Entrepreneurship in the Netherlands

The Top sectors
Colophon

This publication forms part of a series relating to entrepreneurship and small businesses.

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Preface

Entrepreneurship, innovation and internationalisation have been key drivers behind the economic prosperity of The Netherlands. Through continuous innovation and an open mindset to internationalisation, Dutch entrepreneurs have succeeded in making the Netherlands one of the most productive and competitive economies in the World.

After a period of economic turmoil, we are now slowly seeing signs of recovery. In regaining higher structural growth, Dutch entrepreneurs will evidently play a crucial role. It is through entrepreneurs, both existing and new, that new business opportunities are sought out and exploited. It is through entrepreneurs that innovations are brought to the market, raising productivity, creating jobs and increasing living standards.

The Netherlands offers a promising environment for entrepreneurs. Our country belongs to the 20 largest economies of the world, has one of the highest levels of labour productivity and is consistently ranked among the top-10 of the World’s most competitive economies. Key strengths of the Netherlands are enabling conditions such as an excellent physical and ICT infrastructure, sophisticated companies with an international orientation and an excellent educational system. As this report shows, in terms of entrepreneurship The Netherlands has become the most entrepreneurial economy of all the innovation driven economies in the EU-28 over the last decade.

Maintaining an internationally competitive business environment requires permanent effort. This is why the Dutch government launched a new enterprise policy consisting of two tracks in 2010. The first track focuses on excellent framework conditions as they apply to all enterprises. More specifically this track is an “economic agenda” that strengthens the innovation framework, reduces the burden of regulation, improves access to finance and ensures a better match between the education system and the labour market. The second track acknowledges the government’s role in building multi-actor eco-systems that can deliver an above average contribution to economic growth and prosperity. The top sector approach brings together entrepreneurship and innovation in a single integrated approach. Efforts are focused on nine top-sectors that are knowledge-intensive (R&D), export-oriented and have the potential to make an important contribution to solving societal challenges worldwide. To use their resources most effectively, businesses, knowledge institutions and the government (the triple helix) work closely together and coordinate their efforts.

This eleventh edition of Entrepreneurship in the Netherlands focuses on the top sector policy track of the Government’s new enterprise policy. Interesting about this report is that it combines insights into top sectors with insights into the relevance of entrepreneurship including start-ups. This is interesting because our new enterprise policy, including the top sector policy track, focuses both on supporting and enabling new ideas from startups and entrepreneurs, while building on proven strengths of the Dutch economy.
We are confident that this edition of Entrepreneurship in the Netherlands will contribute to an improved understanding of the importance of Entrepreneurship and top sectors for the Dutch economy.

Guido Landheer
Director Top Sectors and Industrial Policy Department

and

Pieter Waasdorp
Director Entrepreneurship
Introduction

In 1997, the first edition in the series ‘Entrepreneurship in the Netherlands’ was published. This series is a co-production of the Ministry of Economic Affairs, Panteia/EIM and international experts. For each edition, a thematic field of interest regarding SMEs and entrepreneurship is studied in-depth such as nascent entrepreneurship, fast-growing enterprises and high tech start-ups. An overview of all editions is provided below. This eleventh edition deals with Top sectors and their importance to the Dutch economy. In 2010, the Dutch government introduced a new policy framework regarding the business sector. Besides generic measures to strengthen the business environment for all companies, there is a specific policy track to improve the performance of a number of important business sectors by building excellent eco-systems of government, knowledge institutes and businesses. Products and technologies produced by these sectors are furthermore important because they can provide solutions for societal problems.

The report is set up as follows. In chapter 1, dr. Sander Wennekers of Panteia analyses the entrepreneurship performance of the Netherlands at present and in an international perspective. Particular attention is given to the interaction between entrepreneurship and the innovativeness of the Dutch business sector. Dr. Henry van der Wiel and Huib van der Kroon of the Dutch Ministry of Economic Affairs explain how top sectors policy should be seen as a complementary policy track to the more generic measures the Ministry takes to improve the business environment as a whole. Its particular focus is on interventions that build systems, create networks and align strategic priorities. Working from recent insights on modern industrial policy, the rationale behind the policy as well as some first insights on target areas of top sector policy such as research and innovation, human capital, sector specific regulatory frameworks and internationalisation are discussed.

In chapter 3, Sanne Blankestijn, Nicolette Tiggeloove and Jacqueline Snijders of Panteia describe the empirical evidence behind the policy on top sectors. What do we know about enterprises, and in particular SMEs in the top sectors? How do they differ from enterprises in other sectors?

Finally in chapter 4, dr. Dirk Pilat, Dan Andrews, Chiara Criscuolo, Peter Gal and Carlo Menon of the OECD explore important features of the role of entrepreneurship and business dynamics in different OECD countries, notably in the Netherlands. Specific attention is given to the role of differences in policies and framework conditions, and the implication for the Dutch business sector policy, including the role of the top sector approach.

This report is prepared in the context of the research programme SMEs and Entrepreneurship carried out by Panteia and financed by the Dutch Ministry of Economic Affairs.

For more information on the studies carried out under this programme, see http://www.topsectorenonderzoek.nl/

The editors thank dr. Dirk Pilat, dr. Sander Wennekers, Nicolette Tiggeloove, Sanne Blankestijn, Dan Andrews, Chiara Criscuolo, Peter Gal and Carlo Menon for their contribution to the project.
The editors
Dr. Henry van der Wiel, Huib van der Kroon and Jacqueline Snijders

Subjects and authors previous editions
In the following overview the subjects of the first 10 editions are given, including the authors that were involved.

Table A  Overview of first 10 editions

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Expert(s)</th>
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<td>New firms: the key to competitiveness and growth</td>
<td>David Audretsch</td>
<td>Sander Baljé</td>
<td>Cees van Gent</td>
<td>Jacqueline Snijders</td>
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<td>1999</td>
<td>Ambitious entrepreneurs: the driving force for the next millennium</td>
<td>Bruce A. Kirchoff</td>
<td>Pieter Waasdorp</td>
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<td>Alan Hughes</td>
<td>Astrid van der Laag</td>
<td>Marcel Kreijen</td>
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<td>Carl Schramm</td>
<td>Mieke Bakkenes</td>
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<td>and Sanjay Goei</td>
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1 Entrepreneurship in the Netherlands in international perspective

Sander Wennekers

1.1 Introduction

The main goal of this chapter is to present some available entrepreneurship performance indicators of the Netherlands, in a historical perspective, and to benchmark these achievements with international indicators. The performance indicators are partly chosen on the basis of availability of international benchmarking data, but they are also selected on the basis of meaningful interrelationships. Together, the chosen entrepreneurship indicators and some added contextual variables may be viewed as part of a causal chain towards explaining macro-economic performance in terms of business dynamics, firm growth and innovation, and ultimately productivity growth and economic growth. In a highly schematic and simplified manner this is indicated in figure 1.1.

Before explaining the framework in some detail, this section first pays attention to two relevant levels of analysis, i.e. the individual level and the firm level. Individuals as well as businesses can behave entrepreneurially (Zahra et al., 1999). When entrepreneurial individuals operate a business for their own account and risk, they are called independent entrepreneurs or business owners. Entrepreneurial individuals who are employed by an existing firm are usually known as ‘intrapreneurs’. These entrepreneurial employees make an important contribution to firm-level entrepreneurship, which is also known as corporate entrepreneurship (Stevenson and Jarillo, 1990; Sharma and Chrisman, 1999). Secondly, at the firm level it is essential to distinguish between new businesses and existing businesses. Their distinctive contributions to innovation are discussed in section 1.4 of the present chapter. The distinction between new and existing businesses also plays a key role in chapter 4, which is devoted to entrepreneurship, business dynamics and experimentation. The distinction is therefore also relevant for a discussion of the Dutch top sectors policy,
which is the main subject of chapter 2. Furthermore, it should be pointed out that existing businesses include businesses that are operated by independent business owners as well as listed companies and their subsidiary firms. In the literature, corporate entrepreneurship is usually studied in the context of these listed companies, but intrapreneurship obviously can also take place within independently owned businesses.

As for the framework in figure 1.1, reading it from right to left, it first marks business dynamics and innovation as indicators that impact on economic growth. Innovations can be introduced by new business start-ups and through entrepreneurship in existing firms. Many innovations, be they process, organizational, product or marketing innovations, affect productivity either in a direct or an indirect way (Mohnen and Hall, 2013). New business start-ups, new products and new business ideas also enhance the degree of competition in an economy, triggering “… a restructuring of the economy through a wide array of reactions including … business exits, mergers, re-engineering (diffusion), and new innovations by incumbents” (Thurik et al., 2002: 164). Ultimately, selection of the most viable firms and the best ideas leads to a restructuring of the economy. At the aggregate level of industries, regions and national economies these processes may lead to higher productivity and to economic growth. In addition, other variables such as capital deepening, which are not indicated in the figure, co-determine productivity and economic growth. Finally, at the left hand side of the scheme, two contextual indicators in the area of education and knowledge creation are marked. While these are crucial conditions for successful innovative and ambitious entrepreneurship, firm growth and productivity development, they are obviously not the only variables that matter. Other important framework conditions for innovative and ambitious entrepreneurship are access to finance (Schneider and Veugelers, 2012) and ‘offensive entrepreneurship policy’ (Kuiper, 2011). These conditions are not explicitly incorporated in the framework, but they are dealt with in the other chapters of this report.

**Types of entrepreneurship and data sources**

Table 1.1 first summarizes the distinction between new businesses and existing businesses, and between independent entrepreneurship and corporate entrepreneurship, as discussed before. In addition, the table introduces three further subdivisions of independent entrepreneurship that play a role in the present chapter. Each subdivision is a dichotomy. All types and subdivisions are discussed below. This section also discusses the data sources used for measuring the various types of entrepreneurship, including Panteia/EIM’s Compendia database, the Global Entrepreneurship Monitor, the Panteia/EIM International Benchmark Entrepreneurship database, and various indicators from Statistics Netherlands (CBS) and OECD.
Table 1.1 Relevant types of entrepreneurship

<table>
<thead>
<tr>
<th>Two major dichotomies</th>
<th>Existing businesses</th>
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<tbody>
<tr>
<td>New businesses</td>
<td>Corporate entrepreneurship</td>
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<tr>
<td>Independent entrepreneurship (business ownership)</td>
<td>(intrapreneurship)</td>
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<tr>
<td>Subdivisions of independent entrepreneurship*</td>
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<tr>
<td>Solo entrepreneurs</td>
<td>Entrepreneurs with personnel</td>
</tr>
<tr>
<td>Replicative entrepreneurs</td>
<td>Innovative entrepreneurs</td>
</tr>
<tr>
<td>Non-ambitious entrepreneurs</td>
<td>Ambitious entrepreneurs</td>
</tr>
</tbody>
</table>

*These subdivisions may relate to both early-stage and incumbent entrepreneurs.
Source: Panteia 2014.

As for the distinction between new businesses and existing businesses, it is useful to be aware of some related concepts. First, early-stage entrepreneurial activity includes the activities of nascent entrepreneurs, i.e. people who are actively trying to establish an enterprise which they will themselves own and manage, and the activities of owner-managers of young businesses (see the reports of the Global Entrepreneurship Monitor on www.gemconsortium.org). Secondly a related concept is new business start-ups, which is usually based on an annual count of new business registrations. Thirdly, incumbent entrepreneurship refers to independent owner-managers of existing businesses, which may be defined in various ways, i.e. including or excluding young businesses. In this chapter we will use the COMPENDIA database for measuring incumbent entrepreneurship (Van Stel, 2005). This measure includes owner-managers of both young and established businesses. Finally, as said before, existing businesses also include listed companies and their subsidiaries.

The distinction between independent entrepreneurship, also known as business ownership or self-employment on the one hand, and corporate entrepreneurship, also known as intrapreneurship or entrepreneurial employee activity, represents the two major ‘modes of exploitation’ of entrepreneurial opportunities recognized in the entrepreneurship literature (Shane and Venkataraman, 2000), i.e. through the creation and growth of independently owned enterprises and through activities of employees within and on behalf of existing organizations.

Three subdivisions of independent entrepreneurship

Next, within the realm of independent entrepreneurship we will make three subdivisions, i.e. between solo entrepreneurs and entrepreneurs with personnel, between replicative and innovative entrepreneurs, and between non-ambitious and ambitious entrepreneurs. These distinctions are relevant for this chapter, because the various types have a quite distinctive impact on productivity, economic growth and job creation. In particular, innovative and high growth start-ups are important in this respect (Shane, 2009; Van Praag en Stevens, 2010).
First, we distinguish between business owners with personnel (employers) and those without personnel, usually known as own account workers or solo self-employed (Wennekers et al., 2010). Only recently internationally comparable time series data distinguishing between business owners with and without personnel have become available (Van Stel et al. 2014).

A second distinction is between replicative entrepreneurship and innovative entrepreneurship. Replicative entrepreneurship may be characterized by routines, competencies and/or products that vary only minimally, if at all, from those of existing organizations. By contrast, innovative entrepreneurs differ significantly in these aspects from existing organizations in the particular market they enter (Koellinger, 2008). Based on these distinctions, the Global Entrepreneurship Monitor includes several indices measuring the degree of innovativeness of early-stage entrepreneurs.

Finally, a relevant distinction is related to entrepreneurial ambitions. Stam et al. (2012: 24-25) discuss several types of ambitions, including making money, hiring employees, and making a societal contribution. Here we will focus on the firm growth ambitions of entrepreneurs. Do they mainly aim at firm survival (i.e. non-ambitious entrepreneurship) or do they want to grow their firms (i.e. ambitious entrepreneurship)? Strictly speaking there is no internationally comparative information about the growth ambitions of early-stage entrepreneurs, but there are GEM data about their growth expectations. Another relevant indicator relates to fast growing existing firms and is taken from the Panteia/EIM International Benchmark Entrepreneurship database. It should be pointed out that in practice ambitious entrepreneurs will often also be innovative (Van Praag en Stevens: 133), but this is not necessarily the case. Firm growth can also be based on the successful implementation of a replicative business model.

### 1.2 Historical setting

Since the 1990s entrepreneurship has been a hot topic. However, this has not always been the case. Since the 19th century and up to the 1970s (UK; USA) or the 1980s (Netherlands; Germany) independent entrepreneurship (also known as business ownership or self-employment) was a ‘declining industry’. See table 1.2 below for some illustrations of this long decline.

<table>
<thead>
<tr>
<th>Year</th>
<th>Sweden</th>
<th>US</th>
<th>Germany</th>
<th>Netherlands</th>
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<td>1900</td>
<td></td>
<td></td>
<td>35*</td>
<td>26</td>
</tr>
<tr>
<td>1950</td>
<td></td>
<td>31</td>
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<td>17</td>
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<td>17</td>
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<td>29</td>
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<tr>
<td>1970</td>
<td>11</td>
<td>10</td>
<td>17</td>
<td>13**</td>
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* Interpolation.
The historical decline of entrepreneurship was related to both a strong and prolonged decline of employment in agriculture, a sector where self-employment dominates, and a decline of self-employment in virtually all other sectors of the economy. Underlying reasons were first and foremost the increasing exploitation of scale economies in production, transport and distribution (Wennekers et al., 2010). Secondly, rising wage levels enhanced the opportunity costs of self-employment and induced ever more ‘marginal’ entrepreneurs to become employees (Lucas, 1978).

The last quarter of the 20th century brought a revival of independent entrepreneurship in many OECD countries, and in most countries but not all this continued in the early 21st century. In recent years we also see a related decline in lifelong employment and an increase in ‘precarious work’ (Kalleberg, 2009). The timing of the revival of independent entrepreneurship (business ownership) however differs across countries (see figure 1.2). The Netherlands were in the middle cohort of countries where the revival started in the mid 1980s, while the US acted as a frontrunner from the early 1970s onward, and in France self-employment did not revive until the early 21st century.

In general, the gradual advance of a service economy, differentiation of consumer preferences, a global trend towards outsourcing and the worldwide diffusion of new information and communication technology are among the major driving forces of the apparent revival of self-employment or, equivalently, independent entrepreneurship. At the supply side an increasing appreciation of (job) autonomy and self-actualization may also play a role. For a more extended analysis of this revival see Wennekers at al. (2010).

Figure 1.2 The proportion of business ownership, excluding agriculture, in the labor force (in %), in France, Netherlands and USA, 1972-2012

Source: Panteia/EIM, Compendia (www.ondernemerschap.nl).
1.3 The state of entrepreneurship in the early 21st century

Incumbent business ownership
We will first benchmark the number of incumbent business owners in the Netherlands. For the latter country estimates are already available for 2012 (see figure 1.2), but the most recent harmonized data for a large group of OECD countries pertain to the year 2011 (see figure 1.3).

With a business ownership rate of 12% Netherlands now performs near the average of the OECD area. This is quite a difference from the eighties and early nineties of the last century, when the Netherlands still seriously lagged behind in terms of independent entrepreneurship, as was pointed out before.

A relevant question in this respect is whether ‘more entrepreneurship is better’ or whether there are indications for the existence of an optimal self-employment rate. In that respect it is also relevant to note that in the Netherlands about 70% of business owners are solo self-employed, i.e. business owners without personnel (see figure 1.4; data for 2008, which are the most recent data available). This share for the Netherlands is 6%-points up from 1992. As figure 1.4 also shows, the share of solo self-employment in the sample varies between a lowest value of almost 50% (France) and a highest value of around 78% (UK).

![Figure 1.3 The proportion of business owners, 2011, excl. agriculture (in % labor force)](source: Panteia/EIM, Compendia (www.ondernemerschap.nl)).
Entrepreneurship in the Netherlands

The causes of the rise of solo self-employment partly overlap with the causes of the rise of self-employment in general, as discussed in section 1.2, but they also include specific factors. One such factor is a growing trend for employer firms to subcontract to own account workers. This is often done to increase flexibility and “to reduce wages and other financial obligations such as continued wage payment during slack, illness and maternity leave as well as employers’ contributions to social security” (Wennekers et al., 2010: 206). According to Beck (2000) the Western world now even faces a gradual disappearance of the ‘job for life’ and a ‘reversal to premodernity’ where many individuals are engaged in various labor market activities including part time jobs and self-employment. Secondly, at the supply side economic development may influence the prevalence of solo self-employment through its effect on human motivations. While basic material and social needs are more prominent at low and medium levels of development, at a high level of prosperity a need for autonomy and self-realization comes to the fore (Maslow, 1970). For some this need for autonomy will make solo self-employment an attractive option (Wennekers et al., 2010). Finally, fiscal exemptions for self-employed persons may have played a role in stimulating the number of (solo) self-employed, particularly in the Netherlands (van Es and van Vuuren, 2010; Van Praag and Stevens, 2010).

While the solo self-employed contribute to the flexibility of the economic system (Burke, 2011), and may act as a buffer for cushioning exogenous shocks in the labor market, there is very little empirical evidence on the contribution of the solo self-employed to the economic growth rate (Van Stel et al., 2014). A recent study in four sectors of industry in the Netherlands suggests that many solo self-employed are only somewhat more productive than employees (SEO, 2010). Also, the solo self-employed

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**Figure 1.4** Solo self-employed as percentage of total number of business owners, 2008

Source: Eurostat and domestic sources, adapted by Panteia/EIM.
have themselves only limited possibilities to exploit scale economies, mainly through cooperating in joint projects with other solo self-employed. Finally, it is important to note that the solo self-employed are a heterogeneous category and differ in motivation, in degree of autonomy and in ambition (De Vries et al., 2013).

