Statistics in focus

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Business demography: the impact on employment

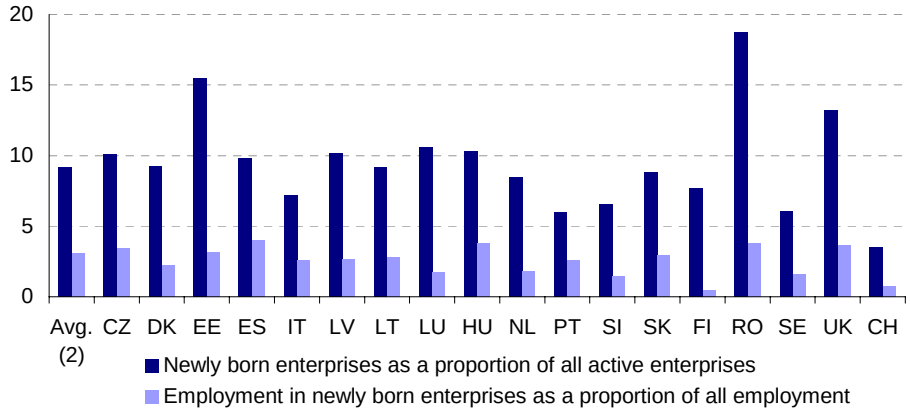
The creation of new enterprises and the closure of unproductive ones can be seen as an important contributor to business dynamism. This publication focuses on an important area of interest in relation to business demography statistics, namely their impact on employment. Attention is paid to the impact of these demographic events both in terms of absolute and relative changes in employment.

This is the second of two publications on business demography being published in quick succession: the other (N° 48/2007) focuses on the number of enterprises, as well as enterprise birth, survival and death rates.

In 2003 in the business economy (NACE Sections C to K, excluding Class 74.15):

- **There were about 2.2 million jobs created in newly born enterprises in 16 of the Member States[1], and an additional 20 900 in Switzerland;**
- **Newly born enterprises represented around 9 % of the total number of active enterprises, while they only accounted for about 3 % of total employment;**
- **Newly born enterprises with less than 5 employees accounted for the highest proportion of jobs created by all newly born enterprises – likewise the highest proportion of job losses coming from the deaths of enterprises was found among this size class;**
- **Industrial activities showed low levels of employment change resulting from enterprise births and deaths, whereas real estate, renting and business activities, as well as distributive trades and construction recorded much higher levels.**

Figure 1: Impact of enterprise births on the stock of enterprises and employment, business economy, 2003 (%) (1)



(1) Denmark, 2001; Portugal, 2002.

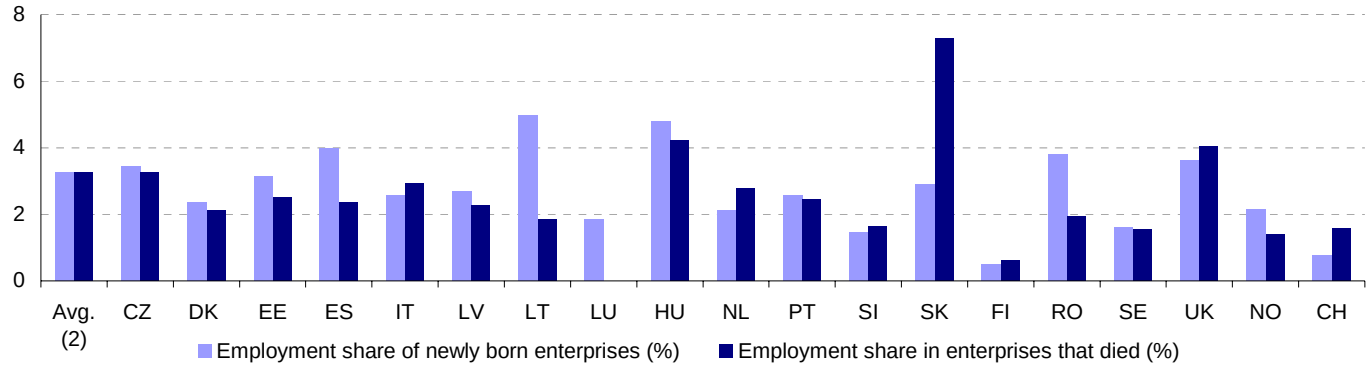
(2) Average based on data for the Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Slovenia, Slovakia, Finland, Sweden and the United Kingdom.

[1] The Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia, Slovakia, Finland, Sweden and the United Kingdom; Denmark, 2001.

