubators, et cetera).

Foreign financial institutions have acquired or set up businesses in many emerging countries. In many cases this has meant that local banks have lost most of their large corporate business to these foreign parties. Emerging countries could enhance the entrepreneurial part of their economy by stimulating local financial institutions to adopt modern ways of financing innovative new local business.

5 Conclusion

The model of the managed economy dominated most developed economies until the late 1980s. It is based on relative certainty in inputs and outputs. Large plants and the ingenious interplay between man and machine are the cornerstones of this economy. Economies of scale increased dramatically. The model of the managed economy brought unprecedented growth. The joint effect of the computer and telecommunications revolutions and globalization has reduced the ability of the managed economies of western Europe and North America to grow and create jobs. On the one hand, there is the advent of new competition from low-cost, but relatively high educated and skill-intensive, countries in Central and Eastern Europe as well as in Asia.

¹² The role of liquidity constraints should not be exaggerated in the entrepreneurial economy (Grilo and Thurik 2008).

On the other hand, 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 (Audretsch and Thurik 2001b). Taken together, this joint effect implies that economic activity in high-cost locations is no longer compatible with routinized tasks. Rather, the competitive advantage of high-cost locations shifted to knowledge-based activities, and in particular intellectual search activities. These activities cannot be costlessly transferred around the globe. Knowledge as an input into economic activity is inherently different from land, labour, and capital. It is characterized by high uncertainty, high asymmetries across people, and high transaction costs. An economy where knowledge is the main source of competitive advantage is more consistent with the model of the entrepreneurial economy. The essence of the model of the entrepreneurial economy is not just creating knowledge, but also exploiting it.

I do not want to argue that the managed economy is totally obsolete. There are large parts of the modern developed and emerging economies where routinized production is essential or where closed forms of innovation are successful. There are large parts where exploitation of what exists is important and where exploration of what does not exist is irrelevant. The modern economy is an economy of which the constellation differs drastically from that of twenty years ago. There is much to describe and to discover about the fundamental changes of the last twenty years. Furthermore, there is a great deal to discover about what good policy practices are under the model of the entrepreneurial developed economy (Audretsch, Grilo and Thurik 2007). It seems obvious what the optimal use is of a machine, a running belt, or an entire factory in the managed economy. But it is unclear what the value is of knowledge with its many soft and latent aspects such as creativity, communication, and emotions. I hope that the above fourteen characteristics with their emphasis on the role of entrepreneurship capital may be helpful understanding the modern economy.

Emerging economies are in an inherently more complicated situation as can be summarized in the following points. First, we should acknowledge that while developed economies switch from the managed to the entrepreneurial economy, emerging economies face an even more challenging task. Just like emerging economies are a mix of a developed and a developing one, they are also a mix of a managed and an entrepreneurial one. For instance, Indonesia has many traits of a managed economy considering that it has a history of promoting certain industries while constraining many others and policymaking is often centralistic. However, a good example of entrepreneurial policy is Indonesia's attitude towards fostering the development of small and medium enterprises (SMEs). Typically SMEs in Indonesia, and particularly Java, tend to cluster. According to Berry, Rodriguez and Sandee (2002) a number of such firms have become successful exporters of rattan furniture, wood furniture and garments using the strength of subcontracting relationships with foreign investors and buyers as well as agglomeration economies achieved by clustering in selected locations. Berry, Rodriguez and Sandee show that Indonesian SMEs participating in clusters are more likely to export and to adopt product and process innovations as compared to more dispersed and isolated firms. This is a direct result of the BIPIK (*Program Pembinaan dan Pengembangan Industri Kecil*) programme which was started in the late 1970s to stimulate geographic concentration of small businesses. Such a concentration facilitates relatively cheap training in basic entrepreneurial skills for many SMEs at the same time.

Second, and suggested by Figure 1, emerging economies usually have not fully finished the consolidation stage of the managed economy. Examples are inefficient and highly fragmented retail and hotel and catering sectors. Nevertheless, they have to try and develop or import parts of a yet newer economy. Third, the managed part of an emerging economy goes well together with a concentrated power system where conformity and homogeneity play significant roles. This power system, combined with usually weaker democratic pressures in emerging economies, may frustrate the partial transition to an entrepreneurial economy where originality and diversity play important roles. Fourth, a high degree of business informality means that while the state is confronted with missed revenues and information about the consequences of its regulatory initiatives, businesses underperform when it comes to access to formal credit sources and to legal protection. Fifth, a drain of the brainy, the creative and the entrepreneurial ones is no easy starting point for fostering a newer entrepreneurial economy. Sixth and hardly discussed above, there are diverse ways in which entrepreneurship can be detrimental to economic development, like through its perverse allocation towards activities which are personally profitable but socially undesirable or through low quality entrepreneurship generating negative externalities (Naudé 2007). This effect can be prominent in emerging economies of many shapes like the Russian and the African examples show.