Van Stel et al. (2014) estimate an extended version of a three-equation model of Carree et al. (2002) where deviations from an ‘equilibrium’ rate of self-employment play a central role determining both the growth of self-employment and the rate of economic growth. In particular, they distinguish between solo self-employed and employer entrepreneurs, and allow for different ‘equilibrium’ relationships of these two types of independent entrepreneurship with the level of economic development. Using data for 26 OECD countries over the period 1992-2008, they find an ‘equilibrium’ rate of solo self-employment of around 7% of the labor force that seems to be independent of the level of economic development. Regarding the impact of deviating, they find that both positive and negative deviations from the ‘equilibrium’ solo self-employment rate may diminish economic growth. In that sense the equilibrium rate of solo self-employment may also act as an optimal rate. For employer entrepreneurs they do not find such a growth penalty. While these findings have to be interpreted with caution, they do indicate that policy makers are well advised to monitor the number of solo self-employed. Apparently, while a shortage of (solo) self-employed may hurt flexibility, competition and dynamism, on the other hand a glut of (solo) self-employed may be detrimental for macro-economic efficiency and for the exploitation of scale economies (Van Stel et al., 2014). In the case of the Netherlands, where the total self-employment rate has now reached a level of 12% of the labor force, while the rate of solo self-employment is now in an order of magnitude of 8%, the current emphasis on stimulating ambitious entrepreneurship and firm growth appears to be a very sensible policy.

Early-stage entrepreneurship
Next, we benchmark ‘entrepreneurship dynamics’ in the sense of gross change in self-employment as measured by the so-called ‘total early-stage entrepreneurial activity’ rate (TEA), collected by the Global Entrepreneurship Monitor (GEM). TEA consists of nascent entrepreneurs and of owner-managers of new businesses. Specifically, the group of nascent entrepreneurs refers to individuals within the adult population (18-64 years of age) who are currently trying to start a new business. For this start-up effort, the individual expects to own at least a part of this new business, and salaries or wages have not yet been paid for the past three months. Owner-managers of new businesses are currently involved in owning and managing a new business for which salaries or wages have been paid for between 3 and 42 months, while new solo self-employed individuals deriving an income from their business are also included.

As Table 1.3 shows, the Netherlands have come a long way from performing below average in terms of early-stage entrepreneurship in 2002-2004, to reaching a prominent position within a group of benchmark countries since 2010, no longer very far behind the US TEA-rate. In 2012 the Netherlands were even first of class in the EU-15 area with a TEA-rate of 10.3.
Table 1.3  Early-stage entrepreneurship (TEA) in % adult population 18-65 years, in 2002-2004 and 2010-2012

<table>
<thead>
<tr>
<th></th>
<th>Netherlands</th>
<th>Benchmark group</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-2004</td>
<td>4.4</td>
<td>5.3</td>
<td>11.3</td>
</tr>
<tr>
<td>2010-2012</td>
<td>8.6</td>
<td>6.1</td>
<td>10.9</td>
</tr>
</tbody>
</table>

Source: Panteia/EIM based on Global Entrepreneurship Monitor.

Ambitious early-stage entrepreneurship

But how should we assess the ambitions of these early-stage entrepreneurs with respect to the growth of their businesses? Here we will use their growth expectations as a proxy. Table 1.4 presents the percentage of early-stage entrepreneurs with medium and high expectations for the future growth of their firm, as a % of all early-stage entrepreneurs. Medium growth expectations refer to those who expect to employ between 5 and 19 people five years from now, while high growth expectations refer to early-stage entrepreneurs expecting to employ at least 20 people. Together these two categories stand proxy for ‘ambitious entrepreneurship’, while their complement (start-ups with no or low growth expectations) represent ‘non-ambitious entrepreneurship’. In the area of growth expectations the Netherlands consistently rank somewhat modestly compared with the group of innovation-driven economies, as is shown in table 1.4 with respect to the years 2008-2012. This observation seems very well compatible with the high percentage of solo self-employed in the Netherlands discussed before.

Table 1.4  Percentage early-stage entrepreneurs with medium and high growth expectations, in % of all early-stage entrepreneurs

<table>
<thead>
<tr>
<th></th>
<th>Netherlands</th>
<th>Innovation-driven economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-2010</td>
<td>31</td>
<td>36</td>
</tr>
<tr>
<td>2011-2012</td>
<td>30</td>
<td>39</td>
</tr>
</tbody>
</table>

Source: Panteia/EIM based on Global Entrepreneurship Monitor.

The rate of intrapreneurship

As discussed in a previous section, entrepreneurship is a multi-dimensional concept, involving many different actors and several levels of analysis. One important distinction contrasts independent (early-stage) entrepreneurial activity by individuals owning and managing a business for their own account and risk with opportunity pursuit within existing organizations, also known as entrepreneurial employee activity (EEA), corporate entrepreneurship or intrapreneurship. Recently, a special topic study based on the Global Entrepreneurship Monitor (GEM) 2011 database, focused on entrepreneurial employees. Thereby the study was able to produce the first broadly international comparison on entrepreneurial employee activity, defined as ‘employees developing new activities for their main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary’. This definition is wider than new organization creation, but it excludes employee initiatives that mainly aim at optimizing internal work processes.
Entrepreneurial employees are not very numerous. On average across the sample of 52 countries just below 3% of the adult population, and 5% of employees, are currently actively involved and have a leading role in the creation and development of new activities for their main employer. Entrepreneurial employee activity is most prevalent in innovation-driven economies, and within this group of countries the Netherlands together with Belgium and some Scandinavian countries were found to have the highest EEA-rates. For the Netherlands an EEA-rate of 5.6% of the adult population was found (see table 1.5). This implied a rate of 7.3% with respect to the number of employees in the sample.

On average about two-thirds of entrepreneurial employee activity takes place in the private or for-profit sector, so one-third of entrepreneurial employees are to be found in organizations in the government and the not-for-profit sector. In the Netherlands public sector EEA has a share of about 40%. Apparently entrepreneurial behavior is not only not restricted to independent entrepreneurs, but is also not restricted to private, commercial activities. While entrepreneurial employees are active in all size classes of organizations, EEA prevalence rates are somewhat higher in large organizations than in small ones. This holds particularly for the innovation-driven economies, including the Netherlands.

<table>
<thead>
<tr>
<th>Factor-driven economies</th>
<th>Efficiency-driven economies</th>
<th>Innovation-driven economies</th>
<th>OECD</th>
<th>EU</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEA</td>
<td>13.4</td>
<td>14.1</td>
<td>6.9</td>
<td>8.2</td>
<td>7.6</td>
</tr>
<tr>
<td>EEA</td>
<td>0.3</td>
<td>1.8</td>
<td>4.6</td>
<td>4.2</td>
<td>4.5</td>
</tr>
<tr>
<td>EEA in private sector</td>
<td>0.2</td>
<td>1.2</td>
<td>2.9</td>
<td>2.7</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Source: van der Zwan et al. (2012: 49).

Entrepreneurial employees were also found to have more entrepreneurial perceptions and attitudes than other employees. However, in the Netherlands entrepreneurial employees have only a slightly lower fear of failure than other employees, and their fear of failure is substantially higher than is the case for the self-employed. The entrepreneurial employees are also less likely than the self-employed to feel they have the required skills and knowledge to start a business (van der Zwan et al., 2012: 56-57). Nonetheless, entrepreneurial employees were also found to be far more likely than other employees to have intentions to start a new business in the next three years. And the incidence of nascent entrepreneurship is also substantially higher for entrepreneurial employees than for other employees. Taking nascent entrepreneurs and individuals with start-up intentions together (and assuming no double counts), it appears that in the innovation-driven economies 29% of the entrepreneurial employees find themselves somewhere near or on the threshold towards self-employment, as
Entrepreneurship in the Netherlands 19

compared to 13% of other employees. The figures for the Netherlands (respectively 24% and 11%) are somewhat lower than the averages for the innovation-driven economies. This may reflect their more conservative assessments of their entrepreneurial skills and their relatively high fear of failure (van der Zwan et al., 2012: 57).

1.4 R&D, education and innovative entrepreneurship

R&D expenditures

Investments in research and development (R&D) are a crucial input for innovation, but these transmissions are not automatically guaranteed and they require entrepreneurial activities in order to be effectuated. Put otherwise, investments in R&D made by corporations (private R&D) and by universities and other knowledge centers (public R&D) first need to ‘spill over’ for economic exploitation by entrepreneurial agents. These agents can be entrepreneurial employees within the company or institute making the R&D investment (Stam, 2013), but also agents outside the R&D-investing organizations. Innovative activity in new enterprises is often based on spillovers from universities, while innovations in large firms are primarily based on knowledge created in their own laboratories (Acs et al., 1994). The latter mechanism is also known as the Schumpeter Mark II regime, while the former mechanism is known as Schumpeter Mark I (Schumpeter, 1911; Schumpeter, 1942; Carree et al., 2002). However, according to the so-called ‘knowledge spillover theory of entrepreneurship’ (Acs et al., 2009) new business startups also create knowledge spillovers from private R&D not appropriated by incumbent firms. This may happen when, due to information asymmetries and other divergences, entrepreneurial employees possessing new knowledge leave their job and start a new enterprise based on that knowledge (Wennekers et al., 2010: 212-213).

In addition it should be noted that radical innovations often originate in entrepreneurial start-ups with access to spillovers from the stock of knowledge, while large incumbent firms predominantly provide the stream of incremental innovations and product improvements (Baumol, 2004; Acs et al., 2009). Accordingly the Schumpeter Mark I regime is sometimes indicated as ‘creative destruction’, and the Schumpeter Mark II regime as ‘creative accumulation’ (Wennekers, 2006: 120).

Stam (2013) emphasizes the importance of entrepreneurial activities of employees within incumbent firms. Using a new international dataset (Bosma et al., 2012), he finds strong positive correlations between several innovation indicators and a newly developed indicator of ‘entrepreneurial employee activity’ (for a definition see the previous section). He argues that attention should be redirected to a “‘broad’ version of the knowledge spillover theory of entrepreneurship …, in which the knowledge exploitation efficiency of incumbents is one of the central variables”. These results seem particularly relevant for the Netherlands with its strong prevalence of entrepreneurial employee activity, and is also relevant for discussions about the Dutch top sectors policy in which large incumbent firms have a major role (see chapters 2 and 3 of the present report).
With these theoretical notions and empirical findings in mind, we will now take a look at the R&D performance of the Netherlands, primarily based on the Main Science and Technology Indicators published by the OECD (see OECD, 2013a). Over the two past decades the R&D intensity of the Dutch economy, measured as gross domestic expenditures on R&D as % of GDP, slowly declined from a level of around 2% in 1995 to a low point of 1.8% in 2008, and ever since gradually climbed up to an estimated level of 2.2% in 2012. However, during all those years R&D intensity of the Netherlands remained somewhat below the OECD average, and far below the R&D intensity in countries like Germany and Finland. A second structural characteristic of research and development in the Netherlands is the high percentage of R&D expenditures performed by higher education (about 40%) and government (about 12%). Accordingly the percentage of R&D expenditures performed by industry remains just below 50% (http://www.oecd.org/sti/sci-tech/keyFigures_20112_1_EN.pdf), while the corresponding figure for the whole OECD area is about 67%. As a result private R&D intensity (expenditures on R&D by the business enterprise sector as % of GDP) of the Netherlands is structurally and substantially lower than that of the OECD area as a whole. A decomposition analysis shows that for one-third this difference can be ascribed to a lower R&D-intensity in individual sectors, while for two-thirds it is due to the specific sector structure of the Dutch economy (EIM, 2011a).

Given the findings of the literature, as discussed earlier in this section, the relative weak R&D performance of the Netherlands is a drawback for innovative entrepreneurship by incumbent firms as well as new start-ups. On the other hand, it was also noted that in recent years the R&D performance has improved. In addition, the relative importance of R&D performed by universities provides an excellent platform for innovative new business start-ups in the Netherlands. However, the actual performance in this domain also depends on other conditions, such as knowledge circulation (WRR, 2013) and access to finance.

Education
The educational level of the population is another important input for entrepreneurial performance (van der Sluis et al., 2005), as well as for innovation and economic growth (Aghion et al., 2009). A well-known index for international comparison in this field is ‘years of schooling’. In this respect, enrollment in tertiary education was found to be important for firm growth (Teruel and de Wit, 2011). In addition, a study by Aghion et al. (2009) shows investment in tertiary education to have positive effects on innovation.

However, a recent World Bank study concludes that there is strong evidence that the cognitive skills of the population, rather than mere school attainment, are positively related to economic growth (Hanushek and Wößmann, 2007). An international benchmark that comes closer to measuring knowledge and competence levels is provided by the three-annual PISA investigation (Programme for International Student Assessment) carried out by the OECD. This investigation measures the student performance of 15 year olds in reading, mathematics and science. The last PISA investigation was carried out in 2012. Some of the key findings for the Netherlands in the four investigations during 2003-2012 are presented in table 1.6.
Briefly summarized these findings show the following. For mathematics the figures show high but slowly declining absolute and relative performance levels of Dutch secondary school students. For reading and science, the Dutch students’ performance remains high in an absolute sense, but for these domains a decline of the Netherlands’ relative position to 15th and 14th place respectively must also be noted. These trends act counter to the policy ambition of a ranking for the Netherlands within the top-5 (SLO, 2010). The trends may also be viewed as an early warning for the future perspective of more high-performance entrepreneurship in the Netherlands. For a broad and partly critical review of the Dutch educational performance also see WRR (2013: 260-262).

<table>
<thead>
<tr>
<th>Table 1.6</th>
<th>Key findings PISA, Netherlands versus OECD average, 2003-2012</th>
<th>(absolute scores and between brackets the relative ranking of the Netherlands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>513 (9)</td>
<td>507 (10)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>538 (4)</td>
<td>531 (5)</td>
</tr>
<tr>
<td>Science</td>
<td>524 (8)</td>
<td>525 (9)</td>
</tr>
</tbody>
</table>

Source: OECD (2013b); SLO (2010).

**Innovative early-stage entrepreneurship**

The Global Entrepreneurship Monitor also provides data which measure a relevant aspect of innovative entrepreneurship, i.e. the degree of product innovation of early-stage entrepreneurs. To this purpose all early-stage entrepreneurs in the GEM sample are asked how many customers consider their product or service new or unfamiliar. Three levels of product innovation are distinguished: products/services that are unfamiliar/new to all (potential) customers, products/services that are unfamiliar to some (potential) customers, and products/services that are unfamiliar to no customers at all.

Table 1.7 presents the percentage of early-stage entrepreneurs that indicate that their product is new to all or some customers, for the Netherlands compared with all innovation-driven economies. As can be seen from the table the Netherlands seem to have improved in this respect (2010-2012 versus 2002-2004), but they are still not a frontrunner in this domain.

<table>
<thead>
<tr>
<th>Table 1.7</th>
<th>Nascent and new business entrepreneurs reporting product innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Netherlands</td>
</tr>
<tr>
<td>2002-2004</td>
<td>30</td>
</tr>
<tr>
<td>2010-2012</td>
<td>43</td>
</tr>
</tbody>
</table>

Source: Panteia/EIM based on Global Entrepreneurship Monitor.
1.5 Firm growth

High-growth firms have been shown to be a key factor for economic growth and structural change. They contribute to the business dynamics of the economy, they facilitate the introduction of innovation, accelerate the development of new technologies, they contribute to productivity growth and they generate a large proportion of employment (Teruel and de Wit, 2011).

The International Benchmark Entrepreneurship composed by Panteia (Timmermans and Snel, 2012) provides information about the percentage of rapidly growing firms in a large sample of firms in the size class 50 - 1000 employees, where rapid growth is defined as at least 60% cumulative employment growth in 3 years. Data are available for the Netherlands and 10 reference countries including Finland, Germany and the US. In the period 2001-2005 the Netherlands were seriously lagging behind with a ranking near the bottom of the distribution. In recent years Dutch firms have on average improved their performance in terms of rapid growth, resulting in a somewhat above average ranking in 2007-2009, but still a long way from the top performance of US firms in this size class. In 2010 estimates indicate that Netherlands may have performed as the best of a group of 9 countries that however did not include the US.

A comparative empirical analysis of the driving forces (in 1999-2005) of the number of rapidly growing firms in a country, carried out by Teruel and de Wit (2011), shows that gross enrolment in tertiary education, opportunities for firm growth as measured by population size and GDP growth, and employment protection were among the main determinants of firm growth differences across countries. Of these the first two variables have a positive influence on firm growth, while the latter one was found to have a negative impact. These variables were also seen to explain the very modest firm growth performance of the Netherlands in the period 1999-2005.

Recently, another internationally comparative study focused on the growth of firms with 10 or more employees, in the years 2007-2010 (Snel and Timmermans, 2012). Here Netherlands ranked in the middle of a group of seven EU-countries (including Belgium, Denmark, Germany, Finland, France and the UK), with respect to the share of rapidly and steadily growing firms taken together. However, the share of slowly/moderately growing firms was found to be relatively low in the Netherlands, and the share of shrinking firms was relatively high. These observations, combined with a relatively high business start-up rate, suggest vital business dynamics in the Netherlands. Potentially these dynamics have a positive effect on productivity growth in the Netherlands, as documented by Verhoeven (2004). However, the growing percentage of solo self-employed among start-ups and the relatively modest firm growth expectations of early-stage entrepreneurs in the Netherlands, probably have reduced the size of this positive effect in recent years.

Snel and Timmermans (2012) also benchmark firm growth in the so-called ‘top sectors’ with the same group of countries. The conclusions are quite similar to those for the business sector as a whole. For more information on firm growth in the top sectors also see Ruis and Verhoeven (2012).
1.6 Conclusions

The past decades have shown a strong growth of the business ownership rate (excluding agriculture) in the Netherlands, from below 8% in the mid 1980s to about 12% in 2012. In recent years the Netherlands even attained a top position within the EU in terms of its early-stage entrepreneurial activity rate (TEA). However, the growth of the number of entrepreneurs since 1996 was mostly due to an increase in the number of solo self-employed without personnel (Panteia/EIM, 2011b). The number of independent entrepreneurs with personnel remained rather constant over that period. The percentage of solo self-employment is also relatively high by international standards, at 70% in the most recent year for which figures are available, 6%-points up from 1992.

At the same time the growth ambitions of early-stage entrepreneurs, as measured by the Global Entrepreneurship Monitor, are seen to be relatively modest compared to the group of innovation-driven economies as a whole. Consistent with this fact is the observation that, at least until recently, the percentage of fast growing firms has been relatively low by international comparison. However, since 2007 the Dutch performance with respect to the incidence of high-growth firms was seen to be slowly improving. Overall, business dynamics in the Netherlands appear to be relatively vital, although a positive effect on productivity may be diminished by the growing percentage of solo self-employed among start-ups and the relatively modest firm growth expectations of early-stage entrepreneurs.

