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Innovation Union Competitiveness report 2011

**PART III: Towards an innovative Europe
- contributing to the Innovation Union**

Even if Europe invests in research and increases the efficiency of its public research system and of its interaction with private research, the benefits of these efforts will not be reaped if the private research system itself does not find the right conditions that will maximise its return on investment and create the conditions for a structural change towards a more knowledge-intensive, smart and efficient economy, able to respond to citizens' needs as well as to international competition. This is the perspective of part III, which places some key data related to innovation and entrepreneurship in a research perspective.

Part III: Towards an innovative Europe — contributing to the Innovation Union

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1. Fast-growing innovative firms

Highlights

The emergence and growth of innovative and knowledge-intensive firms is crucial for structural change. At EU level, the births and deaths of companies show a dynamic panorama, more stable in the larger member states, like the United Kingdom, France or Germany, and with higher degree of change in smaller countries. In the United States firm-creation remains stable, and at a higher level than in the EU. In the United States and even more so in the newly emerging Asian economies, young, leading innovative firms are more numerous, especially in high-tech sectors, and they grow faster than in Europe.

Innovative small and medium-sized enterprises spend their resources differently depending on the home-country context. In the more knowledge-intensive economies, SMEs can spend ten times more on innovation than their counterparts in less developed countries. Concerning patenting activities, young firms less than five years old are active, and here Denmark and Norway have a higher patent intensity than the United States. Evidence shows that because of the high costs of patents (which vary from country to country) the SMEs which tend to patent are mainly above a certain threshold of size. However, above a certain number of employees (e.g. 250) size becomes less relevant as a differentiating factor.

Internationalisation activities have proven to be a path to growth and increased competitiveness for the European SMEs. Evidence shows that European firms are more internationally active when compared with firms in the United States and Japan. Size matters for SMEs: the larger the company is, the more international it tends to be.

1.1. Are European SMEs increasing their research and innovation?

This section focuses on innovative small and medium-sized enterprises as a key source of structural change in the economy. They represent the biggest share of employment and it has been shown that young and dynamic firms have a positive impact on the evolution towards a more knowledge-based economy.

Compared to the United States, Europe's industrial tissue is dominated by well-established companies that have conquered their specific markets, which they try to expand or diversify. Globalisation and world competition are a permanent challenge, and so far large EU companies are doing well and even surpassing their US competitors. One of the characteristics of large EU firms is that they are generally much older and, as they have not been constantly challenged by emerging and growing competitors as in the US economy, they have undergone fewer changes. But it is the young, innovative and dynamic companies that are considered the motors of growth and that potentially bring about structural change. Creativity and entrepreneurship are key elements which occur more frequently in the United States than in Europe. Fast-growing dynamic firms are also associated with other successful and emerging economies, where they constitute one of the main reasons for the success, especially when they are active in knowledge-intensive sectors.

In this chapter we will analyse the degree of research intensity in SMEs and their contribution for the overall BERD as a key indicator for growth. In complement, there is an overview on how SMEs engage themselves in innovative activities (such as patenting, for example) and

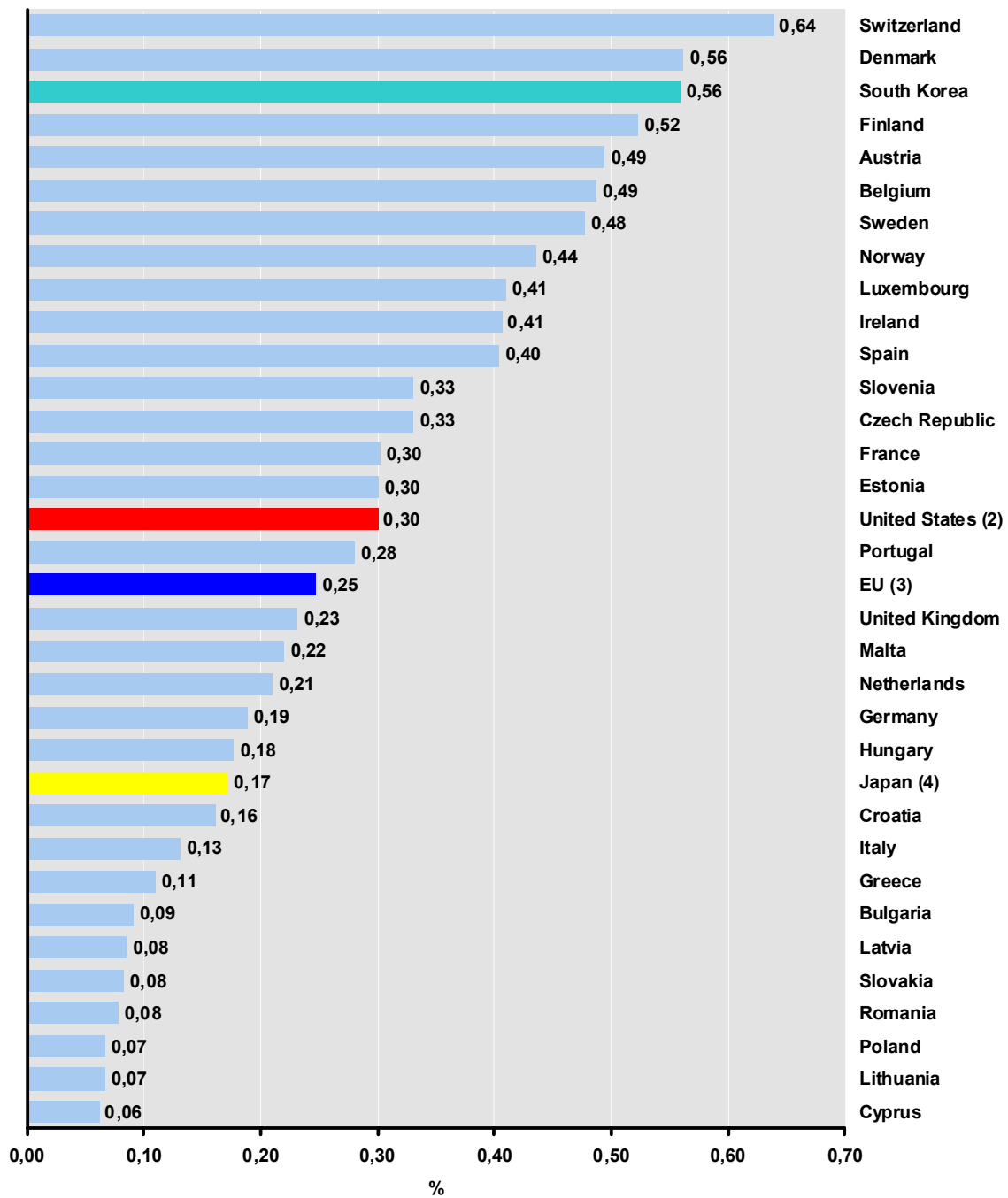
how they invest their resources to keep competitive and to enlarge their knowledge and markets through internationalisation. Finally, the chapter provides an overview of company dynamics with a special attention to fast-growing companies.

