

Do SMEs create more and better jobs?

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Executive summary

1. Introduction

The objective of the Lisbon, strategy launched in 2000, was to make the European Union the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, creating more and better jobs and developing greater social cohesion. On 3 March 2010, the Commission launched the "Europe 2020 Strategy for smart, sustainable and inclusive growth." Europe 2020 is the EU's growth strategy for the coming decade, to become a smart, sustainable and inclusive economy leading to high levels of employment, productivity and social cohesion. Enterprises are at the heart of this strategy, and considering the fact that the overall majority of all enterprises are SMEs, the enterprise policy for reaching these goals mainly revolves around SMEs.

In 2010, there were over 20.8 million enterprises active in the non-financial business sector in the European Union, of which 99.8% were SMEs. About 92% of the total business sector consists of micro enterprises, which employ fewer than 10 persons. The typical European firm is a micro firm.

About 67% of the employment in the non-financial business economy is provided by SMEs. Micro enterprises contribute about 30%, small enterprises about 20% and medium-sized enterprises about 17%. Apart from the impact of SMEs on the welfare in the EU, SMEs also have a positive effect on economic growth.

This central role of SMEs in the EU economy is recognised by the Commission and anchored in the Small Business Act (SBA) adopted in 2008. The SBA established a comprehensive SME policy framework for the EU and its Member States.

2 Objective of the study

So far there is little information available on job creation by SMEs and the quality of the jobs these enterprises provide. The objective of this study is to fill this information gap by "...providing an up-to-date picture of the overall SME impact on the European labour market and SMEs contribution to delivering 'more and better jobs' in Europe."

The study covers all 27 EU Member States and the 10 non-European countries also participating in the Competitiveness and Innovation Programme (CIP) of DG Enterprise and Industry of the European Commission: Albania, Croatia, the Former Yugoslav Republic of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia and Turkey.

Part A: Do SMEs create more jobs?

3 SMEs' rising share in employment

Between 2002 and 2010, net employment in the EU rose substantially, by an average of 1.1 million jobs (or 0.9%) each year. 85% of this net employment growth was registered as employment growth in the SME size class. This share is considerably higher than the share of the SME size class in total employment (which was 67% in 2010). This implies that the employment share of the SME size class has increased over time, and indicates the increasing economic relevance of this size class. Within the SME size class, the highest growth rate is found in the size classes of micro and small enterprises.

More than a decade ago, it was already being argued that the developed countries were witnessing a transition from the so-called managed economy to the entrepreneurial economy¹. One of the main characteristics of this transition was an increased role of new and small enterprises in the entrepreneurial economy. The findings of the study indicate that – at least in the EU27 – this transition has not yet ended, but is still continuing.

4 SMEs create more jobs

SMEs create more jobs than large enterprises. If data are corrected for the so-called population effect², this statement is even better substantiated. Between 2002 and 2010, 85% of total employment growth was attributable to SMEs, and SMEs have a much higher employment growth rate (1% annually) than large enterprises (0.5% a year).

24 Member States had positive employment growth over 2002/2010. Job creation by the SME sector was more than proportionate to its share in employment in these countries. Three Member States experienced an employment decline in the non-financial business economy over 2002/2010: the Czech Republic, Latvia and Malta. In Latvia and Malta, job loss in SMEs was relatively limited in comparison with large enterprises.

The favourable employment development in SMEs can be observed in most sectors of industry. A clear exception to this rule is the trade sector, in which employment in SMEs increased by 0.7% annually, while in large enterprises it increased by an average of 2.2% per year. This was the result of a strong increase in the number of large trade enterprises, in particular in sales, maintenance and repair of motor vehicles.

¹ Audretsch, D. and R. Thurik (2001), What's new about the new economy? *Industrial and Corporate Change* 10 (1).

² The employment level of a size class is an aggregate of the employment levels of individual enterprises. As long as individual enterprises remain within a certain size class, the employment change of that individual enterprise is directly translated into an employment change of the level of the size class. When an enterprise crosses a size class boundary, the situation changes: the employment level of the new size class increases, while the employment level of the old size class decreases. This is the so-called population effect. To answer the question, "Do SMEs create more jobs?" employment statistics at size class level must be corrected for this population effect.

The foregoing holds for the 2002-2010 period as a whole, which was (more or less) neutral for business. The 2009/2010 economic crisis shows a reversal of these trends. The number of jobs in the non-financial business economy decreased by an average of 1.8% annually between 2008 and 2010; this holds for both the SME sector and the large enterprises sector. Taking into account that between 2008 and 2010 a number of previously large enterprises decreased in size to such an extent as to be counted as SMEs instead of as large enterprises in 2010 (which positively affects employment in the SME sector in 2010), this means that the SME sector was hit relatively hard by the crisis. Taking the so-called population effect into account, the number of jobs in the SME sector decreased by an average of 2.4% annually, as opposed to 1.0% annually in the large enterprises sector.

5 Differences within the SME size class

Within the SME sector, the highest growth rate is found in micro and small enterprises. Micro enterprises contributed 58% of total employment growth in EU27 in the period under review. On average, employment growth in the EU amounted to 0.9% annually. In both large (0.5%) and medium-sized (0.7%) enterprises, job growth was below average, while small enterprises contributed on par with the overall average. Micro enterprises in particular experienced above average employment growth, i.e. by an average of 1.3% a year.

In most countries micro enterprises contribute a great deal, relatively speaking. In two countries, though, employment in the micro enterprise sector declined: the Czech Republic and Malta. There, job growth concentrated in small and medium-sized instead of micro enterprises.

6 Impact of enterprise birth and death

In terms of job creation, enterprise birth and death play a very important role. Of the newly born enterprises, only 50% survive after 5 years. As a result, a large number of jobs are created and destroyed. In the period 2004-2008, most employment growth was generated by newly born SMEs (up to 5 years old in 2008). Total gross employment growth was 20.9 million. For newly born SMEs this was 20.7 million.

Some of the newly born enterprises grew during the first five years of their existence, compensating for the job losses caused by the decline of newly born enterprises. Taking these effects altogether, about 85% of jobs newly created during these five years were still in existence after five years. This emphasises the role of enterprise birth as an engine of employment growth. Total net employment growth was 7.8 million. For newly born enterprises this was 17.5 million. Total job loss by enterprise deaths is estimated at 8.9 million.

All in all, employment created by newly born SMEs more than compensates for job loss caused by the death of enterprises in all size classes.

7 Enterprise age

Employment in young SMEs (5 to 10 years old in 2008) increased by 1% on average across all sectors of industry. However, there are significant differences between the sectors of industry. Employment in young enterprises declined significantly in retail trade and slightly in business services. In all other sectors of industry employment in young enterprises increased on average; the highest

growth was found in wholesale trade. In most countries young enterprises showed an increase in employment, especially in Hungary, Belgium and Slovenia. These enterprises only showed a decrease in Poland and the Czech Republic.

Over the period 2004-2008, employment of established SMEs (10 years and older in 2008) declined by an average of 7%. At sectoral level, employment in established SMEs declined most in the construction industry and least in wholesale trade. At country level employment in established SMEs increased most in Belgium, Slovenia and Sweden and declined most in Poland and the Czech Republic. When compared to young SMEs, a larger share of established firms shrank and a smaller share grew. It should be noted that if young SMEs shrink, they are more likely to cease to exist, in which case they are not included in the statistics presented here.

Young enterprises are less likely to survive than older enterprises, but the surviving young enterprises tend to have higher employment growth rates. This is consistent with earlier findings: that so-called "fast growing firms" are usually rather young enterprises. The combined effect of these two opposite developments is positive: within the population of SMEs, the newly born SMEs accounted for the largest net employment growth during 2005-2008. Table 1 presents an overview.

Table 1 Net job creation 2004-2010 by age group of enterprises that survived

	Number x 1,000,000
Newly born enterprises	17.5
Young enterprises	0.2
Established enterprises	-4.2
Total	13.5

Source: EIM, based on Amadeus/Orbis, Bureau Van Dijk

8 Main effects of the crisis

According to enterprises, the main effects of the economic crisis during 2009 and 2010 were the overall negative impact on total demand (mentioned by 62% of all enterprises) and the increase in customer payment terms (mentioned by 50% of all enterprises). Problems with obtaining finance (short term and/or long term) were mentioned by approximately 40% of enterprises. The extent to which enterprises mention these (and other) negative effects depends strongly on the competitiveness and innovation performance of their home countries: whereas the decline in overall demand is mentioned by 70% of all enterprises in countries that are considered to be modest innovators, this is less than half (45%) in the countries that are considered to be the innovation leaders. Apparently, more innovative economies suffer less from the economic crisis than less innovative economies.

There is also a clear size class effect: smaller enterprises more often mention negative effects of the crisis than larger enterprises. This is consistent with the fact that between 2008 and 2010 SMEs' employment decreased more than large enterprises' employment.

9 Employment effects of the crisis

Although a considerable share of enterprises showed an increase in employment, a larger share of enterprises showed a decline of employment levels during 2010. This is especially true for micro enterprises: 13% showed an increase; 25% showed a decrease (62% remained stable). Large enterprises show a different picture: here the share of enterprises with employment increase (33%) exceeds the share of enterprises with decrease (29%). This is consistent with the observation that employment growth in SMEs is weaker than in large enterprises¹.

