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Session 6A:
"Entrepreneurship indicators, Business Demography and SMEs"

Entrepreneurship Indicators: 'Employer Business Demography' and High-Growth Enterprises in Europe

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1. Introduction — Two European data collections on business demography

From this year onwards, Eurostat will publish two separate data collections on business demography, thanks to the Member States' agreement to expand their input on a voluntary basis. The difference between the two data collections is the coverage of small units.

The first, usually referred to as the 'harmonised data collection' (HDC), has been conducted since 2002 and covers all enterprises regardless of size, including non-employer businesses. It now has a legal basis, further to the entry into force in March 2008 of the recast Parliament and Council Regulation on Structural Business Statistics[1]. This data collection has been one of the sources used for the Structural Indicators, which are collected to monitor the Lisbon Growth and Jobs Strategy.[2] It is considered important to cover the non-employers in the HDC, as they account for roughly one third to half of the whole business population, depending on the country. However, a drawback is that the coverage of these small businesses varies between countries, thus limiting the comparability of results.

The second data collection has been labelled 'employer business demography' (EBD), and as the name suggests, limits the scope to employer businesses, i.e. those that have at least one employee during a given reference period. Eurostat and the Member States agreed to add this data collection to the existing one on a voluntary basis, in response to the OECD's request for data that are more comparable across all OECD countries, particularly for the purpose of the joint OECD-Eurostat Entrepreneurship Indicators Programme (EIP).[3] The threshold of one employee was deemed easy to implement and thus to lead to a more comparable coverage of units, albeit at the expense of neglecting a large portion of the business population. The EBD data collection, despite some remaining methodological differences, allows a more meaningful comparison with employer-based data on the United States, as published by the OECD.[4]

The methodologies underlying these two data collections have already been detailed in the paper for the Wiesbaden Group meeting in 2007,[5] so only the basic difference needs to be highlighted here again. The HDC covers enterprises of all sizes regardless of whether they are employers or not. The lowest size class is '0 employees', i.e. non-employers are recorded in a separate size class. Enterprise births are recorded only once. If an enterprise is born as a non-employer business and becomes an employer later on, it is not recorded again as an 'employer birth' in a higher size class (the numerator of the birth rate); however, it is recorded as an active employer enterprise in this higher size class (the denominator). Therefore it would be misleading simply to drop the size class '0 employees' from this data collection to obtain results that are comparable with countries where business demography data are collected on employers only. The European birth rates would be artificially low. As Steve Vale put it in his OECD study on 'The International Comparability of Business Start-up Rates',

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[1] Regulation (EC) No 295/2008 of the European Parliament and of the Council of 11 March 2008 concerning structural business statistics (recast) http://www.eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2008:097:SOM:EN:HTML.

[2] http://ec.europa.eu/growthandjobs.

[3] http://www.entrepreneurship-indicators.net http://www.oecd.org/document/0/0,3343,en_2649_33715_39149504_1_1_1_1,00.html.

[4] http://stats.oecd.org/wbos/default.aspx?datasetcode=BDI, 'Exports', 'Download Files', 'United States – Business Demography' (zipped Excel file with data from the Census Bureau).

[5] http://circa.europa.eu/Public/irc/dsis/businessurvey/library?l=/2007_wiesbaden/parallel_sessions/entrepreneurship/eurostatdoc/_EN_1.0_&a=d.

> 'The [employer] start-up rates for the European countries now only include those businesses that have employees from the start. They do not include businesses that start with no employees, and then take on employees as they expand.'[6]

The difference in the new European 'employer business demography' data collection is precisely that it now includes in its birth data 'businesses that start with no employees, and then take on employees as they expand.' This event has been called 'entry by growth' in this data collection. The mirror event that employers become non-employers but continue their business activity is recorded as well. The death data are corrected with these 'exits by decline'. The first parallel data collection in 2007/2008 has shown that the effect of this methodological difference on the birth and death rates is considerable.

Finally, Member States have conducted the new voluntary data collection on high-growth enterprises and gazelles for the first time, based on the common specifications developed by the OECD. These results are used now as additional performance indicators in the EIP to measure the business dynamics in OECD countries, with a special focus on young enterprises.