While new business start-ups are crucial for the introduction of radical innovations, incumbent firms primarily generate the large stream of more incremental innovations that together play a key role in creating productivity growth (Baumol, 2004). This latter fact also points at the importance of corporate entrepreneurship for effectuating product and process improvements. In that domain a recent international study by the Global Entrepreneurship Monitor showed a high prevalence rate of (ambitious) entrepreneurial employees of incumbent firms in the Netherlands. At the same time the innovativeness of early-stage independent entrepreneurs in our country is ‘average’.

Two crucial inputs for innovative entrepreneurship are education and R&D. As for the former, the education performance of Netherlands is excellent but it was also seen to be slowly declining since 2003 as measured in the PISA-investigations carried out by OECD. Finally, R&D-expenditures of the Dutch business sector are relatively modest, although they have increased since 2008.

The facts and developments presented in this chapter clearly support the current policy emphasis on stimulating ambitious and innovative entrepreneurship. As for the top sectors policy, the analysis indicates the need for an unflattering attention for education and R&D in this domain.
Notes Chapter 1

1 The author is grateful to André van Stel, Wim Verhoeven and the editors of this volume, for their helpful comments and encouragement.

2 This scheme certainly does not claim completeness. For a more extensive analytical framework for explaining economic growth, see figure 2.1 in EZ (2013). For a review of the literature on the economic benefits and costs of entrepreneurship see Van Praag and Versloot (2008).

3 The benchmark group consists of Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Spain, Sweden, UK, Japan and USA.

4 Based on the World Economic Forum’s Global Competitiveness Report, The Global Entrepreneurship Monitor groups all participating countries into factor-driven, efficiency-driven and innovation-driven economies. In 2010, the latter category comprises of countries with a GDP per capita above 17,000 US$ (Hartog et al., 2011). Also see Bosma et al. (2012).

5 For a broader picture of the on the whole rather average innovation performance of the Netherlands in terms of several other indicators, see CBS (2013).

6 Consistent with this evidence, Millán et al. (2013) show that strong employment protection forms a barrier for own-account workers to hire their first employee.

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2 The policy of the Dutch government on top sectors

Henry van der Wiel and Huib van der Kroon

2.1 Introduction

The Netherlands is one of the most prosperous countries in the world with a strong competitive position. The former is reflected in a high GDP per capita and the latter in terms of a high level of labour productivity. According to the latest data from the Conference Board only four countries on the globe have a higher level of labour productivity per hour worked: Luxembourg, Norway, Belgium and the USA.

![Figure 2.1 Labour productivity](https://www.conference-board.org/)

Labour productivity is a good indicator of competitiveness because it measures the efficiency with which an economy uses inputs to produce outputs (goods and services). Improving labour productivity can therefore be seen as one of the most important goals for an economy, as it means that, relative to the amount of labour put in, more goods or services are created. More specifically: productivity growth is a crucial determinant of a country’s ability to increase its living standards.

The observation that the Netherlands has a competitive economy is also recognized by rankings that try to capture the complex concept of competitiveness in terms of the elements/factors that have been identified to drive it. An example of such a ranking is the global competitiveness index (GCI), in which the Netherlands has consistently held a top-10 position since measurement began. The GCI monitors competitiveness based on 12 dimensions for which data are gathered on as much as 144 indicators. The most recent verdict of the GCI for the Netherlands is as follows:
Following an upward trend on the GCI ranking, which lasted until 2012, the most recent edition however showed a decline in the position of the Netherlands. Although disappointing, this is a reminder that a good international competitive position requires continuous work in terms of shaping and maintaining the (framework) conditions that shape competitiveness. This becomes especially important considering that competitiveness itself is a relative concept, whereby developments in other countries can also result in a decline of the competitive position of the Netherlands. The challenge of a well performing economy in terms of competitiveness is especially felt in the current times, where unemployment has been high and GDP growth has been slow (to even negative).

Overall, the Dutch economy is highly productive due to some pronounced strengths. Dutch businesses are highly sophisticated (4th) and innovative (10th), and the country is rapidly and aggressively harnessing new technologies for productivity improvements (8th). Its excellent educational system (ranked 4th for health and primary education and 6th for its higher education and training) and efficient markets - especially its goods market (8th) - are highly supportive of business activity. ... Last but not least, the quality of its infrastructure is among the best in the world, reflecting excellent facilities for maritime, air, and railroad transport, which are ranked 1st, 4th, and 11th, respectively.

Source: Global Competitiveness Index, 2013.

Facing the challenge of maintaining or improving the competitive position of the Dutch economy, and improving its outcomes in terms of employment and GDP growth, the Ministry of Economic Affairs in 2010 launched a new Enterprise policy. At its core, this policy is a mix between shaping excellent framework conditions and special attention for strategic sub-sectors of the economy called top sectors. In this chapter we discuss the developments and insights leading to the current focus on top sectors and the role in this policy for entrepreneurship.

2.1.1 What drives national competitiveness and productivity?

As illustrated by the GCI of the World Economic Forum, competitiveness is a complex concept that is influenced by a great number of variables. The GCI recognizes 144 different competitiveness variables, ranging from an educated labour force to physical infrastructure. For this reason, it is good to realize that the “overall score” of the Netherlands is an aggregate of all these variables. Looking at these underlying variables we see that some dimensions contribute in a much more pronounced manner to Dutch competitiveness than do others. The insight here is that there is a more detailed story behind competitiveness and productivity at the aggregate level of a national economy in terms of the different contributions of the underlying elements.

Top sector policy takes into account this insight by recognizing that some sub-sectors (or subsystems) of the Dutch economy deliver an above-average contribution to the Dutch economy in terms of productivity, export and R&D. In addition, top sectors are also often explicitly related to social challenges. For instance the top sector “Water” deals with issues such as access to clean fresh (drinking) water and protecting people from rising sea levels. From a policy perspective the top sectors are also the sectors of the economy where there is a more explicit role for the government. Due to their link to societal challenges, but also because of the spillovers associated with technological innovation and market failures when it comes to obtaining finance.

The importance of certain sub-systems, clusters or sectors of the business economy - as described above - resonates clearly in the language of policy makers. Sleutelgebieden, spitzenclusters and pole-de-competitives: these are but a few examples of policymakers in different countries in Europe trying to identify and strengthen strategic sub-systems of the economy. Policy that takes a more selective approach to the economy is backed by increasing literature that points to the unequal contribution of different groups of firms to overall economic performance. A recent OECD paper noted that “the focus on average outcomes is misleading and thus heterogeneous firm models are becoming the main analytical workhouse and empirical research is increasingly focusing on the star performers which disproportionately drive productivity and job growth”. (Andrew et al. 2014)

Although there is considerable empirical evidence pointing to the unequal contribution of different groups of firms to the overall performance of the economy, it is far less clear cut what this means for economic policy. How specific can/should a government be in prioritizing certain sub-systems in the economy over others? And what would be appropriate actions/policy to support these sub-systems? When it comes to answering these questions, an often heard point of criticism is that government cannot predict the winners of the future. Admittedly, economic history is not without examples where this has indeed proven to be a bit of a problem. In the Netherlands airplane-building industry (Fokker) and shipbuilding (RSV) are classical examples (Velzing, 2013). At the same time the reality is that there is increasing pressure on governments to focus on areas with the highest potential impact (social/economical return on investment; additionality). This has spurred a renewed debate on industrial policy.
2.1.2 Top sector policy as an example of the renewed debate on industrial policy

The economic and financial crisis, and the government interventions that followed to contain its impact (bailing out banks with tax-payer money), have provided food for thought for an ongoing discussion about what a healthy and productive economy looks like. In many countries this has resulted in increasing interest for targeted (industrial) policies, such as advanced manufacturing, knowledge-intensive business services or the “green” economy, with the aim of fostering new sources of economic growth according to Warwick (2013). The financial crisis has raised (or renewed) the following concerns:

- Have growth trajectories of national economies been sufficiently balanced, with some sectors declining excessively and others taking too strong a role in economic growth?
- How effective is the market, especially the financial flows, in selecting the “right” sectors for sustained economic growth?
- Has the broader, systemic role of manufacturing been underestimated; has its decline lead to an irreversible loss of crucial knowledge and competences?

Although renewed industrial policy has many parallels with classic industrial policy, it has taken on a much broader scope. Broadly defined, new industrial policy can be seen as “any public sector intervention aimed at changing the distribution of resources across economic sectors and activities”. The goal of this kind of policy is to stimulate specific activities and promote structural change. Although, like classical industrial policy, new industrial policy often targets the manufacturing sector, it also explicitly recognises that this need not necessarily be the case (Rodrik 2008).

Not only the scope of industrial policy has been renewed, it also encompasses differences in terms of how it is be perceived and implemented. As Naude (2010) noted, the theory and practice of industrial policy have undergone a certain evolution ever since the term was first introduced. Recent, new ideas on industrial policy are more concerned with the “how” then with the “why” of industrial policy, and emphasize the goal of building effective (innovation) systems. This means the perspective on industrial policy has shifted from a traditional approach to a focus on interventions that help build systems, create networks, develop institutions and align strategic priorities (Warwick, 2013).
Figure 2.3  Evolution of theory and practice of industrial policy

<table>
<thead>
<tr>
<th>Phase</th>
<th>Key ideas</th>
</tr>
</thead>
</table>
| 1940s to late 1960s | - Industrialization is necessary for development.  
- Market failures would prevent this from happening automatically.  
- Market failures are pervasive in developing countries.  
- IP is needed, particularly infant industry protection, state-ownership and state coordination. |
| 1970s to 1990s | - Practical obstacles to IP are considered significant.  
- Government failure is worse than market failure. IP is invitation to waste and rent-seeking.  
- Trade liberalization (exports), privatization and attracting FDI together with macroeconomic stability and minimum government interference are the basic requirements for growth and industrialization.  
- The era of the Washington consensus, especially after the debt crisis of the early 1980s and the ubiquity of structural adjustment programmes (SAPs). |
| 2000s to present day | - Market and government failures are present.  
- The ‘how’ rather than the ‘why’ of industrial policy is important.  
- Institutional setting matters but design difficult. Need to understand political context.  
- Flexibility in the practice of IP is important.  
- Differences exist with respect to the extent to which comparative advantage needs to be defied, not the principle.  
- Innovation and technological upgrading should be a central objective of industrial policy.  
- Promoting national innovation systems should be an important objective of IP. |

Source: Naudé (2010), details on representative authors/contributors to the debate on industrial policy shown in the original source.

Top sector policy fits within this framework of new industrial policy. One of the main characteristics of top sector policy is the continuous cooperation between government, knowledge institutes and businesses in thematic/sectoral networks. Its goal is to build more productive systems/sectors by aligning interests and priorities.

2.1.3  Entrepreneurship, Industrial Policy and economic growth

Industrial policy and entrepreneurship might, at first sight, seem an uneasy alliance: where industrial policy is often associated with incumbents, entrepreneurship is associated with new young firms. New industrial policy, however, does not take a firm-specific approach, but that of building productive multi-actor systems. This system approach recognizes different roles and contributions in the economic system; that of incumbent and young/new firms. This is also recognized in the governance structure of top sectors where both the larger (incumbent) and smaller (young) firms
have representatives. In addition, as explained later in more detail, most of the actual business support in terms of instruments/financing - which is generic by nature - goes to smaller and younger firms.

In chapter 1 the concept of entrepreneurship has been explained/positioned in terms of its importance in delivering innovations to the market place. Whether this happens through new business start-ups or through intrapreneurship: innovations require an organisation of people and means that ultimately exploit a new commercial opportunity. Theoretically speaking, entrepreneurship plays an important role in reallocating resources to new deployments where they (might) become more productive. Many scholars emphasize that this “task” becomes especially important when economies get more developed and knowledge becomes the most crucial production factor. As top sectors are the most knowledge intensive sectors in the Dutch economy, entrepreneurship will play a very important role in terms of experimenting with, adapting and implementing new knowledge.

The general consensus is that growth in innovative economies such as The Netherlands requires a sustained, high level of innovative entrepreneurship (Naudé 2010). At the same time a mere focus on more entrepreneurship, by itself, seems insufficient to automatically benefit from the full potential of entrepreneurship’s role in bringing about growth and structural change: it is also a matter of having the right kind and quality (ambition) of entrepreneurs.

2.2 New enterprise policy

2.2.1 New enterprise policy: 2 main tracks

As discussed in section 2.1, innovation and entrepreneurship are important for productivity and consequently for the welfare of a country. It is not surprising that these topics are key words in many policy notes across Europe, including the Netherlands.

The previous Dutch government implemented a new enterprise policy, giving entrepreneurs more room for their business activities and to enable them to grow. This new policy was launched in a difficult economic climate. Up to 2013, Europe and the Netherlands have been suffering a long-term economic and financial crisis: governments, businesses, banks and households are putting their finances in order. Spending cuts, low economic growth and rising unemployment are creating uncertainty and taking a heavy toll on consumer and business confidence. The challenge of economic stagnation in the short term and global societal challenges in the long term require solutions based on intensive cooperation between governments, the private sector and knowledge institutions.

The current government continues this new enterprise policy, underlining the importance of consistency in economic policy and to restore confidence of the business community. In fact, the government pursues three ambitions:

- The Netherlands in the top five knowledge economies in the world (by 2020);
- Raising the Dutch R&D effort to 2.5% of GDP (by 2020);
• To establish Top Consortia for Knowledge and Innovation with more than 500 million euros in public and private funding, and at least 40% by the private sector (by 2015).

The new enterprise policy aims to realise these three ambitions through two main tracks: a generic and a top sector track. This modern industry policy combines improvements in general framework conditions with targeted support to nine key sectors which are strongly competitive and knowledge intensive.

**Market failures: a case for policy**

In general, the Ministry of Economic Affairs adheres to the principles of the free market and of non-interference as far as is possible. From an economic perspective, welfare is not optimal if market failures or government failures are present. So, what about innovation? Can society safely leave innovation, firm creation and entrepreneurship to the free market? The answer is no since the free market fails and generates, for instance, less than the socially optimum level of innovation. Market failures are a possible reason for the government to conduct innovation policy and to pursue a higher optimum level of innovation. Economic literature usually identifies the following forms of market failure: market power, public goods, externalities, imperfect information and coordination failure. Effective policy can therefore help to boost labour productivity, to make the Netherlands more competitive and generate income and economic growth. In the following two subsections, we refer to the concrete forms of market failures at stake.

**2.2.1.1 Generic enterprise policy**

The generic track is an “economic agenda” for the entire private sector focusing on improvement of framework conditions to strengthen the innovation framework, to reduce the burden of regulation, to improve access to risk capital and to underlie the need for qualified staff and good interaction between the education system and the labour market. The available generic instruments are open to all (innovative) enterprises in the Netherlands, from independent traders to small and medium-sized enterprises (SMEs) and multinationals, and from start-ups to family firms. For these instruments, neither the size of the enterprise nor the sector of activity is relevant.
**Strengthen innovation framework**

Stimulating private spending on R&D is a primary aim of the enterprise policy. R&D is important for innovation, and therefore for productivity. The aim of policy is to reduce the cost of R&D at the level of wages, non-wage costs and profits, and hence to increase private R&D. The reason to stimulate private R&D in this way is the market failure of positive externality known as knowledge spillovers. Innovation leads (in general) to positive externalities: a company’s innovative efforts benefit other companies and the rest of society, without the company concerned being rewarded for these externalities. The main instruments in the new enterprise policy are the tax credit for R&D-personnel (WBSO), lowering the cost of R&D-personnel, the Research & Development Allowance (RDA), lowering other R&D costs (e.g. investment in equipment, consumables) and the tax relief for innovation (the Innovation box). The Innovation Box is concerned with profits arising from innovations.

**Reduce regulatory burden**

Another way to improve the competitiveness climate in the Netherlands is to give more scope to and fewer restrictions for entrepreneurs. It aims at lowering entry and exit barriers, and to stimulate post-entry growth. These are measures to overcome the possibility of market power as market failure. The administrative burden for entrepreneurs were already significantly reduced with €45 mln euros (i.e. 11% of administrative burden) in the period 2010-2012. For the period up to 2017, the administrative burden will be substantially further reduced with 2.5 bln euro. Amongst other, the use of ICT and digital public services will contribute to this reduction. Reducing regulation is not something to be realized by the government alone: entrepreneurs know much better where the problems are. Their input is very important for the design of the deregulation programme. This customized approach focuses on specific areas where there is accumulation of rules for entrepreneurs and excessive interference from various governments. In the first tranche of the customized approach the government together with four key sectors (Chemicals, Logistics, Agri&Food and Life Sciences & Health) investigates the regulatory burden in these sectors. This involves both the removal of bottlenecks in regulation and barriers that hinder innovation. For each of these sectors there will be an action plan with concrete measures that meet the regulatory reform agendas of the top sectors in 2014.

**Improve access to finance**

Finding credit or equity finance is a serious problem nowadays, and that holds especially for investment in innovation and even more so for innovative starters and SMEs. Due to the current economic climate and tighter conditions related to Basel III, banks and financiers, such as investment companies and venture capitalists, are more reluctant to extend credit (see chapter 3).

By definition, the results of R&D investment are difficult to predict. This holds for the firm but even more so for the bank or any other investor who generally lack the technological expertise to evaluate the R&D proposal. Indeed, this is a typical case of market failure due to uncertainty and asymmetric information. Therefore, the new enterprise policy supports businesses that have a good business plan with micro-credit, guarantees for SMEs, loan guarantees and risk capital. Companies wishing to innovate
can apply for finance from the SME+ Innovation Fund, which includes successful innovation credit (see box), SEED-capital arrangement and the recently introduced Fund-of-Fund. The latter was set up in collaboration with the European Investment Fund.

Diverse new forms of finance have been realized, which are intended to increase access to finance, such as crowd funding, credit unions and SME bonds. However, many businesses are not readily finding their way to alternatives to bank finance. The Ministry of Economic Affairs is supporting various initiatives and bringing them to the attention of SMEs, partly through promotional activities and the removal of regulatory barriers. The government has also announced an instrument for early stage financing and investment in young and small companies by informal investors. This supports the early stages of business growth when finance is hard to obtain for innovative start-ups and ambitious existing SMEs. A Dutch Investment Institution (NII) is being set up along with market partners. It will be a front line intermediary which can broker supply and demand for (long-term) finance for institutional investors.

**EVALUATION OF INNOVATION CREDIT**

The evaluation of the 2006-2011 Innovation Credit and Challenger’s Credit was recently completed and presented to Parliament. The evaluation was carried out in line with the report “Durf te meten” (Dare to measure) by the expert working group on impact measurement, with the aim of further improving policy evaluations. (Parliamentary Session 2012-2013, 32 637, no. 44). The main outcomes of the evaluation:

- Innovation credit is effective and efficient. The research agency recommends extending the scheme.
- Receiving a euro in innovation credit results in 1.82 euros extra R&D expenditure at company level. This is without taking account of the fact that part of the loans are repaid in due course and lent out again. At a 50 percent repayment rate, for example, the impact on R&D expenditure is almost twice as great.
- Opinion polls indicate that users of innovation credit more often started the innovation project, were more often successful, obtained more patents and showed more growth in employment (FTEs) than the group of companies that were refused credit.