Obviously, many of these disadvantages are offset by advantages of emerging economies like the opportunities of learning from the mistakes of the developed economies (catching-up mechanisms, returning highly skilled workers) and the informality of the culture (microcredits). The variety among the emerging economies necessitates a more precise analysis than given above about what should be done promoting elements of the new entrepreneurial economy.

References

- Acs, Z. J., and D. B. Audretsch (1993). 'Conclusion'. In Z. J. Acs and D. B. Audretsch (eds), *Small Firms and Entrepreneurship: An East-West Perspective*. Cambridge: Cambridge University Press.
- Acs, Z. J., F. R. Fitzroy, and I. Smith (2002). 'High-technology Employment and R&D in Cities: Heterogeneity vs Specialization'. *Annals of Regional Science*, 36 (3): 373-86.
- Acs, Z. J., D. B. Audretsch, P. Braunerhjelm, and B. Carlsson (2004). 'The Missing Link. The Knowledge Filter and Entrepreneurship in Endogenous Growth'. CEPR Discussion Paper 4783. London: Centre for Economic Policy Research.
- Acs, Z.J., D. B. Audretsch, P. Braunerhjelm, and B. Carlsson (2009). 'The Knowledge Spillover Theory of Entrepreneurship'. *Small Business Economics*, 32 (1): 15-30.
- Audretsch, D. B. (2007a). *The Entrepreneurial Society*. Oxford: Oxford University Press.
- Audretsch, D. B. (2007b). 'Entrepreneurship Capital and Economic Growth'. *Oxford Review of Economic Policy*, 23 (1): 63-78.

- Audretsch, D. B., and A. R. Thurik (2001a). 'What Is New about the New Economy: Sources of Growth in the Managed and Entrepreneurial Economies'. *International Journal of Industrial Organisation*, 19 (5): 795-821.
- Audretsch, D. B., and A. R. Thurik (2001b). 'Globalization and the Strategic Management of Regions'. In D. B. Audretsch and C. F. Bonser (eds), *Globalization and Regionalization: Challenges for Public Policy*. Boston/Dordrecht: Kluwer Academic Publishers, 49-70.
- Audretsch, D. B., and A. R. Thurik (2004). 'A Model of the Entrepreneurial Economy'. *International Journal of Entrepreneurship Education*, 2 (2): 143-66.
- Audretsch, D. B., T. Aldridge, and A. Oetl (2006). 'The Knowledge Filter and Economic Growth: The Role of Scientist Entrepreneurship'. Discussion Papers on Entrepreneurship, Growth and Public Policy. Jena: Max Planck Institute of Economics.
- Audretsch, D. B., I. Grilo, and A. R. Thurik (2007). *The Handbook of Research on Entrepreneurship Policy*. Cheltenham/Northampton: Edward Elgar Publishing Limited.
- Berry, A., E. Rodriguez, and H. Sandee (2002). 'Firm and Group Dynamics in the Small and Medium Enterprise Sector in Indonesia'. *Small Business Economics*, 18 (1-3): 141-61.
- Birch, D. (1987). *Job Creation in America*. New York: Free Press.
- Bosma, N., K. Jones, E. Autio, and J. Levie (2008). *Global Entrepreneurship Monitor 2007*. Babson Park/London: Babson College/London Business School.
- Brock, W. A., and D. S. Evans (1989). 'Small Business Economics'. *Small Business Economics*, 1 (1): 7-20.
- Carlsson, B. (1989). 'The Evolution of Manufacturing Technology and its Impact on Industrial Structure: An International Study'. *Small Business Economics*, 1 (1): 21-38.
- Caves, R. (1982). *Multinational Enterprise and Economic Analysis*. Cambridge: Cambridge University Press.
- Chandler, A. D. (1977). *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press.
- Chandler, A. D. (1990). *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, MA: Harvard University Press.
- Coase, R. H. (1937). 'The Nature of the Firm'. *Economica*, 4 (16): 386-405.
- Erken, H., P. Donselaar, and R. Thurik (2008). 'Total Factor Productivity and the Role of Entrepreneurship'. Jena Economic Research Papers 2008-019. Jena: Friedrich Schiller University and Max Planck Institute of Economics.
- Fritsch, M. (2008). 'How Does New Business Formation Affect Regional Development? Introduction to the Special Issue'. *Small Business Economics*, 30 (1): 1-14.

