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First Section of the Annual Report on EU Small and Medium-sized Enterprises

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Summary

This report is about the structure and development of small and medium-sized enterprises in the European Union. It is based on an analysis of aggregate statistical data and other empirical evidence. The report contains an update of the existing body of data, and some new information is provided. Next to that, the facts are interpreted in view of the existing body of academic literature.

It should be noted that most data in this report – inevitably – refer to averages, e.g. the average SME in the EU, or the average micro firm in new Member States. This can not do justice to the great variety between enterprises. SMEs range from the self-employed bookkeeper without personnel to the fast growing, innovative, and much internationalised ICT firm with 200 employees, and everything in between.

The main outcomes of this report are the following:

1 The EU non-financial business economy counts over 20 million enterprises, over 99% of which are SMEs (i.e., having less than 250 occupied persons). Within the SME sector, the vast majority (92%) are micro enterprises, having less than 10 occupied persons. The typical European firm is a micro firm.
2 Between 2002 and 2007, the number of SMEs has increased by over 2 million, the number of large enterprise by only 2,000. The new Member States show higher birth and death rates of enterprises than the old Member States. Most new firms are created in the service sector and are micro enterprises.
3 About two-third of total employment in the private sector is found in SMEs. Micro firms (who have on average 2 occupied persons) employ 30% of the total private labour force.
4 SMEs' contribution to employment growth between 2002 and 2007 (84%) has been much larger than could be expected from their share in total employment (67%).
5 SMEs have a lower labour productivity than large enterprises. Thus, SMEs contribute a considerably lower share to value added (58%) than to employment (67%). Labour productivity is lowest in micro enterprises. Also, SMEs (and micro enterprises in particular) exhibit lower profitability and employee compensation than large enterprises.
6 Micro enterprises appear to have a propensity to invest that is significantly above the average of the non-financial business economy.
7 In a globalizing economy, with large incumbent firms outsourcing and offshoring production and jobs to low cost locations, SMEs are an important source of job creation.
8 SMEs serve as the key mechanism facilitating knowledge spill-over.

Summarizing, it may be said that there are compelling reasons to view the contribution of SMEs to the Lisbon goals as positive. The recent adoption of the Small Business Act for Europe (2008) is a forceful point of orientation to spur the contribution of SMEs to a dynamic and prosperous Europe.

1 Introduction

This report is about small and medium-sized enterprises (SMEs) in Europe. It is based on an analysis of statistical data and empirical evidence. Major source of information are Eurostat's Structural Business Statistics (SBS). The main difference between the SBS publications and this report is that the Eurostat data have been adapted with a view to present a more recent and more complete picture of the European SMEs (see Annex II).

Thanks to previous publications by Eurostat and the Enterprise and Industry Directorate General of the European Commission many facts and figures about European SMEs are well-known and have been disseminated across Europe. Especially the Observatory of European SMEs reports have created much knowledge about SMEs. Most policymakers, business associations, advisors and researchers are nowadays aware of these facts and figures, which are essential in order for them to do their respective jobs. Although, some of the facts and figures have not changed much over the years, it is useful to mention them below, simply to confirm that the messages are still true. In addition, new information has been provided.

In the next chapters these facts and figures about European SMEs are presented. Chapter 2 starts with an overview of the role SMEs play in the European economy: How are SMEs doing? Building on the findings of Chapter 2 Chapter 3 is dedicated to employment impacts of SMEs. In Chapter 4 the contribution of SMEs to the production is presented. Chapter 5 concerns important issues that are not covered by the previous chapters. The purpose of Chapter 6 is to place the empirical trends of SMEs identified in the previous chapters into the broader context of recent insights and perspectives about the role of SMEs in the contemporary economy. The last chapter is a summary of the main findings.

To the extent that the framework of this study allows, the facts and figures have been analysed and explained by size class, sector of activity and region, i.e. the 15 'old' versus the 12 'new' EU Member States. Some comparisons with partner countries have also been made.

The aforementioned adaptation of the SBS data is in fact the core of this study. SBS data are available for 2002-2005 and comprise the number of enterprises, employment, sales, value added, and investment, all by size class, sector and country. However, what was needed for this study, was a more recent and more complete picture of the non-financial business economy. SBS data are incomplete, mainly due to confidentiality reasons. Using centrally available data, estimates have been made for the 'missing' data. Furthermore, SBS data are not very recent as it takes time to collect data in the Member States, check them, send them to Eurostat, where they have to be checked for consistency, etc. So, for this report 'nowcasting' has been done in order to arrive at figures for 2006 and 2007. As a result, estimates could be presented of all data for all years from 2002 to 2007.

Where needed, additional data have been collected from sources other than the SBS database. It should however, be taken into account that the major advan-

tage of the SBS data is the fact that they are harmonised. Thanks to the introduction of a harmonised metadata and data collection and processing methodology, these data are comparable all over the EU. This cannot be said from most data derived from other sources. Therefore, in many cases only indications can be given, sometimes based on a limited number of countries rather than on the 27 EU Member States.

SMEs are defined as enterprises in the non-financial business economy (NACE C-I, K) that employ less than 250 persons[1]. The complement of SMEs - enterprises that employ 250 or more persons - are large scale enterprises (LSEs). Within the SME sector, the following size-classes are distinguished:

- Micro enterprises, employing less than 10 persons
- Small enterprises, employing at least 10 but less than 50 persons
- Medium-sized enterprises that employ between 50 and 250 persons.

[1] This definition is used for statistical reasons. In the European definition of SMEs two additional criteria are added: annual turnover should be less than 50 million €, and balance sheet total should be less than 43 million € (Commission Recommendation 2003/361/EC). A rough estimate performed in the framework of this report shows about 1% of the enterprises having less than 250 occupied persons, has in fact over 50 million € turnover.

2 How are SMEs in the EU doing?

2.1 Introduction

This chapter presents an overview of the role SMEs play in the European economy. We will focus on the following indicators:

- Business demography
- Number of enterprises
- Fast growing enterprises
- Profitability
- Turnover

Where possible distinctions are made by size class of enterprises, sector of activity and region (i.e. new versus old Member States). Also a few comparisons with partner countries are made.

2.2 Business demography

Business demography (or business 'dynamics') describes and analyses changes within the number of enterprises. These changes are the result of several processes:

- birth of new enterprises;
- death of existing enterprises;
- mergers of two or more enterprises;
- split-up of an enterprise in two or more new enterprises.

In addition, enterprises crossing size bands are causing a change in the number of enterprises of a specific size class, for instance a micro firm with 8 employees in 2006, growing into a small firm with 12 employees in 2007.

From these processes, birth and death are the most important. Unfortunately no EU-wide data are available on any of these processes. This is a pity, because the volatility of the European business sector is enormous as the data presented in Table 1 demonstrate. Each year about 1.5 million new enterprises are established, corresponding to 9% of the total enterprise population. At the same time 1.3 million enterprises annually cease to exist, corresponding to a death rate of 8% of the stock of enterprises. Ceasing activities may be either voluntarily or forced (e.g. as a consequence of bankruptcy, or because no successor can be found).

Table 1 Enterprise birth and death, EU-27, 2003-2005*

	2003	2004	2005	average 2003/2005
enterprise birth				
1,000	1,472	1,625	1,585	1,560
% of population	9	9	9	9
enterprise death				
1,000	1,259	1,325	1,368	1,317
% of population	7	8	8	8
net enterprise birth				
1,000	213	300	217	243
% of population	1	2	1	1

* Estimates based on available data for Bulgaria, Czech Republic, Germany, Estonia, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Netherlands, Austria, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom.

Source: EIM on the basis of EUROSTAT.

2.2.1 Size class dimension

On balance, the dynamism in the EU business sector created a net annual growth of 200,000 to 300,000 new enterprises in the period 2003-2005, and there are indications that in the last 3 years this net growth has even be larger. Most new firms are micro firms: the vast majority of starters employ less than 4 people. It is the individual entrepreneur who starts his or her own business, most often alone, or sometimes with a few employees. As a result, SMEs play an almost exclusive role in the net growth of the enterprise population.

In addition, business dynamics have an important impact on the quality and competitiveness of the business sector. New firms are often established by young people (on average between 30 and 40 years old) who have new ideas and are keen to introduce innovations. Firms closing down have a relatively low productivity and are less innovative. Thus, the continuous renewal of the enterprise stock by SMEs is good for the competitive position of the EU economy.

2.2.2 Sector dimension1

The most 'popular' subsectors for starters are found in the service sector:

- Research and development;
- Computer and related activities;
- Real estate activities.

In fact there are two other subsectors showing a high percentage of starters (post & telecom, and electricity, gas and hot water supply). These subsectors have a high score only as a consequence of privatisation processes: few starters, but very few enterprises in the population.

Eurostat has also made estimates of the subsectors showing the highest contribution to employment growth:

[1] Hartmut Schrör: Enterprise births, survivals and deaths - employment effects (EUROSTAT, Statistics in Focus, 44/2008).

- Real estate activities
- Activities auxiliary to financial mediation
- Construction
- Hotels and restaurants
- Other business activities (excluding holdings).

So, both in terms of enterprise numbers and employment, most starters are found in the service sector.