**2.2.1.2 Top sector track**

In addition to the generic enterprise policy, the Dutch government developed a specific policy for the top sectors. This policy is sector specific, but unlike old-fashioned industrial policy it is demand led, with central and regional government working together with knowledge institutions and enterprises on comprehensive agenda’s in public-private partnership projects (so called golden triangle), with special attention to the challenges facing society in the near future, including issues relating to sustainability. This will increase the applicability of scientific research for both commercial and social purposes and thus increase the return on the public funds devoted to research. That effect will be enhanced by the fact that the top sector policy incorporates elements of foreign policy, education policy and policies to reduce the
(sector specific) administrative burden. The new enterprise policy focuses on nine top sectors (i.e. Agri-food, Horticulture and propagation materials, High tech, Energy, Logistics, Creative Industry, Life Sciences, Chemicals, and Water). These top sectors are R&D-intensive and/or have a strong export position. Market failures that validate this specific policy are related to positive externalities (i.e. knowledge spillovers from R&D/innovation) and information and coordination problems between for instance knowledge institutions and enterprises.

Here, we illustrate two measures of the top sector track: i) TKI, ii) Human Capital.

**TKI: consortia for Knowledge and Innovation**

In the course of 2012, the parties collaborating in the top sectors established 19 Top Consortia for Knowledge and Innovation (TKIs), which have started to implement the research agendas in the Innovation Contracts. These include cross cutting agenda’s on ICT, nanotechnology and bio based economy. In these contracts companies, researchers and the government have made agreements on how the resources, that are earmarked for knowledge and innovation, will be used in each top sector to build on existing scientific excellence and to meet the need for innovative solutions to societal problems.

The idea behind the TKIs is that through cooperation, researchers, enterprises and government can address complex social issues and create (future) commercial opportunities for the Netherlands. User inspired fundamental and applied research will lead to more private R&D-spending with high commercial returns. The goal is to have 500 million euros on PPS-projects. These will arise from joint agendas and programming of the Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands Organisation for Scientific Research (NOW) and applied knowledge institutions with the private sector. In order to spur private financing of public private TKI projects, a TKI allowance took effect in 2013.

The government has two instruments to promote cooperation in TKIs in the top sectors:

- **TKI supplement**: this supplement is aimed at research, valorisation and co-financing of European projects (e.g, horizon 2020). TKIs receive a supplement (top-up) proportionate to the contributions of companies to PPS-projects.
- **Promoting SME Innovation in Top sectors (MIT)**: the MIT scheme offers SMEs support to participate in a top sector, for example with feasibility studies, knowledge vouchers, the hiring in of knowledge workers and private-private research partnerships. Top teams indicate prior to the opening of the scheme which instruments are best suited to their sector.

**Human Capital for the future**

Despite steeply rising unemployment, companies are still struggling to find sufficient specialised technicians and skilled professionals. There are real concerns for the coming years about the availability of enough technically trained employees, particularly from vocational education. Therefore, each top sector drew up its own human capital agenda. Among other things, these agendas give an analysis of their requirement for technically trained personnel, a common vision on the education required and more detailed agreements about how education and top sector companies can best help to prepare students and pupils for the labour market.
In addition, on 13 May 2013, in anticipation of the shortage, the government concluded the 2020 National Technology Pact with a broad coalition of employers, employees, regional authorities, education authorities and students. The pact will result in more technically trained people with the skills the market needs.

The Technology Pact contains specific action agreements, such as more attention to science and technology in all primary schools by 2020, an investment fund to promote cooperation between enterprises and schools/colleges and a thousand grants per year for technical/technology students. The government is also investing 100 million euros to get more science and technology teachers into secondary schools and to enable primary teachers to give greater attention to technical subjects. Furthermore, the government is earmarking 300 million euros both in 2014 and 2015 for extra training and retraining of people interested in technical and engineering subjects. In addition the regions will elaborate regional and area-specific technical pacts.

2.2.1.3 Financial sources

Table 2.1 presents the development of the means available for research and innovation by the central government over the period 2008-2016. We want to highlight three specific points from this table. First, although not directly deductible from the table, most of the means are generic and not only meant for top sectors. Second, the total budget has increased since 2008 in absolute terms, in times of budgetary cutbacks of 40 up to 50 billion euros. Temporary additional government expenditure following the credit crisis in 2008 and 2009 resulted in a rise in budgets up to 2012.

Finally, there has been a shift from direct funding (expenditures by government such as subsidies) to fiscal incentives for innovation. Handing out large subsidies and soft loans to incumbents can be questionable to be effective in stimulating innovation. Rather, it can be argued that this holds production factors in place, where they are not productive. The incumbents might even use the government hand out to hinder new innovative entrepreneurs from entering the market. This may prolong the modernisation of a whole sector, which is going to happen anyway. Therefore, innovation subsidies have been reduced sharply, whereas the share of indirect funding - fiscal incentives - in the total mix has increased strongly.

Table 2.1  Overview of funds for innovation and research (in millions of euro)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental research</td>
<td>2,975</td>
<td>3,183</td>
<td>3,280</td>
<td>3,368</td>
</tr>
<tr>
<td>Applied research</td>
<td>512</td>
<td>488</td>
<td>453</td>
<td>361</td>
</tr>
<tr>
<td>Fiscal resources for R&amp;D</td>
<td>797</td>
<td>1,497</td>
<td>1,777</td>
<td>1,698</td>
</tr>
<tr>
<td>o.w WBSO</td>
<td>447</td>
<td>872</td>
<td>902</td>
<td></td>
</tr>
<tr>
<td>RDA</td>
<td></td>
<td></td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Patentbox</td>
<td>350</td>
<td>625</td>
<td>625</td>
<td></td>
</tr>
<tr>
<td>Spending by ministries</td>
<td>1,317</td>
<td>1,778</td>
<td>1,545</td>
<td>973</td>
</tr>
<tr>
<td>Total</td>
<td>5,601</td>
<td>6,946</td>
<td>7,055</td>
<td>6,400</td>
</tr>
</tbody>
</table>

Source: National Reform Program 2013.
2.2.1.4 Monitoring and evaluations

Finally, an important novel element in this new policy is the stronger reliance on “evidence-based policy making”, i.e. putting more emphasis on monitoring and evaluation to measure progress in enterprise policy. The Ministry of Economic Affairs has established an extensive monitoring system that makes it possible to adjust actions and instruments. Moreover, this system will be used to evaluate the effectiveness of specific instruments and, if possible, the enterprise policy as a whole. In fact, the recommendations in the report “Durf te meten” (“Dare to measure”), produced by the expert group on the measurement of the effects of enterprise policy (Theeuwes Commission) will be followed.

Information about the use of the instruments to promote innovation is yearly published on the website (http://english.rvo.nl/subsidies-programmes). Data on the effects of the policy changes will become available during this government period, when more is known about the use of the instruments and the change in private R&D spending (along with other indicators).

The new enterprise policy is now more than two years in operation. Hard evidence on its policy effect, however, is currently not possible. The measurement of the effects of this policy on so-called “outcome” variables such as economic growth and productivity is difficult for several reasons. A major reason is that it will be difficult to link the effects of enterprise policy to economic growth and productivity. In that regard, it is hard to evaluate the top sector track as a whole, because measuring the effectiveness of policy programmes is still in its infancy. The OECD has set up an Expert Group on Industrial Policy in which countries will exchange their experiences with the evaluation of policy instruments, and policy programmes. This may provide additional reference points for the future.

2.3 Facts&figures of the new enterprise policy

Currently, the “facts&figures” of the new enterprise policy are limited due to data availability. For many topics, figures about the year 2013 or even 2012 are not yet available, including those for the top sectors. Hence, although in the upcoming years more data will become available, it will take longer to get a good picture of the policy effects (see also chapter 3).

2.3.1 Generic enterprise policy: facts&figures

Hereafter, we focus on three main drivers that are important for the productivity performance: innovation, entrepreneurship and human capital. Where possible, we focus on the position of SMEs in this respect. In general, most of the generic innovation resources find their way to the SMEs, both in terms of users (around 95% in 2012) and of budget (around 65% in 2012).
2.3.1.1 R&D and Innovation

R&D is important for productivity. R&D generates innovation and that in turn increases the productivity level. Recent figures for 2012 (see table 2.2) show that the Netherlands continues to lag behind OECD averages in relation to R&D expenditure in the private sector (as % of GDP). But, the Netherlands has closed the gap compared to the EU, due to two reasons. First, the sharp rise in R&D expenditure in the Dutch private sector in 2011 compared with 2010 is largely as a result of Statistics Netherlands revising its R&D statistics. Due to a broadening of the concept of R&D, and the addition of companies with less than 10 employees to the population of companies in the R&D statistics (as is common practice in other countries), the research of a larger number of companies than before is counted as R&D.

Table 2.2 R&D-expenditures in international perspective, 2007-2012

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Netherlands</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D expenditure as %</td>
<td>1.75</td>
<td>1.68</td>
<td>1.73</td>
<td>1.74</td>
<td>2.03</td>
<td>2.16</td>
</tr>
<tr>
<td>of which in private</td>
<td>0.96</td>
<td>0.89</td>
<td>0.85</td>
<td>0.89</td>
<td>1.14</td>
<td>1.22</td>
</tr>
<tr>
<td>of which in public</td>
<td>0.79</td>
<td>0.80</td>
<td>0.88</td>
<td>0.85</td>
<td>0.89</td>
<td>0.94</td>
</tr>
<tr>
<td><strong>Europe (EU-28)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D expenditure as %</td>
<td>1.76</td>
<td>1.83</td>
<td>1.91</td>
<td>1.91</td>
<td>1.95</td>
<td>1.97</td>
</tr>
<tr>
<td>of which in private</td>
<td>1.13</td>
<td>1.16</td>
<td>1.19</td>
<td>1.19</td>
<td>1.24</td>
<td>1.24</td>
</tr>
<tr>
<td>of which in public</td>
<td>0.63</td>
<td>0.66</td>
<td>0.72</td>
<td>0.72</td>
<td>0.71</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>OECD</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D expenditure as %</td>
<td>2.26</td>
<td>2.33</td>
<td>2.38</td>
<td>2.34</td>
<td>2.37</td>
<td>2.40</td>
</tr>
<tr>
<td>of which in private</td>
<td>1.61</td>
<td>1.66</td>
<td>1.66</td>
<td>1.62</td>
<td>1.65</td>
<td>1.68</td>
</tr>
<tr>
<td>of which in public</td>
<td>0.64</td>
<td>0.66</td>
<td>0.72</td>
<td>0.72</td>
<td>0.72</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Source: Statistics Netherlands and OECD, Main Science and Technology Indicators.

Second, given the revision, private firms are investing more in R&D since 2010. This goes together with the fact that in recent years the budget for the WBSO has increased and the numbers using the scheme have risen. In 2012 more companies use the fiscal arrangements that promote research and innovation. This is the 5th year in a row that an increase can be seen. In 2012, 22,220 enterprises made use of the WBSO, 8% more than in 2011. The RDA was introduced in 2012; 13,860 companies used the scheme in its first year. SMEs use the WBSO and the RDA the most (i.e. 97% of the total number of WBSO requests came from SMEs; for the RDA is the proportion was 98%). In the Netherlands, SMEs account for 46% of private R&D investment.

The Innovation Union Scoreboard 2013 (IUS) reported that the Netherlands have become the fifth most innovative economy within the EU; a significant step up from 7th place in the previous IUS. Analysis of the IUS data shows that the improved score is due mostly to the strong increase in the number of innovative companies (data are based on
the Community Innovation Survey 2008-2010), which positively influenced four of the 24 indicators of which the IUS-score consists. The 2013 Scoreboard did not yet include the improved figure on R&D in 2011, but uses the 2010 figure instead. The Innovation Scoreboard points to two areas of relative strength: i) “Open, excellent and attractive research systems”; ii) “Linkages & entrepreneurship”.

2.3.1.2 Entrepreneurship

New entrepreneurs are an important source for stimulating economic growth and productivity. They launch new products, services and introduce new process techniques. In addition, the entry (or even the threat) of new entrepreneurs stimulate competition and innovation among incumbents (see chapter 1).

To establish the relative level of entrepreneurial spirit and efforts to start a business in the Netherlands, the Global Entrepreneurship Monitor 2012 (GEM) is the most commonly used international benchmark. The TEA-index (Total Early-Stage Entrepreneurial Activity) assesses the percentage of working age population both about to start an entrepreneurial activity and that have started one in the last three and a half years. The Netherlands score well in terms of the number of entrepreneurs according to the GEM. In addition, in the Netherlands early stage entrepreneurship (new start ups) has grown substantially since 2008. Within the group of Innovation driven countries in this benchmark, the Netherlands score a third position, behind the US (1st) and Singapore (2nd). Within the EU, the Netherlands are the most entrepreneurial. Figure 2.4 provides an overview of the improving performance of the Netherlands over time and a comparison to benchmark countries.
According to the recent international figures, the business environment is very dynamic in the Netherlands. There are many new (innovative) entrepreneurs entering the market, but also a considerable number of entrepreneurs that exit the market (see chapter 1 for further details).

2.3.1.3 Human Capital

Investment in human capital can make an important contribution to increased productivity. Higher levels of human capital can generate innovation and consequently lead to higher productivity. For an attractive business environment the availability of dedicated and talented people is an important condition. The economy needs people, workers and entrepreneurs, who have the appropriate competencies and have the space and ambition to exploit this.
Currently, the initial results of the human capital agendas become available. In the past two years 14 Centres for Innovative Craftsmanship have been developed in senior secondary vocational education and 18 Centres of Expertise have been developed in higher vocational education for and with the top sectors. In these centres employers, scientists, teachers and students work together to improve the quality of technical vocational education. The centres help to recruit new students and contribute significantly to launching and accelerating innovations. The number of registrations is also rising at these educational centres.

The Technology Pact aims to raise technically trained people with the skills the market needs. The first signs of change can already be seen. There is a clear upward trend in the number of students in higher vocational and universities (see table 2.3). Moreover, the number of pre-registrations for technical university courses for the 2013-2014 academic year is already 17% up on last year. The same picture can be seen in higher vocational education: an increase of 9%. Structural measures in the Technology Pact are intended to ensure this progress continues in the long term.

### Table 2.3 Registrations in Science and Technology, 2009-2012

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior vocational</td>
<td>205</td>
<td>208</td>
<td>199</td>
<td>195</td>
</tr>
<tr>
<td>Higher vocational</td>
<td>70</td>
<td>72</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Universities</td>
<td>62</td>
<td>65</td>
<td>68</td>
<td>70</td>
</tr>
</tbody>
</table>

*Source Platform Betatechniek.*

#### 2.3.2 Facts&figures top sector track

The top sectors together account for more than a quarter of the added value of the Netherlands (see table 2.4). The labour productivity in the top sectors is on average higher than in other sectors of the Dutch economy. The top sectors are on average almost 35% more productive than other sectors in the Netherlands. Partly this has to do with the fact that the top sectors are capital intensive, but also because they are knowledge-intensive. The top sectors are more capital intensive as their investment rate is 1.6 times higher than in the other sectors. Their higher knowledge-intensity becomes evident by looking at the share of R&D spending in the total economy. This share is 97% and underlines the need for sector-specific focus in the top sector track. The top sectors also have a stronger orientation on foreign countries (see chapter 3 for further details).
Table 2.4  Key figures for the Netherlands and top sectors, 2010

<table>
<thead>
<tr>
<th></th>
<th>Netherlands</th>
<th>Top sector</th>
<th>Rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value added (in mln €)</td>
<td>526,176</td>
<td>140,907</td>
<td>385,269</td>
</tr>
<tr>
<td>Employment (in fte)</td>
<td>6,717</td>
<td>1,435</td>
<td>5,282</td>
</tr>
<tr>
<td>Labour productivity (€)</td>
<td>78,335</td>
<td>98,193</td>
<td>72,940</td>
</tr>
<tr>
<td>Export of goods (in mln €)</td>
<td>371,541</td>
<td>149,303</td>
<td>222,238</td>
</tr>
<tr>
<td>Export intensity</td>
<td>32.6</td>
<td>34.8</td>
<td>31.2</td>
</tr>
<tr>
<td>Private R&amp;D-expenditures (in mln €)</td>
<td>5,218</td>
<td>5,044</td>
<td>174</td>
</tr>
<tr>
<td>Private R&amp;D-intensity</td>
<td>1.0</td>
<td>3.6</td>
<td>0.05</td>
</tr>
<tr>
<td>Investment in physical assets (in mln €)</td>
<td>40,272</td>
<td>17,639</td>
<td>22,633</td>
</tr>
<tr>
<td>Investment intensity</td>
<td>7.7</td>
<td>12.5</td>
<td>5.9</td>
</tr>
</tbody>
</table>


TKI and MIT

In 2013 the top teams updated the Innovation Contracts for their own sectors for the period 2014-2015. The estimated private sector contribution to the TKIs in 2014-2015 is around 1 billion euros per year. In updating the contracts the top sectors were asked to look explicitly at the association between the top sectors and European programmes for research and innovation. The Innovation Contracts described the importance of Horizon 2020 in particular, but also of programmes and initiatives like European Innovation Partnerships, Joint Programming Initiatives and European Technology Platforms.

Starting in 2014, the TKI allowance will be increased by 110 million euros to 200 million euros a year. Part of these funds will be available to co-finance EU projects or for valorisation projects.

SMEs take part in the TKIs. Each TKI has an SME help desk to connect SMEs to research programmes and innovation activities within the TKIs. In 2013, the Government made agreements with knowledge institutions and the private sector to improve and simplify public-private partnership. For example, it is now easier for SMEs to be included in the top sectors thanks to low-threshold forms of collaboration with NWO and the institutes for applied research. Based on experience with the implementation of the TKI supplement scheme, it will be expanded for 2014 and become more demanded. For example, there will be more opportunities to apply for the supplement. This will create more flexibility in the use of the supplement. The first € 20,000 contributed by businesses, either in cash or in kind, will be taken as the basis for the supplement. This makes it easier for SMEs to get involved in the top sectors and TKIs.

The MIT-scheme provides instruments that will enable small companies to perform feasibility studies, carry out R&D-related collaborative projects or temporarily hire highly qualified employees. MIT-scheme is mentioned to enhance SME participation and it was opened in April 2013, making 2 million euros available for each top sector and for the cross-sectoral themes of IT and the Biobased Economy. After the opening of the scheme, both NLAgency - which is administering the scheme - and the various top sectors held
information sessions for SMEs with Syntens Innovation Centre. The MIT scheme meets a clear need among the top sectors and the SMEs within them. Applications totalling 40 million euros were made to NLAgency. The government therefore decided to increase the budget for this scheme to 30 million euros in 2014. Any changes to the MIT scheme will be discussed with the top sectors and SME representatives. As further details are worked out various options will be considered for distributing the available budget among the top sectors.

Table 2.5 Number of private participants in PPS for R&D, 2010-2013

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTI</td>
<td>700</td>
<td>800</td>
<td>900</td>
<td>Not yet known</td>
</tr>
<tr>
<td>TKI</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1800*</td>
</tr>
</tbody>
</table>

* Estimate.

Source: NL Agency.