Again, innovation seems to have a positive effect: innovative enterprises, as well as enterprises from more innovative countries, more often report employment growth and have higher employment growth rates. This is confirmed by the report Internationalisation of European SMEs², in which the relation between internationalisation, innovation and the development of employment was investigated. It is shown that internationally active SMEs are more innovative and report higher employment growth: either being active in internationalisation or having concrete plans to become active, international SMEs report an employment growth of 7% versus only 1% for SMEs without any actual or concrete plans for international activities.

Publicly supported employment protection schemes were available in almost all countries. On average, one out of every ten enterprises (in the 37 countries considered) made use of such programmes. This varied between (almost) 0% in Montenegro and 2% in the UK to 25% or more in Belgium, Denmark and Lithuania. It is not clear to what extent these country differences are due to differences in the protection schemes (for example, available budget and eligibility criteria) or differences in the willingness of enterprises to apply for these programmes.

Employment developments were still negative in 2010, but expectations for 2011 were improving at the time the survey was held. The share of firms that expected to lay off employees in 2011 was smaller than the share of firms that actually laid off employees in 2010.

¹ It should be noted that the population effect is not taken into account here.

² Available at website: http://ec.europa.eu/enterprise/policies/sme/market-access/files/internationalisation_of_european_smes_final_en.pdf.

Part B: Do SMES create better jobs?

10 Measuring "better jobs"

Quality of jobs is a multidimensional concept that covers many different aspects, varying from wages and training and development to the meaningfulness of the work. The debate on the exact definition of quality of work has not yet been resolved, but a recent study conducted on behalf of the European Parliament provides an excellent overview of the debate so far and a good demarcation of what quality of jobs should be concerned with: it should concern no more and no less than the well-being of employees. In line with this study, quality of jobs is defined in such a way that it concerns the well-being of workers. It entails two broad dimensions: employment quality and work quality. Employment quality includes employment contract, remuneration, working hours and career development. Work quality includes work autonomy, intensity of work, working conditions and meaningfulness of the job.

Employment quality is best measured at enterprise level. In this report, results from two different sources are used to measure employment quality: the Enterprise Survey 2010 (ES 2010) and the European Company Survey (ECS) 2009. The ES 2010 was conducted specifically for this study, and was carried out on enterprises from all size classes from the non-financial business economy of the 37 countries considered for this study. The ECS 2009 is a well-known source of information on quality of employment, conducted on establishments, excluding micro enterprises.

The group of SMEs consists of widely-diverging business types, from micro firms in low skill activities (shop owners) with no ambition to grow to fast-growing technology start-ups. It is likely that these differences will lead to diverging scores on available quality of jobs-indicators as well.

Work quality can only be evaluated by individual employees themselves, and not at the level of enterprises.

How the various aspects actually influence the well-being of workers strongly depends on social and cultural context. An important finding of the study is that differences in quality indicators are much more apparent between countries than between enterprises in different size classes or business industries.

11 The social context of the enterprise

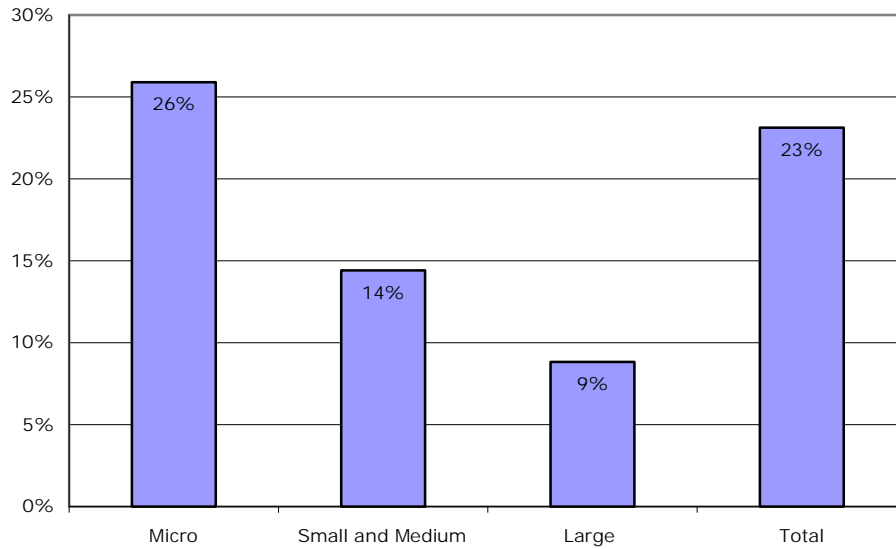
Human resource management (HRM) activities of smaller firms are, generally speaking, less formal and professional than those of large firms. One explanation provided is a lack of knowledge and priority due to fewer opportunities for specialisation. Another view is that the impact of HRM is lower for smaller firms.

The different approaches to HRM by enterprises from different size classes include different ways of recruiting and selecting new staff. Micro and small firms rely more often on informal procedures. This may also imply a lower relevance of formal degrees or certificates. On the other hand, fitting within the current workforce is much more important for smaller enterprises.

Important consequences of these differences in recruitment and selection appear to be higher percentages of older employees and higher probability of hiring pre-

viously unemployed employees (see Figure 1 and Figure 2). This seems likely to be related to the softer aspects of working climate and work quality.

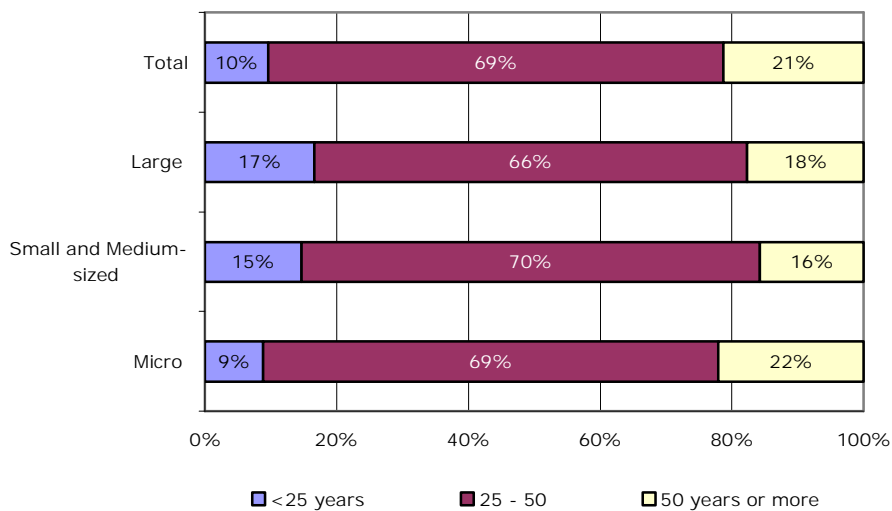
Figure 1 Average share of newly hired employees who were unemployed for at least a year, per enterprise in the EU37 business economy, by size class (2010)



Note: The shares are calculated as the average share (of newly hired employees who were unemployed for at least a year) for all enterprises within a specific size class.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Figure 2 Average share of employees from different age groups per enterprise, in the EU37 business economy, by size class (2010)



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

12 Human capital of the workforce

The human capital of the workforce refers to the amount of knowledge and skills of the individuals in the workforce that can be utilised in the production processes of organisations and enterprises. Human capital can be obtained through initial education, but also after the initial education has been completed (e.g. through experience, learning-by-doing, or vocational education and training).

The amount of human capital obtained through initial education is often measured by years of schooling or educational attainment (the highest educational degree obtained). Various studies show that these indicators of human capital tend to increase with firm size. This is in line with the assumption that, on average, larger firms employ employees with higher levels of human capital than smaller firms do.

One disadvantage of these two indicators is that they are limited to initial education; gains in human capital that occur after initial education has finished are not included. The educational attainment may therefore underestimate the educational level that is actually obtained. This difference between educational attainment and educational level may be larger for smaller firms, since smaller firms put less emphasis on educational attainment in their recruitment and selection practices: compared to large enterprises, they put more emphasis on their personal judgement of an applicant's knowledge and skill level, and pay less attention to the presence of a certain diploma or certificate. On the other hand, smaller firms tend to invest less in formal training and development activities, which suggests that employees in large firms may gain more additional human capital through formal training activities than employees in SMEs.

This disadvantage may be circumvented by measuring the educational level obtained rather than the educational attainment. The Enterprise Survey 2010 includes a question about the educational level of the workforce (rather than the educational attainment). This measure captures the combined effect of human capital gained through initial education and afterwards. The survey results indicate that at the end of 2010, small firms employed a higher share of employees with medium or high education levels than large enterprises. This size class difference is the opposite of what is generally found for educational attainment. This difference may be due in part to differences in measurement methodology (the results from the Enterprise Survey may suffer from a respondent's bias that may be larger for smaller firms), but it may also indicate that the gap between educational level (which includes the effects of life-long learning) and educational attainment is larger in SMEs.

More innovative enterprises employ a higher share of highly educated employees. The causality remains unclear: the study does not deliver proof as to what comes first, higher education or more innovation¹.

13 Employment quality: remuneration

In general, employees in SMEs tend to receive lower wage levels than in large enterprises, even when a correction is made for enterprise, job and employee characteristics. Four possible explanations have been identified:

¹ A brief search did not identify any scientific studies that did.