All the methodological recommendations underlying the data collections on business demography and high-growth enterprises were published in the joint 'Eurostat-OECD Manual on Business Demography Statistics' in late 2007[7]. The purpose of this joint manual was to harmonise different approaches to business demography statistics with a view to better comparability, particularly between European and other OECD countries.

2. Results on 'employer business demography' and high-growth enterprises

2.1. Births and deaths

Eurostat will publish its first results on employer business demography and high-growth enterprises in a 'Statistics in Focus' in November 2008. The complete datasets are available for download on the Eurostat website. The effect of using different methodologies for birth and death rates becomes very obvious in these datasets.

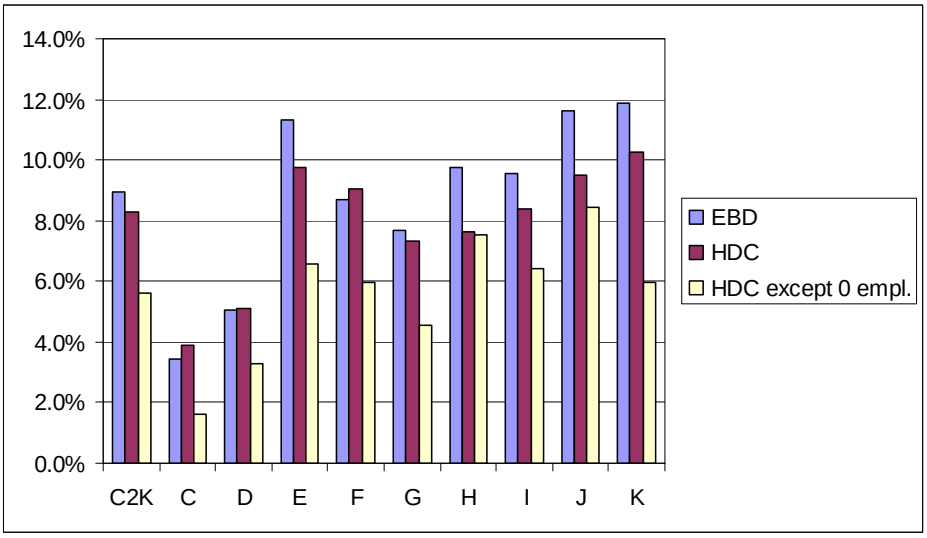
Three different birth rates are compared here to show the effects of 'entry by growth':

- 'EBD': Birth rate according to the 'employer business demography' methodology, where entry by growth is taken into account.
- 'HDC': Birth rate in the 'harmonised data collection' covering employers and non-employers. Non-employers becoming employers are not recorded as births.
- 'HDC except 0 employees': This is the birth rate that we would obtain if we dropped the size class '0 employees' from the harmonised data collection without taking into account entry by growth. These results are not published in any birth rates.

At the time of writing this document, a comparison of EDB and HDC for reference year 2005 is available for the following 13 EU Member States: Bulgaria, Czech Republic, Estonia, Spain, Italy, Latvia, Luxembourg, Hungary, Netherlands, Austria, Romania, Slovakia and Finland.

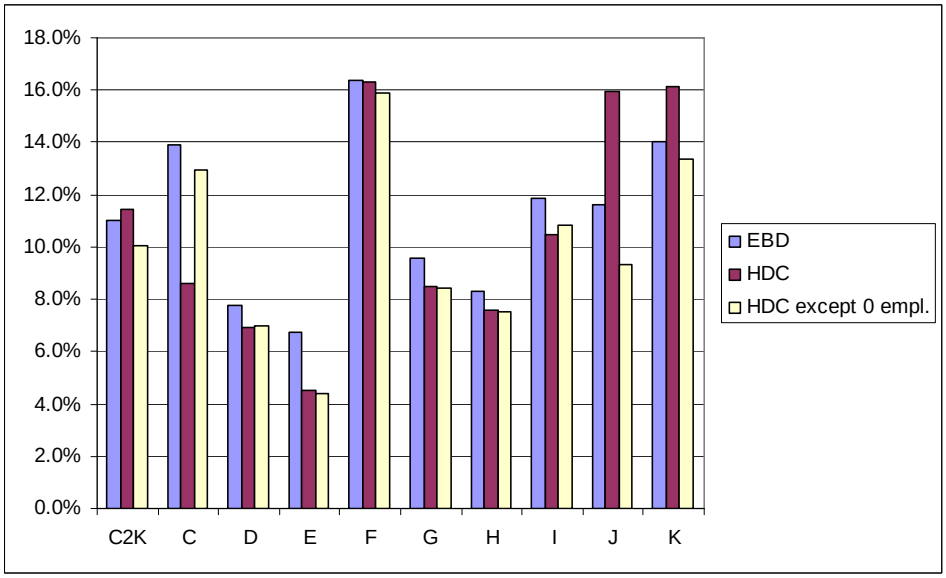
[6] Steven Vale: 'The International Comparability of Business Start-up Rates', OECD STD/DOC(2006)4, http://www.olis.oecd.org/olis/2006doc.nsf/LinkTo/NT000071C2/$FILE/JT03217769.PDF.
[7] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-010/EN/KS-RA-07-010-EN.PDF.