2.2.3 Regional differences

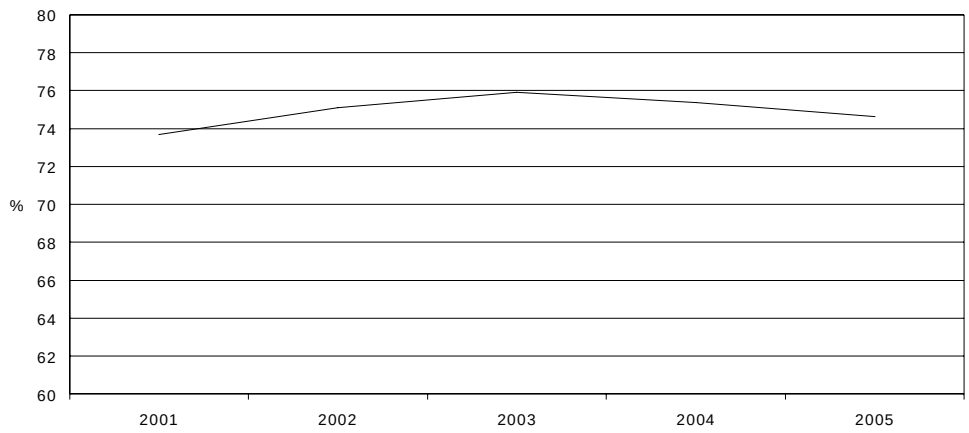
In the new Member States the enterprise birth rates tend to be above the EU average. There is apparently still a process going on of 'catching-up' in the new Member States. Both push and pull factors play a role: high unemployment can lead to more start-ups on the one hand, but on the other there are also people who discover opportunities to start a business, either as employee, or as young starter on the labour market. Also death rates in the new Member States tend to be higher than in the old Member States. These differences are more or less stable over the period under review.

The different levels of death rates in the old versus new Member States can be explained by the strong correlation between a country's enterprise death rate and birth rate. As a more or less stable fraction of newly created enterprises will not survive for a long period, death rates are higher in countries with high birth rates. Conversely, enterprise death creates opportunities to latent entrepreneurs for start-up, which results in a high death rate to cause a high birth rate as well.

2.2.4 Survival rates

In the period 2001-2005, on average, 75% of the newly created European enterprises (i.e. birth rate) had a chance of still being 'in the market' after two years (Figure 1).

Figure 1 2 year new enterprise survival rates*, EU-27**, 2001-2005



* 2 year survival rate: 2 year survival as percent of number of enterprise births 2 years ago.

** Estimates based on available data for Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, Netherlands, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom.

Source: EIM on the basis of EUROSTAT.

2.2.5 Changes in the enterprise population

As mentioned before, the process of business dynamics has a great impact on the number of enterprises. As can be seen in Table 2, during the period under consideration (2002-2007), the number of SMEs grew by 11% or over 2 million, and the number of large enterprises by 4%, which is equivalent to 2,000. This brings us to the next paragraph, where we will have closer look at the number of enterprises in the EU.

Table 2 Number of enterprises by size, EU-27, 2002-2007

	number of enterprises, 2002	change 2002-2007	number of enterprises, 2007
SME	18,348,000	2,062,000	20,409,000
large	41,000	2,000	43,000
total	18,389,000	2,063,000	20,452,000

Source: EIM on the basis of EUROSTAT.

2.3 Number of enterprises

In 2007, there were over 20 million enterprises in the European Union (EU-27). Only about 43 000 of these were large scale enterprises, i.e. 0.2 % of all enterprises. Hence, the very vast majority of enterprises in EU-27 are indeed SMEs.

As we have seen in the previous section, the number of enterprises grew with over 2 million (11%) in the period 2002-2007. SMEs accounted for 99.9% of this increase in the stock of enterprises.

2.3.1 Size class dimension

Within the group of SMEs, the vast majority of the enterprises (92 %) are micro enterprises, employing less than 10 persons[1]. So, the typical European firm is a micro firm. There are about 1.4 million small enterprises, representing 7% of the total stock. About 1% of all enterprises (22,000) are medium-sized enterprises. See Table 3.

On average, an enterprise provides work and income for 6 persons; this measure of enterprise size varies between only 2 in micro enterprises and over 1,000 in large scale enterprises (LSEs).

[1] In fact, roughly one half of these micro enterprises have no employees at all, thus only providing employment and income to self-employed and family workers.

Table 3 Number of enterprises and occupied persons per enterprise, by size class, in the non-financial business economy, EU-27, 2007

variable	micro	small	medium-sized	SME	large	total
number of enterprises	18,788,000	1,402,000	220,000	20,409,000	43,000	20,452,000
in percentages	92	7	1	100	0	100
occupied persons per enterprise	2	19	100	4	1,003	6

Source: EIM on the basis of EUROSTAT.

2.3.2 Sector dimension

Enterprises of different sizes are distributed unevenly over sectors of industry. As can be seen from Table 4, trade and real estate, renting and business activities are the largest sectors of industry in terms of the number of enterprises; also the number of occupied persons per enterprises (the average firm size) is less than the non-financial business economy average. Other typical small scale sectors are construction and hotels and restaurants. On the other side of the spectrum, electricity, mining, manufacturing industry and transport/communication are large scaled sectors in the sense that the average number of occupied persons per enterprise is well above the average of the non-financial business economy.

Table 4 Number of SMEs, LSEs and average firm size by sector of industry, EU-27, 2007

	number of enterprises			occupied persons per enterprise
NACE section	SMEs	LSEs	total	
mining and quarrying	22,000	300	22,300	37
manufacturing	2,357,000	19,000	2,376,000	15
electricity, gas and water supply	29,000	1,100	30,100	56
construction	2,914,000	2,500	2,916,500	5
wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	6,491,000	6,600	6,497,600	5
hotels and restaurants	1,729,000	1,300	1,730,300	5
transport, storage and communication	1,243,000	3,500	1,246,500	10
real estate, renting and business activities	5,625,000	8,500	5,633,500	5
total	20,409,000	43,000	20,452,000	6

Source: EIM on the basis of EUROSTAT.

2.3.3 Regional dimension

Table 5 highlights the position of SMEs in the old Member States (EU-15) and the new Member States (EU-12). In both regions, SMEs make up the vast majority of enterprises in non-financial business economy (and in both regions the typical

enterprise is a micro enterprise). However, in EU-12, enterprises on average tend to have a somewhat lower number of occupied persons than in EU-15.

Table 5 Number of SMEs and LSEs and occupied persons per enterprise, in the non-financial business economy, EU-15 and EU-12, 2007

	EU-15			EU-12		
variable	SMEs	LSEs	total	SME	LSEs	total
number of enterprises	16,249,000	33,000	16,282,000	4,160,000	10,000	4,170,000
occupied persons per enterprise	4	1,062	7	4	803	6

Source: EIM on the basis of EUROSTAT.

Table 6 shows the differences in the size-class pattern of enterprise development between 2002 and 2007 in EU-15 (the old member States) and EU-12 (the new Member States). It is especially noticeable that in EU-15, the number of SMEs has increased much more than the number of LSEs. In fact, notwithstanding a better macro-economic performance of EU-12, the total number of enterprises in EU-12 grew at a lower pace than in EU-15. Unfavourable profitability conditions in EU-12 at the outset (see below) may well have been a reason for this.

Table 6 Change in the number of enterprises in the non-financial business economy EU-15 and EU-12, 2002-2007

		EU-15		EU-12	
		SMEs	LSEs	SMEs	LSEs
Number of enterprises	%	12	3	9	7

Source: EIM on the basis of EUROSTAT.

Table 7 summarises available and (broadly) comparable data for EEA partner countries, the USA and Japan. Both in the EU and in most partner countries, the typical enterprise is a micro enterprise[1]. There are not many striking differences between the listed countries with respect to the distribution of enterprises over the size classes. The EU has relatively more medium-sized enterprises than the USA. The US and Iceland have the largest proportion of micro firms.

[1] With the notable exception of Liechtenstein, which has an extremely large number of LSEs. This is due to the strong presence of the banking sector.

Table 7 Enterprises in partner countries

		micro	small	medium-sized	SME	large	total
absolute levels							
Iceland	2004	21,700	900	100	22,700	100	22,800
Switzerland	2004	260,000	30,000	5,000	294,000	1,000	295,000
Norway	2004	214,000	17,000	2,000	233,000	1,000	234,000
Liechtenstein	2001	5,500	4,500	3,500	13,500	2,500	16,000
USA	2005	14,049,000	468,000	191,000	14,709,000	36,000	14,745,000
Japan	2001	n/a	n/a	n/a	4,690,000	13,000	4,703,000
total = 100%							
Iceland	2004	95	4	0	100	0	100
Switzerland	2004	88	10	2	100	0	100
Norway	2004	92	7	1	100	0	100
Liechtenstein	2001	34	28	22	84	16	100
USA	2005	95	3	1	100	0	100
Japan	2001	n/a	n/a	n/a	100	0	100
EU-27	2007	92	7	1	100	0	100

2.4 Fast growing enterprises

In national and European policies, much emphasis is put on fast growing enterprises. Compared to other enterprises they form an interesting group. These enterprises contribute more than average to production growth and growth of employment. They are also relatively more innovative than the average enterprise. Fast growing enterprises create additional growth of production in other enterprises, for instance through subcontracting relations. In any case they are important tools to reach the goals set in the frame of the Lisbon agenda.

It is impossible to derive information about fast growing enterprises from the aggregated data available from the SBS database. Aggregated data may suggest that enterprise size is more or less constant. This is not the case. First, employment changes because of entry and exit of enterprises, which implies that comparing employment from one year to another refers to a different population of enterprises. Secondly, enterprises that are in the population of enterprises in both reference years individually grow or decrease employment.