Table 2.6 Numbers of SMEs using elements of the MIT-scheme in 2013

<table>
<thead>
<tr>
<th>Element</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge vouchers</td>
<td>280</td>
</tr>
<tr>
<td>Feasibility studies</td>
<td>88</td>
</tr>
<tr>
<td>Hiring in knowledge workers</td>
<td>1</td>
</tr>
<tr>
<td>Network activities</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>Innovation broker</td>
<td>140</td>
</tr>
</tbody>
</table>

Source: NL Agency.

2.4 Future challenges

We began this chapter by showing that, from an international perspective, the Dutch economy is one of the most competitive economies in the World. At the same time we argued that this should not be taken for granted. Maintaining or even improving a good competitive position in an international economy requires continuous effort. On the short, medium and long term there are many challenges for the Dutch economy to overcome. Dutch enterprise policy tries to meet these challenges, by focussing both on excellent framework conditions for all enterprises, as well as paying specific attention to top sectors given their importance to productivity, R&D and Dutch exports.

We have shown that although top sector policy may be equally (or even more) visible as the more generic approach to enterprise policy, most policy instruments are generic by nature. In line with the renewed international discussion on industrial policy, the focus of top sectors is to build networks of government, knowledge institutes and businesses. In these networks roadmaps are drawn and the efforts of all relevant stakeholders for innovation in a sector are better aligned, with the ultimate aim of improving innovation performance and productivity.

Entrepreneurship plays an important role in Dutch enterprise policy. We have demonstrated that for the largest part (financial) policy instrument target SMEs and young companies. There are also continuous efforts to better involve SMEs in the Top Consortia for Knowledge and Innovation, so that they can profit from their efforts.
2.4.1 Focus for 2014

Key components of the top sector track are: research and innovation, human capital, regulatory framework and internationalisation. Consistency in policy is held in high regard by the current government. From this perspective there is much agreement on the importance of continuing the efforts that have been put into the top sector track in the last three years on these components. At the same time the current government sees a more explicit role for top sectors when it comes to societal challenges.

There are a number of reasons why it is important that the top sectors should pay more explicit attention to societal challenges. First of all because from the perspective of the Ministry of Economic Affairs, there is a profit opportunity behind each of these challenges and Dutch companies are well positioned to seize them. For the top sectors, societal challenges represent the growth markets of tomorrow. Secondly there are good opportunities to increase European cooperation on these themes in Horizon 2020. This will enable the Netherlands to benefit from the knowledge available in other Member States, to promote Dutch specific knowledge and to increase cooperation with foreign enterprises and foreign knowledge institutes.
Notes Chapter 2

1 https://www.conference-board.org/data/
2 https://www.conference-board.org/data/
3 See website RVO (www.rvo.nl/) for further information.
4 As a research organisation, the Academy is responsible for a group of outstanding national research institutes. It promotes innovation and knowledge valorisation within these institutes and encourages them to cooperate with one another and with university research groups. NWO is the national research council in the Netherlands. NWO promotes quality and innovation in science.
5 See e.g. TechniekPact, Summary Dutch Technology Pact 2020.
6 The new Budget 2014 will bring some alterations in 2014 and beyond. Note that the table does not include the European budget for R&D (7th Framework programme / Horizon 2020); is about 400* mln per year for Dutch researchers). And also figures of the regional budgets for innovations are not included.

Literature


3 Characteristics of SMEs in top sectors

Sanne Blankestijn, Nicolette Tiggeloove and Jacqueline Snijders

3.1 General introduction

In chapter 2 of this report, the Ministry of Economic Affairs has presented the support policy for the Dutch business sector and the reasoning behind this policy. A distinction is made between generic policy and top sector policy. In this chapter we present what is the evidence behind this policy. What do we know about enterprises, and in particular SMEs in top sectors? How do they differ from enterprises in other sectors?

This chapter starts with a short overview of the top sectors and their current status followed by an in-depth discussion of three topics: innovation, internationalisation and financing. If available, developments over time are provided.

Research has shown that enterprises operating in the top sectors are an important part of the Dutch economy. They are worth over one quarter of the Dutch economy in added value and employ around a fifth of the Dutch workforce. In the remainder of this section top sectors are compared to the Dutch economy as a whole. It will provide key information on employment, determinants of economic growth and the development of total added value.

Figure 3.1 Development of top sectors, 2010-2014, mutations with regard to the last year in percentages. 2014 are expected changes

Total added value
In total, 27% of the created added value in the Netherlands was produced by top sectors in 2012, corresponding to a total of €141.151 million. Three top sectors play a large role in generating this additional value: high-tech systems & materials (24%), transport (20%) closely followed by the energy sector (18%).

Employment & labour productivity
In 2012, 19% of all Dutch employees worked in a top sector. More than half of all employees worked in the high-tech systems & materials (29%) or transport sector (22%). Only 2% of all employees worked in the life sciences & health sector, corresponding to less than 1% on the scale of the Dutch economy.

Given that 19% of all employees work in a top sector and comparing this to the 27% of added value, we see that the labour productivity in top sectors is higher compared to the rest of the Dutch economy in 2012. The following figure shows the labour productivity per top sector in 2010.

Figure 3.2 Total labour productivity per top sector in 2010

This graph illustrates that the relative advantage of top sectors is due to the high level of productivity in the energy sector and the chemical sector which both have a higher labour productivity than the average Dutch economy. Some sectors, the creative sector for instance, are lagging behind a little. This graph should be interpreted with care, bearing the differences between the industries in mind. For instance, the chemical sector is more capital intensive while the creative sector is based more on the labour side.

Differences between the various top sectors are also visible in the size of the enterprises. On average, the size of the enterprises varies between 2 to 37 employees. The average size is relatively high in the chemicals, energy and water sector (31-37 employees). On average, we find the smallest enterprises in the agri & food, creative industries, high-tech systems & materials and horticulture sector. They have between 2-7 employees. Between 14 and 17 employees are often found in logistics as well as the life sciences and health sector.
**Export**

Even though the contribution of the top sectors to the total added value is high, the contribution of top sectors to export is clearly higher. They are responsible for 39% (€ 157,572 million) of the export of goods in 2012. Around 49% of this is realised by the high-tech systems sector (29%) and the chemical sector (20%).

The Dutch economy leans heavily on its competitive position in the export markets. This leads to specific attention within the top sector policies on promoting export further, for instance by active support of internationally active enterprises. In 2010, a total of 3.4% of the total world trade had the Netherlands as its country of origin (including the export of previously imported products). The top sector horticulture had an even higher share, namely 11.7% of all world trade in this sector. Life Sciences & Health (6.3%) and Agri & Food (6.1%) also had large percentages. It must be noted that these are sectors have relatively low shares in the total export of the Netherlands, while they have a significant position on the world market.

**Enterprises**

In 2012, Statistics Netherlands provided information on the number of enterprises in the various top sectors for the years 2010 and 2011. The numbers are provided in table 3.1. The table shows that the number of SMEs in all top sectors is high, often close to 100%.

<table>
<thead>
<tr>
<th>Top sector</th>
<th>Enterprises 2010</th>
<th>SMEs* 2010</th>
<th>SMEs in % of total number of enterprises 2010</th>
<th>Enterprises 2011</th>
<th>SMEs* 2011</th>
<th>SMEs in % of total number of enterprises 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri &amp; Food - core</td>
<td>59,050</td>
<td>58,970</td>
<td>99.86%</td>
<td>57,310</td>
<td>57,230</td>
<td>99.86%</td>
</tr>
<tr>
<td>Agri &amp; Food - chain</td>
<td>125,700</td>
<td>125,530</td>
<td>99.86%</td>
<td>124,030</td>
<td>123,850</td>
<td>99.85%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>18,460</td>
<td>18,440</td>
<td>99.89%</td>
<td>19,210</td>
<td>19,190</td>
<td>99.90%</td>
</tr>
<tr>
<td>High-tech systems &amp; materials</td>
<td>64,120</td>
<td>63,930</td>
<td>99.70%</td>
<td>66,850</td>
<td>66,670</td>
<td>99.73%</td>
</tr>
<tr>
<td>Energy</td>
<td>1,270</td>
<td></td>
<td>.</td>
<td>24,150</td>
<td>24,020</td>
<td>99.46%</td>
</tr>
<tr>
<td>Logistics</td>
<td>23,820</td>
<td>23,690</td>
<td>99.45%</td>
<td>24,150</td>
<td>24,020</td>
<td>99.46%</td>
</tr>
<tr>
<td>Creative industry</td>
<td>97,020</td>
<td>96,980</td>
<td>99.96%</td>
<td>106,820</td>
<td>106,780</td>
<td>99.96%</td>
</tr>
<tr>
<td>Life Sciences &amp; Health</td>
<td>2,290</td>
<td>2,270</td>
<td>99.13%</td>
<td>2,280</td>
<td>2,260</td>
<td>99.12%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>2,150</td>
<td>2,080</td>
<td>96.74%</td>
<td>2,120</td>
<td>2,060</td>
<td>97.17%</td>
</tr>
<tr>
<td>Water</td>
<td>2,820</td>
<td>2,760</td>
<td>97.87%</td>
<td>2,920</td>
<td>2,860</td>
<td>97.95%</td>
</tr>
<tr>
<td>Total business sector Netherlands</td>
<td>1,124,410</td>
<td>1,121,410</td>
<td>99.73%</td>
<td>1,170,130</td>
<td>1,167,180</td>
<td>99.75%</td>
</tr>
<tr>
<td>Top sectors</td>
<td>264,220</td>
<td>263,610</td>
<td>99.77%</td>
<td>275,280</td>
<td>274,700</td>
<td>99.79%</td>
</tr>
</tbody>
</table>

*SMEs are enterprises with less than 250 persons employed.

3.2 Innovation

Innovation is one of the key policy fields of the top sector policy. The three overall objectives of Dutch enterprise policy are all focused on knowledge and innovation. Innovation is seen as the key to make the sectors internationally more competitive. An overview of the research in this field is provided in this section, including information on the role of SMEs.

Enterprises active in top sectors are more often qualified as fast-growing enterprises (based on revenue, 21% versus 18% in non-top sectors). Within the top sectors, horticulture, main ports and logistics as well as the life sciences sector particularly distinguish themselves with a high share of fast-growing enterprises. These enterprises bring innovations to the market and help the overall economy grow. They have the ambition to develop themselves and become better and more efficient. In this section, we focus on three aspects of the innovation process. First, we discuss the inputs for the innovation process. Aspects like expenditures on R&D and hours invested are discussed. Second, we provide a short introduction on the process, for example on cooperation. Lastly, we will comment on innovation outputs as well as on innovation and competition.

Innovation inputs

Inputs for innovations are in the academic literature mostly described in monetary terms: the amount of money spent on R&D within enterprises. Table 3.2 below shows the R&D expenditures and the R&D intensity in the top sectors. This is for enterprises with 10 or more employees. We see that all top sectors, except logistics, have a higher R&D intensity compared to the Dutch average. The life sciences & health sector even has an intensity which is 25 times as large. Hence, top sectors have relatively high investments in R&D.

The total innovation expenditure, presented in column 4 and 5, show larger numbers because it is broader than just R&D expenditure. These numbers also include investment in appliances, other external knowledge and education. Based on this data, 64.8% of the innovation expenditure occurs in top sectors. Around 46.4% of total Dutch innovation is produced by SMEs active in top sectors.
Table 3.2  R&D expenditure, R&D intensity and innovation expenditure, all enterprises and SMEs in 2010

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri &amp; Food</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Core</td>
<td>402</td>
<td>2.5</td>
<td>878</td>
<td>392</td>
</tr>
<tr>
<td>- Chain</td>
<td>576</td>
<td>1.5</td>
<td>1,429</td>
<td>851</td>
</tr>
<tr>
<td>Chemicals</td>
<td>737</td>
<td>5.0</td>
<td>1,325</td>
<td>265</td>
</tr>
<tr>
<td>Creative industry</td>
<td>21</td>
<td>0.2</td>
<td>233</td>
<td>172</td>
</tr>
<tr>
<td>Energy</td>
<td>645</td>
<td>2.4</td>
<td>859</td>
<td>178</td>
</tr>
<tr>
<td>Horticulture</td>
<td>169</td>
<td>1.8</td>
<td>478</td>
<td>372</td>
</tr>
<tr>
<td>High-tech systems &amp; materials</td>
<td>2,578</td>
<td>8.1</td>
<td>4,190</td>
<td>1,594</td>
</tr>
<tr>
<td>Logistics</td>
<td>113</td>
<td>0.4</td>
<td>424</td>
<td>241</td>
</tr>
<tr>
<td>Life Sciences &amp; Health</td>
<td>671</td>
<td>25.4</td>
<td>1,121</td>
<td>302</td>
</tr>
<tr>
<td>Water</td>
<td>468</td>
<td>5.5</td>
<td>363</td>
<td>134</td>
</tr>
<tr>
<td>Total Top sectors</td>
<td>5,044</td>
<td>3.6</td>
<td>8,502</td>
<td>3,151</td>
</tr>
<tr>
<td>Total Business sector Netherlands</td>
<td>5,218</td>
<td>1.0</td>
<td>13,119</td>
<td>6,785</td>
</tr>
</tbody>
</table>

* R&D intensity is defined as the amount of private R&D investments in percentage of the total added value in the given sector.

** In this table, SMEs are enterprises with ten or more persons employed in the enterprise (paid work within the enterprise).

Source: Statistics Netherlands (2012)\textsuperscript{16} second and third column, CIS, (2011) for the fourth column.

Panteia carried out a study on innovation in top sectors (2013; updated in 2014 with a second measurement) which provides insight beyond just the monetary expenses. It includes measurements of time spent on innovation as well as the use of fiscal regulations meant to stimulate innovation. These results are based on responses to a questionnaire under enterprises active in top sectors which is called the “Topsectorenpanel”. This panel also provides an insight into the differences between enterprises of different size. At the moment, two similar surveys have been held in this panel (Autumn 2012 and Spring 2013). For a methodological justification, see Hoevenagel (2013)\textsuperscript{16}.\textsuperscript{17}
The first conclusion drawn from this report is that in 2012, 65% of the enterprises which were interviewed stated that they invested time in innovation activities of a certain variety, 58% invested funds as well as time. In 2013, a slight increase of 67% in time was visible; however less often funds were invested as well as time (54%). Ultimately it looks like the total investments have stayed the same. These numbers vary based on the size of the enterprise, see the following table (table 3.3):

<table>
<thead>
<tr>
<th></th>
<th>Small (1-9 employees)</th>
<th>Medium-sized (10-99 empl.)</th>
<th>Large (≥100 empl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>63</td>
<td>66</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>87</td>
<td>83</td>
<td>96</td>
</tr>
<tr>
<td><strong>Time and monetary investments</strong></td>
<td>55</td>
<td>52</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>72</td>
<td></td>
<td>83</td>
</tr>
</tbody>
</table>


The table describes the number of enterprises involved in innovation in all top sectors. Large differences in the amount of time invested in these activities exist. We see that in general, investments have been lower, with only the small enterprises investing more time in innovations. This is not met by investing more funds. It is visible from the table that the amount of innovation increases with the size of the firm. Except for size, we can also compare the SMEs in top sectors to the whole Dutch economy. As stated, 67% of SMEs in top sectors invests time and 54% of these also invest funds. For the Dutch economy these numbers are 56% and 47% respectively. This shows that top sectors use more innovative inputs.

The labour input for innovation can also be shown per sector, as seen in the table below. It shows the percentage of the total labour force in the enterprise which is engaged in the innovative activities.
Table 3.4  Estimated % of labour used for innovation activities in top sectors, by enterprises who invested in innovations during the last 12 months. Measured in Spring 2013.

<table>
<thead>
<tr>
<th>Top sector</th>
<th>&lt;5%</th>
<th>5-&lt;10%</th>
<th>10-&lt;25%</th>
<th>25-&lt;50%</th>
<th>50% or more</th>
<th>Does not know/Does not want to say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri &amp; Food</td>
<td>44</td>
<td>35</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Chemicals</td>
<td>15</td>
<td>24</td>
<td>43</td>
<td>10</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Creative industry</td>
<td>13</td>
<td>19</td>
<td>41</td>
<td>16</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Energy</td>
<td>7</td>
<td>37</td>
<td>25</td>
<td>18</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Hightech systems &amp; mat.</td>
<td>20</td>
<td>28</td>
<td>33</td>
<td>10</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Life sciences &amp; health</td>
<td>19</td>
<td>25</td>
<td>36</td>
<td>8</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Transport</td>
<td>32</td>
<td>25</td>
<td>32</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Horticulture</td>
<td>34</td>
<td>32</td>
<td>25</td>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Water</td>
<td>21</td>
<td>33</td>
<td>24</td>
<td>9</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>


In 2013 the sectors energy and life sciences & health often used more than 50% of their labour force for innovative activities. Almost 1 in 8 enterprises in these sectors did so. For the other sectors, the numbers show that less than 10% of the time is invested in innovations relatively more often.

Innovation processes
The connection between innovation inputs and outputs lies in the process which connects both. The Panteia survey on innovation also used questions to assess how this process works. Special attention was given to cooperation.

First, SMEs in top sectors cooperate significantly more often than SMEs in the whole Dutch Economy. Almost half of the SMEs in top sectors use cooperation techniques (48%) against 31% overall. We can also focus on the type of partners as shown in the following figure.
The figure shows that enterprises more often cooperated with all kinds of partners; other enterprises and suppliers are especially popular partners. The following graph compares the types of partners for SMEs in top sectors and SMEs in the whole Dutch economy.


We see that all types of cooperation partners are more important in top sectors than in the whole economy.

Innovation outputs

Innovation can be shown in different ways: it could be in process or product innovation, new to the market vs. new to the firm, or in terms of impact on the revenue. Hence, innovation is a very broad concept.

While on average 43% of enterprises introduced new services or goods in the past three years, the small enterprises (41% in 2012, 45% in 2013) are clearly lagging compared to the larger enterprises (84% in 2012, 89%)\textsuperscript{26}. These numbers have changed slightly in 2013: 47% of SMEs in top sectors (almost half of all enterprises) introduced new products. In the whole Dutch economy, this number is 38% for all SMEs.\textsuperscript{26} Not only differences in size exist for new-to-the-market introduction, but also differences in the number of introductions per top sector as shown in the following graph (figure 3.5). It shows the number of enterprises which stated in the Autumn of 2012 and Spring of 2013 that they had introduced a new product/service in the past three years. This same pattern for the top sectors can be seen for process innovations however the percentages are lower\textsuperscript{27}. The chemical sector offers the most new products, 73% of enterprises claim to have introduced a new product in the past three years in the 2013 measurement (69% in 2012). The lowest percentage is in agri & food (21% in 2013).

In 2012, 35% of the enterprises state that they have implemented process innovations. In the 2013 this increased slightly to 37%\textsuperscript{29}. Small enterprises produce this type of innovation less often (34% in 2012, 35% in 2013) than large enterprises (66% in 2012,
64% in 2013). However, the differences are not as large as for product innovations. The great difference in introductions of top sector SMEs and all SMEs in the Dutch economy is interesting. In top sectors, 37% of all enterprises introduce a process innovation, relative to 20% of all SMEs in the Dutch economy.