Figure 1: Birth rates, Austria, 2005, NACE Rev. 1.1 section level



Austria is a typical example of a country where the employer birth rate (8.9%) for the business economy (NACE sections C to K) is higher than the birth rate covering the non-employers (8.3%). If entry by growth were disregarded in the employer data, the birth rate would be artificially low at 5.6% and therefore misleading. One third of the employer births are due to entry by growth, as a comparison of the left and right columns for the 'C to K' aggregate shows. This pattern looks quite similar in eight of the 13 countries for which this comparison is possible.

Figure 2: Birth rates, Latvia, 2005, NACE Rev. 1.1 section level

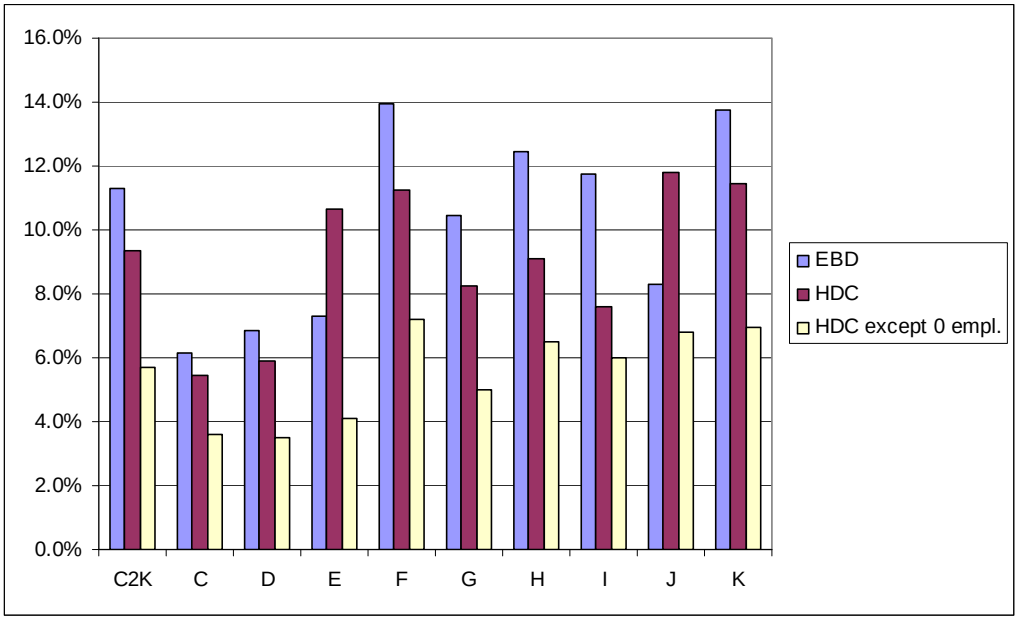


Source: Eurostat (SBS, Business demography)

Latvia is one of the countries where the initial assumption that employer birth rates would exceed the HDC results did not prove right. The employer enterprise birth rate for the business economy is 11.0%, while the HDC birth rate is higher at 11.4%. The entry by growth share among employer births is only 5.2% and thus much lower than in Austria. These and other differences between Member States may be due not only to different behaviour of enterprises in reality, but possibly also to different ways of implementing the

methodology or different underlying administrative data. However the aggregate of the 13 countries available for comparison shows the pattern of Austria quite clearly again:

Figure 3: Birth rates, 'EU' aggregate of 13 Member States (AT, BG, CZ, EE, ES, FI, HU, IT, LV, LU, NL, RO, SK) 2005, NACE Rev. 1.1 section level

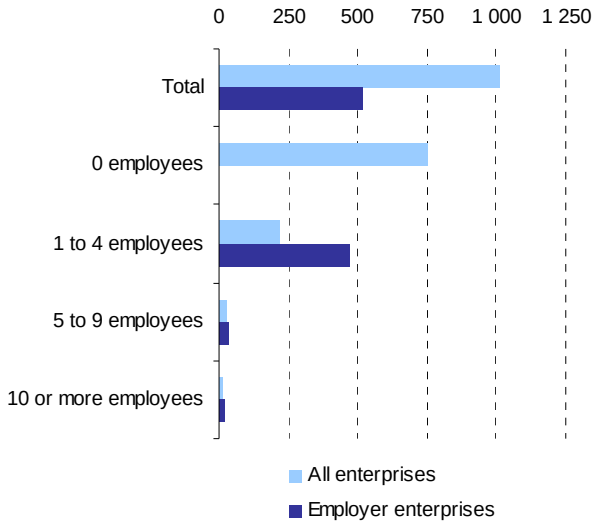


Source: Eurostat (SBS, Business demography)

The employer enterprise birth rate for the 13 countries available in the dataset is 11.3%, whereas the HDC birth rate also including the non-employers is 9.4%. As the right column for the 'C to K' aggregate shows, the employer birth rate would only be 5.7% if entry by growth were not taken into account. In other words, half of the employer births (50.4%) are due to 'entry by growth'.

In addition to a comparison of birth rates between the two data collections, it is interesting to look at the absolute numbers of newly born enterprises, depending on the inclusion of non-employers. As Figure 4 below shows, just above 1 million enterprises were born in 2005 in the 13 Member States available for comparison, according to the HDC, compared with 521 000 employer births. In the harmonised data collection, three quarters of the births (749 000) were recorded among the non-employers. In the EBD dataset ('employer enterprises'), the higher numbers of births in each size class, compared with HDC ('all enterprises'), are due to the entry by growth effect. As a rule of thumb, there were half as many EBD births than HDC births, and half of the EBD births were again due to entry by growth.

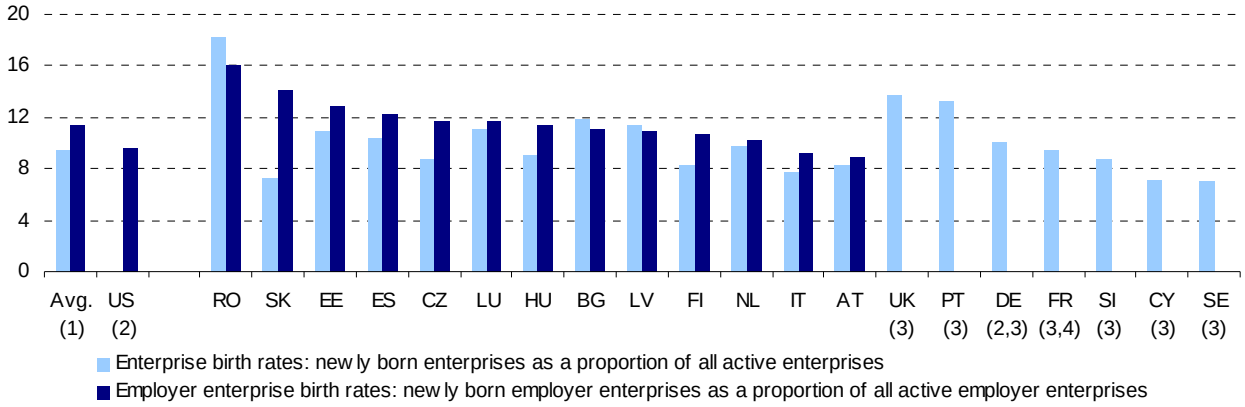
Figure 4: Comparison of the number of enterprise and employer enterprise births, business economy (NACE Rev. 1.1 Sections C to K excluding 74.15), 2005 (thousands) (1)



1) Information is for the total of: Bulgaria, Czech Republic, Estonia, Spain, Italy, Latvia, Luxembourg, Hungary, the Netherlands, Austria, Romania, Slovakia and Finland.
Source: Eurostat (SBS, Business demography)

In the 'Statistics in Focus' published in November 2008, the birth rates were contrasted with data from the United States as published by the OECD.