Business demography and employment

Among the Member States, newly born enterprises generated around 3 % of total employment in active enterprises in the business economy in 2003, and their contribution reached as high as 5.0 % in Lithuania (2002). Employment coming from births of newly born enterprises generally compensated losses due to the deaths of enterprises during the same year, but this was not the case in Italy, the Netherlands (2002), Slovenia (2002), Finland (2002) and the United Kingdom, with Slovakia posting a significantly larger proportion of employment in active enterprises lost resulting from enterprises deaths compared with the proportion gained from newly born enterprises – see Figure 2.

Figure 2: Employment share of enterprise births and deaths in total employment, business economy, 2003 (%) (1)



(1) Enterprise death statistics for 2003 are preliminary. The Czech Republic, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia and Finland, 2002; Denmark and Norway, 2000.

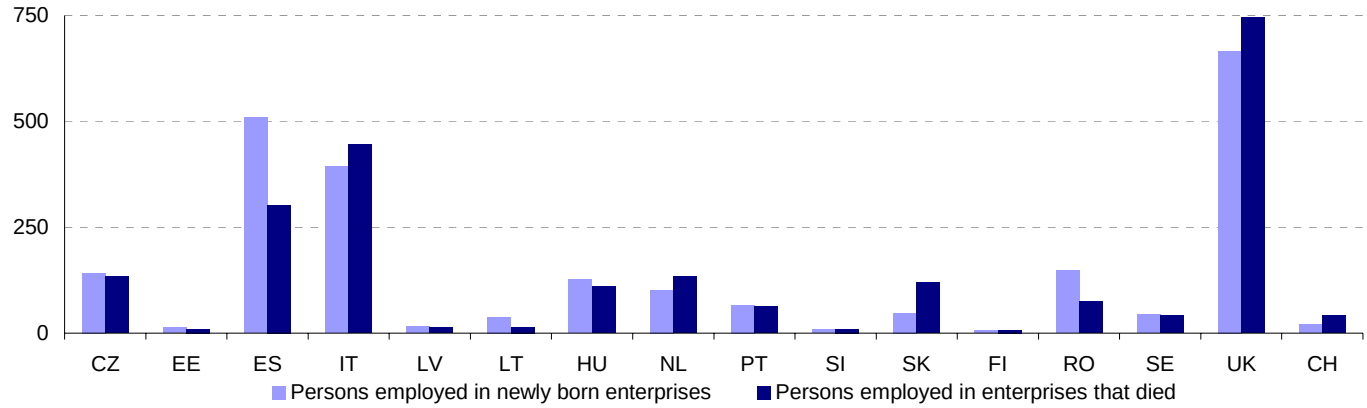
(2) Average based on Estonia, Spain, Italy, Latvia, Slovakia, Sweden and the United Kingdom.

Net changes in employment

Two simple indicators to measure dynamism in terms of employment are a snapshot of the number of persons employed in newly born enterprises and those that died in the same year. These two indicators are presented for 2003 in Figure 3. Unsurprisingly, among the Member States, the largest number of jobs created and lost due to demographic effects was observed in the largest economies, namely the United Kingdom, Italy and Spain.

However, when looking at the ratio of jobs created by newly born enterprises to jobs lost due to the death of enterprises, the three Baltic countries stood out from the rest, with ratios that ranged from 1.2 to 2.7 in 2003 (Lithuania, 2002). This ratio was also high in Spain (1.7) and Romania (2.0) in 2003.

Figure 3: Gains/losses in employment resulting from enterprise births and deaths, business economy, 2003 (thousands) (1)