The highest research-intensity in SMEs is found in Switzerland and Denmark

The research-intensity of the SMEs is an essential indicator to understand their potential for growth and impact on the knowledge economy. Many new technologies are adopted and developed into disruptive innovations in the shape of new products and services by dynamic, research-intensive, fast-growing SMEs. The world of ICT provides multiple examples, such as Apple, Microsoft or Facebook in the United States, or Skype in the EU.

In this context, the EU is relatively well placed, only slightly below the levels of the United States and above those of Japan. However, very dynamic economies such as South Korea, the Nordic countries or Belgium, Austria and Switzerland, have much higher levels of business research investments than the EU average or even the United States.

Figure III.1.1 BERD performed by SMEs as % of GDP, 2008⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat

Notes: (1) EL: 2005; IE: 2006; EU, BE, DK, DE, LU, AT, SE, NO, US, JP, KR: 2007

(2) EU does not include IE, EL.

(3) US: BERD does not include most or all capital expenditure.

(4) JP: BERD by size class is underestimated.

Box: Denmark supports SMEs

Policy mixes addressing science–industry linkages and the commercialisation of public research results have been at the centre of policy development in recent years in Denmark. Since 2000 there has been an increase of the number of ‘gazelle’ Danish enterprises (those less than five years old), probably as a consequence of the respective policy measures, but this development was also supported by the favourable economic situation of mid-2000s. Since the newly introduced policy measures are not supported by large budgets and the economic situation is more difficult, it remains to be seen if the R&D intensity of SMEs and the R&D intensity of the business sector in general can continue the positive trend. This includes, as will be presented in this chapter, very dynamic patenting activity from the young Danish SMEs, ahead of similar activity in the United States.

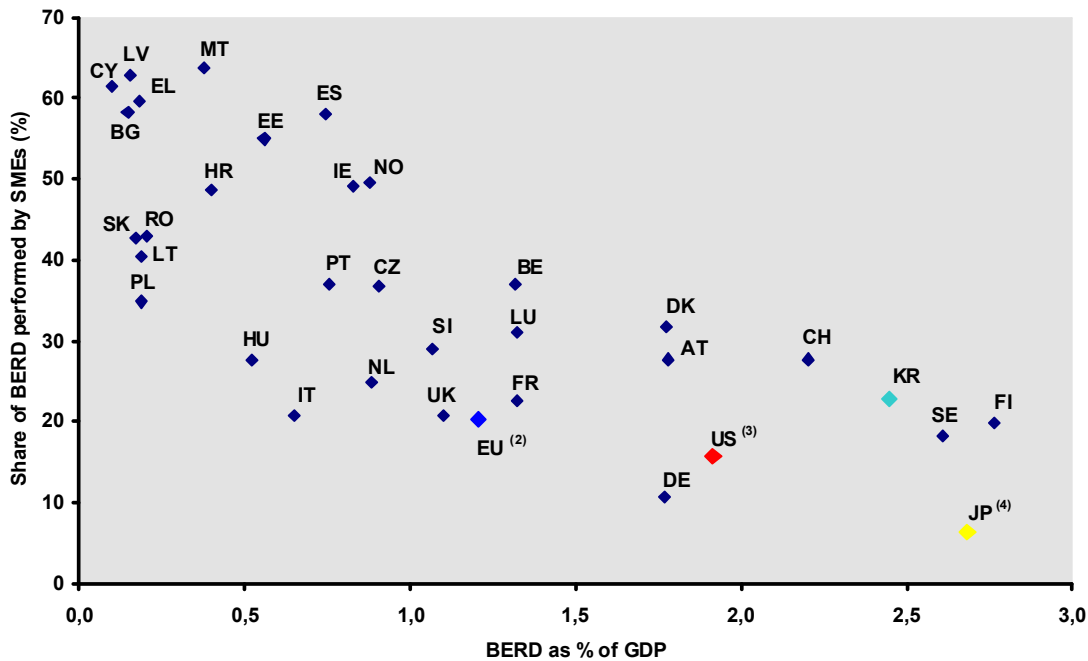
Though R&D investments are still concentrated in the largest companies, as in most other European countries, the share of R&D expenditures by SMEs in Denmark is quite high: 32% of R&D expenditure in 2007 came from SMEs (with 1–249 employees) in Denmark. Manufacture of pharmaceuticals and medicinal chemistries, software consultancy and supply are the largest sectors regarding intramural R&D expenditures.

In the EU, a slightly higher share of BERD is performed by SMEs in comparison to the United States, and this share is also higher still than that of Japan

Small and medium-size firms perform a higher share of business R&D in the EU than in the United States and Japan, as shown in figure III.1.2. In the EU, the share of BERD performed by SMEs amounts to 19.4% compared with 15.7% and 6.4% respectively for the United States and Japan. South Korea is above the EU with a share of 22.8%.

Though there are some exceptions, usually the higher participation of SMEs in business R&D is associated with lower R&D intensities of the country, as, for example, in the case of the EU-12 Member States, smaller countries, and also for Spain, Greece, Ireland and Portugal. The EU countries where SMEs only account for around a quarter or less of BERD, like France, the United Kingdom, Germany, Sweden or Finland, are countries at the top of both rankings of business R&D-intensity and innovation performances, and they host many of the large R&D investors and MNEs. Denmark, Belgium and Norway are the exceptions — here, a higher share of BERD performed by SMEs goes hand-in-hand with the active presence of SMEs in research in high and medium high-tech sectors. Europe needs an increased contribution to the overall economy of technology-based companies in sectors of high R&D intensity, to counterbalance its structural composition.

Figure III.1.2 BERD as % of GDP and % share of BERD performed by SMEs, 2008 ⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat

Notes: (1) EL: 2005; IE: 2006; EU, BE, DK, DE, LU, AT, SE, NO, US, JP, KR: 2007

(2) EU does not include IE, EL.

(3) US: BERD does not include most or all capital expenditure.