Amongst others, Hölzl, Peneder and Silva-Porto (2008) show that the distribution of individual enterprises according to employment growth is tent shaped. The vast majority of enterprises show a moderate growth of employment. Then there is the group of enterprises that don't grow[1] or even loose employment. At the other end there is the group of fast growing enterprises. Verhoeven et al. (2008)

[1] Quite some very small enterprises even don't want to grow. The individual entrepreneur is happy with the size of his or her business, earns a decent income and does not like to grow, because he/she fears to become a manager instead of being an entrepreneur.

present data on high growth enterprises (HGEs). In that study, HGEs are defined as enterprises in the non-financial business economy employing between 50 and 1,000 persons, and having experienced 60% or more employment growth in three years. Their numbers are expressed as percentage of the total number of enterprises with 50 to 1,000 occupied persons. As far as the EU is concerned, the study is confined to Belgium, Germany, Denmark, Finland, France, Italy, the Netherlands and the United Kingdom (these countries account for 58% of the total number of medium-sized enterprises in EU-27). It appears that on average between 1998 and 2005, the share of HGEs in the total number of enterprises (with 50 to 1,000 employed persons) varies between 8% in The Netherlands, and as high as 23% in Italy; the weighted average of the countries under consideration is 12%. These figures tend to be fairly stable over the before-mentioned period. On average, HGEs in the countries under consideration have experienced total employment growth of 115% between 2002 and 2005; non-HGEs have seen their employment decline by 6% over the same period.

It should be noted that in Japan, the share of HGEs in the stock of enterprises with between 50 and 1,000 employed persons is fairly low at about 2%; the corresponding figure for the USA is 18%.

2.5 Profitability

2.5.1 Introduction

The share of the operating surplus in value added gives insight in the profitability of SMEs. Some qualifications, however, are in order. A large share of the labour input of SMEs consists of self-employed and unpaid family workers[1]. These are not on the wage bill of enterprises, and so their labour input is not included in labour costs. Therefore, a correction has been made[2]. In addition, preferably the net operating surplus should be used, but unfortunately, only data on the gross operating surplus disaggregated by enterprise size-class are available. Here, the gross operating surplus adjusted for the imputed wage of self-employed, in percent of gross value added, is used to measure the profitability differences between SMEs and LSEs[3]. This profitability measure is positively affected by labour productivity, and negatively by labour costs per employee.

2.5.2 Size class dimension

Table 8 shows, that in 2007 within European enterprises, the gross operating surplus adjusted for the imputed wage of self-employed amounts to 32% of total value added (profitability). On average, the smaller the enterprise, the less profitable it tends to be. It appears that the size-class differentials regarding labour cost per employee are not enough to offset differences in labour productivity.

[1] 20% of the workforce in SMEs consists of self-employed and unpaid family workers; in micro enterprises, this percentage amounts to 41%.

[2] The imputed wage of the self employed is calculated as the number of self-employed and unpaid family workers times the corresponding sectoral labour cost per employee.

[3] To some extent the disturbing impact of including depreciation on the profitability measure can be eliminated by adjusting for differences in sectoral structure as well. Checks have been performed to make sure observed differences in the gross operating surplus adjusted for the imputed wage of self-employed are not simply the result of differences in sectoral structure.

Table 8 Estimation of the profitability of primary private enterprises by size class, EU-27, 2007

variable	unit	micro	small	medium-sized	SME	large	total
labour costs	mln €	562,000	751,000	680,000	1,992,000	1,612,000	3,604,000
labour costs	%	16	21	19	55	45	100
labour costs per employee	1,000 €	25	29	31	28	38	32
gross operating surplus adjusted for imputed wage of self-employed	% of value added	19	31	36	28	36	32

Source: EIM on the basis of EUROSTAT.

These results still hold when an adjustment for the sectoral structure of SMEs is made. However, in some sectors of industry, SMEs are in fact more profitable (in the definition adhered to in this report) than LSEs, as can be seen in the next table.

Table 9 Estimation of profitability* of SMEs by NACE section, EU-27, 2007

		SMEs	LSEs	total
		%		
c-i, k	non-primary private enterprise	24	31	27
by NACE section				
c	mining and quarrying	74	72	73
d	manufacturing	27	34	31
e	electricity, gas and water supply	71	62	64
f	construction	19	25	20
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	23	24	23
h	hotels and restaurants	-24	8	-16
i	transport, storage and communication	14	40	31
k	real estate, renting and business activities	30	-3	21

* Gross operating surplus adjusted for imputed wage of self-employed, as percent of gross value added at factor costs.

Source: EIM on the basis of EUROSTAT.

As Table 9 shows, the relative profitability of SMEs varies greatly between sectors. For instance, in the small scaled sectors hotels and restaurant and real estate, renting and business activities, SMEs are more profitable than LSEs than large enterprises. The same occurs in the large-scaled sectors mining and quarrying as well as electricity, gas and water supply. In these specific sectors, SMEs might well be operating in niche markets with high profit margins. In the other sectors of industry, SMEs' profitability is below LSEs. Furthermore, it appears that typical small-scaled sectors of industry (construction, trade, hotels and res-

taurants, real estate, renting and business activities) seem to have profitability below the non-financial business economy average. Note that this may partly be due to the use of the gross operating surplus, thus including depreciation: sectors that have a higher profitability measure than the non-financial business economy average, are in general more capital intensive.

2.6 Turnover

The direct contribution of SMEs to economic wealth can be measured by their contribution to turnover (or gross premiums written) or to value added. Both measures of the direct contribution to economic wealth are lower than the contribution of SMEs to employment suggests, indicating a below average labour productivity of SMEs. In Chapter 4 further attention is paid to value added and labour productivity of SMEs. As Table 10 shows, turnover is almost equally distributed over the SME size classes micro, small and medium: about 4.5 thousand billion euro each, in percentages roughly 20%-20%-20% respectively. The distribution of value added over the same size classes is: 21%-19%-18%. The contribution of micro, small and medium-sized enterprises to employment is however (in percentages): 30-21-17. So, within the SME sector micro enterprises are the most labour intensive group, and medium sized enterprises the least labour intensive.

Table 10 Turnover of non-primary private enterprises, by size class, EU-27, 2007

variable	unit	micro	small	medium-sized	SME	large	total
levels							
Turnover or gross premiums written	mln €	4,402,000	4,504,000	4,564,000	13,471,000	9,917,000	23,388,000
Value added at factor cost	mln €	1,251,000	1,132,000	1,070,000	3,453,000	2,537,000	5,990,000
Number of persons employees	units	38,890,000	27,062,000	21,957,000	87,909,000	42,895,000	130,805,000
percent distribution							
Turnover or gross premiums written	%	19	19	20	58	42	100
Value added at factor cost	%	21	19	18	58	42	100
Number of persons employees	%	30	21	17	67	33	100

Source: EIM on the basis of EUROSTAT.

3 Employment impacts of SMEs

3.1 Size class dimension

The most striking phenomenon of SMEs is perhaps their contribution to employment in the European economy. No less than 67% of employment in the private, non-financial economy is found in small and medium-sized enterprises. As can be seen in Table 11 almost 88 million people are employed by SMEs, whereas large enterprises employ almost 43 million people. Within the group of SMEs, the micro firms employ most people: almost 39 million, i.e. 30% of the total employment in the private, non-financial economy. Micro firms employ on average 2 people as can be seen in the same Table 11. So, 92% of all enterprises (see Table 11) employ 30% of the total private labour force and are at the same time very, very small indeed[1]. This is important information for policymakers, for instance for those developing programmes for high-tech firms, innovation, internationalisation, etc. Although these are extremely important issues, one can not expect each and every micro enterprise to get involved in these developments. Those developing rules and regulations should keep these fact and figures in mind.

Between 2002 and 2007, the number of jobs in the EU non-financial business sector increased by 8.7 million. SMEs employment growth was 7.3 million, while employment in LSEs increased by 1.4 million. Thus, SMEs' contribution to employment growth (84%) has been much more than could be expected from their share in total employment (67%).

So, both from a static and dynamic point of view the contribution of SMEs to employment is impressive.

[1] In fact, roughly one half of these micro enterprises have no employees at all, thus only providing employment and income to self-employed and family workers.

Table 11 Employment indicators of non-primary private enterprise, EU-27, 2007

variable	unit	micro	small	medium-sized	SME	large	total
levels							
number of enterprises	units	18.788.000	1.402.000	220.000	20.409.000	43.000	20.452.000
number of persons employed	units	38.890.000	27.062.000	21.957.000	87.909.000	42.895.000	130.805.000
average enterprise size	occupied person/ enterprise	2	19	100	4	1.003	6
labour costs	mln €	562.000	751.000	680.000	1.992.000	1.612.000	3.604.000
labour costs per employee	1,000 €	25	29	31	28	38	32
percent distribution							
number of enterprises	%	92	7	1	100	0	100
number of persons employed	%	30	21	17	67	33	100
labour costs	%	16	21	19	55	45	100

Source: EIM on the basis of EUROSTAT.

From Table 11 it can also be derived that labour costs per employee increase with enterprise size. This can be explained to a limited extent by differences in sectoral structure between smaller and larger enterprises. For instance, labour costs per employee at the sectoral level are lowest in trade and hotels and restaurants, which typically are small scaled sectors of industry. Nevertheless even irrespective of sectors there are differences. On the one hand these can be explained by the fact that in larger enterprises the educational level of employees is higher than in smaller enterprises. On the other hand, labour conditions in larger firms - irrespective of the educational level - are somewhat better than in smaller firms.