Figure 5: Comparison of enterprise and employer enterprise birth rates, business economy (NACE Rev. 1.1 Sections C to K excluding 74.15), 2005 (%) (1)



(1) Average based on data for those Member States shown in the figure above with information available for employer enterprises.
(2) 2004.
(3) Employer enterprise birth rate, not available.
(4) Excluding financial intermediation (NACE Section J).
Source: Eurostat (SBS, Business demography), OECD (for the US)

When looking at this data in comparison with the United States, the following constraints still limiting comparability should be borne in mind:

- Data for the United States are based on reference year 2004, while 2005 is used for European countries.
- The aggregated employer birth rate for Europe is based only on 13 of the 27 Member States. 7 of the 13 Member States (compared with 12 of 27 in total) are new ones which joined the EU in 2004 or 2007. These new Member States tend to

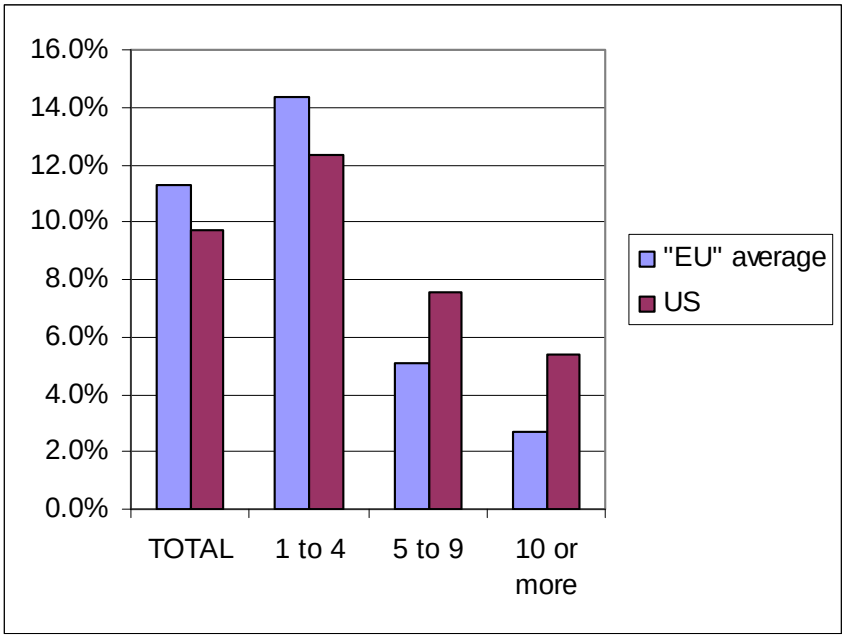
show a higher business churn than the older Member States, as the business population is less stable due to the radical changes of the political and economic systems in the 1990s.

- Some methodological differences remain. For instance, mergers and acquisitions can be recorded as births and deaths in the US data, while they are usually filtered out in the European data.

Despite these constraints, we can observe that the (non-)inclusion of non-employers in the European data has a considerable effect on a comparison with birth rates in the United States. The aggregated employer enterprise birth rate for the 13 EU countries is 11.3% compared with 9.7% in the United States, while the aggregated birth rate according to the harmonised data collection is only 9.4%. Even though we can assume that the employer enterprise birth rate for the EU-27 in 2005 would be lower than 11.3%, these results seem to challenge the frequent assumption that the United States are far more entrepreneurial than the EU countries are on average.

The breakdown of employer enterprise births by employee size class shows a different pattern in Europe and the United States, as Figure 6 below shows.