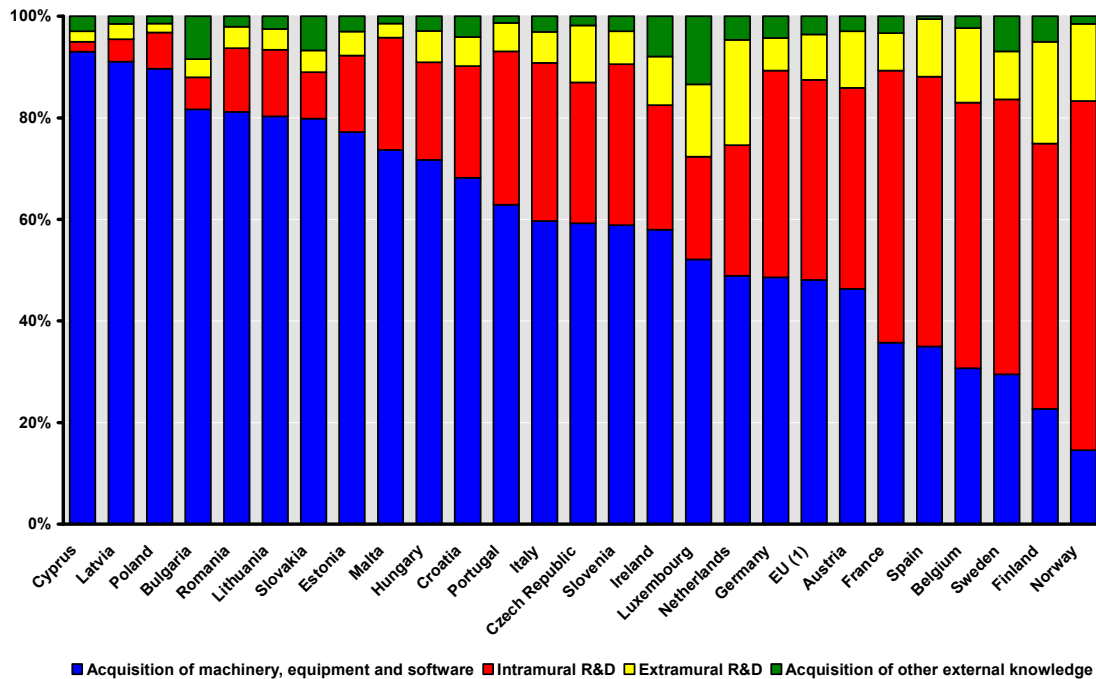
(4) JP: BERD by size class is underestimated.

SMEs in more advanced economies invest more heavily in the production and acquisition of new knowledge. SMEs in less developed economies invest more in the acquisition of machinery.

Part II chapter 2 presented the different partners required for the collaboration of innovative firms. In spite of the different situations across countries, in general, suppliers of equipment were considered the most important collaboration partners and also one of the most important sources for new knowledge. Consequently, it is relevant to analyse how innovative SMEs spend their resources, as shown in figure III.1.3. In the EU-12 Member States, and in general in countries with a lower R&D intensity (like Portugal and Italy) SMEs dedicate over 60% of their innovation expenditure to machinery, equipment and software. Spain presents a special situation, where machinery, equipment and software correspond only to 35% of the innovation expenditure compared with 53% for intramural R&D — values very similar to those registered for France. The Netherlands also present a large share of innovation expenditure dedicated to R&D, at 47%, but with the particular characteristic that only 26% is intramural and the other 21% performed extramural. SMEs in Germany, though investing the same 47% in research, give preference to intramural R&D with a share of 40%. In Belgium, Sweden, Finland and Norway, SMEs dedicate more than 50% of their innovation expenditure to intramural R&D. In fact, in these last two countries total expenditure in R&D passes 72% and 84% of their innovation investments, respectively.

Figure III.1.3. also shows the internal structure of the SMEs in the different countries. SMEs which are in the more research-intensive countries and are better innovation-performers rely more on their internal resources to innovate and are less dependent on external sources.

Figure III.1.3 SMEs - distribution of innovation expenditure by type of activity, 2006-2008



Source: DG Research and Innovation
Data: Eurostat
Note: (1) EU does not include DK, EL, UK.

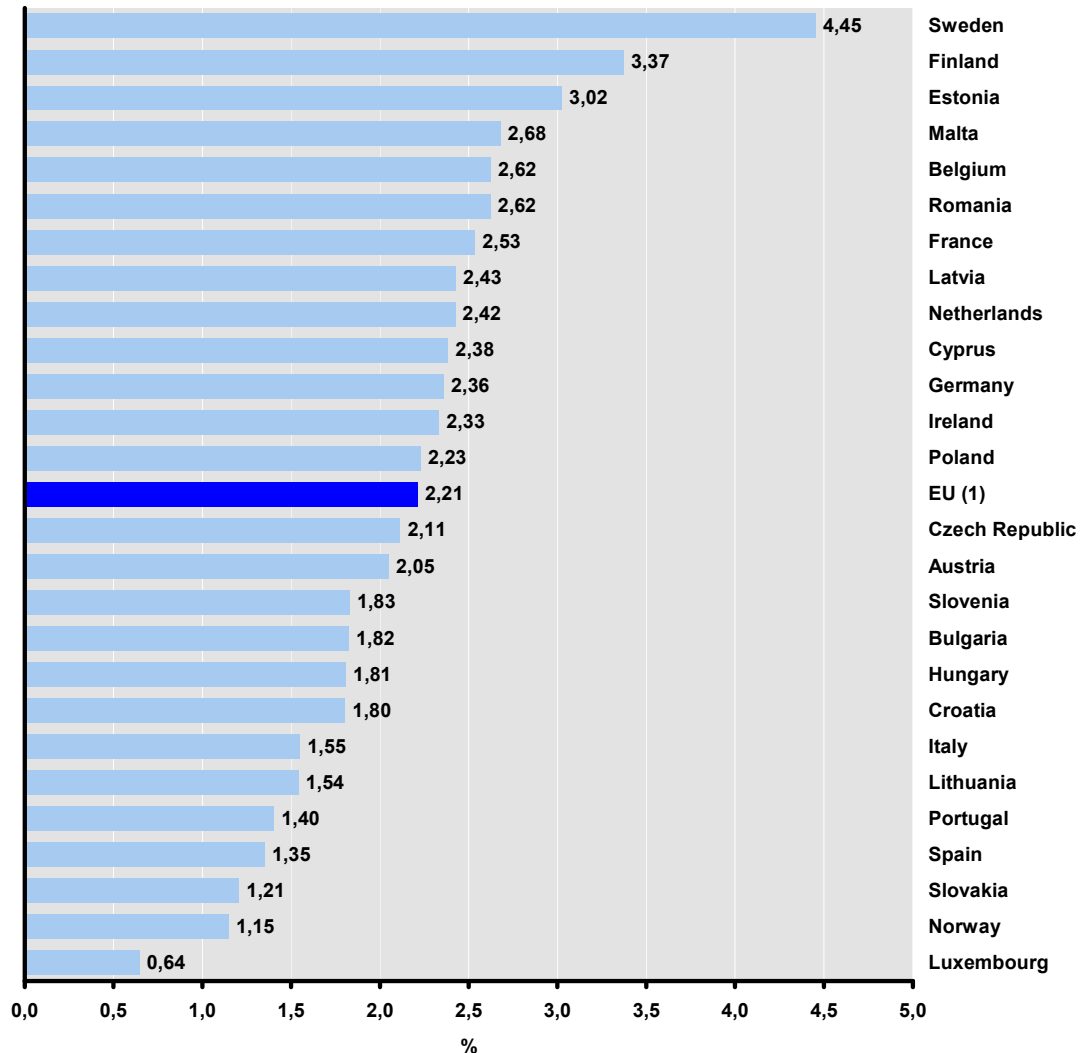
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Relative to their turnover, companies in knowledge-intensive economies can spend up to ten times more on innovation than their counterparts in less developed countries