Enterprise birth and death contribute positively to employment growth in the EU. As stated by Eurostat, newly born enterprises (almost all being micro enterprises) in the European Union[1], accounted for on average 3.3% of total employment in 2005. This outweighed the employment losses due to death of enterprises at EU level. At sectoral level, this holds in particular for real estate, construction and other business activities.

[1] EUROSTAT, Statistics in Focus, 44/2008; based on available data in 17 Member States.

3.2 Sector dimension

Table 12 Number of persons employed, by size class and sector (NACE section) EU-27, 2007

		micro	small	medium-sized	small and medium-sized	large	total
c-i, k	non-primary private enterprise	38,890,000	27,062,000	21,957,000	87,909,000	42,895,000	130,805,000
by NACE section							
c	mining and quarrying	45,000	101,000	100,000	245,000	564,000	809,000
d	manufacturing	4,969,000	7,281,000	8,809,000	21,059,000	14,447,000	35,505,000
e	electricity, gas and water supply	38,000	83,000	231,000	352,000	1,319,000	1,671,000
f	construction	5,734,000	4,335,000	2,206,000	12,275,000	1,690,000	13,965,000
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	12,855,000	6,669,000	3,925,000	23,448,000	8,542,000	31,990,000
h	hotels and restaurants	4,197,000	2,477,000	994,000	7,669,000	1,655,000	9,324,000
i	transport, storage and communication	2,291,000	1,794,000	1,565,000	5,650,000	6,459,000	12,110,000
k	real estate, renting and business activities	8,761,000	4,323,000	4,127,000	17,210,000	8,220,000	25,430,000

As we have seen before, almost 131 million people are employed by the private, non-primary sector in the EU. Table 12 presents the distribution of employment by size class over the selected sectors. In terms of employment the largest subsector is manufacturing industry with 35.5 million people, followed by trade etc. and real estate. Especially in the group of large enterprises, manufacturing is by far the largest subsector, employing 14.5 million people (one third of total employment in large enterprises). Within the SME sector the subsectors trade (23.5 million) and manufacturing (21 million) are the largest with respectively 27% and 24% of total employment in SMEs. Within the group of micro enterprises the trade subsector is by far the largest with 12.9 million people or 33% of total employment in micro enterprises.

In Table 13 the development of employment per sector in the period 2002-2007 is presented. It is clear that SMEs have created much more employment than large enterprises: 9 versus 3%. Especially the growth of employment in real estate (21%) and hotels etc. (18%) is remarkable. In the group of large enterprises several subsectors (mining, manufacturing) have lost employment in the period under consideration.

Table 13 Development of employment per sector of industry, SMEs and LSEs, EU-27, 2002-2007

		SME	large
		%	
c-i, k	non-financial business economy	9	3
by NACE section			
c	mining and quarrying	2	-8
d	manufacturing	0	-6
e	electricity, gas and water supply	3	-4
f	construction	10	7
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	7	13
h	hotels and restaurants	18	10
i	transport, storage and communication	10	-1
k	real estate, renting and business activities	21	17

In Table 14 the development of labour costs of SMEs and large enterprises in the period 2002-2007 is presented, by sector of industry. Labour cost in large enterprises has slightly more increased than in SMEs, especially in electricity (probably as a consequence of privatisation processes), manufacturing and construction.

Table 14 Labour costs per employee in SMEs and LSEs development 2002-2007, EU-27

		SME	large
		%	
c-i, k	non-financial business economy	8	10
by NACE section			
c	mining and quarrying	-0	6
d	manufacturing	11	15
e	electricity, gas and water supply	10	21
f	construction	12	15
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	8	7
h	hotels and restaurants	2	3
i	transport, storage and communication	11	14
k	real estate, renting and business activities	1	2

3.3 Regional dimension

According to Table 15, 81% of total employment in the private, non-primary sector is in the 'old' Member States, so only 19% in the 'new' Member States. In old and new Member States almost the same fraction of the employment (two-third) can be found in SMEs.

As could be expected (given differences in GDP per capita) labour costs per employee differ substantially between old and new Member States: in the EU-15 the labour costs per employee are € 44,000 per year, whereas in the new Member States € 9,000. Also in the SMEs sector labour costs in the old Member States are roughly four times higher than in the new Member States.

Table 15 Employment indicators of non-primary private enterprises, EU-15 and EU-12, 2007

		EU-15			EU-12		
variable	unit	SME	large	total	SME	large	total
number of enterprises	units	16,249,000	33,000	16,282,000	4,160,000	10,000	4,170,000
number of persons employed	units	71,047,000	35,102,000	106,150,000	16,862,000	7,793,000	24,655,000
number of persons employed	percentage, region=100	67	33	100	68	32	100
number of persons employed	percentage, EU=100	54	27	81	13	6	19
average enterprise size	occupied person per enterprise	4	1.062	7	4	803	6
labour costs per employee	€ 1,000	33	44	37	8	11	9

Source: EIM on the basis of EUROSTAT.

Looking at the dynamic perspective, Figure 2 shows that the size-class pattern of employment growth differs significantly between old (EU-15) and new (EU-12) Member States. Specifically, EU-15 employment grew fastest in micro and small enterprises, with medium-sized and large enterprises showing moderate - though on average positive - employment growth during 2002-2007. In EU-12, employment growth was largest in small and medium-sized enterprises, with micro firms lagging behind. Extremely low profitability of EU-12 micro enterprises during the early years of the decade might be a cause for this adverse size-class pattern (see below). Like in EU-15, LSEs initially contributed negatively to job growth during the 2002-2007 period.

Figure 2 Development of employment, old (EU-15) and new (EU-12) Member States, 2002-2007

figure 2a Number of persons employed (emt), EU15 (eu15), index, 2002= 100

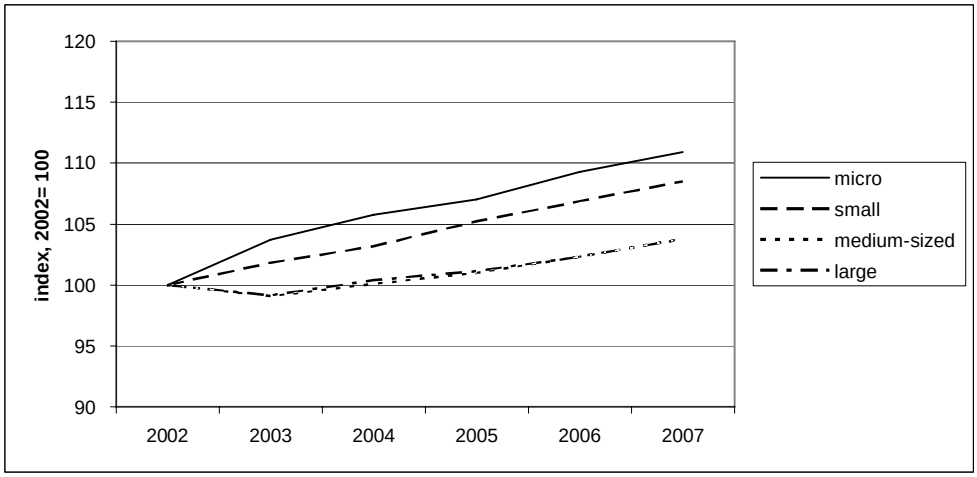
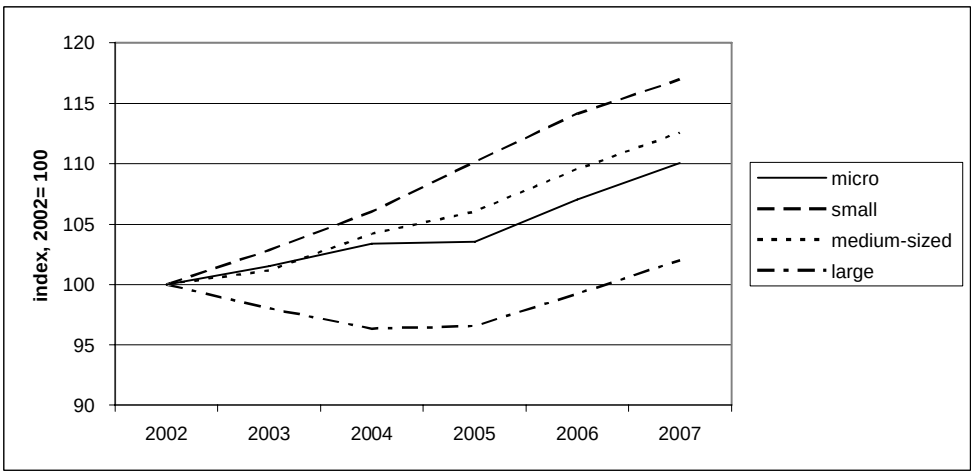


figure 2b Number of persons employed (emt), EU12 (eu12), index, 2002= 100



3.4 Comparison with partner countries

On the other hand, looking at the size-class distribution of employment (see Table 16), the average scale at which enterprises in the non-financial business economy operate, differs between the European countries and the US and Japanese. In Iceland, Switzerland and Norway, SMEs have an employment share of approximately 70%, which is well comparable with the EU average of 67%. Conversely, in the USA, LSEs have a larger share in total employment than in the EU. Even though in Japan SMEs have the same share in employment as in the EU, average enterprise size is significantly higher, at more than 8 people.