- Labour productivity increases with firm size.
- Larger firms have more financial resources.
- SMEs can better monitor individual employees, whereas large enterprises pay a premium to avoid shirking.
- Family owned and managed enterprises pay less and are relatively often SMEs.

In the context of the findings below, one might well add a fifth explanation: job satisfaction is higher in SMEs. If this is interpreted as a reward, employees would find working for lower wages acceptable.

In almost all Member States, average wages in SMEs are lower than in large enterprises. Within the size class of SMEs, the relationship between enterprise size and average wages is less straightforward. In 11 Member States micro enterprises on average pay higher wages than small enterprises. A similar pattern has been demonstrated for the US, where weekly wages in establishments with fewer than five employees are on average higher than in establishments with 5 to 19 employees.

Over time, the ratio of gross wages per employee between SMEs and large enterprises has remained fairly constant, although micro enterprises are catching up.

Remuneration systems in micro and small enterprises across Europe tend to be simple and straightforward. They make little use of performance related payments, and if they do it is usually done at enterprise level – for all employees.

14 Employment quality: job flexibility

Study results regarding job flexibility and job security are mainly based on the survey held on enterprises in 2010. They should therefore be considered with caution: it is likely that, compared with other elements of job quality, the results are more influenced by the effects of the crisis.

Having said that, recent developments also illustrate the importance of job flexibility: 40% of the reduction of total hours worked at EU level was due to job flexibility. As a result, employment contraction was much less than would have been the case without job flexibility.

In the period 2008-2009, working overtime occurred in just over two-thirds of all establishments. Working overtime occurred somewhat less often in SMEs, but it included a larger part of the workforce. The variation between countries is, however, considerably larger¹.

On average, 18% of employees work part-time. This share barely varies between size classes. Within micro enterprises, 18% of the employees have a part-time contract, as compared to 14% for large enterprises. Again, differences between countries are much larger. In the least innovative countries, the share of part-time work is much lower than average.

¹ These results are based on the ECS 2009, which is held at establishment level.

For Europe in total, flextime arrangements are found less often amongst SMEs. However, there are several countries where the opposite is true.

15 Employment quality: job security

Job security is found to be a key element of job satisfaction. A prerequisite for job security is the continued existence of the enterprise. It is therefore important to note that the risk of enterprise death is much higher in SMEs. Roughly half of all start-ups die within 5 years, and SMEs constitute a large majority of this group.

Indicators of job (in)security commonly involve indicators related to the number of workers with temporary positions. Two main categories of workers with temporary positions are workers from temporary work agencies and employees working on fixed-term contracts.

SMEs and micro enterprises in particular are less likely to hire workers from temporary work agencies than large enterprises are. During 2008 and 2009, the number of employees doing temporary agency work was greatly reduced. During 2010 the share of SMEs that hired workers from temporary work agencies decreased further, while this share increased somewhat amongst larger enterprises. This indicates that larger enterprises are recovering sooner from the crisis than smaller enterprises, which is consistent with the findings in part A of the study.

During 2009, 50% of small enterprises in EU27 employed staff with fixed-term contracts, as compared to 75% for medium-sized and 87% for large enterprises. No data is available for micro enterprises. Differences between countries are considerably larger, ranging from less than 20% in Austria and Cyprus to 75% or more in Poland and the Netherlands.

16 Employment quality: employee participation

Available indicators regarding employee participation clearly show lower scores for smaller enterprises. Wage agreements cover 65% of small enterprises and 81% of large enterprises. Employee representation varies between 34% in small, and 88% in large enterprises. As before though, country differences are larger.

17 Employment quality: skill development

In comparison to large enterprises, micro and small enterprises show a preference for fewer formal training activities. The most common training methods within SMEs are on-the-job training and self-directed learning. Somewhat less common is the provision of training courses. For large enterprises, the most common training methods are on-the-job training and internal and external training courses.

Enterprises with higher shares of full-time workers, highly educated employees or young employees are more likely to provide training. This is also the case for larger enterprises and innovative enterprises. For the latter, this is also true at country level: the higher the score on the Innovation Union Scoreboard 2010, the more employees follow training.

The usage of external training activities, job rotation, learning circles and self-directed learning is more likely for enterprises from countries with high

GDP/capita levels, whereas for the other types of training there is no relation with the countries' welfare level.

The report argues that one should be careful when assigning the blame for a lack of training activities provided to employees (solely) on enterprises, specifically smaller enterprises. Smaller enterprises are less likely to be able to profit from investments in training as they have fewer chances of applying new knowledge on a sufficiently large scale. In the case of training of more general skills and knowledge (improving general human capital rather than firm-specific human capital), employees also benefit from training investments, in the form of higher wages (either at their current firm, or at another firm). In this case, employees may (also) be held responsible for following an adequate amount of training activities. In a sense, this could be seen as a market failure: SMEs do not have much to benefit, whereas employees do not have sufficient insight into possible (relevant) training and its benefits. Governments should be responsible if society as a whole benefits more than the private parties involved (employers and employees).

The major reason given for not providing training is that employees already possess all the required skills. This is mentioned by 62% of enterprises that do not provide training; smaller enterprises mention it more often than larger enterprises. Other important reasons provided by roughly 25% of these enterprises are that: training and develop activities would not produce any benefits; the costs of training; the loss of working time; and the inability to cover work while workers are being trained. This is roughly the same in all size classes. It should be noted that these results represent the views of the business owners or managers and may deviate from those of the employees.

18 Employment quality: different indicators barely related to each other

At the level of individual enterprises, the various quality-indicators that are based on the Enterprise Survey 2010 are barely correlated with each other. A high score on one of the indicators does not guarantee (or even hint at) a relatively high score on other indicators. Therefore, building a composite index does not add much to the general understanding of what is going on within enterprises. On the contrary: it may even result in an oversimplification of the issue.

19 Employment quality: overview of indicators

For seven aspects of employment quality, the indicator scores are highest amongst large enterprises, while only three aspects are highest amongst SMEs (Table 2). The conclusion might be drawn that SMEs do not score better than large enterprises on employment quality. This is only a tentative conclusion, based on a set of indicators that may not capture all relevant aspects of employment quality. The possibility that SMEs score relatively high on one or more aspects on employment quality that are not included in this study cannot be ruled out.

Table 2 Main outcomes of indicators of employment quality, for EU37 business sector (2010)

Area	Indicator	Size class with highest indicator score
Remuneration	Wage levels	LSE
	Usage of performance-related pay schemes	LSE
Job flexibility	Working overtime	LSE
	Working part-time	SME
	Flexitime arrangements	LSE
Job security*	Employing from temporary work agencies	SME
	Usage of fixed-term contracts	SME
	Job losses due to firm death	LSE
Employee participation	Coverage by collective labour agreements	-
	Employee representation	LSE
Skills development	Usage of training and development activities	LSE

- Based on the available information, the size class with the highest indicator score cannot be determined.

* Indicators used to measure job security actually measure job insecurity; this table reverts the scores so that they indicate the size class for which job security is highest.

Source: EIM.

20 Employment quality: relevance of enterprise and public context
For several indicators on employment quality, it has been possible to examine their relationship with characteristics of enterprises (size, age, sector, country and innovativeness) and of the enterprise workforce (gender, age and educational level), representing the enterprise context and the public context.

The scores of individual enterprises on the various indicators are indeed related to the specific enterprise context. Analyses confirm the size class effects that have already been indicated above. Sectoral differences are also present, but firm age is not related to the various indicators. Apparently, the quality of the employment relationship does not improve when firms exist longer; or, formulated differently, young firms do not seem to have a disadvantage in relation to established enterprises.

Gender distribution of the workforce is hardly related to the scores on the employment quality indicators. Age and educational level of the employees, however, are. Firms with a higher share of older employees tend to invest less in internal training courses and on-the-job training (but not less in external training courses or self-directed learning) and employ fewer employees with a part-time contract. Firms employing more employees with higher educational levels tend to offer more training to their employees (regarding all four training activities examined) and also employ fewer employees with part-time contracts. Innovative firms, finally, also provide more training activities to their employees. These firms are also more likely to employ workers from temporary work agencies.

Despite all of these relationships between employment quality and the enterprise context, it is often the public context that seems to matter most. Within the in-

ternational context of this study, firm size and country account by far for the largest share of the variation in the data. Other aspects of the enterprise context are less relevant.

21 Job quality

The findings on employment quality indicators hint at a better performance of large enterprises. As discussed, this is only one of the elements of overall job quality. If employee job satisfaction is used as an overall evaluation of job quality, job quality turns out to be higher in SMEs compared to large enterprises: after correction for interfering context variables at country level, job satisfaction tends to be higher for employees in smaller enterprises.

22 Work quality

If overall job quality is higher amongst SMEs, and if the employment quality is not, then the conclusion would have to be that SMEs score particularly high regarding the quality of work.

Available statistics on health and safety at work suggest that SMEs do not score relatively high on these indicators. In 2007, the standardised incidence rate of accidents at work (pertaining to accidents resulting in 4 days of absence or more) was highest for medium-sized and small enterprises, somewhat lower for large enterprises, and the lowest for micro enterprises.

Given these results, the main reasons why job satisfaction is higher amongst SMEs than amongst large enterprises may be related to aspects such as work autonomy and the meaningfulness of the work. Experts confirm that it is particularly the "soft" side of the work relationship that is valued highly by employees in SMEs. Employees seem to value the face to face relationships in SMEs positively, and most managers at SMEs are not autocratic. It has also been suggested that the work quality is higher in SMEs because SMEs tend to offer a more stable working environment: strategies change less often and reorganisations, mergers and take-overs occur less often as compared to large enterprises. This example illustrates the important role of the enterprise context for work quality (and, thus, for job quality).