How much of their turnover do companies spend in innovation activities?⁴ Data availability does not cover all the EU Member States, but gives a sufficiently diversified panorama within the set of countries shown in figure. III.1.4.2. More knowledge-intensive economies, like Sweden and Finland, invest three times more than other less R&D-intensive and less innovative countries. Estonia and Malta show a very high ratio and Belgium, Romania, France, Latvia and the Netherlands have similar values well above the EU average. Well below the average, are Italy, Lithuania, Portugal, Spain, Slovakia and Luxembourg. These figures, however, have to be interpreted with care as the definition of innovation expenditures (in particular non-R&D innovation expenditures) can still be interpreted very differently by respondents to the Community Innovation Survey. Cross-country comparability is not assured.

⁴ Community Innovation Survey: the innovation activities comprise not only R&D, but also activities such as technology acquisition, training, product design and introduction (know-how and other knowledge is relevant for companies in the high R&D intensity sectors, especially pharmaceuticals & biotechnology and healthcare equipment).

Figure III.1.4 Enterprises with innovation activities - Innovation expenditure as % of turnover, 2006-2008



Source: DG Research and Innovation
Data: Eurostat
Note: (1) EU does not include DK, EL, UK.

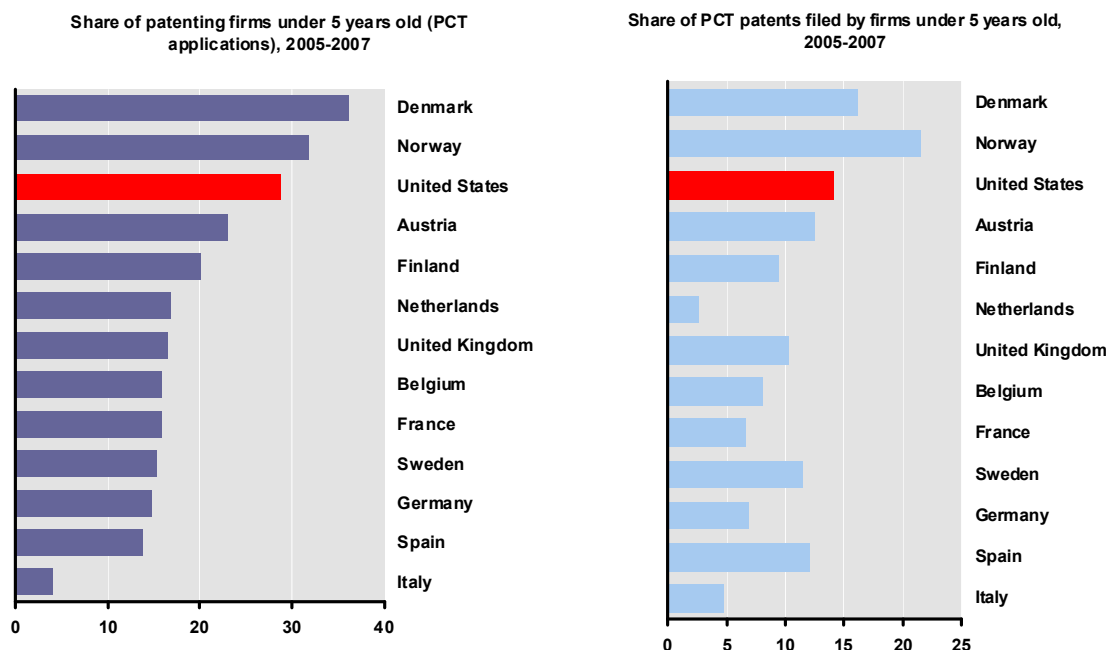
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These figures should be interpreted together with the data presented in the second chapter of Part III which concerns venture capital and the different policies, framework conditions and public support existing in each EU country. Considering the differences between countries regarding venture capital investment in the early stage (EU-27 average is about 0.2% per thousand GDP compared to the United States with 0.5% per thousand GDP), innovative companies in Sweden, Finland and Belgium, might more easily invest a bigger share of their turnover in innovation. Another aspect is the patterns of specialisation as shown in chapter 2 of part New Perspectives, where the differences in the economic structure of the EU, the United States and Japan are made visible and compared. In this context, the EU is lagging behind its main competitors in terms of specialisation in high-technology knowledge.

Young firms (less than five years old) are active in patenting, with Denmark and Norway ahead of the United States

Young firms that want to protect their innovations face several barriers, most of them linked to the size of the company. Framework conditions, access to venture capital and the high costs involved are aspects affecting the act of patenting. Very different situations can be observed when comparing European countries. Figure III.1.5. (left panel) shows the share of young firms that filed a PCT application(s) with priority date in 2005–2007: the highest share of (PCT) patenting young firms is to be found in Denmark and Norway, (36.2% and 31.8% respectively), above the United States with 28.8%. Young firms in Austria and Finland are also relatively active in patenting. Italy is the country where young companies are less active in patenting: only 4% of them having filed a PCT patent with priority date in 2005–2007. The right panel of the figure presents the share of PCT patent applications with priority dates in 2005–2007 that were filed by young companies in all PCT patent applications filed by companies in the country. There is some positive but not strong correlation between the right and the left panels. Values in the right panel also depend on the patenting activities of the firms older than five years. Older firms in Denmark are obviously more active in patenting than older firms in Norway, hence a smaller share of patents by young firms in Denmark than in Norway, despite the higher share of young firms that patent in Denmark. The same remark applies to the Netherlands where the share of patents filed by young firms is small in comparison to the share of young firms that file patents in that country.

Figure III.1.5 PCT patent applications by young firms (< 5 years), 2005-2007



Source: DG Research and Innovation

Data: OECD, HAN Database, October 2009 and Bureau Van Dijk Electronic Publishing, August 2008.