Table 16 Employment of enterprises by size class in partner countries

		micro	small	medium-sized	SME	large	total
absolute levels							
Iceland	2004	26,000	18,000	7,000	52,000	23,000	74,000
Switzerland	2004	551,000	566,000	516,000	1,633,000	661,000	2,294,000
Norway	2004	350,000	311,000	223,000	884,000	383,000	1,267,000
Liechtenstein	2001	n/a	n/a	n/a	n/a	n/a	n/a
USA	2005	18,960,000	9,406,000	11,494,000	39,859,000	32,186,000	72,045,000
Japan	2001	n/a	n/a	n/a	25,601,000	12,676,000	38,277,000
total = 100%							
Iceland	2004	35	25	10	70	30	100
Switzerland	2004	24	25	23	71	29	100
Norway	2004	28	25	18	70	30	100
Liechtenstein	2001	n/a	n/a	n/a	n/a	n/a	n/a
USA	2005	26	13	16	55	45	100
Japan	2001	n/a	n/a	n/a	67	33	100

Source: EIM on the basis of EUROSTAT.

4 SMEs' contribution to production and labour productivity

4.1 Introduction

Several ways to measure production exist. The direct contribution of SMEs to economic wealth can be measured by their contribution to turnover (or gross premiums written). Turnover is related to the value of total sales of an enterprise; this concept is easily recognised by businessmen. It includes amongst others the purchase value of merchandise. The production value concept relates to the production of the enterprise; it equals turnover minus the purchase value of merchandise, plus increases to stocks. At the macro level, both turnover and production value leads to lots of double counting because it includes many transactions between enterprises; for instance, products produced in manufacturing and sold to wholesale traders, and subsequently to retailers and then to final consumers, are counted three times in total turnover: at the sales price of the original manufacturer, of the wholesale company, and at the retailer. On the other hand, value added is a concept that does not include such double counting, and is therefore appropriate in aggregated analysis. In this chapter some information on all these concepts is presented. Subsequently, a detailed analysis regarding value added in comparison with employment (i.e., labour productivity) is given.

The introduction of labour productivity is important because it illustrates the efficiency with which SMEs and LSEs, by using labour as production factor, contribute to GDP. This in turn is an important determinant of the competitiveness of the EU economy.

4.2 Production at aggregate level

As can be seen from Table 17 total turnover in the non-financial business economy in EU-27 amounted to € 23 billion; on average this is equivalent to € 1.1 million per enterprise. Turnover per enterprises obviously varies greatly between size-classes, i.e. between € 234,000 in micro enterprises, and € 232 million in LSEs. If the production value is taken as a measure for production, the total amount is € 15 billion: only two thirds of turnover. The share of SMEs in total turnover is 48%, while they have a share in production value of 52%; this difference is mainly attributable to the strong presence of SMEs in trade, where the purchase value of merchandise obviously plays an important role. When value added[1] is used as a measure of production instead of production value - thus removing all double counting from the aggregate figures - total production in EU-27 non-financial business economy amounts to almost € 6 billion. SMEs contribute 58% to this, while LSEs contribute 42%.

[1] Gross value added at factor cost. This includes all rewards to production factors capital and labour, including depreciation. This concept is equivalent to the gross domestic product in macroeconomic analysis.

Table 17 Production per size-class according to various definitions, EU-27, 2007

variable	unit	micro	small	medium-sized	SME	large	total
levels							
Turnover or gross premiums written	mln €	4,402,000	4,504,000	4,564,000	13,471,000	9,917,000	23,388,000
Turnover per enterprise	1,000 €	234	3,213	20,765	660	231,894	1,144
Production value	mln €	2,607,000	2,628,000	2,836,000	8,070,000	7,363,000	15,434,000
Value added at factor cost	mln €	1,251,000	1,132,000	1,070,000	3,453,000	2,537,000	5,990,000
Number of enterprises	units	18,788,000	1,402,000	220,000	20,409,000	43,000	20,452,000
Number of persons employed	units	38,890,000	27,062,000	21,957,000	87,909,000	42,895,000	130,805,000
labour productivity*	1,000 €/ occupied person	32	42	49	39	59	46
percent distribution							
Turnover or gross premiums written	%	19	19	20	58	42	100
Production value	%	17	17	18	52	48	100
Value added at factor cost	%	21	19	18	58	42	100
Number of persons employed	%	30	21	17	67	33	100

* Gross value added at factor cost, per occupied person.

Source: EIM on the basis of EUROSTAT.

The direct contribution to value added of SMEs is lower than the contribution of SMEs to employment suggests, indicating a below average labour productivity of SMEs. Labour productivity[1] varies between € 32,000 in micro enterprises and € 59,000 in LSEs, with small and medium-sized enterprises in between. These size-class differences in labour productivity are only partly explained by differences in sectoral structure. For instance, construction, trade and hotels and restaurants typically are sectors with a strong representation of SMEs; at the same time, these sectors have the lowest labour productivity, at € 39,000, € 36,000 and € 20,000 respectively. The fact that differences in the sectoral structure only partially explain size-class differences in labour productivity at the aggregate level suggests that lower-than-average labour productivity is an inherent characteristic of the average SME. This evidence suggests that either the average SME is too small to exploit economies of scale, or is less capital-intensive. Another explanation might be the use of lower qualified labour in SMEs, which is suggested by the lower labour cost per employee (see section 3.1). As more people previously employed by an SME find a new job in a large enterprise than the other way around, SMEs can also be considered as breeding ground for LSE staff. In this way SMEs play an important role in the education and training of employees in the entire economy.

[1] Gross value added at factor cost per occupied person.

4.3 A more detailed analysis of labour productivity

4.3.1 Sectoral differences

Table 18 shows the contribution of SMEs to value added in the various sectors of industry in EU-27. In section 2.3.3, a distinction between small-scaled sectors (construction, trade, hotels and restaurants and real estate, renting and business activities) on the one hand, and large scaled sectors of industry (mining and quarrying, manufacturing, electricity, gas and water supply, and transport and communication) on the other ,has been presented. From Table 18 it follows that this distinction clearly corresponds with a higher or lower than average contribution to value added. In small-scaled sectors, the contribution of SMEs to value added ranges between 70% and 83%, while in the large-scaled sectors, it varies between 21% and 34%. Applying the same distinction between sectors of industry, it can be seen that in small-scaled sectors, the contribution of SMEs to employment is larger than the average employment share of SMEs (67%), while in large-scaled sectors SMEs contribute less than 67% to employment.

On average, an occupied person produces € 46,000 of value added; this varies between € 39,000 in SMEs, and € 59,000 in LSEs. Only in two sectors of industry, labour productivity of SMEs is higher than the same in LSEs, i.e. in mining and quarrying and real estate, renting and business activities. In electricity, gas and water supply, the labour productivity differential between SMEs and LSE is small (less than 2%). In the remaining sectors of industry, SMEs' labour productivity is lower than LSEs'.

Table 18 Value added and employment by size-class and sector of industry, EU-27, 2007

		value added			employment			labour productivity*		
		SME	large	total	SME	large	total	SME	large	total
		%			%			1,000 €		
c-i, k	non-financial business economy	58	42	100	67	33	100	39	59	46
by NACE section										
c	mining and quarrying	33	67	100	30	70	100	127	112	117
d	manufacturing	45	55	100	59	41	100	39	69	51
e	electricity, gas and water supply	21	79	100	21	79	100	128	130	129
f	construction	83	17	100	88	12	100	37	56	39
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	70	30	100	73	27	100	34	41	36
h	hotels and restaurants	75	25	100	82	18	100	19	28	20
i	transport, storage and communication	34	66	100	47	53	100	41	71	57
k	real estate, renting and business activities	72	28	100	68	32	100	54	44	51

* Gross value added at factor cost, per occupied person.

Source: EIM on the basis of EUROSTAT.

4.3.2 Regional differences

Table 19 compares the contribution of SMEs to value added and employment in the 'old' (EU-15) and the 'new' (EU-12) Member States. It appears that even though SMEs' employment share does not differ much between EU-15 and EU-12, the share of SMEs in value added is lower in EU-12 (52%) than in EU-15 (58%). This implies that the SME/LSE labour productivity differential is larger in the new than in the old Member States: in EU-15, SMEs' labour productivity is 13% less than average, while in EU-12, SMEs' labour productivity is 23% below average.

It should be noted that Table 19 suggests a large difference between old and new Member States. However, at least part of this should be attributed to differences in price levels between these regions.

Table 19 Value added and employment in the non-financial business economy in old (EU-15) and new (EU-12) Member States by size-class, 2007

	value added			employment			labour productivity*		
	SME	large	total	SME	large	total	SME	large	total
	%			%			1,000 €		
EU15	58	42	100	67	33	100	45	66	52
EU12	52	48	100	68	32	100	14	27	18

* Gross value added at factor cost, per occupied person.

Source: EIM on the basis of EUROSTAT.

4.4 Developments 2002-2007

Table 20 shows how the contribution of SMEs to total value added of the non-financial business economy in EU-27 has changed between 2002 and 2007. It appears that the shares of individual size-classes in total value added merely have not changed. This is consistent with the evolution of the shares in employment. From this it would seem that productivity differentials between SMEs and large enterprises have been rather constant over time.

Table 20 Value added and employment by size-class, non-financial business economy, EU-27, 2002 and 2007

	value added						employment					
	micro	small	medium-sized	SME	large	total	micro	small	medium-sized	SME	large	total
	%						%					
2002	21	19	18	57	43	100	29	20	17	66	34	100
2007	21	19	18	58	42	100	30	21	17	67	33	100

Source: EIM on the basis of EUROSTAT.