- Galbraith, J. K. (1956). *American Capitalism: The Concept of Countervailing Power*. Boston: Houghton Mifflin Co.
- Grilo, I., and A. R. Thurik (2008). 'Determinants of Entrepreneurial Engagement Levels in Europe and the US'. *Industrial and Corporate Change*, 17 (6): 1113-45.
- Jones, C. I. (1995). 'R&D-based Models of Economic Growth'. *Journal of Political Economy*, 103 (4): 759-84.
- Knight, F. H. (1921). *Risk, Uncertainty and Profit*. New York: Houghton Mifflin.
- Loveman, G., and W. Sengenberger (1991). 'The Re-emergence of Small-scale Production; An International Comparison'. *Small Business Economics*, 3 (1): 1-37.
- Lucas, R. E. (1988). 'On the Mechanics of Economic Development'. *Journal of Monetary Economics*, 22 (1): 3-39.
- Naudé, W. (2008). 'Entrepreneurship in Economic Development'. WIDER Research Paper 2008/20. Helsinki: UNU-WIDER.
- Nelson, R. R., and S. G. Winter (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: Harvard University Press.
- Nooteboom, B., W. Vanhaverbeke, G. Duysters, V. A. Gilsing, and A. van den Oord (2007). 'Optimal Cognitive Distance and Absorptive Capacity'. *Research Policy* 36 (7): 1016-34.
- OECD (2007a). *Baltic Partnerships, Integration, Growth and Local Governance in the Baltic Sea Region*. Paris: OECD.
- OECD (2007b). *Economic Survey Chile*. Paris: OECD.
- Piore, M. J., and C. F. Sabel (1984). *The Second Industrial Divide: Possibilities for Prosperity*. New York: Basic Books.
- Romer, P. M. (1986). 'Increasing Returns and Long-run Growth'. *Journal of Political Economy*, 94 (5): 1002-37.
- Romer, P. M. (1990). 'Endogenous Technological Change'. *Journal of Political Economy*, 98 (5): 71-101.
- Saxenian, A. L. (2007). *The New Argonauts*. Cambridge, MA: Harvard University Press.
- Scarpetta, S., P. Hemmings, T. Tressel, and J. Woo (2002). 'The Role of Policy and Institutions for Productivity and Firm Dynamics: Evidence from Micro and Industry Data'. OECD Economics Department Working Paper 329. Paris: OECD.
- Schumpeter, J. A. (1942). *Capitalism, Socialism and Democracy*. New York: Harper and Row.
- Solow, R. (1956). 'A Contribution to the Theory of Economic Growth'. *Quarterly Journal of Economics*, 70 (1): 65-94.
- Solow, R. (1957). 'Technical Change and the Aggregate Production Function'. *Review of Economics and Statistics*, 39 (3): 312-20.

- Teece, D. J. (1993). 'The Dynamics of Industrial Capitalism: Perspectives on Alfred Chandler's "Scale and Scope" '. *Journal of Economic Literature*, 31 (1): 199-225.
- Thurik, A. R. (2009). 'Entreprenomics: Entrepreneurship, Economic Growth and Policy'. In Z. J. Acs, D. B. Audretsch and R. Strom (eds), *Entrepreneurship, Growth and Public Policy*. Cambridge: Cambridge University Press.
- Thurik, A. R., A. R. M. Wennekers, and L. M. Uhlaner (2002). 'Entrepreneurship and Economic Growth: A Macro Perspective'. *International Journal of Entrepreneurship Education*, 1 (2): 157-79.
- Thurik, A. R., M. A. Carree, A. van Stel, and D. B. Audretsch (2008). 'Does Self-employment Reduce Unemployment?'. *Journal of Business Venturing*, 23 (16): 673-86.
- Vernon, R. (1970). 'Organization as a Scale Factor in the Growth of Firms'. In J. W. Markham and G. F. Papanek (eds), *Industrial Organization and Economic Development*. Boston: Houghton Mifflin, 47-66.
- WEF (World Economic Forum) (2007). *Global Competitiveness Report 2007-2008*, Geneva: WEF.
- Wennekers, A. R. M., L. M. Uhlaner, and A. R. Thurik (2002). 'Entrepreneurship and its Conditions: A Macro Perspective'. *International Journal of Entrepreneurship Education*, 1 (1): 25-64.
- Wennekers, S., A. van Stel, R. Thurik, and P. Reynolds (2005). 'Nascent Entrepreneurship and the Level of Economic Development'. *Small Business Economics*, 24 (3): 293-309.
- Whyte, W. H. (1960). *The Organization Man*. Hammondsworth: Penguin.
- Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: The Free Press.
- Young, A. (1998). 'Growth without Scale Effects'. *Journal of Political Economy*, 106 (1): 41-63.