An interesting exercise is to combine the introduction of new goods with the percentage of revenue which can be attributed to these innovations. Large enterprises (>100 employees) relatively often make less than 10% of their revenue from innovations, compared to the smaller enterprises. Medium-sized enterprises (10-99 employees) often make 25-50%, while small enterprises relatively often make more than 50%. This could point in the direction that innovations are crucial for small enterprises. They introduce innovations relatively less often, but if they do, they play a very large role in their total revenue. They thus seem to depend on these innovations to keep their revenue at a steady level. In 2013, a negative trend was visible, as shown in the following graph. The revenue created (as percentage of total revenue) by product innovations in the last three years is stated in this graph by the enterprises. We have compared the answers from the 2012 and 2013 measurement. A large part of the revenue is generated by new products or services less often.

![Figure 3.6](image_url)

**Figure 3.6** Change in percentage points of the percentage of revenue generated by new products or services which have been introduced in top sectors in the last three years, per size class. Change between Autumn 2012 and Spring 2013.


**Innovation and competition**

A well established fact in science is that competition and innovation interplay with each other. Increased competition can force other enterprises to invest in innovations in order to stay competitive. Panteia, together with the Rotterdam School of Management - Erasmus University has performed the “innovation and competition monitor” for
Entrepreneurship in the Netherlands

At the moment a first measurement (Autumn 2012) and second measurement (Spring 2013) have already taken place.

In the first report, a distinction was made between technological innovation and social innovation. Technological innovation is aimed at renewing technological knowledge, R&D and IT investments as well as knowledge creation. Social innovation can be defined as the introduction of change in the method of organisation, management or organisation of labour. This should be new for the organisation or industry.

Panteia has created a pyramid, separating enterprises based on their innovative efforts. The higher in the pyramid, the more intense the innovation efforts. The figure below shows the results of the pyramid for both SMEs in the whole Dutch economy and SMEs in top sectors. The pyramid makes clear that SMEs in top sectors are more innovative, with higher percentages in the top of the pyramid. This picture is also representative for all enterprises in top sectors: of all top sector enterprises, 99.7% are SMEs.

![Figure 3.7: Ranking of Dutch SMEs in the top sectors and all SMEs based on innovations efforts, 2012](image)

Per sector, we see that chemicals have a relatively high percentage of leaders (26%) while Agri & Food has only 4%. All sectors show different numbers, symbolising the heterogeneity of the top sectors.

Apart from technological innovation (see section innovation inputs), social innovation is very important. To be exact, 23% of innovation success can be attributed to technological innovation, while 77% can be attributed to social innovation. The current market situation is that enterprises have to innovate faster to keep up. This is only possible if the company structure facilitates this. On a scale of 1 to 7, top sector enterprises score a 3.1 for social
innovation. These scores are highest for chemicals and energy and lowest for the creative industry. Within the top sectors, results show that socially innovative enterprises perform better than non-socially innovative enterprises. Socially innovative enterprises thus invest more in changing the organization from within.

3.3 International orientation top sectors

Top sectors distinguish themselves from other sectors by their strong international orientation. Statistics Netherlands shows that 40,000 enterprises across all top sectors are exporting, which is around one-third of all exporters in the Netherlands. Within these top sectors, large differences arise. Table 3.5 gives an overview of the number of exporting enterprises within each top sector. Around 12% of all Dutch exporters operate in the high tech systems & materials sector. On average, around 14% of the enterprises in Dutch top sectors are engaged in export activities. The Dutch business sector in total has an average below 10%.

Great differences exist within the nine top sectors between the shares of exporting enterprises, due to the sector specific characteristics. The chemical sector for example is characterised by large capital intensity as well as large enterprises. This leads to 65% of the enterprises in the chemical industry exporting goods, against 8% in the creative industry.

Table 3.5 Exporters in top sectors 2011 (total number of exporters; exporters in % of total number of Dutch exporters; exporters in % of total number of enterprises in the sector)

<table>
<thead>
<tr>
<th>Top sector</th>
<th>Number of exporters</th>
<th>in % of total numbers of exporters in the Netherlands</th>
<th>in % of the total number of enterprises in the top sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>1,380</td>
<td>1.2%</td>
<td>65%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>4,980</td>
<td>4.4%</td>
<td>26%</td>
</tr>
<tr>
<td>Life sciences &amp; health</td>
<td>500</td>
<td>0.4%</td>
<td>22%</td>
</tr>
<tr>
<td>Water</td>
<td>620</td>
<td>0.5%</td>
<td>21%</td>
</tr>
<tr>
<td>High tech systems &amp; materials</td>
<td>13,570</td>
<td>12.0%</td>
<td>20%</td>
</tr>
<tr>
<td>Logistics</td>
<td>4,870</td>
<td>4.3%</td>
<td>20%</td>
</tr>
<tr>
<td>Energy*</td>
<td>160</td>
<td>0.1%</td>
<td>11%</td>
</tr>
<tr>
<td>Creative industry</td>
<td>9,030</td>
<td>8.0%</td>
<td>8%</td>
</tr>
<tr>
<td>Agri &amp; Food</td>
<td>4,380</td>
<td>3.9%</td>
<td>8%</td>
</tr>
<tr>
<td>Total top sectors**</td>
<td>38,300</td>
<td>34%</td>
<td>14%</td>
</tr>
<tr>
<td>Total business sector</td>
<td>113,390</td>
<td>100%</td>
<td>10%</td>
</tr>
</tbody>
</table>

* Data from Statistic Netherlands in the top sector energy excludes the subsector “sustainable energy”.

** Excluding the subsectors “wholesale and retail” and “other” from the agri & food chain. The total number of exporters is corrected for double counting.

Export top sectors amounts to almost 160 billion euro
The strong international orientation of the top sectors is also showed by the relatively high value of the export. According to Statistics Netherlands, top sectors - SMEs and large enterprises - generate almost 160 billion euro in export\(^36\). This is 40% of the total Dutch export value. Hence, with 34% of the total exporters represented in the Netherlands, 40% of the value is generated. The largest share is produced by the high tech systems and materials sector, followed by chemicals and agri & food. The creative industry only produces 0.4% of all export value (see figure 3.8). Please note these numbers only represent the export of goods, not services\(^37\). This might explain the small share for the creative industry.

![Figure 3.8 Export value of goods per top sector, 2011](image)

* Data from Statistic Netherlands in the top sector energy excludes the subsector “sustainable energy”.


Large share of revenue based on exports, especially in horticulture
Based on research by Panteia, it is shown that almost half of all internationally active enterprises receive more than 50% of its revenue from exports\(^38\). Especially remarkable is horticulture; in this sector 71% of all internationally active enterprises receive more than 50% of their revenue from exports. Figure 3.9 shows the percentages for each sector.
Figure 3.9 Share of revenue from exports per top sector (in % of the total number of exporting SMEs)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Less than 50%</th>
<th>More than 50%</th>
<th>Don't know/no answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri &amp; Food</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High tech systems &amp; materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life sciences &amp; health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logistics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horticulture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Top sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Results for life sciences & health are only indicators.

SMEs are enterprises with 10 to 250 persons employed.

Source: Bram van der Linden, Nicolette Tiggeloove, Paul van der Zeijden (2013), Topsectoren in beeld - Internationale oriëntatie topsectoren, Panteia: Zoetermeer.

Three-quarters export both in and outside the European Union

The size of the share of export in the revenue varies with the destination of export. When an enterprise has a larger export share, the enterprise will also be more likely to export outside the EU. Three-quarters of all exporters active in top sectors export both to other EU Member States as well as outside the Union. Proportionally, there are more enterprises in the chemical sector and high tech systems & materials sector which export to both. Enterprises export mostly to the US, while also around 25% of all exporters’ export to developing economies like China and Russia. The size of the enterprise also influences the destination: when the SME becomes larger, exports outside the EU increase as well. Notable is that, even when considering the difference in size classes, the largest share of the smaller internationally active top sector enterprises (10-20 employees) also exports outside the EU.

Horticulture, in particular, invests in distant countries

Not only are exports an important indicator to assess the international competitive position and the effect on growth for internationally active countries. Foreign direct investments (FDI) should also be considered. The largest share of enterprises active in FDI is not only active in Europe but also outside the EU (see figure 3.10). Enterprises in the horticulture sector are especially active in these distant countries. China and the US are the leading countries for investments. These are mostly investments in plants or sales offices.
Two thirds of all partners are located outside the EU

Of all internationally active enterprises in the top sectors with a partner in a foreign country, two thirds state that these partners are located outside the EU. The partners are mostly established in China or in the US.

Enterprises see most opportunities in the US and China

Around 14% of the enterprises that are not active outside the EU intend to be in the coming two years. Relatively more enterprises in the energy, life sciences & health, agri & food and creative industry have these plans (see figure 3.11). They especially expect to have opportunities in the US or China. Almost two thirds of the enterprises which are already working internationally intend to extend further in the coming two years. This can be explained by the fact that the major reason for extending their international activities outside the EU, is to increase their market. They expect the most growth potential in the BRIC countries.

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*SMEs are enterprises with 10 to 250 persons employed.


---

<table>
<thead>
<tr>
<th>Sector</th>
<th>Outside EU</th>
<th>Both Within and Outside EU</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri &amp; Food</td>
<td>21%</td>
<td>31%</td>
<td>49%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>18%</td>
<td>59%</td>
<td>23%</td>
</tr>
<tr>
<td>Creative Industry</td>
<td>40%</td>
<td>19%</td>
<td>41%</td>
</tr>
<tr>
<td>Energy*</td>
<td>17%</td>
<td>43%</td>
<td>39%</td>
</tr>
<tr>
<td>High tech systems &amp; materials</td>
<td>31%</td>
<td>31%</td>
<td>38%</td>
</tr>
<tr>
<td>Life sciences &amp; health</td>
<td>44%</td>
<td>33%</td>
<td>22%</td>
</tr>
<tr>
<td>Logistics</td>
<td>14%</td>
<td>34%</td>
<td>52%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>58%</td>
<td>40%</td>
<td>12%</td>
</tr>
<tr>
<td>Water</td>
<td>36%</td>
<td>33%</td>
<td>31%</td>
</tr>
<tr>
<td>Total Top sectors</td>
<td>42%</td>
<td>30%</td>
<td>28%</td>
</tr>
</tbody>
</table>

*Results for life sciences & health are only indicators.
3.4 Financing

Sufficient business financing is a crucial condition for the growth and continuity of the business sector. Access to finance is one of the major constraints of the business sector in particular of SMEs and this also holds true for enterprises active in the top sectors. Financial support to the business sector is provided through various schemes within the generic policy as well as the top sector policy.

Given the crucial role of finance in business development, a bi-annual financing monitor has been set up to monitor the need for and availability of finance in the Dutch business sector. A separate measurement has been carried out in 2012 among entrepreneurs active in the top sectors to get insight in their needs and access to finance. This measurement was repeated twice in 2013.40

Financial position of enterprises in the top sectors in 2011
Enterprises active in the top sectors have a better solvability and liquidity position (current ratio) than enterprises active in other sectors. This means that enterprises active in top sectors are generally in a better position to fulfil their payment obligations. The return on equity in top sector enterprises as an indicator of the firms’ profitability, is however significantly lower (see table 3.6). The reason for the lower profitability is the fact that investments in growth, internationalisation and innovation by these enterprises are usually financed by a mix of equity (retained profit) and debt financing. This mix has a negative influence on the return on equity on the short term.
Table 3.6  Financial indicators enterprises in top sectors, in 2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Top sectors</th>
<th>Remaining sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvability</td>
<td>0.47</td>
<td>0.37</td>
</tr>
<tr>
<td>Current ratio</td>
<td>1.43</td>
<td>1.22</td>
</tr>
<tr>
<td>Return on equity</td>
<td>8.6%</td>
<td>19.3%</td>
</tr>
</tbody>
</table>

Source: Panteia.

Search for financing

In 2013, enterprises in the top sectors made more use of both their existing bank credit facility and additional external finance than enterprises in other sectors. In the top sectors, 30% used the bank credit facility more as opposed to 23% in other sectors. Around 26% of the enterprises in the top sectors applied for additional financing, as opposed to 18% in other sectors.

For all enterprises, work capital is still the most important reason financing is sought for. Top sector enterprises find financing for investments relatively more often. Interestingly the reason top sector firms do not to seek additional financing is more often that it is “unnecessary” than in other firms: 81% as opposed to 76%.

For both top and other sector firms, the major source for debt financing is the house bank, followed by other banks, families and friends and suppliers. In addition, top sector firms use other sources more often.

According to the (limited number of) top sector entrepreneurs not receiving the (full amount of) finance applied for, the major reason is the risk to the provider, followed by insufficient solvability. Top sector firms mention these two reasons for rejection more often than other firms. The results show that top sector firms are more often found at the end of the spectrum for risk and credibility than other firms. This oxbow of both more high risks and more low risks shows the two sides of innovation: the return on success and the risk of failure.

Use of equity

In general, enterprises choose for equity because it is easier to acquire. The main reason for not choosing equity is that there is no need or the enterprise does not expect to get it. The reasons do not differ between top and other sectors.

In the case of top sectors, the source of equity is more often from their own private means and new shareholders, but compared to other enterprises they appeal to the current shareholders less often. It proves to be more difficult for top sector enterprises to attract the full amount of equity needed, but they are more often able to attract part of the amount required. This may be explained by the fact that in the case of top sectors the source is often private means, whereas the remaining enterprises approach current shareholders.
Knowledge
As may be expected, enterprises in the top sectors are more aware of the existing
government support schemes and they judge the schemes they know a bit better than
the other enterprises.

Entrepreneurs in the top sectors are significantly more optimistic about their chances
of getting the financing they expect to need in the next twelve months. Overall, small
entrepreneurs in both the top and other sectors value their knowledge of financing as
moderate.

3.5 Summary
In this chapter we presented what is known of the enterprises active in the top sectors
and for SMEs if available. How do they differ from enterprises in other sectors?
Special focus was give to three topics: innovation, internationalisation and financing.

Performance of the top sectors
Enterprises operating in the top sectors are an important part of the Dutch economy.
They are worth over one quarter of the Dutch economy in added value and employ
around a fifth of the Dutch workforce. Given these indicators on value added and
employment, labour productivity in top sectors is higher compared to the rest of the
Dutch economy. However, the indicators differ per sector. The energy sector and the
chemical sector have for example both a higher labour productivity than the average
Dutch economy, whereas the creative sector for instance, is lagging behind.
The contribution of top sectors to export is also high.

Innovation
Innovation is considered to be by far the most important strategy for enterprises to strengthen
their competitive power and to improve their position on the (inter)national markets.
Enterprises in the top sectors show a clearly stronger focus on innovation than other
enterprises in the Dutch economy. The R&D intensity was 3.6 in 2010 for the top sectors
compared to 1.0 for other enterprises. Compared to all SMEs, the SMEs in the top
sectors represent in general a clearly higher level of innovation (adaptor, developer or
initiator in stead of non-innovative of follower of innovations).
In particular for SMEs in these top sectors innovation seem to result in better revenues.
It is remarkable that cooperation with clients, suppliers, knowledge institutes and
external consultants is considered by the enterprises in the top sector to be of fast
growing importance to their future innovation and market performance.

International orientation
Around 14% of all enterprises in the top sectors are active in international markets,
compared to 10% for all enterprises in all industries. In particular the chemical industry
has a strong international orientation. In the coming years, export by the top sectors
will further shift towards markets outside the EU, in particular the US and the upcoming
BRIC markets.
Financing
The ability to access financial markets and external capital is crucial for enterprises aiming to widen their business. Momentarily access to these markets is problematic in all sectors and for all sizes of enterprise. Also enterprises in the top sectors face these problems but, compared to the others sectors, entrepreneurs in the top sectors are significantly more positive about the success rate of getting the finance needed. In addition, enterprises in these sectors are more aware of the support schemes available.
Notes Chapter 3

3. See for a complete overview of all indicators per sector the report: “Topsectoren: beeld en ontwikkeling” (October 2013) from Bangma, Bruins & Snel.
13. The three main ambitions are:
   - Belong to the top 5 of knowledge economies in the world (in 2020);
   - Increase of Dutch R&D efforts to 2.5% of the GDP (in 2020);
   - Create top consortia for knowledge and innovation. In these consortia public and private parties should participate for more that 500 million. At least 40% should be facilitated by private parties (in 2015).
17. CIS is the abbreviation for Community Innovation Survey. This survey is carried about the European Commission. See also http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/cis for a description and further information.
21. Prince, Y.M. (2013), Topsectoren in beeld - De innovativiteit van de topsectoren in 2012, Panteia: Zoetermeer. Figure 2.3.
Entrepreneurship in the Netherlands


24 Doove, S.T. & Prince, Y.M. (2014), Topsectoren in beeld - Ontwikkeling van de innovativiteit van de topsectoren in najaar 2012-voorjaar 2013, Panteia: Zoetermeer Figure 3.4.


26 Doove, S.T. & Prince, Y.M. (2014), Topsectoren in beeld - Ontwikkeling van de innovativiteit van de topsectoren in najaar 2012-voorjaar 2013, Panteia: Zoetermeer. Figure 4.3.

27 For percentages per top sector, see graph 4.6 in Prince, Y.M. (2013), Topsectoren in beeld - De innovativiteit van de topsectoren in 2012, Panteia: Zoetermeer.


31 Prince, Y.M. (2013), Topsectoren in beeld - De innovativiteit van de topsectoren in 2012, Panteia: Zoetermeer. Figure 4.4.


34 The given number of exporters in top sectors is based on Statistics Netherlands, Monitor topsectoren. Methodebeschrijving en tabellenset, 28 September 2012.

35 For more information on Dutch exporters, please see the following report:

36 The Statistics Netherlands export value is computed excluding the subsectors “wholesale and retail” and “other” from the agro & food chain. The export value is only the export of enterprises with an establishment in the Netherlands (including re-export).

37 Statistics Netherlands presents only export values for goods; services are not represented in their data.

38 Bram van der Linden, Nicolette Tiggeloove, Paul van der Zeijden (2013), Topsectoren in beeld - Internationale oriëntatie topsectoren, Panteia: Zoetermeer.

39 Brazil, Russia, India and China (BRIC).

Entrepreneurship and business dynamics in the Netherlands - enabling experimentation

Dan Andrews, Chiara Criscuolo, Peter Gal, Carlo Menon and Dirk Pilat

4.1 Introduction

Entrepreneurship is an important driver of job creation and productivity growth. But a growing body of evidence shows large differences in job creation and destruction across countries and in the contribution that young firms, including entrants and start-ups, make to employment growth. However, our understanding of these differences remains limited, which is important for policy development in the current context of unemployment across the OECD area. Most analysis has focused on partial evidence of firm dynamics such as average employment growth; the share of high-growth firms; or the entry and exit of firms. While useful, this analysis does not help shed light on firms’ heterogeneous responses to shocks or on the heterogeneous impact of policies and framework conditions across different firms.

This chapter exploits micro-data on firm dynamics to explore what drives the dynamics of business growth across OECD countries, and notably in the Netherlands. It describes the whole distribution of firm employment growth, and thus captures the heterogeneity of firm growth dynamics within sectors. The chapter draws on two successive projects, the first of which covered 10 countries, including the Netherlands, for the period 2002-2005 (Bravo-Biosca et al., 2013), whereas the second one (in progress) covers some 18 countries, including the Netherlands, but for a longer period (up to 2011). This work points to some important features of the role of entrepreneurship and business dynamics in different OECD countries, including the Netherlands. The analysis also explores the role of differences in policies and framework conditions, which helps in drawing some conclusions and policy implications for the Netherlands, including the role of the top sector approach.