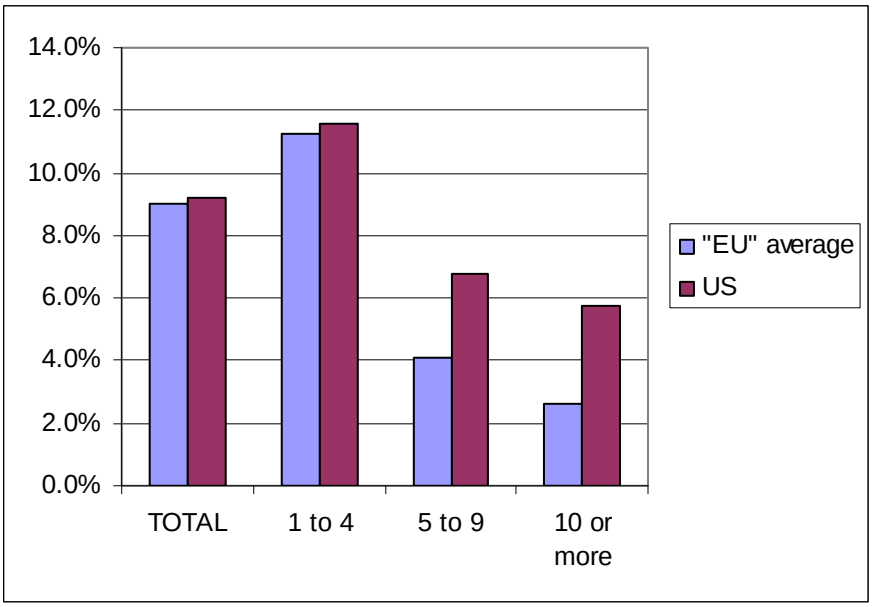
Figure 6: Birth rates by employee size class, 'EU' 2005, US 2004, business economy



Source: Eurostat (SBS, Business demography), OECD (for the US)

The high total birth rate in the EU in comparison with the United States corresponds to a higher relative birth rate also in the size class of 1 to 4 employees. In the higher size classes, '5 to 9' and '10 or more' employees, birth rates in the United States are clearly higher. In the size class '10 or more employees' it is actually twice as high in the United States (5.4%) as in the 13 EU countries (2.7%).

Figure 7: Death rates by employee size class, 2004, business economy



Source: Eurostat (SBS, Business demography), OECD (for the US)

Finally, a look at the death rates of 2004 in Figure 7 shows that these were slightly lower in total for the 12 available EU Member States (9.1%, Austria not included) than for the United States (9.2%). The average death rate in size class '1 to 4 employees' is almost equal, while the US death rates, like the birth rates above, are clearly higher in the higher size classes.

It seems that the 'European' employer birth rates are higher than in the US, while the death rates are slightly lower. However, any conclusion drawn from this should be treated with great caution, again because only 13 countries are included in the 'EU' aggregate for birth rates, and only 12 in that for death rates. The relatively dynamic development of economies in new EU Member States is overrepresented in these results. If the average employer birth rate for the EU-27 total proves higher than that of the United States, one likely explanation may be found in methodological divergences arising from the geographical and political situations: while different countries make up the European Union, the United States constitute a single nation. For instance, if a firm decides to expand its activities from the Czech Republic to Slovakia, it is likely to set up a new enterprise in that country, which is then counted as a new employer enterprise (if it has salaried employees). The same move of a Texan firm to Oklahoma would result in a new establishment, but it would be a subsidiary of the Texas-based mother company and would not be counted as a newly-started enterprise. This difference makes for lower new firm counts in the US when compared with the EU.