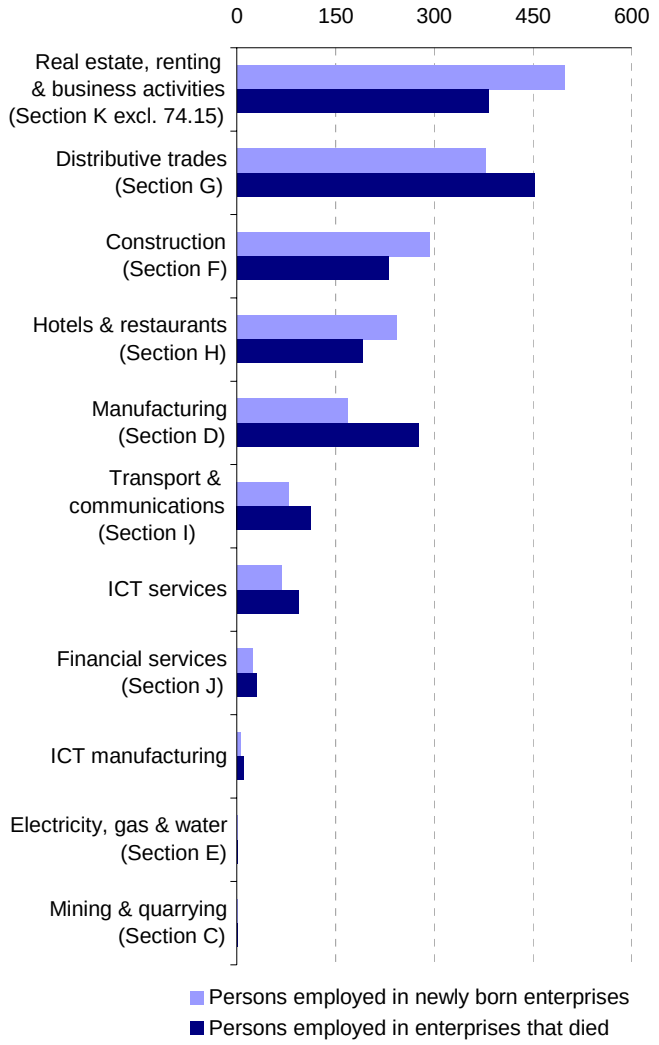


(1) Enterprise death statistics for 2003 are preliminary. The Czech Republic, Lithuania, Hungary, the Netherlands, Portugal, Slovenia and Finland, 2002.

On the basis of an analysis by activity, enterprise birth rates tended to be low in industrial activities, such as manufacturing and mining and quarrying, mainly reflecting higher start-up costs than for many service activities. In terms of employment creation, services activities tended to be more dynamic, for example in real estate, renting and business activities, distributive trades, and hotels and restaurants, while this was also valid for construction activity. Figure 4 shows the level of employment creation and loss through demographic events for each NACE Section as well as for two ICT aggregates (manufacturing and services - see methodological notes for definitions); these figures are presented for an aggregate of available countries. Construction, real estate, renting and business activities and hotels and restaurants also reported the highest ratios of jobs created by newly born enterprises to jobs lost due to the death of enterprises. All the other NACE Section activities, including ICT manufacturing and services, lost a greater number of jobs through enterprise deaths than they gained from new entrants in 2003.

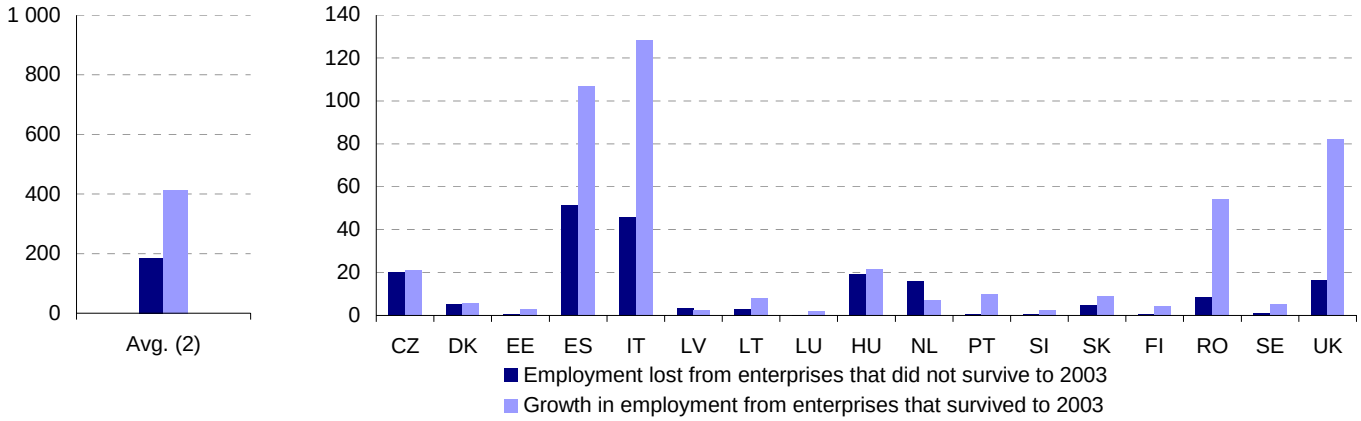
Among the 15 Member States for which data for 2002 are available (see Figure 5) there were a total of 2.15 million jobs created in newly born enterprises in the business economy. The following year in 2003, there were 2.37 million persons employed by the same cohort of enterprises that had been born a year before. However, among those enterprises having survived to 2003 the number of persons initially employed in 2002 was 1.96 million, indicating a gain of about 414 100 jobs amongst those that survived to 2003. Equally there was a loss of around 184 500 jobs from enterprises that were born in 2002 and did not survive to 2003. Among the Member States, the ratio of employment gains among survivors to losses from enterprises that did not survive was particularly high in Finland and Portugal, and was also high in Slovenia, the United Kingdom, Sweden and Estonia.