4.2 Evidence on business dynamics across countries

Cross-country differences in the post-entry performance of firms tend to be more marked than differences in entry and exit patterns (Bartelsman et al., 2003). For example, the size of entering and exiting firms tends to be smaller in the United States than in Europe and successful young firms tend to expand relatively more quickly in the United States than elsewhere (Bartelsman et al., 2012). This is consistent with a more dynamic distribution of firm growth in the United States, whereby successful firms grow faster and unsuccessful firms shrink faster, than in Europe (Figure 4.1). Moreover, Europe also has a higher share of slow-growing and stagnant firms compared to the United States. The levels and growth rates of firm productivity within industries also tend to be more dispersed in the United States than in Europe (Bartelsman et al., 2004), while more recent evidence points to important differences in productivity dispersion across countries in Europe (Altomonte, 2010).
These differences between the United States and “Europe” appear to reflect a greater degree of experimentation and “learning by doing” among entrants in the United States, given that the largest differences can be found in high technology and emerging sectors, where the imperative for experimentation and intensity in the use of knowledge-based capital (KBC) is likely to be greatest (Bartelsman et al., 2008). Experimentation may be particularly important in a time of extensive technological change, when the success of new business models and applications may only become apparent through testing in the market. The gap in experimentation between the United States and Europe suggests that differences in institutional factors, which shape differences in the cost of reallocating resources, may explain the relative sluggishness of some European countries to capitalise on the ICT revolution (Bartelsman et al., 2010; Conway et al., 2006), and the growth potential embodied in KBC.

Figure 4.1 The distribution of firm employment growth
United States and selected European countries; 2002-2005

Notes: The chart compares the distribution of firm employment growth between the US and the average of seven European countries selected on the basis of data availability (e.g. Austria, Denmark, Spain, Finland, Italy, Netherlands and Norway). The European countries included in the sample have a larger share of static firms (those growing between -5 and 5% a year) relative to the US where firms that grow more than 5% or shrink more than 5% a year are more prevalent. The bottom panel of the chart shows the Europe-US differential in percentage terms. For example, the share of firms with employment growth above 20% is 5.9% in the US and 4.3% in Europe, which translates into a differential of around -26%.

New evidence from 18 OECD countries for a longer and more recent period (2001-11) enable for the first time also a look at the age of the firm in growth dynamics, and not just the role of size (Box 4.1). The data show that young businesses play a crucial role in employment creation. During the financial crisis, the majority of jobs destroyed in most countries reflected the downsizing of mature businesses, while net job growth in young firms (less than five years of age) remained positive.

**Box 4.1: Dynemp, a new OECD project on firm-level dynamics**

The OECD has collected cross-country evidence from countries’ business registers to identify the sources of job creation across countries and over time. The project - called Dynemp - currently involves 18 countries: Austria, Belgium, Brazil, Canada, Finland, France, Hungary, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States. Dynemp aims to quantify the extent to which firms that differ in terms of age, size and sector of activity contribute to job creation and job destruction and to see how firm entry, growth and exit shape employment dynamics across countries and over time. The resulting statistics also provide insights on the effect of the recent international financial crisis on business dynamics.

The DYNEMP database currently contains non-confidential comparable statistics for 17 OECD economies and Brazil on employment, gross job creation and destruction by firm age, size and macro-sectors. The statistics are preliminary, e.g. mergers and acquisitions are not accounted for. Also, differences exist in the minimum threshold above which a unit is captured, as when a BR builds on tax records and filing is compulsory only above a given level of turnover or of employment (or both). Owing to methodological differences in constructing these indicators, DYNEMP statistics may deviate from official statistics published by national statistical offices. For instance, firms that enter and exit the data in the same year, and those that are never seen to employ more than one employee, are excluded from DYNEMP-based figures.

*Source: Criscuolo, et al. 2014.*

The firm-level data also show that, across all countries in the sample, young firms are more dynamic than older firms. Young firms systematically create more jobs than they destroy. In particular, young firms represent only around 20% of total employment, but they account for almost 50% of total job creation in the economy, while their share in job destruction is around 25% (Figure 4.2). These patterns also hold for the main sectors of the economy (Figure 4.3), where small firms tend to be more important in services than in manufacturing, with small young firms accounting for almost 45% of job creation, compared with just over 30% in manufacturing.
Figure 4.2  Employment, job creation and job destruction, by firm age and size, 2001-11
Non-financial business sector, average over 18 countries


Figure 4.3  Employment, job creation and job destruction, manufacturing and services
2001-11; By firm age and size, average over 18 countries


Differences in the magnitude of this phenomenon across countries point to the importance of national policies and business environments in fostering the birth and growth of new firms. In some countries, e.g. Brazil, New Zealand and Spain, young
Firms account for more than half of the economy’s total gross job creation, whereas in others, such as Japan and Finland, they account for less than 30% of jobs created. In the Netherlands, the data suggest that just over 40% of gross job creation over the period 2001-2011 was due to young firms (Figure 4.4).

**Figure 4.4  Employment, gross job creation and gross job destruction in young firms, 2001-11**


Young firms are generally characterised by a so-called “up-or-out” dynamics. A significant share of start-ups does not survive beyond the first two years, but those that do survive contribute more than proportionally to job creation than mature businesses. Differences in the extent to which young firms grow are shown in Figure 4.5. The potential growth of young firms is inferred by comparing the average (and median) size of start-ups and of old businesses (eleven years old or more). This points to some differences in the size of start-ups across countries, although these are not striking, with France, Finland and the Netherlands have the largest infant firms.

The picture is much more heterogeneous when examining the size of older businesses. The average size of old firms in the US - around 80 employees in manufacturing and 40 in services - is by far the largest. This is even more striking since the average size of start-ups in the French manufacturing sector is more than double the average size of US start-ups. This confirms previous results of Bartelsman et al. (2003) who found that seven year old US firms are on average 60% larger than their size at entry, while in European countries the figure ranged between 5% and 35%. With the current data, the Netherlands has amongst the lowest ratios between the average size of old firms and start-ups of all countries, with a particularly low ratio of 1.7 for manufacturing firms. In the United States, this ratio is over 5 for both manufacturing and services firms.
These findings suggest that in some countries there are lower entry barriers for new firms; as a consequence, entrants can start off at a smaller size as they have more room for experimentation. Moreover, they can exit more easily if they are not successful. This, in turn, might contribute to stronger growth prospects for very productive and successful businesses. Also it indicates that in some countries barriers to growth (access to markets; burdensome regulation on starting businesses; lack of competition; etc.) might hinder the growth potential of young businesses.

4.3 Factors explaining differences in business dynamics

The aggregations from micro data point to important cross-country differences in business dynamics. These may partly be due to structural differences between the economies, e.g. in the role of different sectors in the economy, but are also likely to reflect policies and framework conditions. An important difference is the extent to which some countries are more successful than others in channelling resources towards innovative and high productivity firms. Countries that are more successful at channelling resources to the most productive firms also tend to invest more in knowledge and innovation, i.e. knowledge-based capital (KBC). Incentives to invest in KBC will partly depend on perceptions about the ease with which labour and capital will flow to successful firms (i.e. can be reallocated from less productive to more productive firms), which would ultimately result in a more efficient allocation of resources in an economy. Figure 4.6 provides some evidence of a positive correlation between investment in KBC and the efficiency of allocation, based on an indicator of the efficiency of resource allocation introduced in Andrews and Criscuolo (2013). This evidence is confirmed by more formal empirical analyses reported below.

![Figure 4.6](image)


To effectively implement and commercialise new ideas, firms require a range of complementary tangible resources to test ideas (e.g. to develop prototypes and business models), develop marketing strategies and eventually produce at a commercially viable scale. New OECD evidence (Andrews et al., 2014) reveals important differences across countries in the extent to which capital and labour flow to innovative firms. For example, a 10% increase in the patent stock is associated with an increase
in the typical firm’s capital stock of about 3% in Sweden and the United States; 1½% in Japan, Germany, France and Spain; and a ½% in Italy (Figure 4.7; Panel A). Similarly, the ease with which patenting firms in the United States can attract labour is roughly twice as large as Italy, Germany, and Japan (Figure 4.7; Panel B). 4

![Figure 4.7 Do resources flow to more innovative firms? Additional inputs attracted by a firm that increases its patent stock by 10%; selected OECD countries (2002-2010)](image)

**Notes:** The black dot shows the country-specific point estimate while the grey bands denote the 90% confidence interval (note that the confidence intervals vary across countries due to differences in the number of observations). These estimates are obtained from the following baseline fixed effects regression specification:

$$Y_{i,s,c,t} = b_1 \ln(PatS_{i,s,c,t}) + h_{i,s} + m_{c,t} + e_{i,s,c,t}$$

Where: $Y$ is the economic characteristic (employment or capital) for firm $i$, in sector $s$, in country $c$ at time $t$ and $PatS$ is the depreciated patent stock of firm $i$. The specification also includes firm fixed effects and industry*country*year fixed effects. To obtain the country-specific estimate, $PatS$ is interacted with various dummy variables for each country.

**Source:** OECD calculations based on firm level data from the ORBIS-Patstat Database for the non-farm business sector. See Andrews, Criscuolo and Menon (2014).
These cross-country differences tend to be driven by younger firms: the sensitivity of capital with respect to patenting is about five times as large in the United States as compared with Italy for young firms, but this differential is only about double amongst older firms. The significance of these findings is enhanced by the fact that the extent to which young firms patent varies considerably across countries (Figure 4.8) and that, while young firms account for a smaller number of patents, they are significantly more likely to file a radical patent than older firms (Andrews et al., 2014). Moreover, the resource flows associated with radical patents are around two times larger in Sweden and the United Kingdom relative to Italy. One interpretation of these findings is that in countries where reallocation costs are lower, firms may be more willing to experiment with disruptive technologies than in environments where reallocation costs are higher.

4.4 The role of policy

A wide range of policy instruments can potentially influence the reallocation of resources to the most innovative firms and contribute to the development of scale in young firms. This section touches on a number of such areas, reflecting recent OECD work. It also draws some implications for the Netherlands.

Product market competition

The first of these are product market regulations (PMRs) that have a pervasive impact at each stage of the innovation process. PMR shape the formation of new ideas via their effects on innovative effort. Lower entry regulations increase the supply of new ideas by raising firm entry rates, which in turn increase the pressure on incumbent
firms to innovate via heightened competitive pressure. New OECD evidence shows that a modest reduction in PMR in the energy, transport and communications sectors - corresponding to the difference in regulation between Australia and Austria in 2008 - could result in a 5% increase in the stock of business enterprise R&D and a 3% rise in patents per capita in the long run (Westmore, 2013). This could be expected to raise annual MFP growth by around 0.1% but the effects would take some time to materialise given the relatively sluggish adjustment of R&D to shocks. Similarly, the positive impact of knowledge spillovers from abroad on domestic patenting activity is significantly higher in countries where barriers to entry for new firms are relatively low (Westmore, 2013), suggesting that reforms to PMR can also raise the incentives for firms to incorporate foreign technologies.

One of the channels through which product market reforms affect innovation and its implementation is via improved managerial performance, which could enhance the ability of firms to undertake the internal reallocations required to implement new technologies and to sustain the innovation process. Pro-competition policies are likely to improve management performance by imposing greater market discipline, which affects the tail of poorly managed (and unproductive) firms (Bloom and Van Reenen, 2010). Consistent with this, the tail of poorly managed firms in countries where product market regulations are less stringent - particularly, the United States - is smaller than in other countries where product market regulations are, on average, more cumbersome.

Figure 4.9 Framework policies and resource flows to patenting firms, 2002-2010

A: Additional labour attracted by a firm that increases its patent stock by 10%
B: Additional capital attracted by a firm that increases its patent stock by 10%

<table>
<thead>
<tr>
<th>Stringency of Employment Protection Legislation</th>
<th>Access to Early Stage VC</th>
<th>Judicial inefficiency</th>
<th>Barriers to Trade &amp; Investment</th>
<th>Cost of Bankruptcy Legislation for Entrepreneurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum (Sweden)</td>
<td>Mean (Norway)</td>
<td>Minimum (United Kingdom)</td>
<td>Mean (France)</td>
<td>Minimum (Norway)</td>
</tr>
<tr>
<td>Mean (Belgium)</td>
<td>Mean (Switzerland)</td>
<td>Mean (Japan)</td>
<td>Mean (Italy)</td>
<td>Mean (Portugal)</td>
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<tr>
<td>Minimum (Greece)</td>
<td>Maximum (Czech Rep.)</td>
<td>Maximum (Slovak Rep.)</td>
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<td>Maximum (Norway)</td>
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Note: The chart shows that the sensitivity of firm employment and capital to changes in the patent stock varies according to the policy and institutional environment. These estimates are obtained by including an interaction term between the Patent Stock (PatS) and policy variables in the baseline equation outlined in the notes to Figure 4.7. All policy terms are statistically significant at at least the 10% level. Panel A shows that the sensitivity of firm employment to patenting is three times larger when EPL is at the sample minimum (i.e. the US), compared with when EPL is at the sample maximum (i.e. Portugal).

Source: OECD calculations based on matched ORBIS-PATSTAT data. See Andrews et al., (2014) for details. EPL is the OECD Employment Protection Legislation (EPL) sub-index of restrictions on individual dismissal of workers with regular contracts; Regulation of professional services and Barriers to Trade and Investment are sourced from the OECD Product Market Regulation (PMR) Index; Stock market capitalisation is expressed as a percent of GDP and is sourced from the World Bank along with Judicial Efficiency and Strength of Investor Rights. Judicial Efficiency refers to the cost of enforcing contracts, which measures the court costs and attorney fees as a per cent of the debt value. Strength of Investor Rights takes into account the extent of corporate disclosure, director liability and ease with which shareholder can sue company officers.

Product market regulations also influence innovation through the ability of successful firms to attract the complementary tangible resources that are required to implement and commercialise new ideas. Figure 4.9 shows how the estimated flow of resources to patenting firms varies with different public policy settings (see Andrews et al., 2014). For example, the responsiveness of firm employment to increases in the patent stock would more than double if the stringency of PMR were reduced from the highest observed level in Poland to the mean value of Belgium.

Product market regulations also influence the ability of economies to capitalise on innovation via rapid changes in market shares of successful firms. Across OECD countries, less stringent regulations affecting product markets tend to be associated

Entrepreneurship in the Netherlands
with higher allocative efficiency in manufacturing sectors (Figure 4.10A) and this relationship is confirmed by econometric analysis (Andrews and Cingano, 2012). This research also uncovers a sizeable negative effect of inappropriate service regulations on aggregate productivity, via a trickling-down effect of inefficiencies in resource allocation in the service sector. For example, a highly regulated country such as Spain would eventually experience a 4% increase in aggregate productivity if it were to reduce anti-competition barriers in the services sector to the lower level that prevails in Denmark. Importantly, reforms to regulation in the services sector tend to have stronger effects on resource allocation when labour and credit markets are more responsive, suggesting that the benefits of higher entry and competition are more fully realised when other barriers for labour and capital to flow to their most productive use are also low (Andrews and Cingano, 2012).

**Figure 4.10** Allocative efficiency and framework policies
Selected OECD countries in 2005

A. Product market regulations restricting competition

![Graph showing allocative efficiency and product market regulations restricting competition](image-url)
B. Creditor friendliness of bankruptcy law

Notes: Allocative efficiency measures the contribution of the allocation of employment across firms to manufacturing labour productivity in 2005 (see Andrews and Cingano, 2012). Product market regulation refers to the overall index from of the OECD PMR for 2003. For details on the cost to close a business, see Figure 4.9.


In terms of product market regulation, the Netherlands is no longer amongst the more heavily regulated countries in the OECD area. The overall level of product market regulation has been substantially reduced in recent years and is now amongst the lowest in the OECD area (OECD, 2014a). However, other indicators, such as the World Bank’s Doing Business indicator on “Starting a Business” still rate the Netherlands very low - at place 67 in 2013, up from 77 in 2012 - suggesting there remains room for further improvement.

Product market regulation may also be a factor that still affects young firms, precisely because young firms in certain areas may seek to develop a new business model that is in conflict with prevailing regulations. For example, entrepreneurs developing a new business model around new technological opportunities, e.g. related to the Internet or to other areas of technology convergence, such as biotechnology or nanotechnology, are more likely to find that existing rules constrain their business behaviour than firms operating in more mature markets. The Netherlands already has initiatives to reduce the regulatory burden, including in new areas, but this is an area in constant need of attention to ensure that regulations are kept up to date and enable new areas of growth.

Employment protection legislation

By raising labour adjustment costs, stringent employment protection legislation (EPL) slows down the reallocation process (Haltiwanger et al., 2008) and aggregate productivity growth (see Bassanini et al., 2009). At the same time, EPL has important effects on the nature of innovation. For example, by raising exit costs, stringent EPL...
makes experimentation with uncertain growth opportunities - which is essential to promoting investment in KBC - less attractive. From this perspective, strict EPL curbs incentives to develop new ideas through its negative effects at the late stage of the innovation process.

New OECD empirical evidence shows that higher EPL lowers productivity growth by handicapping firms that operate in environment subjects to greater technological change and thus place a high option value on flexibility given their tendency to experiment with uncertain technologies. As illustrated in Figure 4.9, stringent EPL significantly reduces the ability of innovative firms to attract the complementary tangible resources that are required to implement and commercialise new ideas. Moreover, the burden of this effect falls disproportionately on young firms, which is consistent with the idea that stringent EPL reduces the scope for experimentation with radical innovation.

These findings are in line with firm-level evidence that in ICT-intensive sectors where experimentation is common, more stringent EPL is associated with lower MFP growth and particularly so for firms close to the technology frontier (Andrews, 2013). Reflecting this, countries with stringent EPL tend to have smaller high-risk innovative sectors associated with intensive ICT use (Bartelsman et al., 2010), while multi-national companies tend to concentrate more technologically advanced innovation in countries with low EPL where disruptive resource shifts are easier to accommodate (Griffith and Macartney, 2010). At the same time, more stringent EPL disproportionately reduces R&D expenditure - one indicator of the investment in the formation of new ideas - in sectors with higher rates of patenting intensity, particularly in more turbulent sectors where reallocation needs are likely to be more intense (Bas, 2013).

EPL also affects the ability of national economies to gain from successful innovations through increases in the market share of innovating firms. For example, in sectors with naturally higher reallocation needs - measured by job layoff, firm turnover and ICT intensity; e.g. electrical and optical equipment - less stringent EPL disproportionately raises allocative efficiency (Andrews and Cingano, 2012) relative to other sectors. Similarly, in more R&D-intensive industries, less stringent EPL raises productivity growth to the extent that it is associated with a more dynamic firm growth distribution - that is, a lower share of static firms and higher share of growing and shrinking firms (Bravo-Biosca et al., 2012).

While stringent EPL is undesirable from the perspective of promoting experimentation and thus investment in KBC, it is important to recognise that employment protection might raise worker commitment and firm’s incentives to invest in firm-specific human capital, which could raise within-firm productivity (Autor, 2003). While empirical evidence for this hypothesis is scarce (see below), it nonetheless suggests that labour market reforms should be designed and implemented in a broad-based fashion (see Martin and Scarpetta, 2012).