23 HRM practice, job quality and attractiveness on the labour market

Attractiveness of an enterprise on the labour market depends on many different firm-specific factors. Micro enterprises most often report that they have a competitive advantage over their competitors as far as "soft" aspects of an enterprises' human resource management (working climate, work-life balance and working-time arrangements) are considered. Regarding the "hard" aspects (training and career opportunities, remuneration levels): large firms report having the best position on the labour market, followed by small and medium-sized enterprises. Regarding the extent to which the location of the enterprise plays a role, scarcely any size class effect is visible. Innovative enterprises consider themselves more competitive on the labour market.

Combined with the different processes and criteria used by smaller enterprises to select new staff, the differences in attractiveness influence the average constitution of the workforce. The share of young people employed is similar in small, medium-sized and large enterprises, but considerably lower in micro enterprises. However, the share of older employees is highest in micro enterprises. The share

in large and small and medium-sized enterprises is comparable. The share of people with a handicap is very low in all size class. Although the latter seems to increase with the size of the firm, the increase is too small to be statistically significant. Smaller enterprises are more likely to hire persons who have been unemployed for at least one year.

1 Introduction

The objective of the Lisbon strategy, launched in 2000, was to make the European Union the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, creating more and better jobs and developing greater social cohesion. Enterprises were at the heart of the strategy. One of the conditions for achieving the Lisbon objective was to develop a business environment in which enterprises could survive and grow. It is therefore imperative for public policy to identify and take into account the conditions for SMEs in the European economy as a whole and in the Single Market in particular.

Considering this role of SMEs in the economy, the success of the Lisbon strategy ultimately depends on the success of enterprises, especially the smaller ones.

This central role of SMEs in the EU economy is recognised by the Commission and anchored in the Small Business Act (SBA). The SBA, adopted in 2008, establishes a comprehensive SME policy framework for the EU and its Member States. On 3 March 2010, the Commission launched the "Europe 2020 Strategy for smart, sustainable and inclusive growth". Europe 2020 is the EU's growth strategy for the coming decade, which entails transforming itself into a smart, sustainable and inclusive economy leading to high levels of employment, productivity and social cohesion. The strategy presents concrete actions to be taken at the EU and the national levels. Smart growth refers to fostering knowledge, innovation, education and digital society. Sustainable growth refers to making EU production more resource efficient while improving competitiveness and inclusive growth focuses on raising participation in the labour market, the acquisition of skills and fighting poverty.

The SBA review was presented in February 2011. The review includes the progress of the implementation of the SBA and new actions to be taken by the EC and Member States to respond to challenges resulting from the economic crisis.

More than 99% of all enterprises in the European Union are SMEs, and these provide over 2/3 of total private employment. With the indirect impact of their profits and wages, etc. through taxation, European SMEs are a fundamental pillar of the European welfare states.

Economic growth is also positively associated with the increased role of SMEs. This role can best be understood by bearing in mind the three external impacts that SMEs have on the economy as a whole:

- SMEs serve as a vehicle for knowledge spillovers, which may become accessible and commercialised by large enterprises through technology transfer or acquisition.
- SMEs increase the amount of competition in the input market, particularly in terms of the competition for new ideas and human capital embodied in knowledge workers.
- SMEs increase diversity in the market, which can spill over to generate productivity increases in existing enterprises.

An important implication of these impacts is that the contribution to growth of SMEs is not restricted to the SME sector of the economy alone, but rather spills over to impact non-SME enterprises.

Considering the important contribution of SMEs to employment, more detailed information is needed on job creation and job destruction over time. For example: what is the contribution in employment change in incumbent enterprises; what is the effect of entry and exit on employment; and what change is caused by the population effect? Furthermore, to present little information has been available on the quality of jobs provided by SMEs. DG Enterprise and Industry of the European Commission has therefore launched this study to investigate the role SMEs play in job creation and the quality of jobs they provide, particularly in light of the SBA and the Europe 2020 strategy. Specific focus is placed on the impact of the crisis on the SME labour market.

1.1 Objective of this study

The objective of this study is to "Provide an up-to-date picture of the overall SME impact on the European labour market and SMEs' contribution to delivering 'more and better jobs' in Europe".

The following questions need to be answered by systematically gathering information:

- Do European SMEs deliver not only more but also better jobs?
- How can the policy environment enhance SMEs contribution to more and better jobs?

The study covers the 27 Member States of the European Union and the following 10 non-EU countries: Albania, Croatia, the Former Yugoslav Republic of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia and Turkey.

What are better jobs?

There has been considerable debate about what constitutes a good job. What does the quality of a job mean? There is as yet no general agreed upon definition or demarcation of the concept of job quality. This report follows the recommendation from a 2009 study by the European Parliament: that the concept of job quality should be restricted to aspects of a job that have an impact on the well-being of workers. Within this demarcation, two main dimensions of job quality can be distinguished: the employment quality (covering aspects of the employment relationship) and the work quality (covering aspects of the actual tasks performed by the employees). This study focuses on employment quality, and data has been gathered on various aspects of employment quality. In addition, job satisfaction of employees is used as an overall indicator of job quality. Although there are several disadvantages in using job satisfaction to compare the quality of jobs across countries, these disadvantages do not apply to the specific approach of this study, which focuses on differences between enterprises from different size classes within countries.

1.2 Structure of the report

The report is structured in two parts:

- Part A provides an answer to the question: "Do SMEs create more jobs?" Chapter 2 introduces the approaches that can be followed to answer this question. These approaches are presented in Chapter 3 (Employment growth by size class) and Chapter 4 (Employment growth within enterprises). The last chapter of this part analyses the impact of the crisis on the SME labour market.
- Part B provides an answer to the question: "Do SMES create better jobs?" Chapter 6 starts with an introduction to the concept of job quality and explains how it has been measured for this study. The following three chapters focus on: the social context of the enterprises (Chapter 7); the employment quality (Chapter 8); the work quality and the overall job quality (Chapter 9).

The final chapter of the report (Chapter 10) includes the major conclusions of the report and the policy implications for stimulating the creation of more and better jobs through SMEs.

Different sector and size class classifications used

This publication is concerned with jobs of employees. Although technically speaking, entrepreneurs and the self-employed also have jobs, the common understanding of a job is limited to jobs of employees. Unfortunately, many available databases with enterprise statistics do not distinguish between employer enterprises (enterprises employing at least one employee) and enterprises without employees (self-employed entrepreneurs). Most of the information presented in Part A (except for the final two sections of Chapter 5) refers to all jobs, i.e. including the employment of self-employed and non-paid family workers. In contrast, the information presented in Part B usually refers to jobs of employees only.

The focus of this publication is the business economy, which is defined in NACE Sections¹ D, F -K, N and O (excl. 91). Many of the figures and tables presented in the first chapters of this publication (up to Paragraph 4.3) are, however, based on the publication "European SMEs under Pressure", which uses a different sectoral demarcation: that of the non-financial business economy, defined in NACE Sections C -I and K. Notice that the difference between the business economy and the non-financial business economy is not limited to financial intermediation (NACE J), but also differs regarding private enterprises from other service activities (NACE N health and social work and NACE O other service activities, excl. 91)².

¹ These sections include manufacturing (D), construction (F), wholesale and retail trade (G), hotels and restaurants (H), transport and communication (I), financial intermediation (J), other business services (K), health and social work (N) and other personal activities (O excl. 91) (based on the NACE Rev. 1.1 classification of enterprises).

² In addition, they also differ regarding mining and quarrying (NACE C) and electricity, gas and water supply (NACE E), but these two divisions involve relatively few private enterprises.

SME Performance Review

The information used is based on desk research, interviews with experts, database analysis and a telephonic survey of SMEs and large enterprises in all countries covered by this study. The methodologies applied are included in the annexes to this report.

The study is prepared in the framework of the SME Performance Review (SPR)¹. The SME Performance Review was launched by the European Commission in 2008 and represents one of the main tools employed by the European Commission to monitor the implementation of the Small Business Act (SBA). The SPR represents a comprehensive source of information on the performance of SMEs in Europe.

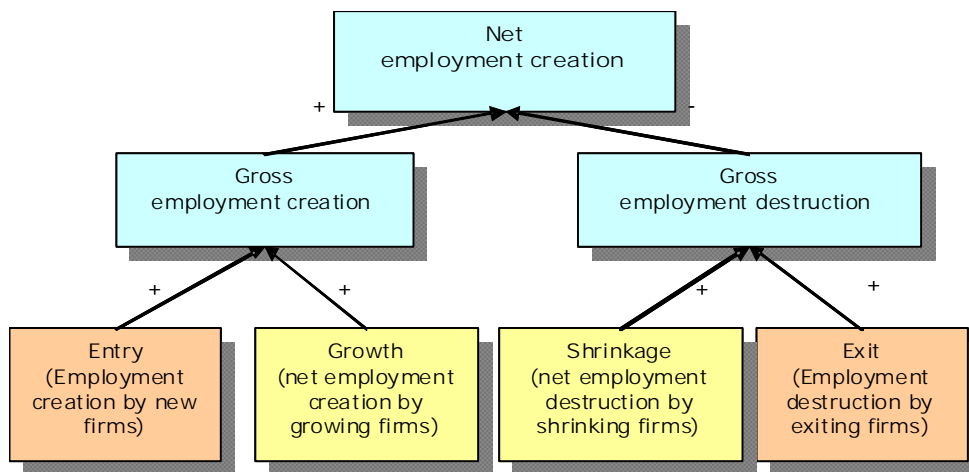
¹ http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm.