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Note: Data refers to patent applications filed under the Patent Cooperation Treaty (PCT) by firms with a priority date in 2005–2007. Counts are based on a set of patent applicants successfully matched with business register data.

Box: *Can SMEs afford to patent? Different countries need different policies to address the issue*

(Some insights from the IRMA-Industrial Research Investment Monitoring project — DG JRC and DG RTD — on the effect of size in the propensity to apply for a patent)

Costs associated with the application of a patent and its maintenance are extremely high for SMEs in general. So, what is the minimal firm-size, a threshold to be achieved, in order to allow an SME to engage itself in protecting its innovations? The literature agrees on the fact that propensity to patent increases with firm size.

Further investigation conducted in the frame of the IRMA project, shows some evidence on the subject and presents a few conclusions, also directly connected with the framework conditions that favour innovation. (other parameters, besides the costs involved, should be considered as supporting policies and programmes such as regional innovation programmes, programmes addressed to SMEs, support from structural funds, etc). The first one is that the size threshold beyond which SMEs use the patent system differs widely across countries. For example, this critical size is between 40 and 50 employees in Switzerland, Sweden and Belgium but is much higher in Germany or Italy. The second conclusion is that size only matters up to a point. Beyond 250 employees, the propensity to patent is largely independent of the size of the firm.

In conclusion, supporting policies intended to help SMEs to patent have to address different sizes of companies in accordance with the country.

Internationalisation activities have proven to be a way for growth and increased competitiveness for European SMEs

Internationalisation is a way for SMEs to increase performance and reinforce growth, strengthening their competitiveness and the basis for a sustainable development. In this way, the Single Market has enlarged the opportunities portfolio for SMEs with the chance of expansion beyond their home market. However, according to recent data, 75% of SMEs still depend entirely on their home markets.

Part II of this report presented a positive trend in what concerns the degree of technology absorption of EU companies, based on increasing ownership of cross-border patents, as a sign of the capacity of European firms to absorb knowledge produced abroad. In addition, the increased participation of SMEs in European R&D programmes and other initiatives launched in the context of the ERA (like international networks) have positively contributed to giving the SMEs an international dimension.

Different studies have been launched by the Commission on the degree of internationalisation of SMEs and its impact in the future development of the companies. The most recent one, based on a survey launched during spring 2009 of almost 9500 questionnaires completed by SMEs (micro, small and medium), covering 26 different sectors in 33 European countries⁵, presents new conclusions relevant to the situation, drivers and effects on business

⁵ Internationalisation of European SMEs, Final Report, DG ENTR, June 2010.

performance in the period 2007–2009. In this study, internationalisation is used in the broad sense to refer not only to exports but to all activities that place the SMEs in a business relationship with a foreign partner: exports, imports, foreign direct investment, international subcontracting and cooperation.

The main results confirm that 25% of EU SMEs export or have exported during the last three years and that the partner countries are mostly other EU countries (with the exception of imports from China, all the relations with BRICs are still underdeveloped and emerging markets such as Brazil, Russia, India and China are only served by 7% to 10% of the exporting SMEs). The sectors with the highest percentage of exporting SMEs are: mining (58%), manufacturing (56%) wholesale trade (54%), research services (54%) and sales of motor vehicles (53%).

European firms are more internationally active by comparison with those in the United States and Japan, even if only the extra-internal market is considered.

Companies involved with e-commerce (with activities based in internet) are more internationally active and, when considering export–import activities, these companies increase in intensity in direct proportion to the age of the SME. The main factor for internationalisation seems to be company size. Not surprisingly, there is a negative correlation between the population size of the SME's home country and its level of international activity (meaning that SMEs in Estonia or Denmark tend to be more international than SMEs in Germany, France, Italy, Spain, the United Kingdom or Poland) and the proximity of a SME to a national border does not seem to have great relevance to the level of its internationalisation.

Internationalisation of SMEs is linked to higher growth in turnover and employment

There is a direct correlation between the level of internationalisation and the size of the company: the larger the company is, the more international it tends to be (whether measured by exports, imports or FDI, according to the previously mentioned report)

Other strong correlations observed:

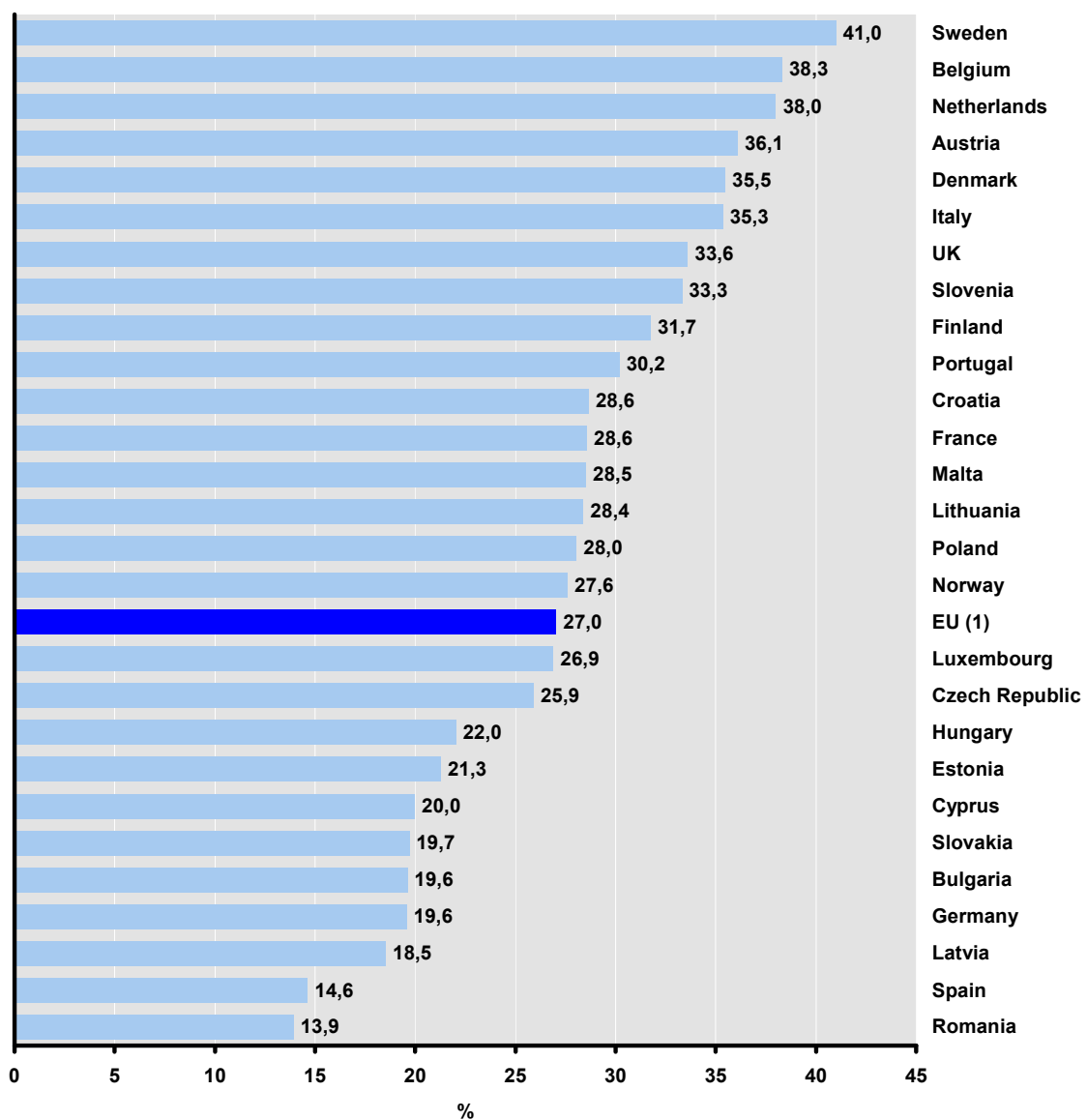
- Internationalisation and higher turnover growth: more than 50% of the SMEs that invest abroad or are involved in international subcontracting reported increasing turnover from 2007–2008, whereas the average value for all SMEs is around 35%.
- Internationalisation and higher employment growth: SMEs with international activities reported in general a higher employment growth (10% increase for SMEs both importing and exporting) than other SMEs, whose average increase was 3%.
- Internationalisation and innovation: 26% of the SMEs with international activities succeeded in introducing new products for their sector in their home country (the average value for other SMEs is 8%).