4.4.1 Sectoral differences

Table 21 shows sectoral differences with respect to the change in the size-class distribution of value added and employment in EU-27 between 2002 and 2007. It shows that there has been no significant change in the contribution of SMEs to value added in any of the sectors. Employment shares have changed somewhat. It appears that all sectors that had an unfavourable productivity differential for SMEs in 2007 also had one in 2002. In mining and quarrying and in real estate, renting and business activities, SMEs were more productive than LSEs both in 2002 and 2007.

Table 21 Value added and employment by size-class and sectors in the non-financial business economy, EU-27, 2002 and 2007

		value added			employment		
		SME	large	total	SME	large	total
		%			%		
2002							
c-i, k	non-financial business economy	57	43	100	66	34	100
by NACE section							
c	mining and quarrying	33	67	100	28	72	100
d	manufacturing	46	54	100	58	42	100
e	electricity, gas and water supply	21	79	100	20	80	100
f	construction	83	17	100	88	12	100
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	70	30	100	74	26	100
h	hotels and restaurants	76	24	100	81	19	100
i	transport, storage and communication	34	66	100	44	56	100
k	real estate, renting and business activities	73	27	100	67	33	100
2007							
c-i, k	non-primary private enterprise	58	42	100	67	33	100
by NACE section							
c	mining and quarrying	33	67	100	30	70	100
d	manufacturing	45	55	100	59	41	100
e	electricity, gas and water supply	21	79	100	21	79	100
f	construction	83	17	100	88	12	100
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	70	30	100	73	27	100
h	hotels and restaurants	75	25	100	82	18	100
i	transport, storage and communication	34	66	100	47	53	100
k	real estate, renting and business activities	72	28	100	68	32	100

Source: EIM on the basis of EUROSTAT.

4.4.2 Regional differences

Table 22 shows how the contribution of SMEs and LSEs to value added and employment has changed between 2002 and 2007 in the 'old' (EU-15) and the 'new' (EU-12) Member States. It appears that the contributions have been remarkably stable. This implies that productivity differences between SMEs and LSEs have been stable as well.

Table 22 Value added and employment by size-class, old (EU-15) and new (EU-12) Member States, 2002 and 2007

	value added			employment		
	SME	large	total	SME	large	total
	%			%		
2002						
EU15	58	42	100	66	34	100
EU12	52	48	100	66	34	100
2007						
EU15	58	42	100	67	33	100
EU12	52	48	100	68	32	100

Source: EIM on the basis of EUROSTAT.

5 Other issues

5.1 Introduction

There are a few other SME issues that are important enough to present in this report, even though they don't fit in one of the previous chapters. The first one is the propensity to invest. Thanks to the SBS database, it is for the first time possible to present estimates of the propensity to invest by size class of enterprises.

The second issue is the global financial crisis. Although a direct impact of the current financial crisis can not be inferred from the data in this report, something has to be said about this actual and severe economic issue.

5.2 The propensity to invest

There are not many differences between SMEs and LSEs regarding the propensity to invest - i.e., investment in tangible goods as percentage of gross value added. It can be seen in Table 23 that this is higher in medium-sized and large enterprises than in small enterprises, but still below average. Micro enterprises show a propensity to invest well above average (23% against 19%). This could not be ascribed to sectoral differences between size-classes. This could point at a high knowledge intensity of micro firms accompanied by a high level of investments. Other likely explanations are a high propensity to absorb market uncertainties which can only be effectuated experimenting with new investments.

Table 23 Propensity to invest of SMEs by size class, EU-27, 2007

	propensity to invest of SMEs*
	%
micro	23
small	15
medium-sized	17
SMEs	19
large	18
total	19

* Gross investment in tangible goods, as percent of gross value added at factor cost.
Source: EIM on the basis of EUROSTAT.

It appears (from data not shown here) that only in the old Member States the propensity to invest is highest in micro enterprises. That this is not the case in the new Member States may be explained from the fact that profitability of micro enterprises in the years before 2007 has been extremely low.

Therefore, at the macro level, the micro enterprises' propensity to invest is higher than the propensity to invest of all other size-classes. In Table 24, this is partly reflected by the high index of the SMEs propensity to invest in small-scaled sectors hotels and restaurants and real estate, renting and business ac-

tivities. More detailed data shows that in 19 out of 45 NACE divisions - counting for 50% of total investment - micro enterprises have the highest propensity to invest.

Table 24 Propensity to invest* of SMEs and LSEs by NACE section, EU-27, 2007

		SME	large	total
		%		
c-i, k	non-primary private enterprise	19	18	19
by NACE section				
c	mining and quarrying	37	21	26
d	manufacturing	13	14	14
e	electricity, gas and water supply	33	33	33
f	construction	10	9	10
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	12	15	13
h	hotels and restaurants	20	15	19
i	transport, storage and communication	26	28	28
k	real estate, renting and business activities	30	15	26

* Gross investment in tangible goods, as percent of gross value added at factor cost.
Source: EIM on the basis of EUROSTAT.

5.3 SMEs and the global financial crisis

A direct impact of the current financial crisis can not be inferred from the data in this report. This is in particular because the available data only covers 2007, and because the financial sector is not included in the current analysis. Nevertheless it seems logical to pay some attention to the issues in this report using evidence other than SME statistics.

Bank lending is the largest source of external SME finance and banks take a dominant position regarding external loan finance. Bank loans are used for financing investments, working capital and stock financing. Bank lending may be secured or unsecured and will depend on the credit rating of an SME. Previous work by the Commission and others suggest that "a commercial bank may be unable to provide finance to a viable SME because of:

- Lack of a track record;
- Inadequate security;
- Breach of a threshold limit;
- A credit rating outside an acceptable range".

In the second half of 2008, a financial crisis and "collapse" of the financial system took place. This situation is followed by an economic slow-down or even recession in some Member States. In some studies on access to finance for SMEs, the impact of economic and credit cycles on the supply of SME finance are considered.

For example, it is generally agreed that economic cycles can have a significant impact on bank lending to SMEs. In times of economic expansion, and/or when

interest rates and the cost of capital are low, banks will adopt very different lending criteria, and take a different view of lending risk compared with periods of economic decline or stagnation.

Although, no direct evidence is available yet, these are strong indications that the severeness of the current financial crisis and consequently the economic slowdown/recession has an adverse effect on SMEs' access to bank financing. The global financial crisis and the ensuring flight away from risk have affected credit flows towards various groups of firms to a different degree, depending on their size, location and risk features. In such a context, SMEs are particularly vulnerable to the credit crunch due to their heavy dependence on bank credit and limited recourse to financial markets. Firms with the weakest financial structure and lower credit rating, such as SMEs, suffer the most. As confidence is restored on the financial markets, resources available for SMEs to grow out of the credit crisis are likely to remain initially scarce as economies have entered a recessionary phase.

In several countries there are signals that SMEs and especially the smaller enterprises are facing large problems getting access to bank credit. Several national small business associations are asking for additional policy measures to support SMEs.

In November 2008 the European Commission published a Communication "Temporary framework for state aid measures to support access to finance in the current financial and economic crisis". In the Communication special attention is paid to SMEs:
"Such difficulties could affect not only weak companies without solvency buffers, but also healthy companies which will find themselves facing a sudden shortage or even unavailability of credit. This will be particularly true for SMEs, which in any event face greater difficulties with access to finance than larger companies. This situation could not only seriously affect the economic situation of many healthy companies and their employees in the short and medium term but also have longer-lasting negative effects since all EU investments in the future - in particular, towards sustainable growth and other objectives of the Lisbon Strategy - could be delayed or even abandoned. (….) SMEs are particularly important for the whole economy in Europe and improving their financial situation will also have positive effects for large companies, thereby supporting overall economic growth and modernisation in the longer term."

During the last meeting of the Working Party on Small and Medium Sized Enterprises and Entrepreneurship (WPSMEE) of the OECD, which was held in Paris from 27 to 29 October 2008, special attention was paid to "SME financing in the global crisis". For the contributions to the discussion see:
http://www.oecd.org/document/17/0,3343,en_2649_34197_41662161_1_1_1_1,00.html

On behalf of DG Enterprises of the European Commission, an assessment of the correlation between business cycles and the supply of SME finance is taking place presently. The results will be published in the first half of 2009.

6 The role of SMEs in broader perspective

6.1 Introduction

The purpose of this chapter is to place the empirical trends of SMEs identified in the previous chapters into the broader context of recent insights and perspectives about the role of SMEs in the contemporary economy. The starting point is to interpret the meaning of the SME statistics reported in this study.

6.2 The main findings presented in the report

The empirical findings presented in this report suggest two contrasting views about the role of SMEs in the economy.

On the one hand SMEs on average are less efficient than their larger counterparts. Labour productivity in SMEs is lower than that in large enterprises. Thus, SMEs contribute a considerably lower share to gross value added (58%) than to total employment (67%). Labour productivity is the lowest in the micro firms.

The performance of SMEs measured in this way is consistent with their lower levels of efficiency. SMEs exhibit a lower level of profitability than do their larger counterparts. Micro firms have the lowest levels of profitability. Similarly, the levels of employee compensation are also lower for SMEs and are particularly low for micro firms. By contrast, large firms exhibit the highest levels of profitability and also compensate employees at the highest level.

This lower level of profitability is consistent with at least two of the many roles (Carree and Thurik, 2003) SMEs play in the economy: the seedbed and turbulence role (Beesley and Hamilton, 1984) which creates economic growth at the expense of survival rates and profitability of those firms involved in this roles (Fritsch and Mueller, 2008) and interacting with their larger counterparts as a supplier while large firms outsource their less profitable non-core activities (Baumol, 2002).