Part A: Do SMEs create more jobs?

2 Measuring "more jobs"

Do SMEs create more jobs? Or, to be more specific, what is the relative SME contribution to net job creation (or, equivalently, net employment creation¹)? There are various possible approaches to answering this question. At the macro level, as well as by sector of industry, net employment creation is the balance of job creation on the one hand, and job destruction on the other. Job creation and destruction may occur because of employment change in incumbent enterprises, or because of entry and exit of enterprises. Figure 3 depicts the relationships between these various sources of employment changes.

Figure 3 Determinants of net employment creation



Source: EIM, 2011.

Employment creation at the level of size classes...

Information on levels of employment by size class provides insight into the economic importance of different size classes. Considered over a longer period of time, changes in the employment levels of size classes can indicate changes in the relative economic importance of these size classes. This is the subject of Chapter 3, which examines net employment creation over time for different size classes.

¹ Jobs and employment are not the same. For example, a worker can switch between jobs, but remain employed at the same firm during a certain period. In this example, one job has been destroyed and another job has been created, while employment did not change. Another example is when a single employee has more than one job. This study focuses on (changes in) employment levels. At the aggregate levels of enterprises and size classes, differences in (changes in) the number of jobs and (changes in) employment levels are, however, very small. The terms "employment" and "jobs" are therefore used interchangeably in this study.

... or at the level of individual enterprises.

Another question is: to what extent enterprises from different size classes have contributed to employment changes? And: to what extent are employment changes caused by enterprises from different sizes? It is important to realise that this question concerns individual enterprises rather than size classes. An enterprise size class is defined as a population of enterprises that falls within certain size class boundaries at a specific point in time. Individual enterprises can cross size class boundaries at any moment. Comparing employment figures for the size class of SMEs for two consecutive years therefore includes the impact of previously large enterprises that became SMEs (positively affecting the measured employment change in the SME population), as well as the impact of enterprises that were SMEs previously that have become large enterprises (negatively affecting the measured employment change in the SME population). Hence, changes in the employment level of a certain size class can be attributed to either one of two different causes:

- changes in the level of employment of individual enterprises: determined by employment growth or shrinkage within existing enterprises, as well as by job creation and job destruction resulting from the birth and death of enterprises;
- changes in the classification of enterprises resulting from movements between size classes (also known as the population effect).

Box 1: The population effect

If an individual SME grows from 200 to 300 employees, it is clear that SMEs have made a positive contribution to employment growth. However, as captured by statistics on employment levels by size class, the employment level of SMEs actually decreases, because this firm no longer belongs to the SME size class. Thus, the number of jobs in the SME size class actually drops by 200 employees, while the employment level in the size class of large enterprises increases by 300 jobs. Because of this population effect, changes in the employment levels of size classes do not give information on which part of the overall employment changes can be attributed to the different size classes.

Chapter 4 focuses on job creation and destruction by enterprises in order to answer the question of the extent to which net employment changes can be attributed to different size classes. First, annual statistics on employment levels by size class will be corrected for the population effect. This correction makes it possible to determine the extent to which the net employment creation can be attributed to different size classes of enterprises. Second, differences in employment growth patterns of individual enterprises from the SME size class are examined, thus obtaining a better understanding of the heterogeneity within this size class. This second analysis is based on data on individual enterprises that exist at a certain point in time, consequently, it does not include employment destruction due to firms that exited the market.

The final chapter in Part A discusses the impact of the crisis on job creation and destruction, both at the aggregated level of size classes and at the level of individual enterprises.

3 Employment growth by size class

3.1 Introduction: main indicators on EU SMEs

This chapter deals with the size class pattern of net employment change in the EU: what has been the long-term dynamics of employment change by enterprise size class in the non-financial business economy as well as its constituent sectors of industry.

In general, the following size classes are distinguished in the analysis:

- Micro enterprises, employing less than 10 persons;
- Small enterprises, employing at least 10 but less than 50 persons;
- Medium-sized enterprises, employing between 50 and 250 persons;
- Large scale enterprises (LSEs), employing 250 or more persons.

Together, the first three size classes define the size class of SMEs.

To better understand the order of magnitude of the employment changes, this chapter starts by presenting some basic facts on SMEs in 2010 (Table 3)¹.

Number of enterprises

In 2010, there were over 20.8 million enterprises active in the EU's non-financial business economy (Table 3). The vast majority of these enterprises are SMEs; the typical European firm is a micro firm². The majority of SMEs are active in Distributive trades and Real estate, renting & business activity, followed by the Construction, Manufacturing and Transport & Communication. The share of SMEs in the new Member States (EU12) is the same as in the old Member States (EU15).

As mentioned in the introduction, this study covers 37 countries (Europe37). In total about 24 million enterprises are active in these countries. The size class distribution of enterprises in Europe37 is similar to the one in EU27.

¹ This section draws heavily on: European Commission: Are European SMEs recovering from the crisis? Annual Report on EU small and medium-sized enterprises 2010/2011.

² 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 Main indicators on SMEs and large enterprises in the non-financial business economy, EU27, 2010 (estimates)

		Micro	Small	Medium-sized	SMEs	Large	Total
Number of enterprises	(1,000)	19,200	1,380	220	20,800	40	20,840
Employment	(1,000)	38,910	26,610	21,950	87,460	43,260	130,720
Persons employed per enterprises	(1)	2	19	100	4	1,005	6
Turnover per enterprises	(1,000 €)	239	3,388	22,263	680	248,275	1,191
Value added per occupied person	(1,000 €)	33	43	49	40	57	46

Source: European Commission: Are European SMEs recovering from the crisis? Annual Report on EU small and medium-sized enterprises 2010/2011.

Employment

In 2010, about 67% of the employment in the non-financial business sector in the EU is provided by SMEs. Micro enterprises contribute to about 30% of these jobs, small enterprises about 20% and medium-sized enterprise about 17%. Similar percentages hold for the total of the 37 participating countries.

Enterprise size

On average, an enterprise in the European Union provides employment for 6 persons; the average for SMEs is only 4 persons, but countries differ significantly with respect to the scale of their enterprises. About half of all enterprises have no employees at all. Similar to the large variation regarding the number of occupied persons per enterprise, there is a large variation regarding turnover per enterprise.

Value added per occupied person

Value added per occupied person - a measure for the efficiency with which enterprises contribute to GDP - is positively correlated with enterprise size, varying between 33 000 Euro in micro enterprises and 57 000 Euro in LSEs. To some extent this is due to SMEs concentrating in sectors of industry with low labour productivity, such as construction and retail trade. However, also within sectors of industry value added per occupied persons tends to be lowest in SMEs.

3.2 Employment change by size class in the EU non-financial business economy

3.2.1 At the aggregate level

Between 2002 and 2010, employment in the EU non-financial business economy has on average increased by 1.1 million jobs annually, which is equivalent to 0.9% a year. 80% Of total employment growth has been registered as employment growth in the SME size class¹, which is much more than the share in total employment of this size class (67%). Consequently, the size class of SMEs has a much higher employment growth rate (1% annually) than the size class of large enterprises (0.5% a year). Within the SME size class, the highest growth rate is found in micro and small enterprises. At the same time, the total number of enterprises has on average increased by 1.6% annually. This increase, which is equivalent to roughly 300,000 enterprises a year, is almost completely concentrated in the micro size class.

Table 4 Employment change in the non-financial business economy by enterprise size class, EU15, EU12 and EU27, 2002/2010

	Micro	Small	Medium-sized	SMEs	Large	Total
average annual change in %						
EU15	1.2	0.7	0.4	0.9	0.6	0.8
EU12	1.5	2.5	1.6	1.8	0.2	1.3
EU27	1.3	1.0	0.7	1.0	0.5	0.9
average annual change in the number of occupied persons						
EU15	364,000	145,000	73,000	581,000	207,000	788,000
EU12	109,000	98,000	74,000	281,000	17,000	298,000
EU27	473,000	243,000	147,000	863,000	224,000	1,086,000

Source: EIM, based on: European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

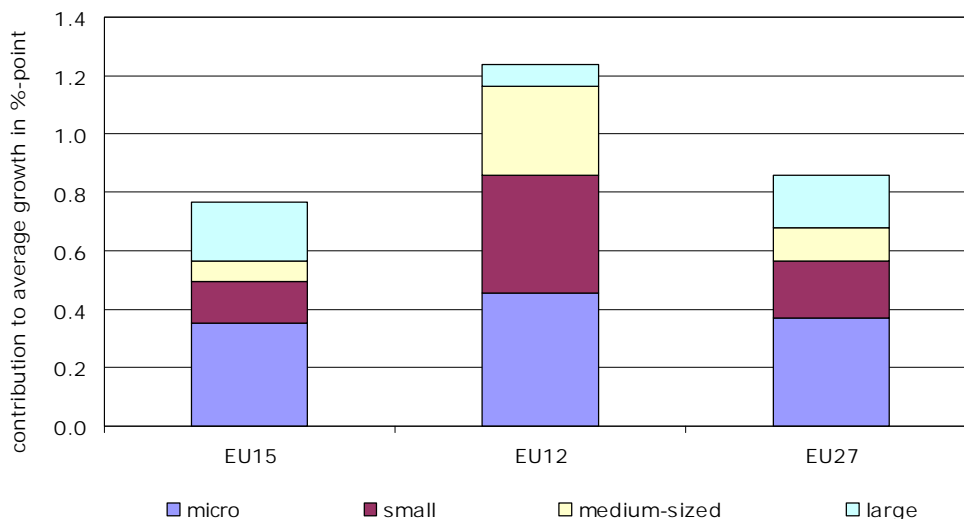
At the EU27 level, the employment growth rate is highest in the SME size class, and within the SME group, it is largest for micro and small enterprises. This pattern is observed in EU15 as well. In EU12, the employment growth rate was largest in the size class of small and medium-sized enterprises, with micro enterprises lagging somewhat behind. The extremely low profitability of EU-12 micro enterprises during the early years of the decade may have hampered employment growth in micro enterprises². As can be seen from Figure 4, large enterprises have had a relatively small contribution to employment growth in EU12;

¹ Size-specific figures have not been adjusted for enterprises crossing size-class boundaries; this is discussed in Section 4.2.