A high rate of development by SMEs of new-to-the-market or significantly improved products can occur in all types of economies

Figure III.1.6. shows to what degree innovative SMEs can present products new to the market, and develop new products or processes. The panorama is diverse, and higher rates are achieved both by countries that perform highly in innovation (Sweden, Belgium and the Netherlands) and less highly (Italy, Portugal and Slovenia). In general, the correlation is surprisingly weak between this indicator and the level of R&D intensity of a country or of its SMEs. If one assumes that cross-country comparability is effective on this indicator, this

shows that the impact of a knowledge environment with positive spillovers and the presence of favourable framework conditions for innovation (as described in chapter 2 of this Part III), are undeniably positive inducers for innovation. A very positive finding shows that in countries not yet at the highest levels of R&D intensity and innovation performance, innovative SMEs can have the similar performances to those in a more knowledge-intensive environment or region.

Figure III.1.6 SMEs with new or significantly improved products new to the market as % of all SMEs with innovation activities, 2006-2008



Source: DG Research and Innovation
Data: Eurostat
Note: (1) EU does not include IE, EL.

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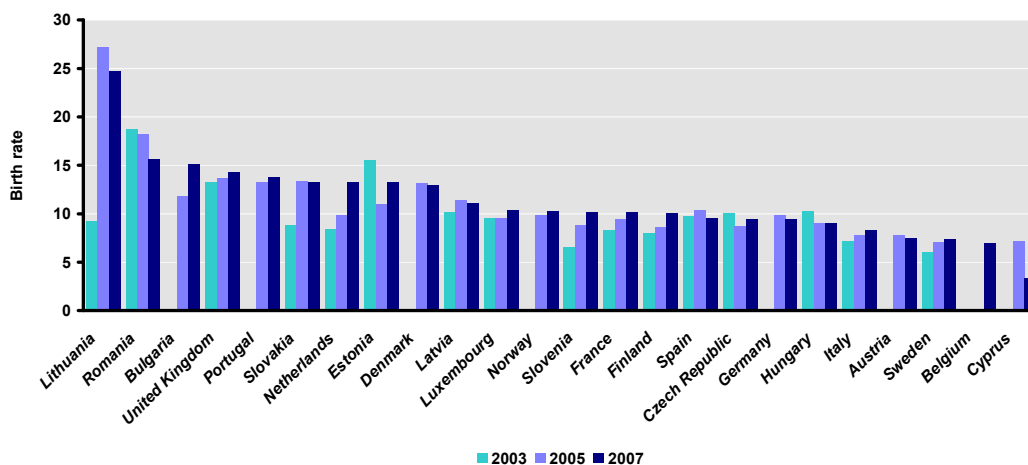
1.2. Is Europe creating new and rapidly growing firms?

Firm demography does not show dramatic changes over time

The birth of a business enterprise consists of the founding of a company. The death of a business enterprise consists of the extinction of a company for the year in reference.⁶

Figure III.1.7. presents the birth rate of business enterprises in Member States providing this data for the years 2003, 2005 and 2007. Except in Lithuania where the increase is dramatic, the birth rate of businesses has remained relatively stable in these countries. Unsurprisingly, catching-up countries (Lithuania, Romania and Bulgaria) top the ranking among the Member States that provide this data. Among larger countries, the birth rate of businesses is highest in the United Kingdom where new businesses represent close to 15% of all enterprises. France and Germany are at the same level with a birth rate of about 10%, while Italy is closer to 8%. In these countries, with the exception of Germany, the slight progression of the businesses' birth rate since 2003 has been of similar magnitude.

Figure III.1.7 Birth rate of business enterprises ⁽¹⁾



Source: DG Research and Innovation

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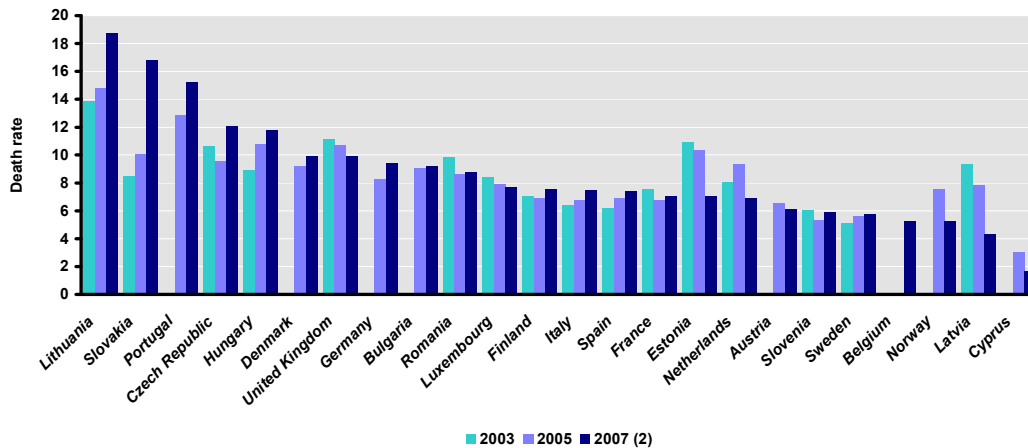
Data: Eurostat

Note: (1) The number of enterprise births divided by the number of active enterprises.