Figure 4: Employment change resulting from births and deaths of enterprises, 2003 (thousands) (1)



(1) Enterprise death statistics for 2003 are preliminary. Average based on data for Estonia, Spain, Italy, Latvia, Slovakia, Sweden and the United Kingdom.

Figure 5: Employment change among enterprises born in 2002, business economy (thousands) (1)



(1) Denmark, 2001.

(2) Average based on data for the Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia, Slovakia, Finland, Sweden and the United Kingdom.

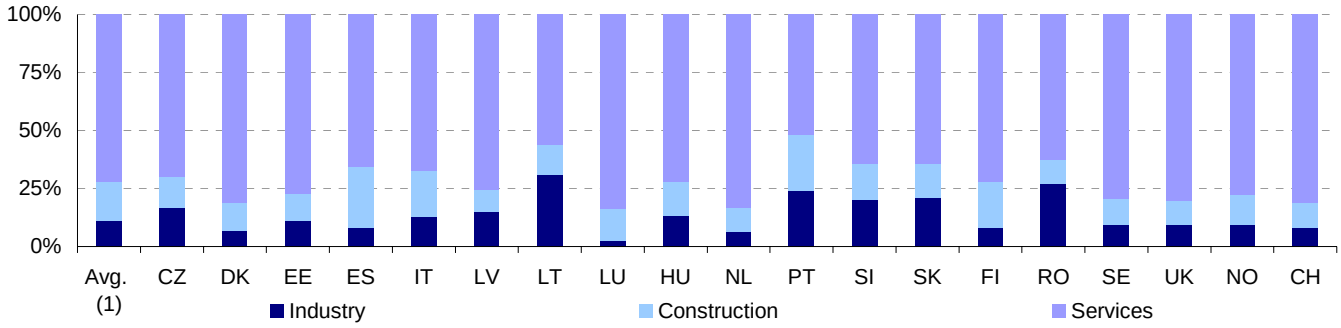
Where is employment created by newly born enterprises and where do survivors increase employment?

Figure 6 shows that in 2003 among the jobs created in newly born enterprises in that year, about 72 % were within the services sector and 17 % in construction. New industrial enterprises generated one fifth or more of the jobs in newly born enterprises in Lithuania, Portugal, Slovakia and Slovenia, as well as in Romania. The contribution of ICT activities to employment growth was relatively small, as they generated slightly more than 4 % of total employment created in newly born enterprises in the business economy[2].

In Figure 7, looking at employment in 2003 of enterprises born in 1998, enterprises that started small (with less than 10 employees) had increased their employment more than larger enterprises, in percentage terms. In a similar vein, new entrants in electricity, gas and water, ICT services, mining and quarrying, and in real estate, renting and business activities showed higher overall growth of employment over this period of time - see Figure 8.

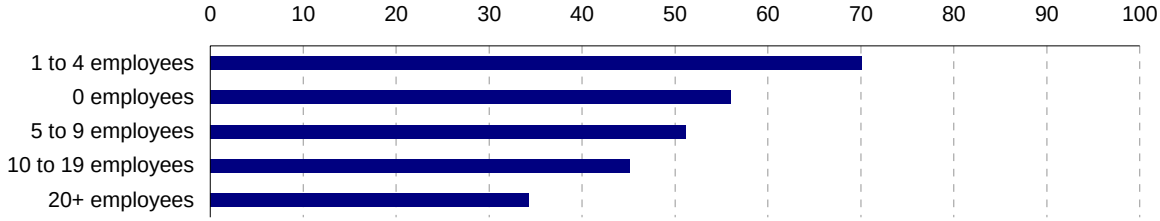
[2] Average, based on data for the Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia, Finland, Sweden and the United Kingdom.