Empirical evidence for the hypothesis that stringent EPL might be beneficial to innovation and within-firm productivity via these channels is scarce. Acharya et al.,
find a positive relationship between EPL and patenting based on a sample of five countries and argue that strict EPL ex ante fosters innovation by making it less likely that firms would dismiss workers in the event of short-run project failures. New OECD research, however, cannot confirm this relationship in a broader sample of countries (Westmore, 2013). Nevertheless, there is some evidence to support the idea that stringent EPL is less detrimental in industries characterised by cumulative innovation processes, where innovation-driven labour adjustments are more likely to be accommodated through the skill-upgrading of existing employees than worker turnover. For example, Andrews and Cingano (2012) find that while strict EPL has an adverse effect on resource allocation in highly turbulent innovative sectors, this is not the case in sectors characterised by cumulative patterns of innovation (such as the chemicals sectors).

The Netherlands had one of the highest levels of employment protection legislation for regular workers in the OECD area on 1 January 2013 (OECD, 2013b), while regulation for temporary workers was relatively low. The debate on potential reforms in this area has been underway in the Netherlands for a long time. The main point from this chapter and from other recent contributions in the area (e.g. Bartelsman, 2013) is to argue that an economy increasingly dependent on knowledge and ICT, and where new firms are an important source of innovation and employment, may require a labour market that can adapt quickly and easily to technological changes and emerging demands. Such a labour market may require different rules as regards employment protection legislation. However, reforms to such rules are only one aspect that needs to be considered in improving the adaptability of the labour market; reforms to social policies and skills will be important too.

**Bankruptcy legislation**

Similar to stringent EPL, bankruptcy laws that impose excessively high exit costs in the event of business failure may make entrepreneurs less willing to experiment with risky technologies. At the same time, bankruptcy codes that provide no safeguards for creditors may reduce the supply of credit, so some balance is required.

Bankruptcy regimes that severely penalise failed entrepreneurs, whether by forcing liquidation more often or limiting entrepreneurs’ ability to start new businesses in the future, are likely to reduce the willingness to take risks and thus the supply of new ideas. Similarly, studies that control for the possibility that economic outcomes influence bankruptcy regimes (i.e. reverse causality) find that more debtor-friendly bankruptcy codes have been associated with greater intensity of patent creation, patent citations and faster growth in countries relatively more specialised in innovative industries (Acharya and Subramanian, 2009). At the same time, more debtor-friendly bankruptcy codes are associated with more rapid technological diffusion, which enables laggard countries to catch-up with the technological frontier (Westmore, 2013).

The right balance between leniency and protection of creditors in bankruptcy legislation will also depend on specific features of entrepreneurs’ activities. Bankruptcy legislation that does not excessively penalise failure - as measured by a lower cost to close a business - can promote the flow of capital to more innovative firms (Figure 4.9, Panel B; Andrews et al., 2014), by reducing the expectation of entrepreneurs that they
will be heavily penalised in case of failure. By contrast, if the cost of winding-down a business is particularly high, risky entrepreneurial ventures might not be brought to the market to avoid incurring high exit costs in case of failure. Indeed, bankruptcy codes that more heavily penalise failure are negatively associated with MFP growth and the share of high growth firms in capital intensive industries (Bravo-Biosca et al., 2012). Finally, across OECD countries, less stringent - i.e. more debtor-friendly - bankruptcy legislation is to some extent associated with higher allocative efficiency (Figure 4.10, Panel B), and this effect is particularly strong in sectors with naturally higher firm turnover rates where regulations affecting exit costs are most likely to bind (Andrews and Cingano, 2012).

The swift reallocation of resources from failed ventures will also be affected by the time required for the full completion of all legal procedures to wind up a business and the obstacles to the use of out of courts arrangements. In extreme cases, these legal procedures might take years to complete, thus undermining effective reallocation and the accumulation of entrepreneurial capital.

Based on available international indicators, the Netherlands has amongst the most debtor-friendly systems of bankruptcy legislation in the OECD area (Andrews and Criscuolo, 2013), suggesting that this is not a constraint for business dynamics in the country.

**Fiscal incentives for R&D**

R&D tax incentives, a non-discriminatory tool that aims to reduce firms’ marginal cost of R&D activities, were present in 27 of the 34 OECD member countries in 2011. Support for business R&D through the tax system is typically combined with a broader set of direct support policies (e.g. grants, loan, loan guarantees) that are also intended to address market failures related to investment in innovation. While significant cross-country differences exist in the policy mix, there has recently been a general shift away from direct support and R&D tax incentives have become more generous.

New OECD evidence suggests that R&D tax incentives have the unintended consequence of protecting incumbents at the detriment of potential entrants, thus slowing down the reallocation process (Bravo-Biosca et al., 2012). OECD analysis finds that more generous R&D tax credits are associated with a less dynamic distribution of firm growth in R&D intensive sectors - i.e. a higher share of stagnant firms and a lower share of shrinking firms - thus disproportionately benefiting the slowest growing incumbent firms. At the same time, differences in the extent of direct support - as measured by the share of business R&D financed by government - do not appear to shape the distribution of firm employment growth, suggesting that such policies have a more neutral impact on incumbents vis-a-vis entrants. To the extent that R&D tax incentive schemes in some countries lack immediate cash refunds and/or carry-over provisions, the design of such schemes may provide less assistance to young firms which are typically in a loss position in the early years of an R&D project. Indeed, the lack of an immediate refund may significantly reduce the effective rate of the tax subsidy to R&D, even in countries that provide relatively
generous support at first glance (Elschner et al., 2011). The use of payroll withholding tax credits for R&D wages, whereby firms receive an immediate refund for expenditure on the wages for R&D personnel, is another way to provide support for (young) firms that are in a loss position.

Even if R&D tax incentive schemes are refundable and contain carry-over provisions, young firms may not fully benefit from such schemes if they lack the upfront funds required to start an innovative project. Direct public funding might be more beneficial than R&D tax incentives for young financially constrained firms (Busom et al., 2012) if direct support helps to certify the “good quality” of young firms and projects. This could reduce problems associated with information asymmetry, which tend to be much more pronounced for radical - as opposed to incremental - innovations. This in turn would lower the cost of capital of firms receiving grants when applying for external sources of financing.

The design of R&D tax credits in the Netherlands is relatively favourable to domestic and young firms, with special treatment for such firms, and an incentive scheme that is primarily linked to wage costs, rather than taxes. At the same time, significant support is also being provided for the Innovation Box, which is more likely to end up supporting large multinational firms and incumbents, rather than young innovative firms. Moreover, in recent years, support for innovation policy in the Netherlands has become more focused on indirect support, which may not fully meet the needs of young innovative firms engaged in high-risk projects.

**Financing in the knowledge based economy**

For knowledge-based firms, profitability partly depends on the ability to leverage investments in KBC through rapid increases in the scale of production, which requires access to complementary tangible resources that typically need to be funded through external finance. New OECD evidence shows that via their effect on reallocation mechanisms, deeper financial markets play an important role in helping firms to implement and commercialise new ideas, thus raising the returns to innovation. For example, resource flows to innovative firms tend to be stronger in countries with higher stock market capitalisation to GDP (Figure 4.10, Panel A; Andrews et al., 2014). Similarly, deeper financial markets are associated with a more dynamic distribution of firm growth (i.e. more growing and shrinking firms and fewer static firms) in industries that are highly dependent on external finance (Bravo Biosca et al., 2012).

Financing constraints tend to be more acute for young firms to the extent they have limited internal funds and lack a track record to signal their “ability” to investors. Indeed, when asymmetric information problems are large, a “missing markets” problem may emerge where many of the innovations associated with young start-up firms may never be commercialised. This financing gap is partly bridged by venture capitalists or business angels, who address informational asymmetries by intensively scrutinising firms before providing capital and monitoring them afterwards. Countries with more developed seed and early stage venture capital markets tend to invest more heavily in KBC and also appear to be more effective at channelling capital and labour to young innovative firms (Figure 4.10). More broadly, econometric studies based on the variation
in venture capital (VC) financing that is exogenous to the arrival of entrepreneurial opportunities, tend to find that VC has a sizeable positive impact on innovation and economic growth (Kortum and Lerner, 2000).

Nevertheless, the question of why seed and early stage VC (SES-VC) financing is higher in some countries than others remains. It is likely that differences in human capital, entrepreneurial attitudes and framework and innovation policies will play a role. For example, less stringent EPL and bankruptcy regimes, characterised by strong exit mechanisms and that do not excessively penalise business failure, can foster the development of SES-VC (Armour and Cumming, 2006), while high rates of taxation on corporate incomes and capital gains have negative effects on SES-VC (Da Rin et al., 2006). Regulatory barriers might also impact the availability of SES-VC, particularly with respect to the ease with which venture capitalists and business angels can organise themselves as limited liability entities (OECD, 2013b). Finally, with respect to the clean technology sector, new OECD evidence suggests that regulations that aim to create a market for these technologies are associated with a higher level of VC investment while fiscal incentives for investment in these technologies are not effective (Criscuolo and Menon, 2013).

Governments attempt to nurture the market for seed capital through a range of supply-side policy initiatives (Wilson and Silva 2013). Most OECD countries have some type of government equity finance programme, such as direct public VC funds, “funds of funds” - an investment strategy consisting of holding a portfolio of other investment funds rather than investing directly in companies - and co-investment funds, whereby public funds are matched to those of private investors who are approved under the scheme. These programmes, especially funds of funds and co-investment funds, have grown in importance over the past five years. While fiscal incentives are less common, some 17 OECD countries still employ either “front-end” tax incentives or tax deductions for investment in seed and early stage VC and “back-end” tax relief on capital gains, including rollover or carry forward of capital gains or losses. Of course, it is important to keep in mind the broader taxation environment - and particularly the existence of capital gains tax - when assessing these specific fiscal incentives.

Evidence on the contribution of supply side policy interventions in the market for SES-VC is scarce and research on whether public VC funds crowd-out private activity is inconclusive (Da Rin et al., 2012). Given the potential for regulatory capture, however, government funding is likely to be most effective when it remains disciplined by private venture capital and does not exert actual control over business decisions. This suggests that public co-investment funds and fund-of-funds might be preferable to public equity funds but evidence on this issue is limited and the effect is likely to be contingent on the design of such schemes. More broadly, preliminary, albeit crude, evidence (Da Rin et al., 2013) shows that the more support for SES-VC there is in a country - as proxied by the number of tax and equity policy instruments - the lower is the age at which firms receive SES financing. Although causation is difficult to establish and the ultimate performance of firms that receive public funding is unclear, this might suggest that such programmes warrant further attention and that further analysis to examine the effectiveness of these schemes is called for.
Financing of risk capital remains an area where the Netherlands lags the lead countries in Europe. The Dutch government provides a range of financial support instruments in this area, affecting all phases of a firm’s growth, including a recently established Fund-of-Funds. As explored further in other OECD work (Wilson and Silva, 2013), such supply-side instruments are important, but may not be sufficient to address the wide range of potential market failures in the area. Attention for entrepreneurship education and mentoring can help strengthen the quality of business proposals and projects and broaden the pipeline, which could help attract more private risk capital to the Netherlands. While the government has some policies in these areas, they may require greater emphasis in the overall policy mix.

**Entrepreneurship and the Top Sector approach**

There is also a question to which extent the search for greater dynamism and experimentation in the Dutch economy aligns with the current “Top sector” approach. This approach involves public-private partnerships (PPPs) along sectoral lines to facilitate coordination and rationalise government interventions in a way that maximises impact. In general terms, the approach is closely aligned with modern approaches to industrial policy (Warwick, 2013), especially in terms of its focus on coordination and alignment, the principal role attributed to stakeholder demand and the commitment to monitoring and evaluation. It also involves a whole-of-government approach to innovation policy, which increases the likelihood that bottlenecks outside the traditionally narrow remit of innovation policy will be identified, that sufficient attention and resources will be diverted to tackle them.

At the same time though, the policy differs from other approaches, e.g. in its emphasis on economic sectors, as opposed to tasks or activities. The emphasis on sectors of strength has potential implications for the relative roles of incumbents and challengers, including young innovative firms. Moreover, the process does not involve a “search” process for new areas of strength, which risks making the approach less dynamic than other forms of modern industrial policy. From the perspective of entrepreneurship, the main concerns are around the selection of the specific sectors, the risk of favouring incumbents at the expense of challengers, and the need to strike a balance between small and large firms. Another objection to the current choice of sectors is that it risks being backward rather than forward-looking, especially in terms of emerging social challenges. Moreover, focusing on sectors of existing strength is not always compatible with increasing overall competitiveness.

The engagement of entrepreneurs and small firms in the top sector approach also risks being limited by the transaction costs entailed in their participation. This can be aggravated by the fact that larger companies are better organised and have longer experience in dealing with government. The government has recognised this problem and there are efforts underway to encourage the participation of SMEs. It is important to ensure that their interests are taken into account in a manner that is sufficiently representative.
Overall, there appears to be a high level of awareness of the limitations of the top sector approach and the government is taking steps to adapt the approach. For instance, ensuring more active and more representative participation of SMEs, maintaining openness in the top sectors as well as a fuller representation of social challenges, all appear high on the agenda. At the same time, it is important to ensure that sufficient support is available for initiatives that fall outside the scope of the top sectors and that the current landscape of generic instruments is further strengthened and rebalanced, including in the area of entrepreneurship. A more elaborate analysis of the top sector approach is contained in a new OECD report (OECD, 2014b).

4.5 Conclusions and implications for the Netherlands

This chapter has presented new empirical evidence on employment dynamics in a range of OECD countries, including the Netherlands. It demonstrates the important role that young firms - of less than 5 years old and independent of their size - play for job creation, including in the Netherlands. It also shows that in many European countries, including the Netherlands, young firms stay relatively small after their successful entry and growth, at least in comparison with the United States, thus limiting their contribution to employment and growth in the long term. This is a well-known problem in many European countries, where only few young firms scale to a very large size.

Several of the policies affecting this (lack of) dynamic are well known and the chapter presents new evidence on their role in explaining cross-country differences. In some cases, the Netherlands appears to have some room for improvement. For example:

• In terms of product market regulation, the Netherlands already has initiatives to reduce the regulatory burden, including in new areas, but this is an area in constant need of attention to ensure that regulations are kept up to date and fully enable new growth areas.
• With regards to employment protection legislation, the Netherlands continues to have one of the highest levels of regulation for regular workers in the OECD area, although regulation for temporary workers is relatively low.
• Based on available indicators, the Netherlands has amongst the most debtor-friendly systems of bankruptcy legislation, suggesting that this is not a constraint for business dynamics.
• As regards R&D tax incentives and support for innovation, the design of R&D tax credits in the Netherlands is relatively favourable to domestic and young firms. At the same time, significant support is also being provided for the Innovation Box, which is more likely to support large multinational firms and incumbents, rather than young innovative firms.
• Finally, financing of risk capital remains an area where the Netherlands lags the lead countries in Europe and where there may be scope for further improvement.

These are not the only factors that may influence the state of business dynamics in the Netherlands and the role that young firms currently play in the economy. Other important influences emerge from the European level; without a fully integrated single
market for services, young services firms cannot easily scale their firm for the European
market, as they will have to comply with different rules in every new market they
enter. This puts European firms at a severe disadvantage compared with firms in larger
integrated markets, notably the United States.

Cultural or societal factors may also play a role, although this is often hard to quantify.
Recent indicators from OECD’s Entrepreneurship at a Glance (OECD, 2013c) suggest that
the Netherlands has a reasonably positive attitude towards entrepreneurship, but that
only 47% of Dutch adults found that “school had helped develop a sense of initiative and
a sort of entrepreneurial attitude”, considerably below levels in countries like Denmark
and Sweden (54% each) or Finland (64%). Moreover, only 42% of Dutch adults found that
“school education provided enabling skills and know-how to run a business”.

The human factor may also play a role in another way, however. Emerging evidence from
the OECD’s Dynemp project finds that a very high share of young firms in Europe never
grow beyond 1 employee. This is possibly because a large number of new firms reflect
a life choice, and only a very limited number of entrepreneurs out of all those starting a
firm may have the desire or the ability to grow a large firm. This then brings the attention
back to the entrepreneurs themselves and the abilities and experiences they can bring
to the Dutch economy. Tapping into the widest possible tool of talent is important in
this context, and requires also exploring how any specific challenges facing various
categories of entrepreneurs can be tackled, including women (that remain very poorly
represented in the Netherlands), immigrants (that are potentially a very important
source of radical innovation), as well as young people and seniors.

The chapter also briefly touched on the Top Sector approach and its impact on
entrepreneurship. It is important to ensure that this approach gives sufficient room for
young innovative firms, including in remaining open in the choice of future top sectors.
At the same time, it will be important to ensure that sufficient support is available for
initiatives that fall outside the scope of the top sectors and that the current landscape
of generic policies and instruments is further strengthened, including in the area of
entrepreneurship.

The Netherlands has made good progress in recent years and the perspective for
entrepreneurs has improved in many areas, with more high-growth firms emerging.
Nevertheless, more can be done to enable experimentation in the economy and realise
the potential of entrepreneurship for future growth and job creation.

Finally, the chapter has mainly explored the contribution of young firms to employment
growth, and the policies and factors that affect that contribution. Further OECD work
will explore this contribution in further detail, including at the sectoral level, and will
also examine the role of different firms for productivity growth, as the key driver of
long-term growth. This analysis will give further insights in business dynamics, enabling
governments to develop their policies based on a better understanding of the underlying
dynamics in the economy, both as regards employment and as regards productivity.
Notes Chapter 4

1 Organisation for Economic Co-operation and Development (OECD). The OECD work on this topic has benefitted from financial support by NESTA, and has benefited from cooperation by a wide range of researchers across member countries, notably in the context of the OECD Dynemp project. Their contributions are gratefully acknowledged. The views expressed in this chapter are those of the authors and do not necessarily represent those of the OECD or its member countries.

2 The data presented in this chapter are preliminary and subject to revision. They do not account for mergers and acquisitions in determining the age of firms. Moreover, due to methodological differences, figures may deviate from officially published national statistics. See box 1 for further detail.

3 These differences might be partly influenced by the intensity of mergers and acquisition activity across countries and whether new businesses that result from M&A deals appear as “entrants” in a country’s business register.

4 The low sensitivity of resources to patenting in countries such as Denmark, Finland and the Netherlands may reflect the fact that firms in small open economies may expand abroad rather than domestically.

5 More detailed references to the literature in these areas are contained in the original OECD papers.

6 See Martin and Scarpetta (2012) and OECD (2013a) for a comprehensive review of the recent cross country evidence.

7 The 7 OECD countries that did not provide R&D tax incentives in 2011 were: Estonia, Germany, Israel, Mexico, New Zealand, Sweden and Switzerland.

8 Indeed, this is consistent with recent evidence from Finland and Germany which shows that direct support schemes do not preserve the dominance of market leaders but make small firms more likely to undertake R&D (Czarnitzki and Ebersberger, 2010).

9 Financial market development in this study is measured as the sum of the stock and bond market and of private credit by banks, all normalised over GDP.

References