Figure III.1.8. illustrates the death rates of business enterprises. In Portugal, Slovakia and the Czech Republic, the death rate has increased substantially between 2003 and 2007 (before the crisis) and is larger than the birth rate, indicating that the number of enterprises in these countries has been decreasing. However, in most of the other countries providing this data, the birth rate has been higher than the death rate, indicating that more business enterprises have appeared than disappeared over the period 2003–2007.

⁶ The birth and death rates are calculated by dividing the number of births and deaths of enterprises by the total number of enterprises active in the country.

Figure III.1.8 Death rate of business enterprises ⁽¹⁾



Source: DG Research and Innovation
Data: Eurostat

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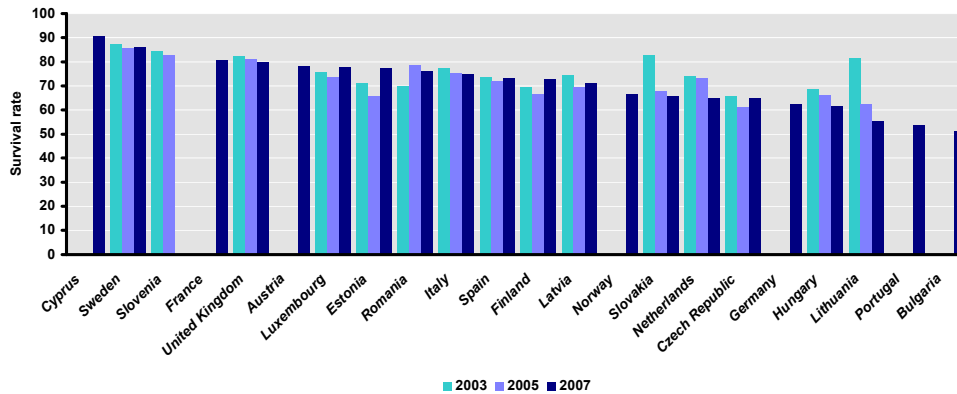
Notes: (1) The number of enterprise deaths divided by the number of active enterprises.
(2) BE, BG, CZ, DK, DE, EE, CY, LV, LT, HU, NL, PT, FI, SE, UK: 2006.

The survival rate of enterprises in Europe has not changed significantly over recent years

Another perspective of business performance is given by the survival rate of companies two years after their creation. This aspect is particularly relevant due to the important role in economic growth played by young companies. The first years are crucial for start-ups and depend on internal factors but also on external factors: a favourable environment, a positive economic cycle and the sector of the company. Survival is, in general, higher in manufacturing than in services sectors.

Only 14 Member States provide the data for all the reference years 2003 to 2007. A group of 9 countries, including both catching-up and more economically advanced Member States, has had a survival rate in the range of 70–80% between 2003 and 2007. Another important group of 7 Member States is in the 60–70% range, but with higher fluctuations over time. Only 4 countries have a survival rate above 80% and 3 below 60%. The largest variations of the survival rate over time are observed in catching-up countries, in particular in Lithuania, Slovakia, Hungary, Estonia, and Romania. This may reflect a less stable economic situation within these countries, but these higher fluctuations also have a statistical origin in the smaller number of enterprises in these countries.

Figure III.1.9 Survival rate of business enterprises ⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat

Note: (1) The number of enterprises in the reference period (t) newly born in t-2 having survived to t divided by the number of enterprise births in t-2.

In general in business demographics, the services sector undergoes more turmoil than the manufacturing sector, where the birth and death rates of companies are lower. This fact is directly related to the shift that occurs in most EU countries towards a larger share of services sectors in the economy. Another factor that has to be taken into consideration is that the effect of the economic and financial crisis cannot be observed yet in these graphs as the last year available for business demography data was 2007.

The higher share of fast-growing enterprises in catching-up countries is a sign of their economic development towards a more knowledge-intensive economy

An economy can move towards more and larger knowledge-intensive sectors only with the emergence of new and fast-growing firms. The presence of (young) high-growth enterprises in a country is a sign of the successful development and dynamism of innovative entrepreneurial activities. Unfortunately statistics on the share of high-growth enterprises in all enterprises are available only in a limited number of countries.

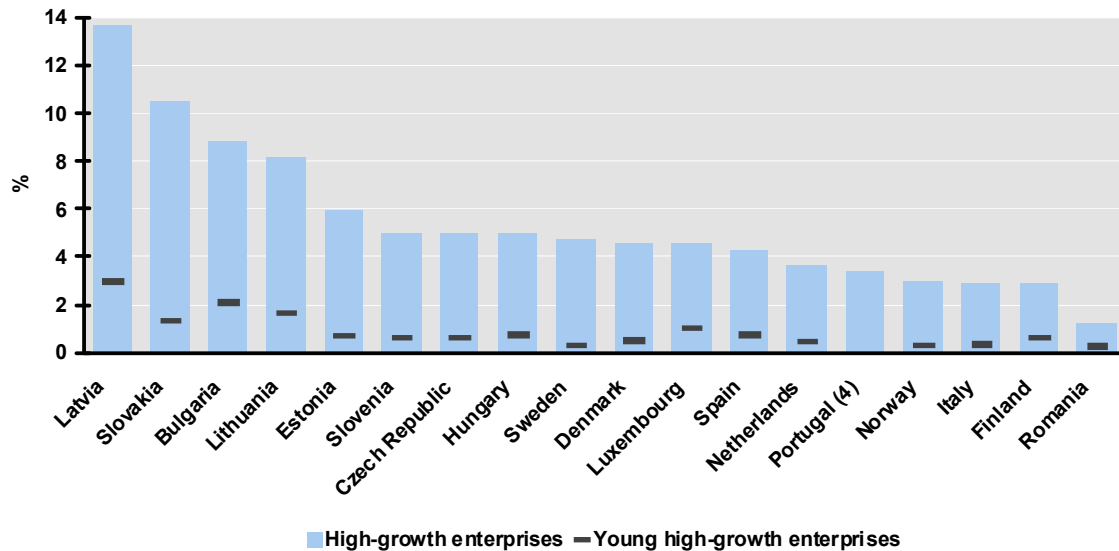
In Europe, the share of enterprises growing fast (the number of enterprises with a 20% growth rate in employment⁷ per annum during 3 consecutive years, and with 10 or more employees⁸ at the beginning of the observation period as a percentage of the population of enterprises with 10 or more employees) is the highest in catching-up countries. Among the more research-intensive countries, only the Nordic countries and the Netherlands provide statistics on high-growth enterprises. These countries have similar shares of high-growth enterprises (3–4%) and are all surpassed by catching-up countries. While this observation is not surprising, it is still encouraging for the knowledge- and economic-convergence in the EU. In all European countries providing this data, high-growth enterprises represent less than 10% of all enterprises, and young high-growth enterprises (less than five years old, also called

⁷ Alternatively, high-growth enterprises can also be defined in terms of turnover.