Figure 6: Number of persons employed in newly born enterprises, breakdown by sector, 2003



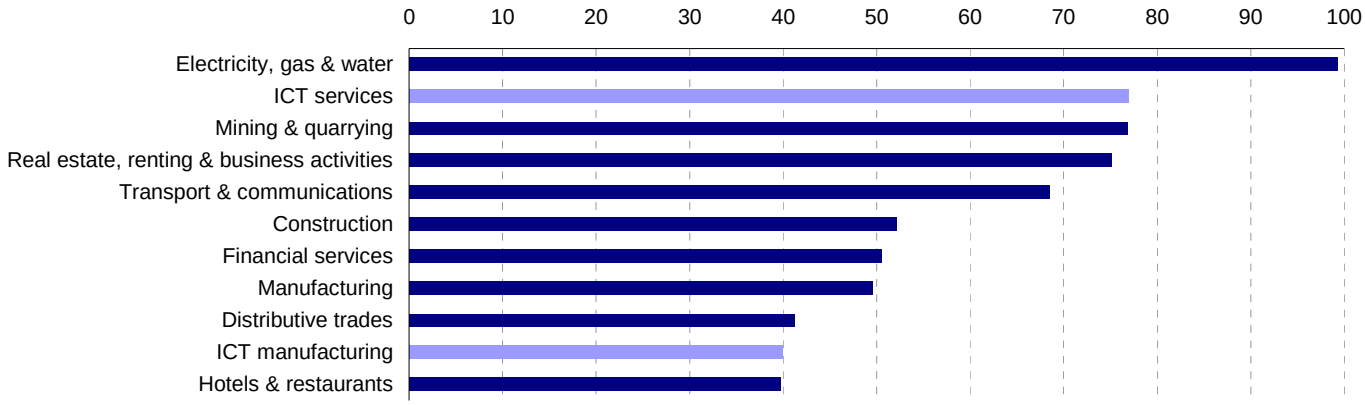
(1) Average based on data for the Czech Republic, Estonia, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia, Finland, Sweden and the United Kingdom.

Figure 7: Enterprises born in 1998 and surviving to 2003 - overall employment growth, by enterprise size class in the birth year, business economy (%) (1)



(1) Average based on data for Spain, Italy, Luxembourg, Finland, Sweden and the United Kingdom.

Figure 8: Enterprises born in 1998 and surviving to 2003 - overall employment growth, by activity (%) (1)



(1) Average based on data for Spain, Italy, Luxembourg, Finland, Sweden and the United Kingdom.

Survival and failure: the impact on employment

Table 1 shows employment levels and growth of survivors from the cohort of enterprises born in 1998. Note that this only includes employment changes among enterprises born in 1998 and not of other active enterprises.

The first block of data in Table 1 shows the total employment in each reference year of enterprises that were newly born in 1998: as such the change in employment levels from one year to the next reflects employment lost by enterprises that did not survive to the next year, as well as employment change (increase or decrease) among survivors. In several countries there was an initial increase in employment levels as the net employment growth among survivors was greater than the loss of employment through enterprises failing to survive. In most countries however, after this initial increase for one or two years, the overall employment level among the cohort of enterprises born in 1998 stabilised or fell as the net employment change among survivors was less than the employment lost through enterprises failing to survive. A clear example of this effect can be seen in Spain where employment grew greatly in the first year, less in the second, and then fell back below the initial employment level of the whole cohort in the following years.

A different measure is shown in the second block of data, namely the initial number of persons employed (in other words the employment in 1998) of enterprises that survived to the specified reference year. For example, in Denmark the enterprises that were born in 1998 and survived to 2001 had employed 18 200 persons when they were born in 1998. A comparison of this value with that in the first block of data shows that these same surviving enterprises had increased their employment to 25 100 persons by 2001.

In this second block of data, by looking at the fall in the value from one year to the next, it is also possible to see clearly how many jobs had been created in 1998 among enterprises that failed to survive. For example, in Denmark the initial (1998) employment level of survivors fell from 21 400 in 2000 to 18 200 in 2001, in other words 3 200 jobs were created in 1998 by enterprises that survived to 2000 but failed to survive to 2001.

The third and fourth blocks of data in Table 1 show the change in employment among survivors in absolute and percentage terms. Hence, for the aggregate shown in Table 1 there was a 16.8 % increase in the number of persons employed in enterprises born in 1998 that survived their first year of operation. Enterprises that survived until their fifth year of operation (2003) had increased their employment overall by 54.5 %, an increase of slightly less than 542 400 jobs.

This publication has focused on employment, but new entrants also have an impact on the economy in terms of their output, and may also be more or less efficient than incumbents or enterprises that die. Business demography data also provide information on the turnover generated by newly born enterprises.