On the other SMEs in general, and micro firms in particular, continue to contribute to the creation of new employment at a much higher rate than do large firms, at least for the EU-15. This raises the question, if SMEs and micro firms especially, are less efficient, why does more employment shift away from large firms and into SMEs? In addition, is this a positive or negative development, in view of the lower average levels of efficiency exhibited by SMEs?
The answers to these questions are best considered in the context of the increased globalisation of the economy in the following section.

6.3 The global context

The opportunities and challenges afforded by globalisation impacts the traditional roles of SMEs relative to their larger counterparts. In particular, opportunities accruing from globalisation may have facilitated the outsourcing and offshoring of employment by well established large firms (Audretsch, 2007). Baumol (2009) suggests that globalisation has enabled large, incumbent firms to shift produc-

tion, either through outsourcing relationships or else through outward foreign direct investment, to lower cost locations, having the dual impact of increasing large-firm productivity, while at the same time reducing employment by large firms in the high-cost domestic economy.

This is consistent with the empirical evidence presented in this report of lower rates of employment creation in large firms combined with higher rates of profitability. Shifting production, including employment to foreign locations is a key strategy implemented by large firms to achieve higher rates of productivity. Similarly, substituting capital and technology for labour similarly increases labour productivity levels and profitability in the large firms.

Thus, in an era of globalising markets, when large firms tend to substitute offshore employment for domestic employment, SMEs become even more important for avoiding increases in unemployment and maintaining and even increasing levels of employment. In addition, as the next section shows, SMEs provide a mechanism for the spill-over of knowledge and ideas created but not implemented in large organizations to become commercialised, thereby generating innovative activity and contributing to the dynamism of the economy.

6.4 Knowledge spill-over entrepreneurship

In addition to their contribution to employment creation, SMEs also contribute to the dynamism and innovative performance of an economy by serving as an important conduit for knowledge spill-overs. Investments in new knowledge may not automatically be commercialised by the organisation(s) in which that knowledge was originally created. The knowledge filter concept refers to knowledge and ideas created in an organisation but not actually implemented, transferred or commercialised by that organisation (Audretsch, Keilbach and Lehmann, 2006). There are many sources contributing to the knowledge filter, ranging from legal restrictions to incompatibilities between the capabilities of the incumbent organisation consistent with its core competencies and the new knowledge. For example, investments in research generate considerable new knowledge at universities and research institutes, but these are organisations with a legal and societal mandate to simply generate newness without giving commercialisation a top priority.

The greatest source of the knowledge filter may be inherent in new ideas, which are shrouded in uncertainty and asymmetries across different workers and decision makers. Thus, firms and other organisations, such as universities and research institutes, may invest in the creation of potentially valuable knowledge and ideas but decide not to pursue the implementation and commercialisation of that knowledge. By serving as a conduit for the spill-over of knowledge from the organisation investing in the creation of new ideas to the organisation actually implementing and commercialising that knowledge, (young, innovative) SMEs provide the vehicle for knowledge spill-over entrepreneurship (Audretsch and Keilbach, 2007, and Audretsch, Keilbach and Lehmann, 2006).

Empirical evidence has found that knowledge spill-over entrepreneurship, measured in terms of new-firm start-ups, is higher in regions exhibiting higher levels of investment in new knowledge. Audretsch and Keilbach (2007) and Audretsch, Keilbach and Lehmann (2006) provide compelling empirical evidence that, even

after controlling for standard regional-specific characteristics, those regions in Germany with higher levels of investment in new knowledge also exhibit higher rates of new-firm start-ups. Similarly, Acs et al. (2004) find that self-employment rates across OECD countries tend to be greater in those countries with greater investments in new knowledge, even after controlling for country-specific characteristics.

6.5 Linking SMEs to economic growth

A generation ago, scholars and policy makers looked to investments in physical capital to drive economic growth in the manufacturing-based economy (Audretsch and Thurik, 2001). More recently, commensurate with the globalisation of domestic economies, the focus shifted to knowledge as a source of comparative advantage.

However, while investments, such as human capital, research and development, universities and creativity may be a necessary condition for economic growth in the European context, it may also not be sufficient. As what has been referred to as the European Paradox suggests, investments in knowledge is no panacea for curing stagnant economic growth and persistent levels of high unemployment. Rather, mechanisms are needed to ensure that such costly investments in new knowledge, which form the basis for economic growth in a globalised economy, actually spill over for commercialisation and innovative activity. By serving as a key conduit for the spill-over of knowledge, SMEs provide an important link to economic growth.

There is considerable empirical evidence linking SMEs to economic growth. In one of the first and most important studies, Carree, van Stel, Thurik and Wennekers (2002) found a positive relationship between business ownership rates and economic growth rates for OECD countries. Thurik et al. (2008) similarly found that those OECD countries with a higher rate of business ownership tend to exhibit lower levels of unemployment.

Holtz-Eakin and Kao (2003) found that U.S. states with higher new-firm start-up rates also tend to have a higher level of productivity growth. Similarly, Acs and Armington (2006) find that U.S. states with higher rates of new-firm start-ups exhibit higher rates of economic growth.

Audretsch, Keilbach and Lehmann (2006) and Audretsch and Keilbach (2008) include a measure of entrepreneurship capital along with physical capital and knowledge capital in estimating a production function model for German regions. The empirical evidence suggests that that the start-up of new firms is positively related to the economic growth rate.

There is also compelling empirical evidence suggesting that the impact of SMEs on economic growth tends to be greater from a longer-term perspective than from a short-term perspective. Van Stel et al. (2008), Mueller and Fritsch (2008) and Mueller et al. (2008) have shown that the impact of new firm start-ups on subsequent growth is greater in the long than in the short run.
Acs et al. (2004) find that a measure of self-employment is positively related to the growth rates of OECD countries. In the most comprehensive and compelling study to date, Erken, Donselaar and Thurik (2008) link a measure of business

ownership rates to the productivity growth for a panel of OECD countries and find that the more prevalent business ownership is, the greater is the growth of productivity. They do so for a recent period of some 30 years while correcting for many economic concepts such as R&D, human capital and catch-up mechanisms. Thus, a number of different studies have used a plethora of measures reflecting different aspects of SME activity and have generally generated compelling results suggesting a positive impact on economic growth (Carree and Thurik, 2006).

7 Conclusions

This report is about the structure and development of small and medium-sized enterprises in the European Union. The report contains an update of the existing body of data, and some new information is provided. Next to that, the facts are interpreted in view of the existing body of academic literature. The facts and figures presented in this report are essential for policymakers, business associations, advisors and researchers to do their respective jobs.

Before presenting the main conclusions, it should be noted that most data in this report – inevitably – refer to averages, for instance the average SME in the EU, or the average micro firm in new Member States. This can not do justice to the great variety between enterprises. SMEs range from the self-employed bookkeeper without personnel to the fast growing, innovative, and much internationalised ICT firm with 200 employees, and everything in between.

SMEs are important for Europe. These enterprises account for a significant amount of European work experience and economic activity. Furthermore, SMEs make an important contribution to the dynamism and innovative performance of an economy, thus enhancing economic growth especially in the medium and long term.

The EU non-financial business economy counts over 20 million enterprises, over 99% of which are SMEs (i.e., having less than 250 occupied persons). Within the SME sector, the vast majority (92%) are micro enterprises, having less than 10 occupied persons. The typical European firm is a micro firm. With the exception of Liechtenstein, the same holds for EU partner countries.

Between 2002 and 2007, the number of SMEs has increased by over 2 million, the number of large enterprise by only 2,000. In this way, SMEs have contributed significantly to job growth in the EU. The new Member States show higher birth and death rates of enterprises than the old Member States. Most new firms are created in the service sector and are micro enterprises.

SMEs' contribution to employment growth between 2002 and 2007 (84%) was much larger than could be expected from their share in total employment (67%).

SMEs have a lower labour productivity than large enterprises, as follows from the fact that SMEs contribute a lower share to value added (58%) than to employment (67%). Labour productivity is lowest in micro enterprises. Also, SMEs (and micro enterprises in particular) exhibit lower profitability and employee compensation than large enterprises.

At the same time, micro enterprises appear to have a propensity to invest that is significantly above the average of the non-financial business economy (23 percent versus 18 percent for large firms in terms of value added). This phenomenon is not yet clearly understood (data on this became available only recently) and should be further investigated. However, it could point at a high knowledge intensity of micro firms accompanied by a high level of investments. It could point at a high propensity to absorb market uncertainties which can only be effectuated experimenting with new investments. It can point at the rejuvenation force of the smallest firms influencing the production function of the industry in a

Schumpeterian ‘creative reconstruction’ sense. All these possible explanations suggest an important contribution of micro enterprises to the dynamics of the EU economy.

As SMEs are more dependent on external sources of finance, it seems likely that the current financial crisis will have a rather strong impact on SMEs.

In a globalizing economy, where large incumbent firms are able to outsource and offshore production and employment to lower cost locations, SMEs are an important source of employment. In addition, SMEs serve as a key mechanism facilitating knowledge spill-overs from the organization where knowledge is created to the organization where it is actually implemented and commercialized. The contribution of SMEs to facilitating spill-overs is confirmed by a wide set of studies finding an empirical link between various measures reflecting entrepreneurial activity and economic growth.

Summarizing, it may be said that there are compelling reasons to view the contribution of SMEs to the Lisbon goals as positive. The recent adoption of the Small Business Act for Europe (2008) is a forceful point of orientation to spur the contribution of SMEs to a dynamic and prosperous Europe.