⁸ A size threshold of 10 employees was set to avoid having the growth of very small enterprises distort the picture. The 10-employees threshold is low enough to avoid excluding too many enterprises.

‘gazelles’) less than 1%, except in Bulgaria, Lithuania, Slovakia and Latvia. The group of young high-growth enterprises therefore represents 10 to 15% of all high-growth enterprises. Catching-up countries are also those where the share of young high-growth enterprises is the highest.

Figure III.1.10 High-growth ⁽¹⁾ and young high-growth ⁽²⁾ enterprises as % of total enterprises, 2007 ⁽³⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat

Notes: (1) Enterprises of more than 10 employees with an average annual growth in employment of more than 20% per annum over a three year period.

(2) Enterprises up to 5 years old of more than 10 employees with an average annual growth in employment of more than 20% per annum over a three year period.

(3) LT, FI: 2005; BG, ES, NO: 2006.

(4) PT: Data are not available for young high-growth enterprises.

When high-growth is defined in terms of turnover, the share of high-growth enterprises is significantly higher than when it is defined in terms of employment in all countries. This is due to the relatively high costs of labour⁹. Enterprises therefore reach the 20% growth-rate during three consecutive years for turnover more easily than for employment, which indicates that many enterprises grow faster in turnover than in employment.

The US business environment is more fertile for the growth of innovative firms

As analysed in the 2010 EU Industrial R&D Investment Scoreboard, it appears that the main reason for the R&D intensity gap between the EU and the United States has its origins in a smaller number of young innovative companies in high R&D intensity sectors (mostly ICT).

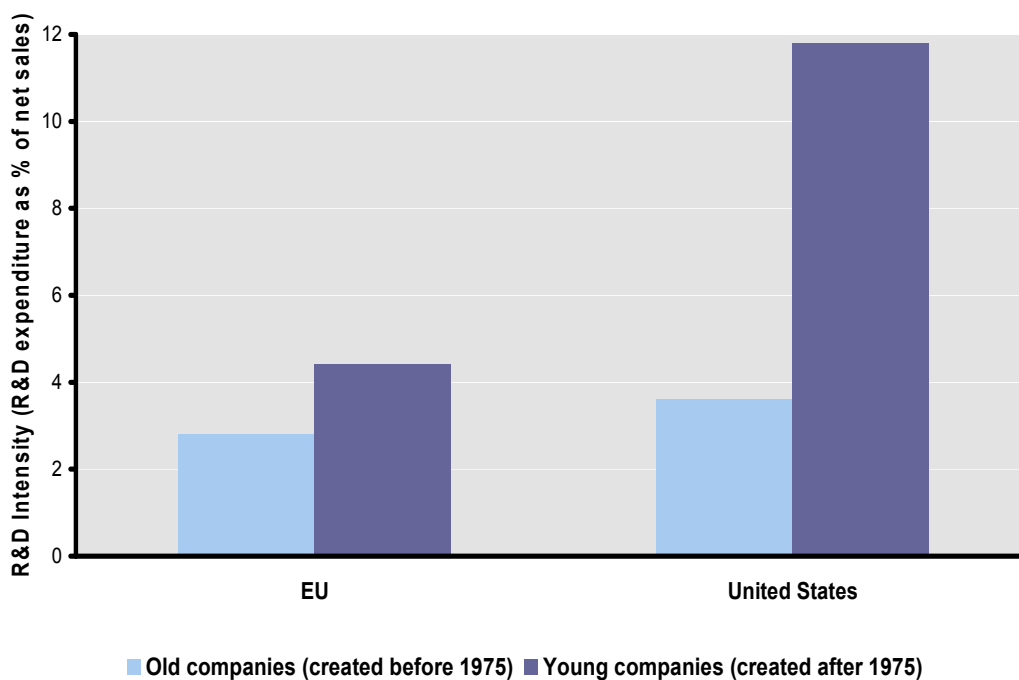
As seen in part I, chapter 5, the difference in industrial structure (i.e. the fact that EU high-R&D-intensity sectors are much smaller relatively than those of their US counterparts) explains most of the R&D-intensity gap with the United States, namely in the corporate part.

⁹ See "Measuring Entrepreneurship. A Collection of Indicators", OECD, 2009

By increasing the number of large European companies in high-R&D-intensity sectors the overall EU R&D-intensity targets would be more easily reached. If we take into account the age of the Scoreboard companies, the analysis provides additional insights concerning the origin of the EU's R&D intensity gap. Younger companies (i.e. those created after 1975 but not acquired by other companies) show a higher R&D intensity than older ones, and are much more numerous in the US than in the EU (54.4% versus 17.8%). The younger companies based in the EU are less R&D intensive than their US counterparts (4.4% versus 11.8%),

These differences in the rates of formation and growth of companies may be a major cause of the smaller size of these sectors in the EU compared to the United States, which proves to be a friendlier environment for the growth of companies. To add to this situation, there is a "sectoral" specificity: there are sectors, like biotechnology, internet, software, computer hardware and services and telecoms equipment that evidence an above average share of R&D performed by young companies¹⁰. They are called the "young sectors". For most of these sectors, the United States have a bigger share in their economy than the EU.

Figure III.11 R&D Intensity for the EU and US Scoreboard companies by age of company ⁽¹⁾



Source: DG Research and Innovation, JRC-IPTS

Innovation Union Competitiveness Report 2011

Data: The 2010 EU Industrial RD Investment Scoreboard

Note: (1) The share of young companies in the total number of companies: EU: 17.8%; US 54.4%.

¹⁰ See the Working Paper issued in the context of the Industrial Research Monitoring and Analysis (IRMA) "Young Leading Innovators and EU' R&D intensity Gap", October 2010, M.Cincera and R. Veugelers

In this chapter we analysed the contribution of SMEs to R&D investments and innovation, as well as firm dynamics. Innovation and growth of firms are essential elements for progress towards a more knowledge-intensive economy. The chapter showed that the EU is still well placed compared to its world competitors, only slightly below the United States on the research intensity of SMEs. For the European SMEs to realize their full potential for innovation and growth, besides the R&D intensity, it is essential that they have the right legal, financial and commercial framework conditions. The next chapter will analyse these aspects.