Table 1: Number of persons employed in enterprises born in 1998, and among their survivors, business economy

	Avg. (1)	BE	DK	ES	IT	LU	PT	FI	SE	UK	NO
Enterprises born in 1998: employment of those that survived to each year (thousands)											
at birth, in 1998	:	48.0	31.7	519.5	568.6	4.7	134.0	10.0	:	655.0	40.8
survived to 1999	1 880.5	:	31.7	537.6	583.3	5.8	133.1	13.0	43.0	703.6	46.0
survived to 2000	1 823.4	:	27.7	539.2	565.7	6.3	126.2	14.4	45.7	658.3	43.0
survived to 2001	1 726.0	:	25.1	509.7	542.1	6.6	:	14.1	43.9	616.1	76.3
survived to 2002	1 604.9	:	:	458.6	518.3	6.3	:	13.2	39.9	574.9	:
survived to 2003	1 538.1	:	:	434.5	518.6	6.7	:	10.3	36.9	537.8	:
Enterprises born in 1998: initial employment in 1998 of those that survived to each year (thousands)											
survived to 1999	1 610.7	:	26.5	449.5	485.4	4.4	128.8	9.3	38.7	627.8	36.8
survived to 2000	1 399.3	:	21.4	391.7	424.4	3.8	111.0	8.3	34.8	540.1	32.9
survived to 2001	1 229.2	:	18.2	353.7	376.9	3.4	:	7.5	30.6	460.5	30.7
survived to 2002	1 093.7	:	:	322.2	337.2	:	:	6.6	27.1	400.6	:
survived to 2003	995.7	:	:	302.1	305.0	3.0	:	6.0	24.3	358.2	:
Enterprises born in 1998: overall employment change of those that survived to each year (thousands)											
survived to 1999	269.8	:	5.2	88.1	98.0	1.4	4.3	3.6	4.4	75.8	9.2
survived to 2000	424.0	:	6.3	147.6	141.3	2.5	15.2	6.0	10.9	118.2	10.1
survived to 2001	496.7	:	6.9	156.0	165.1	3.2	:	6.7	13.3	155.6	45.7
survived to 2002	511.2	:	:	136.5	181.1	6.3	:	6.5	12.8	174.3	:
survived to 2003	542.4	:	:	132.5	213.5	3.7	:	4.3	12.6	179.6	:
Enterprises born in 1998: overall employment change of those that survived to each year (%)											
survived to 1999	16.8	:	19.6	19.6	20.2	31.6	3.3	38.7	11.3	12.1	25.1
survived to 2000	30.3	:	29.4	37.7	33.3	64.8	13.7	72.0	31.5	21.9	30.6
survived to 2001	40.4	:	38.2	44.1	43.8	94.8	:	89.7	43.4	33.8	148.9
survived to 2002	46.7	:	:	42.4	53.7	:	:	98.4	47.3	43.5	:
survived to 2003	54.5	:	:	43.8	70.0	123.3	:	71.1	51.7	50.1	:

(1) Average based on data for Spain, Italy, Finland, Sweden and the United Kingdom.

Size class analysis

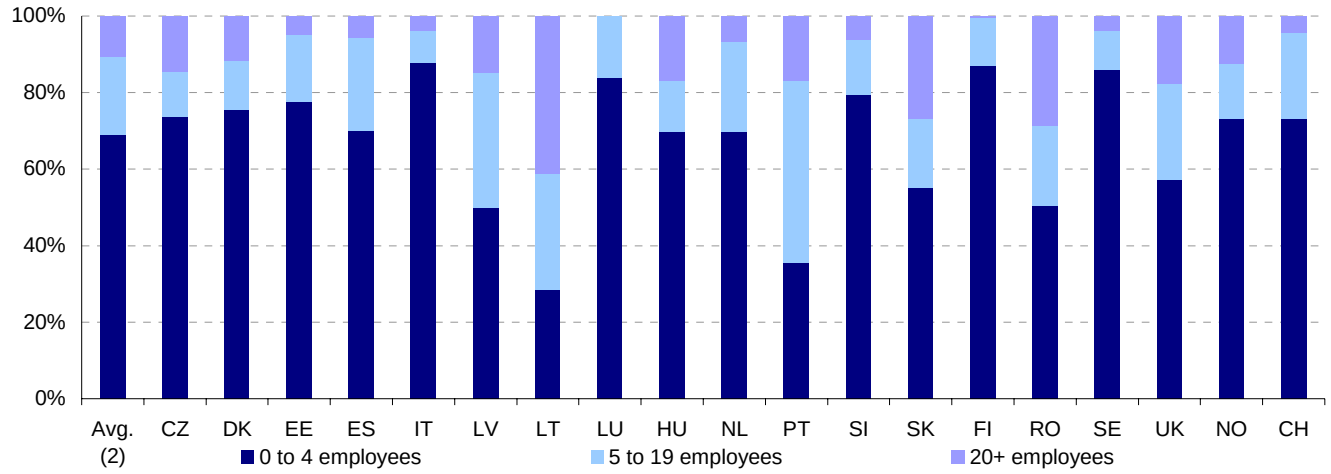
A size class analysis of employment among enterprises that were born or died in 2003 shows considerable variation between Member States. Italy, characterised by being relatively dependent on SMEs, had a high proportion of employment in newly born enterprises within the size class of enterprises with 0 to 4 employees (87.7 %) in 2003. Equally, the same size class accounted for a greater proportion of employment lost through enterprise deaths (86.4 %) in Italy than in other countries. In a large majority of countries, this enterprise size class represented a higher proportion of jobs created in newly born enterprises than jobs lost in enterprises that died. This pattern was less evident for enterprises with 5 to 19 employees and the impact on employment of enterprises deaths of larger enterprises (20 or more employees) was higher than their births.