2.2. High-growth enterprises

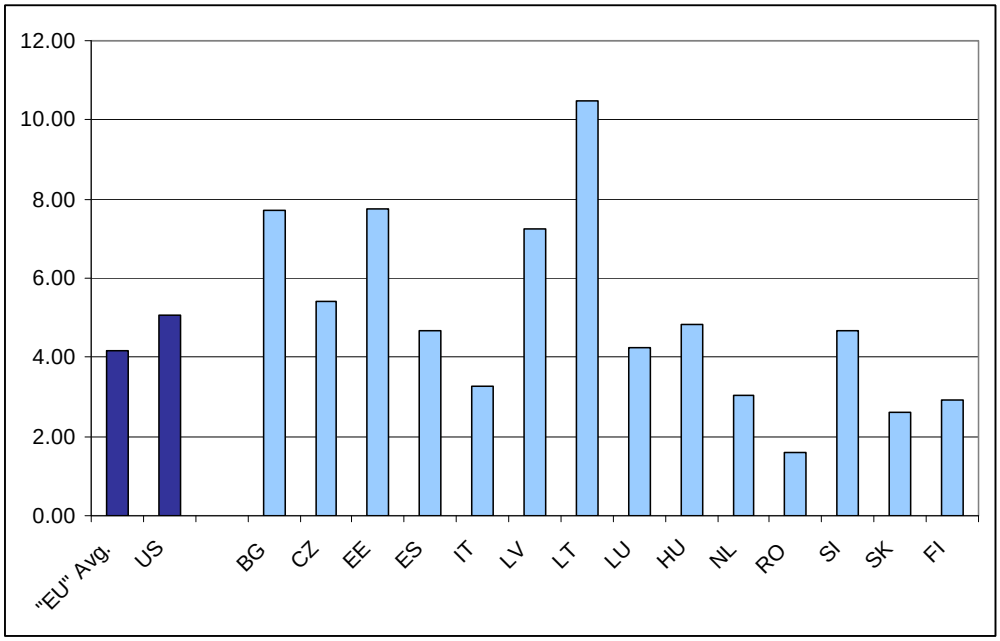
As an additional contribution to the first data collection on Entrepreneurship Indicators, 14 Member States have provided Eurostat with data on high-growth enterprises. These figures are based on the definition of high-growth enterprises and gazelles in the Eurostat-OECD Manual on Business Demography Statistics:

All enterprises with average annualised growth greater than 20% per annum, over a three year period should be considered as high-growth enterprises. Growth can be measured by the number of employees or by turnover.[8]

A threshold of 10 employees at the beginning of the observation period has been used for this first data collection, following a sensitivity test on various thresholds that several countries performed in 2007 at the request of the OECD. In early 2008, 14 Member States reported data to Eurostat on the numbers of enterprises that had shown high growth from 2002 to 2005. Growth was measured either in employees or in turnover, and as a subset of each dataset, numbers of 'gazelles' were extracted, i.e. high-growth enterprises that were 4 or 5 years old in 2005.

Based on these results, Eurostat has published rates of high-growth enterprises using the population of active enterprises with 10 or more employees in 2002 as the denominator. The full dataset can be accessed on Eurostat's website.

Figure 8: High-growth firm rate by employment, business economy (NACE Rev. 1.1 Sections C to K excluding 74.15), 2005 (%)



Source: Eurostat (SBS, Business demography), OECD (for the US)

Figure 8 shows the rates of high-growth enterprises based on the employment data for the 14 available Member States, again in comparison with the United States. The denominator for Bulgaria (active enterprises in 2002) was estimated for this graph. On average, the rate for the EU Member States was 4.2% compared with 5.1% in the United States. The higher figures for high-growth enterprises in the United States, compared with the available EU Member States, may be explained in the same way as the lower employer birth rates. Being one large national economy, the United States offer more potential for existing firms to grow, including the possibility to expand business to other States within the country. Within EU countries, the potential for expansion at national level may be more limited, while the establishment of a foreign subsidiary will be recorded as an enterprise birth in the target country.

[8] Eurostat-OECD Manual on Business Demography Statistics, 2007, page 61.

3. Conclusion

Not surprisingly, the first results on European ‘employer business demography’ have shown that the scope and methodology of business demography statistics have a significant impact on results. This data collection is a first attempt at providing European data that are more comparable particularly with data on the United States, based on the employer business population. The first EBD data collection also seems to confirm the assumption that restricting the scope to employer enterprises tends to lead to higher birth and death rates.

High employer birth rates in Europe on the one hand, and high rates of high-growth businesses in the United States on the other, may be partly due to the use of the enterprise / firm as the statistical unit, whose results are influenced by the fact that the EU is a Union of 27 nations, while the United States form one nation.

Before drawing more conclusions, however, there should be more analyses on ‘employer business demography’ in comparison with the United States and other non-EU OECD countries when data on more reference years and countries become available in the future. For the moment, these results confirm that harmonising methodologies among EU and OECD countries is a useful undertaking, as different methodologies lead to significantly different and possibly misleading results.