² European Commission : European SMEs under Pressure. Annual report of EU Small and Medium-sized enterprises 2009.

this has been the result of downsizing of large enterprises¹, as the number of large enterprises increased.

Figure 4 Average annual total employment change and contribution of size classes in non-financial business economy, 2002/2010



Explanation: Total employment growth in EU15 on average was 0.8%; average employment growth in micro enterprises was 1.2%. As the share of micro in total employment is 28%, the contribution of micro enterprises was $0.28 \times 1.2 = 0.4$ %-point.

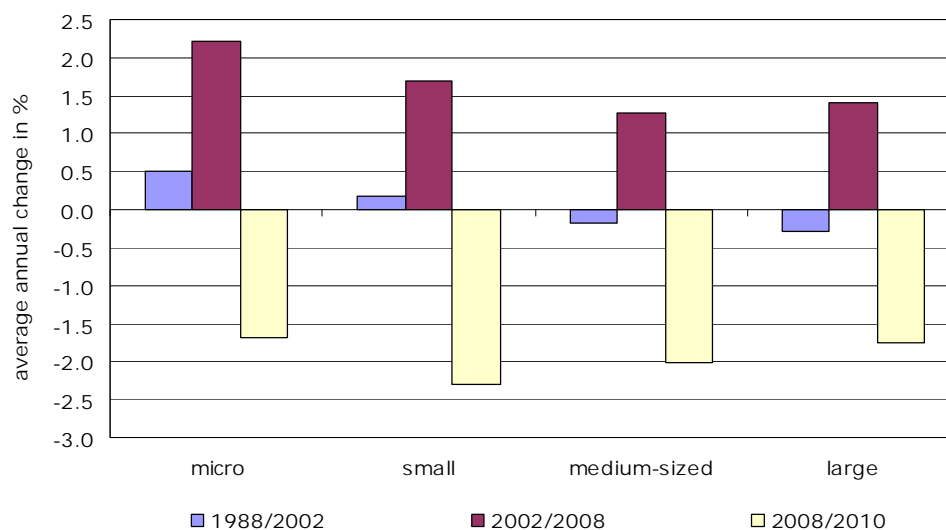
Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

The period 2002/2008 as a whole has been rather favourable in terms of employment growth, as EU27's employment in the non-financial business economy increased by 1.8% annually, which coincided with a rather high growth of employment in SMEs. Data limitations hamper a longer term view on the size class pattern of EU27 employment growth, but for EU15, such a longer term view is possible. Between 1988 and 2002, EU15 employment in the non-financial business economy almost did not change. This has been the result of two opposing trends: the number of jobs in large enterprises decreased, whereas the number of jobs in SMEs increased. Just like in 2002/2008, employment growth within the SME size class has been highest in the size class of micro enterprises and lowest in the size class of medium-sized ones. During 2008/2010 - which contrary to the other periods does not cover a full cycle - the situation is different. Employment decreased in large as well as micro, small and medium-sized enterprises, and in fact the employment decrease was strongest in SMEs and in LSEs (-1.8% on average) (Figure 5).

As suggested by Figure 6, there is a clear correlation between total employment growth in the non-financial business economy, and changes in the number of jobs SMEs provide. A similar picture would emerge when looking at EU15 for the 1988/2010 period.

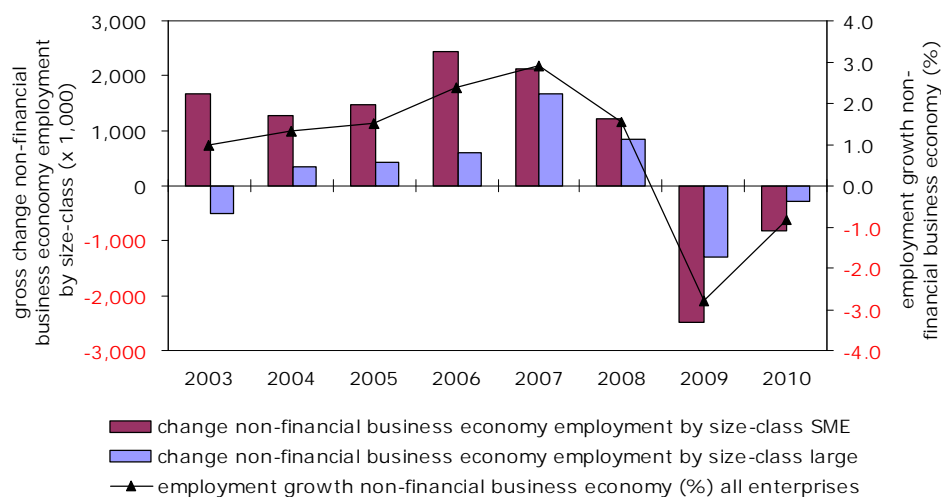
¹ In EU12, average enterprise size in large enterprises declined from 845 occupied persons per enterprise to 812 between 2002 and 2008, while slightly increasing in EU15.

Figure 5 Employment change in the non-financial business economy by size class, EU15, 1988/2002, 2002/2008 and 2008/2010



Source: EIM, based on Audretsch, Thurik, Kwaak and Bosma (2003), and European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

Figure 6 Employment change by enterprise size class and total employment growth in the non-financial business economy, EU27, 2002-2010



Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

3.2.2 By sector of industry

On average, during the last decade, employment growth has been largest in the SME size class. This holds for both EU15 and EU12. This pattern can be observed in most sectors of industry. A clear exception to this rule is the trade sector, in which employment in the SME size class increased by 0.7% annually, while in the

size class of large enterprises it increased by 2.2% a year on average. This coincided with an increase in the number of large enterprises in trade by 21% between 2002 and 2008 (whereas the total number of large enterprises in the non-financial business economy increased by only 5%), in particular in sales, maintenance and repair of motor vehicles. In EU12 the increase in the number of large trade enterprises even was much larger. The less favourable employment development of SMEs in the trade sector is also observed when 2002/2008 and 2008/2010 are viewed separately.

Table 5 Employment change in the non-financial business economy by sector of industry and enterprise size class, EU27, 2002/2010

Panel A: 2002-2008

		Micro	Small	Medium-sized	SMEs	Large	Total
		average annual change in %					
c -i, k	Non-primary private enterprise	2.2	2.0	1.6	2.0	1.3	1.8
by NACE section							
c	Mining and quarrying	-0.2	-0.2	-0.6	-0.4	-4.0	-2.9
d	Manufacturing	-0.7	-0.5	-0.4	-0.5	-1.4	-0.9
e	Electricity, gas and water supply	4.0	1.4	0.9	1.4	-1.2	-0.7
f	Construction	3.1	2.1	2.5	2.6	2.3	2.6
g	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	0.6	2.0	2.2	1.3	3.3	1.8
h	Hotels and restaurants	2.2	6.0	4.3	3.6	2.6	3.4
i	Transport, storage and communication	2.0	2.9	3.3	2.6	-0.2	1.1
k	Real estate, renting and business activities	6.0	4.0	3.9	5.0	5.7	5.2

Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

Panel B: 2008-2010

		Micro	Small	Medium-sized	SMEs	Large	Total
		average annual change in %					
c -i, k	Non-primary private enterprise	-1.4	-2.2	-2.1	-1.8	-1.8	-1.8
by NACE section							
c	Mining and quarrying	-0.4	-1.4	-0.4	-0.8	-2.0	-1.6
d	Manufacturing	-4.6	-4.6	-3.6	-4.2	-4.2	-4.2
e	Electricity, gas and water supply	-0.2	0.5	-0.3	-0.1	-0.8	-0.7
f	Construction	-3.1	-4.2	-6.1	-4.0	-4.5	-4.1
g	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	-1.1	-1.0	-1.1	-1.1	-0.7	-1.0
h	Hotels and restaurants	-0.7	-0.5	0.3	-0.5	-0.6	-0.5
i	Transport, storage and communication	-0.4	-1.0	-0.8	-0.7	-1.2	-1.0
k	Real estate, renting and business activities	0.2	-0.3	0.7	0.2	0.5	0.3

Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

Panel C: 2002-2010

		Micro	Small	Medium-sized	SMEs	Large	Total
		average annual change in %					
c -i, k	Non-primary private enterprise	1.3	1.0	0.7	1.0	0.5	0.9
by NACE section							
c	Mining and quarrying	-0.2	-0.5	-0.6	-0.5	-3.5	-2.6
d	Manufacturing	-1.7	-1.6	-1.2	-1.4	-2.1	-1.7
e	Electricity, gas and water supply	3.0	1.2	0.6	1.0	-1.1	-0.7
f	Construction	1.5	0.5	0.3	0.9	0.5	0.9
g	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	0.2	1.2	1.3	0.7	2.2	1.1
h	Hotels and restaurants	1.5	4.3	3.3	2.6	1.8	2.4
i	Transport, storage and communication	1.4	1.9	2.2	1.8	-0.4	0.6
k	Real estate, renting and business activities	4.5	2.9	3.1	3.7	4.4	4.0

Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

The unfavourable employment development in SMEs in 2008/2010 is the result of various trends. The unfavourable development within the trade sector is a continuation of earlier trends. In manufacturing, the employment decline in SMEs was similar to the decline in large enterprises. In construction, the employment decline in SMEs was less than in LSEs; however, construction was hit hard by the drop in investment demand, and at the same time 14% of the SMEs employment is in construction (as against 4% of LSEs employment). The services sectors have experienced the smallest employment decrease (real estate, renting and business services even observed a small employment increase), but they have a smaller share in SMEs employment than in employment of large enterprises¹. The unfavourable performance of SMEs with respect to employment during 2008/2010 should to a large extent be ascribed to an unfavourable industry structure.

¹ For services as a group, employment in SMEs declined by -0.3 between 2008 and 2010, and by -0.4% in large enterprises.

4 Employment growth within enterprises

4.1 Introduction

The results from the previous Chapter show that the majority of EU's job creation in 2002-2010 occurred in the SME size class. In addition, the relative employment growth rate was also higher for the SME size class as compared to the size class of large enterprises. These findings show that the employment share of the SME size class has increased over time and indicate the increasing economic relevance of this size class.

It is also tempting to conclude that micro, small and medium-sized enterprises are the main engine of job growth of the European private sector. However, this conclusion may be premature, since these results do not correct for the population effect. In the first sections of this Chapter, the aggregate data that were analysed in the previous Chapter are adjusted for the population effect in order to establish the extent to which employment changes can be attributed to enterprises of different size classes. In the last section of this Chapter, employment data from individual enterprises are used to examine long-term patterns of net employment changes.

4.2 Impact of enterprises crossing size class boundaries on the size class pattern of employment growth

4.2.1 Introduction

A significant share of EU's new jobs is created in the SME size class. As indicated in Chapter 2, this is the result of two - possibly counteracting - phenomena: job creation and destruction by individual enterprises¹, and changes in the classification of enterprises in size classes (population effect). This section presents a discussion of the latter.

If an enterprise grows so much as to be assigned to a larger size class in the next year (for example, an SME becoming a large enterprise), this is registered in statistics as an employment loss in the size class of origin and additional employment growth in the destination size class. For example, if an enterprise hires additional staff to bring its total number from 245 in the previous year up to 255 in the current year and it therefore becomes an LSE instead of an SME, then the number of enterprises and employment in the SME size class decreases, while the number of enterprise and employment in the size class of large enterprises increases. It would be wrong, however, to conclude that 255 new jobs have been created by large enterprises, while 245 jobs have simultaneously been destroyed by SMEs. Before any such conclusions can be drawn, a correction for this population effect is required. The basic idea of this correction is that the employment increase from 245 to 250 is attributed to SMEs, while the employment increase from 250 to 255 is attributed to large enterprises. The conclusion would then be that the employment creation of 10 new jobs can be attributed in part to small

¹ This includes job creation from new firms and expansion of existing enterprises and job destruction from firm deaths and employment decline in incumbent enterprises.

and medium-sized enterprises, and in part to large enterprises. This correction is known as correction by current size. A brief explanation of how this correction works is included in Annex III¹.

4.2.2 Medium term view 2002-2008

The importance of correcting for enterprises crossing size boundaries is demonstrated in Table 6. Between 2002 and 2008, the number of large enterprises in the EU increased with approximately 4,000, i.e. on average by 650 a year. This is the net effect of, on the one hand, SMEs crossing the size boundary towards the LSE size class, and on the other hand, large enterprises crossing the size boundary towards the SME size class; in short, the number of SMEs decreased between 2002 and 2008 as some of them became LSE. The annual employment loss to the SME-sector, i.e. the population effect, is estimated as -154,000 jobs on average². This is the number of jobs that were previously counted within the size class of SMEs, but are now counted within the size class of large enterprises. So, while the number of jobs in the SME size class increased by 10.2 million between 2002 and 2008, the number of new jobs that can be attributed to SMEs is actually 11.1 million. This is the net result of gross job creation and gross job destruction in all enterprises that originally were SME (or entered during 2002-2008)³, for as long as they belong to this size class. Likewise, while the number of jobs in the LSE size class has increased by 3.4 million, the number of new jobs that can be attributed to LSEs is actually 2.5 million. In a similar way, corrections have been made for enterprises crossing the other size boundaries. The largest correction is needed for micro enterprises becoming larger.

¹ A more elaborate discussion of this correction method, including a comparison with other correction methods, can be found in the separate methodological paper.

² Apart from rounding off, the employment of 154,000 corresponds with approximately 650 enterprises crossing the 250 size class boundary.

³ Note that the 11.1 million job increase includes the employment effect of exiting enterprises (which tend to be micro or small ones).

Table 6 Unadjusted employment growth ('gross change'), population effect and adjusted employment growth by enterprise size class and total employment growth in the non-financial business economy, EU27, 2002-2010

	Micro	Small	Medium-sized	SMEs	Large	All enterprises
average annual number of employed persons						
2002/2008						
Gross change	820,000	528,000	354,000	1,701,000	559,000	2,261,000
Adjustment for population effect	-328,000	111,000	63,000	-154,000	154,000	0
Employment change after adjustment for population effect	1,148,000	416,000	291,000	1,855,000	405,000	2,261,000
2008/2010						
Gross change	-569,000	-609,000	-475,000	-1,653,000	-784,000	-2,437,000
Adjustment for population effect	353,000	-71,000	-61,000	222,000	-222,000	0
Employment change after adjustment for population effect	-922,000	-539,000	-414,000	-1,875,000	-562,000	-2,437,000
2002/2010						
Gross change	473,000	243,000	147,000	863,000	224,000	1,086,000
Adjustment for population effect	-158,000	66,000	32,000	-60,000	60,000	0
Employment change after adjustment for population effect	631,000	178,000	115,000	923,000	163,000	1,086,000

Note: The employment change after adjustment equals the gross effect minus the adjustment. The adjustment effect for 'all enterprises' equals zero because the population effect only relates to enterprises changing size class.

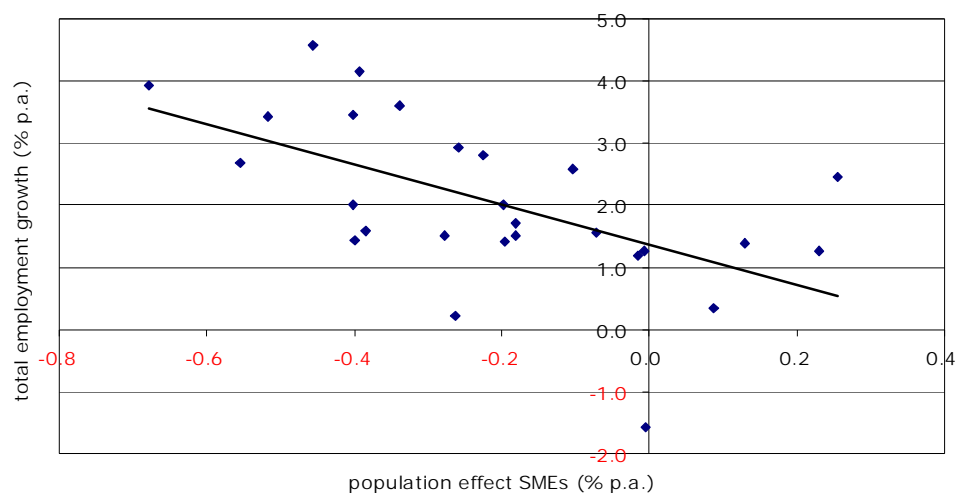
Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

Overall, the total number of jobs in the non-financial business economy increased by 2.3 million, of which 82% (1.9 million) can be attributed to micro, small and medium-sized enterprises (Table 6). This justifies and reinforces the conclusion that micro, small and medium-sized enterprises were the main engine of job growth of the European private sector during 2002/2008.

Another illustration of the importance of the SME size class for employment generation is depicted in Figure 7. This figure shows the correlation between the size of the SME population effect and the total employment growth rate between 2002 and 2008, for the 27 Member States. The SME population effect refers to the correction for enterprises crossing the size boundary between SMEs and large enterprises, and is related to the number of enterprises crossing the size class boundary between SMEs and large enterprises. A negative (positive) value implies that most enterprises went from being an SME (large enterprise) to becoming a large enterprise (SME). There is a significant negative correlation between the population effect on SMEs and total employment growth, implying that the total employment growth rate is highest in countries with the largest share of enterprises evolving from SME into large enterprises. For instance, in Bulgaria, employment in the non-financial business economy increased by 4.1% annually, coinciding with a population effect in the SME-sector of -0.4% a year on average between 2002 and 2008. Conversely, Hungary experienced a very modest em-

ployment increase in the non-financial business economy, and at the same time employment in SMEs increased slightly due to large enterprises becoming SME.