Indeed, the net result of the death of one larger enterprise may have a greater net effect on employment than the death of several hundred smaller enterprises.

It is normal that most enterprises start out their life very small and either die or grow in the following years. One reason to explain that businesses start small is the fact that the vast majority of new enterprises are financially constrained.

Finally, entry by new firms should not be seen exclusively in terms of success or failure. Rather new entrants (even those that fail) may lead to incumbents increasing their efficiency and productivity.

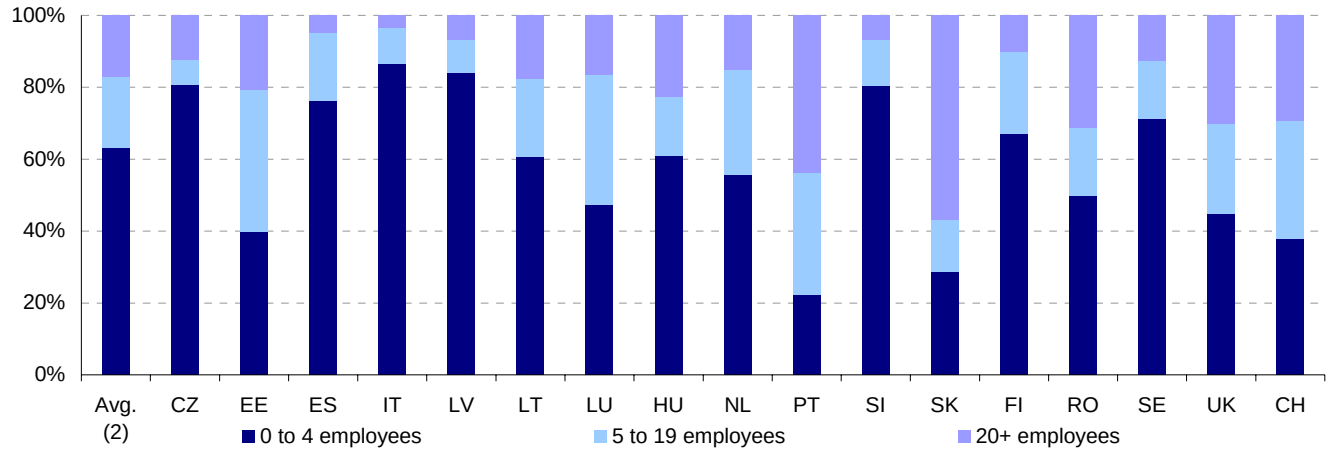
Figure 9: Number of persons employed among newly born enterprises, business economy, by size class, 2003 (1)



(1) The Czech Republic, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia and Finland, 2002; Denmark and Norway, 2001.

(2) Average based on Estonia, Spain, Italy, Latvia, Slovakia, Sweden and the United Kingdom.

Figure 10: Number of persons employed among enterprises that died, business economy, by size class, 2003 (1)



(1) Enterprise death statistics for 2003 are preliminary. The Czech Republic, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia and Finland, 2002.

(2) Average based on Estonia, Spain, Italy, Latvia, Slovakia, Sweden and the United Kingdom.

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Legal basis

Currently, data on business demography are provided to Eurostat on a voluntary basis. A recast Regulation on Structural Business Statistics amending and consolidating the existing legislation based on Council Regulation (EC, EURATOM) No 58/97 of 20 December 1996 has been proposed by the European Commission. It comprises a new Annex providing a complete legal basis for business demography statistics.

Data source

The main source of data for this development action is the statistical business registers that the National Statistical Institutes maintain. The use of the statistical business registers makes it possible to identify demographic events at the level of each individual unit.

Coverage of countries

Tables and graphs in this publication show a varying coverage of countries. The availability of data by country depends on the year in which they joined the harmonised data collection, the availability of survival data from earlier years and the continuity of participation in the data collection.

Definitions

Within the business demography context, an **active** unit is defined as one with any turnover and/or employment in the period from 1st January to 31st December in a given year. This definition complements the concept in the Business Registers glossary.