ANNEX I References

Acs, Z., D. Audretsch, P. Braunerhjelm, and B. Carlsson, 2004, The Missing Link: The Knowledge Filter and Endogenous Growth, CEPR Discussion Paper 4783, CEPR, London.

Audretsch, D.B., I. Grilo and A.R. Thurik (eds), 2007, The Handbook of Research on Entrepreneurship Policy, Edward Elgar Publishing Limited, Cheltenham, UK and Northampton, MA, US.

Audretsch, D. and R. Thurik, 2001, What's New about the New Economy? Sources of Growth in the Managed and Entrepreneurial Economies, Industrial and Corporate Change, 19(1), 795-821.

Audretsch, David B, Max Keilbach and Erik Lehmann, 2006, Entrepreneurship and Economic Growth, New York: Oxford University Press.

Audretsch, David B. and Max Keilbach, 2008, Resolving the Knowledge Paradox: Knowledge Spill-over Entrepreneurship and Economic Growth, Research Policy, 37(1), 1697-1705.

Audretsch, David B. and Max Keilbach, 2007, The Theory of Knowledge Spill-over Entrepreneurship, Journal of Management Studies, 44(7), 1242-1254.

Audretsch, David B., 2007, The Entrepreneurial Society, New York: Oxford University Press.

Baumol, William J., 2002, The Free Market Innovation Machine, Princeton, N.J./Oxford: Princeton University Press.

Baumol, William J., 2009, Globalization and Entrepreneurship, in David B. Audretsch, Robert Littan and Robert Strom (eds.), Openness and Entrepreneurship, London: Edward Elgar Publishing.

Beesley, M.E. and R.T. Hamilton, 1984, Small Firms' Seedbed Role and the Concept of Turbulence, Journal of Industrial Economics 33(2), 217-231.

Carree, M., A. van Stel, R. Thurik, and A. Wennekers, 2002, Economic Development and Business Ownership, Small Business Economics, 19(3), 271-290.

Carree, M.A. and A.R. Thurik, 2003, The impact of entrepreneurship on economic growth, in D.B. Audretsch and Z.J. Acs (eds), Handbook of Entrepreneurship Research, Boston/Dordrecht: Kluwer Academic Publishers, 437-471.

Carree, M.A. and A.R. Thurik (eds), 2006, The Handbook of Entrepreneurship and Economic Growth, Edward Elgar Publishing Limited (International Library of Entrepreneurship), Cheltenham, UK and Northampton, MA, US,.

Erken, Hugo, Piet Donselaar and A. Roy Thurik, 2007, Total Factor Productivity and the Role of Entrepreneurship, Jena Economic Research Papers no 2008-19, Jena, Germany.

Fritsch, Michael and Pamela Mueller, 2008, The Effect of New Business Formation on Regional Development over Time: The Case of Germany, Small Business Economics, 30(1), 15-29.

Gilbert, Brett Anitra, Patricia P. McDougall and David B. Audretsch, 2008, Clusters, Knowledge Spillovers and New Venture Performance: An Empirical Examination, Journal of Business Venturing, 23(4), 405-422.

Holtz-Eakin, D. and C. Kao, 2003, Entrepreneurship and Economic Growth: The Proof is in the Productivity, Center for Policy Research, Syracuse University.

Hölzl, Werner, Michael Peneder and Maria Silva-Porto, 2008, The economics of entrepreneurial activity and SMEs: policy implications for the EU, WIFO, mimeo

KMU Forschung Austria, 2007, Study on Practices and Policies in the Social Enterprise Sector in Europe, Study on behalf of European Commission, DG En-

terprise & Industry (http://ec.europa.eu/enterprise/entrepreneurship/coop/projects-studies/project5.htm)

Mueller, Pamela, Andre van Stel and David J. Storey, 2008, The Effects of New Firm Formation over Time: The Case of Great Britain, Small Business Economics, 20(1), 59-71.

Nijsen, A., J. Hudson, K. van Paridon, Chr. Mueller and R. Thurik (eds), 2008, Business Regulation and Public Policy: the Costs and Benefits of Compliance, Springer (International Studies in Entrepreneurship Series), New York, 2008.

OECD, 2006, The SME Financing Gap: Theory and Evidence, Financial Market Trends, Volume 2006/2

OECD, 2008, Statistics Newsletter for the extended OECD Statistical Network, no. 40, March 2008

OECD, 2008, SME financing in the global financial crisis, Centre for Entrepreneurship, SMEs and Local Development (http://www.oecd.org/LongAbstract/0,3425,en_2649_34197_41662161_1_1_1_1,00.html)

PWC, 2003, Study on the financial and macroeconomic consequences of the draft proposed new capital requirements for banks and investment firms in the EU, Report for DG MARKT

Small Business Act for Europe (executive summary), 2008, Brussels: European Commission, http://ec.europa.eu/enterprise/entrepreneurship/docs/sba/SBA_IA

Thurik, Roy A., Martin A. Carree, Andre van Stel and David B. Audretsch, 2008, Does Self-Employment Reduce Unemployment? Journal of Business Venturing, 23(6), 673-686.

Van Stel, Andre and Kashife Suddle, 2008, The Impact of New Firm Formation on Regional Development in the Netherlands, Small Business Economics, 30(1), 31-47.

Verhoeven, W.H.J., D. Snel, P.M. de Jong-'t Hart, M. Mooibroek, and N.G.L. Timmermans, 2008, Internationale benchmark Ondernemrschap (in English: international Benchmark Entrepreneurship), EIM (http://www.ondernemerschap.nl/index.cfm/12,html?nxt=ctm_publikatie&bestelnummer=A200809)

ANNEX II Methodology

Except when indicated otherwise, data for EU countries and Norway are based on EUROSTAT's Structural Business Statistics (SBS) and Business Dynamics (BD) data. A number of additional estimates to the source data were required to arrive at a full dataset covering all countries, or - in the case of business dynamics - to arrive at estimates for EU-27. These estimates are briefly discussed below.

Structural data

The structural data refer to the 'picture' of the non-financial business economy for each of the years 2002-2007, i.e. the number of enterprises, employment, sales and value added, and investment. SBS data were available for 2002-2005, and have been supplemented with additional estimates when needed. Furthermore, 'nowcasting' has been done in order to arrive at figures for 2006 and 2007.

Additional estimates on data 2002-2005

For some data points, EUROSTAT has not been able to provide statistical information. An important reason for this is confidentiality of existing data. Using centrally available data[1], estimates have been made in the following way:

- First of all, estimates for the number of enterprises and employment have been made. This has been done by making preliminary estimates on the number of enterprises and employment. The latter is made up using the initial estimate of the number of enterprises and an assumption on the average number of occupied persons per enterprise[2]. These initial assumptions were subsequently embedded in the available data such that (a) full consistency with aggregated data was achieved, and (b) the result obeyed logical constraint. The logical constraints taken into account were: (a) a positive number of enterprises should coincide with a positive number on employment and zero employment should coincide with a zero number of enterprises, and (b) the average employment per enterprises should fall within applicable size-bands.
- Estimates on the number of self-employed were prepared in a similar way, using as an initial estimate the number of enterprises. The final result on the number of self-employed was obtained by embedding the initial estimates in the available aggregated data, taking into account that (a) the number of self-employed should not exceed total employment, and (b) there should not be self-employment without any enterprises. From total employment, the number of employees is calculated.
- Using estimated employment, initial estimates for missing data were prepared for sales, gross production and value added. The final result on these production measures was obtained by embedding the initial estimates in the available aggregated data, taking into account that there should not be production

[1] Source: EUROSTAT. Centralised data are preferred to avoid incomparability of data between countries.

[2] If possible, from EU-27, and otherwise from a country deemed comparable with the one under study.

without any employment, and conversely, in case of positive employment, production should not be zero[1]

- A similar procedure has been followed for wages and social security contributions, using employment of employees for initial estimates[2].
- Finally, investment has been estimated using a similar procedure, using value added to arrive at initial estimates.

As a final step, the resulting estimates have been broadly checked with the partners in the ENSR Network.

Nowcasting: estimates 2006/2007

Estimates on employment and the number of enterprises have been made using EUROSTAT National Accounts data on employment (under the reasonable assuming that average enterprise size remains constant). Similarly, production and labour costs figures for 2005 have been extrapolated to 2007 using corresponding National Accounts data. Finally, investment data have been updated initially, keeping the propensity to invest constant, and then performing a consistency check with available National Accounts data

Business dynamics

Business dynamics refers to the birth and death of enterprises, and to the (2 year) survival rates of newly created enterprises. EURPOSTAT publishes such data fro the business economy (NACE C-K) for some EU Member States, notably Bulgaria, Czech Republic, Germany, Estonia, Spain, France, Italy, Cyprus, Latvia, Lithuania, Lithuania, Luxembourg, Hungary, Netherlands, Austria, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom. These have been weighted to arrive at an estimate for EU-27. The 22 Member States for which birth an death data are available make up approximately 70-75% of total number of enterprises in EU-27, and the 15 countries having survival rates available (Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, Netherlands, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom) represent 65-70% of total EU enterprises birth.

[1] The latter restriction has not always been upheld for value added. Also the SBS data themselves sometimes show negative value added. Furthermore, in some cases, data on gross production were completely lacking. In these cases, the estimated out/value added ratio for the sector concerned from EUROSTAT National Accounts has been used in all size-classes.

[2] In some cases, no data on labour costs were available at all. In these cases, labour costs per employee from EUROSTAT National Accounts have been used in all size-classes.