A **birth** amounts to the creation of a combination of production factors with the restriction that no other enterprises are involved in the event. Births do not include entries into the population due to mergers, break-ups, split-off or restructuring of a set of enterprises. Births do not include entries into a sub-population resulting only from a change of activity. A birth occurs when an enterprise starts from scratch and actually starts activity. An enterprise creation can be considered enterprise birth if new production factors, in particular new jobs, are created. If a dormant unit is reactivated within two years, this event is not considered a birth.

A **death** amounts to the dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Deaths do not include exits from the population due to mergers, take-overs, break-ups or restructuring of a set of enterprises. Deaths do not include exits from a sub-population resulting only from a change of activity. An enterprise is included in the count of deaths only if it is not reactivated within two years.

In the business demography context, **survival** occurs if an enterprise is active in terms of employment and/or turnover in the year of birth and the following year(s). Two types of survival can be distinguished: 1) an enterprise born in year t is considered to have survived in year t+1 if it is active in any part of year t+1 (= survival without changes); 2) an enterprise is also considered to have survived if the linked legal unit(s) have ceased to be active, but their activity has been taken over by a new legal unit set up specifically to take over the factors of production of that enterprise (= survival by take-over).

The **number of persons employed** is defined as the total number of persons who work in the observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams).

The **number of employees** is defined as those persons who work for an employer and who have a contract of employment.

Size classes in business demography are defined according to the number of employees in the birth year. Even if newly born enterprises outgrow their size classes in reality, they remain assigned to their initial size class in this data collection.

Employment indicators for Denmark, the Netherlands and Finland are provided in full-time equivalents (FTEs) and as such may show values that are lower than the corresponding data for the other Member States, especially for activities where the proportion of part-time work is high.

Statistical unit

The type of statistical unit used for this project on business demography is the enterprise. This unit is defined in the statistical units Regulation (Council Regulation (EEC) No 696/93 of 15 March 1993 as the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources.

Economic activities - NACE

NACE is a hierarchical classification of economic activities. Business demography indicators have been produced in this project for activities within NACE Rev. 1 Sections C to K and M to O, excluding Class 74.15. Sections C to K are referred to as the business economy, Sections C to E are referred to as industry, Section F is referred to as construction and Sections G to K are referred to as services. No data are collected for management activities of holding companies (Class 74.15) which is excluded from all higher aggregates (Group 74.1, Division 74, Section K, services, and the business economy total). From reference year 2003 onwards, NACE Rev. 1.1 has been used.

Section C: mining and quarrying
Section D: manufacturing
Section E: electricity, gas and water
Section F: construction
Section G: distributive trades
Section H: hotels and restaurants
Section I: transport and communication
Section J: financial intermediation
Section K (excl. 74.15): real estate, renting and business activities

ICT manufacturing: Divisions 30 and 32, and Groups 31.3, 33.2 and 33.3
ICT services: ICT wholesaling, ICT consultancy and Group 64.2
ICT wholesaling: Classes 51.43, 51.64 and 51.65
ICT consultancy: Class 71.33 and Division 72

Coverage of units

No threshold in terms of the size of units has been set for this project. The coverage in general is very good, though differences in national administrative sources affect coverage of the smallest units (those with no paid employees). In many countries VAT registers are one of the principal sources for maintaining the statistical business register, and the thresholds for VAT registration may have an impact on the coverage of the business demography data. The VAT threshold in Estonia is about EUR 16 000. Up to 2002, coverage of sole proprietorships is limited to those with 20 or more persons employed. In Latvia, natural persons performing economic activity on the basis of licenses and patents and peasant farms were included only from 2002 onwards for populations of active enterprises and of enterprise births. The exceptionally high birth rate of 2002 in Latvia is due to the first inclusion of these natural persons. In Lithuania, VAT data were used for 2002, only when there was no information on turnover from other statistical sources. However, only those enterprises having more than about EUR 28 985 have to pay VAT. In Portugal the VAT threshold, for all reference years, is EUR 9 976. Sole proprietorships have not been covered in Portugal since 2001. The relatively high threshold for value added tax (VAT) in the United Kingdom may explain some of the differences, though, as in other countries, the impact of the VAT threshold is reduced by voluntary registrations and the use of additional sources.

Non-availability and abbreviation

The colon (:) is used to represent data that is not available or confidential.
'Avg.' is used to represent an average based on countries with available data.

Further information:

Data: EUROSTAT Website/Home page/Industry, trade and services/Data

Industry, trade and services

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  - Special topics of structural business statistics
    - Business demography

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