Figure 7 The population effect for SMEs and total employment growth in the non-financial business economy, individual EU Member States, 2002/2008



Correlation: -0.57 (significant at 5% level).

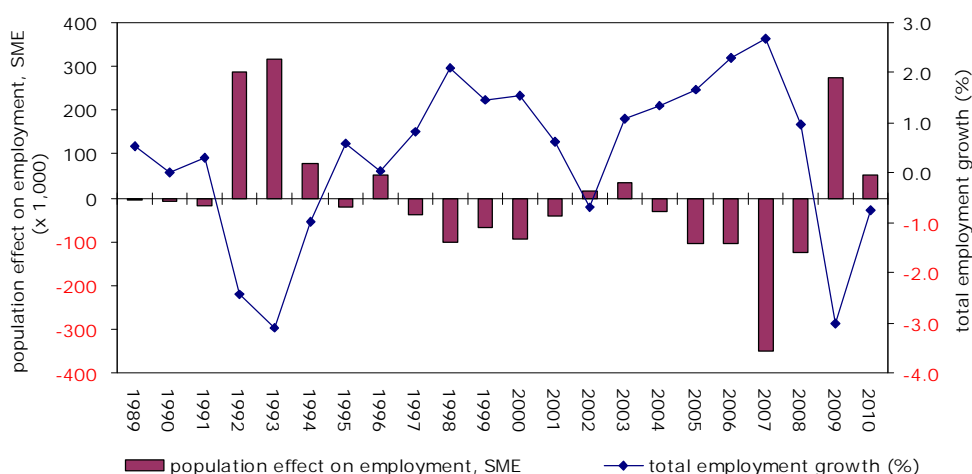
Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

4.2.3 Long term view and relation with the business cycle

Unfortunately no long series on employment by size class is available for EU27, but for EU15 development can be traced back to 1988¹. Figure 8 demonstrates that the negative correlation between the population effect for SMEs and total employment growth also holds when total employment growth is weak or even negative. For instance, in 1992 and 1993 total employment growth was negative, and in these years the SME sector experienced an increase in jobs because of large enterprises becoming SMEs. At the same time, average the population effect for SMEs is close to zero during the 1988-2010 period: the occurrence of the population effect is clearly related to the business cycle. Thus, in the long term, SME/LSE differences in employment growth are mainly determined by the development of the number of enterprises in each size class.

¹ See Audretsch, D.B., A.R. Thurik, A. Kwaak and N. Bosma, SMEs in Europe 2003, 2003 Observatory of European SMEs: 2003/7, European Commission, 2003.

Figure 8 Population effect on SME employment and total employment growth in the non-financial business economy, EU15, 1988-2010



Explanatory note: If an SME becomes large from one year to another, this population effect will have a negative impact on employment in SMEs, and a positive one in large enterprises.

Correlation: -0.93.

Source: EIM, based on Audretsch, Thurik, Kwaak and Bosma (2003), and European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

4.2.4 The 2009/'10 economic crisis

Table 6 clearly shows that the overall employment decrease in 2009 and 2010 coincided with a positive impact on SME employment of large enterprises downsizing to be come an SME; in average this concerns 60,000 jobs in 2009 and 2010. For micro enterprises this effect is even stronger: employment in micro enterprises increased by 158,000 jobs on average in 2009 and 2010 because of larger (most likely, small) enterprises declining to less than 10 occupied persons. In view of the analysis in the previous section this seems to be a natural process.

4.3 The contribution of SMEs to EU's employment growth

During the period 2002 to 2010, total employment in the non-financial business economy increased by 1.1 million jobs per year on average (Table 7), which is equivalent to 0.9% annually. In total, SMEs contributed 0.9 million jobs annually, which is 85% of the total increase. This figure controls for the net impact of enterprises that crossed the SME/LSE size boundary. Micro enterprises contributed to 58% of total employment growth in EU27 in the period under review.

Another way to look at the contribution of SMEs to employment growth is as follows. On average, employment growth in the EU amounted to 0.9% annually. Large (0.4%), medium-sized (0.5%) and small enterprises (0.7%) show a below-average job growth rate, while micro enterprises in particular have experienced above average employment growth, i.e. on average by 1.7% per year (Table 8).

From Table 8 it follows that SMEs experienced the highest employment growth in most Member States. There are, however, some exceptions to this rule: in France, Poland, Slovenia and Spain, employment growth rates were higher amongst large enterprises than amongst SMEs. In Poland, the employment growth rate amongst SMEs is higher than the EU average, but the employment growth rates amongst large enterprises are even higher as the average number of persons employed in LSEs has increased in some large sectors. In the Czech Republic total employment decreased, and mostly so in SMEs; this was the result of employment increased in small and medium-sized enterprises, and a significant employment decrease in micro enterprises. In France and Slovenia, high employment growth rates were still recorded amongst micro enterprises.

Table 7 Total employment growth in the non-financial business economy and contribution of size classes, EU27, 2002-2010

	Micro	Small	Medium-sized	SMEs	Large	All enterprises
2002-2003	1,804,000	34,000	-205,000	1,633,000	-447,000	1,186,000
2003-2004	637,000	436,000	228,000	1,300,000	315,000	1,616,000
2004-2005	896,000	425,000	262,000	1,583,000	309,000	1,892,000
2005-2006	1,361,000	733,000	518,000	2,612,000	419,000	3,031,000
2006-2007	1,233,000	655,000	690,000	2,578,000	1,214,000	3,792,000
2007-2008	958,000	216,000	252,000	1,426,000	621,000	2,048,000
2008-2009	-1,356,000	-830,000	-647,000	-2,833,000	-948,000	-3,781,000
2009-2010	-488,000	-247,000	-182,000	-917,000	-177,000	-1,094,000
average	631,000	178,000	115,000	923,000	163,000	1,086,000
average, % of all enterprises	58	16	11	85	15	100

Explanation: Enterprises that were micro enterprises in 2002, plus newly created enterprises during 2002 -2003 (taking into account exit as well) created 1,804,000 jobs in 1804000; similarly, enterprises that were micro enterprises the previous year, have on average created 631,000 jobs between 2002 and 2010.

Note: The contribution of size classes to total employment growth is controlled for the population effect.

Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

Still another way to interpret the contribution of the SME-sector to job growth is by comparing its share in employment change with its share in total employment. For instance, as follows from Table 7 micro enterprises have a share of 58% in employment growth in EU27 over 2002/2010. On average their employment share amounts to 30% (this follows from Table 3), the ratio between these figures equalling 1.7. This is substantially greater than one, indicating a more than proportional contribution of micro enterprises to total employment. Such ratios are presented for individual Member States in Table 9. The following comments are in order:

- 24 out of 27 Member States have had positive employment growth over 2002/2010. In most of these countries, job creation by the SME-sector has been more than proportionate to its share in employment in these countries: the SME-indicator is greater than 1¹. In most cases this especially holds for micro enterprises. In one of these countries, however, employment in the micro enterprise sector actually declined, i.e. in Sweden. In Sweden, job growth has in particular been more than proportionate to their employment share in small and medium-sized enterprises.
- Three Member States experienced an employment decline in the non-financial business economy over 2002/2008: The Czech Republic, Latvia and Malta. Here, the low value of the SME-indicator for Latvia and Malta means that the share of SMEs in total job loss is less than proportionate to their employment share, in other words job loss in the SME-sector has been relatively mild. The employment impact of small and medium-sized enterprises in Malta and the Czech Republic and small enterprises in Latvia was actually the opposite of the overall trends, i.e. positive instead of negative.

¹ Belgium, France, Slovenia and Spain are the exception to this rule. In Spain, the share of SMEs in total job growth is significantly below the SME-share in the total stock of employment; this effect is concentrated in small enterprises that contributed negatively to employment.

Table 8 Total employment growth in the non-financial business economy and contribution of size classes, by Member State, average 2002-2010

	Micro	Small	Medium-sized	SMEs	Large	All enterprises
average annual change in %						
Austria	1.8	1.0	1.0	1.3	0.8	1.1
Belgium	1.5	0.3	0.4	0.9	1.0	0.9
Bulgaria	3.7	5.0	1.9	3.5	-0.1	2.4
Cyprus	2.2	2.9	3.3	2.7	2.0	2.5
Czech Republic	-1.8	0.4	0.9	-0.5	-0.3	-0.4
Denmark	1.1	0.5	0.3	0.6	-0.1	0.4
Estonia	2.0	0.3	1.1	1.1	-0.2	0.8
Finland	1.6	0.8	0.5	1.0	-0.3	0.5
France	1.4	-0.4	-0.4	0.3	0.5	0.4
Germany	2.2	1.3	1.6	1.7	0.2	1.1
Greece	0.9	2.8	0.6	1.2	-1.5	0.6
Hungary	0.5	0.8	-0.3	0.4	-0.1	0.2
Ireland	3.4	0.6	0.5	1.5	0.1	1.0
Italy	1.0	0.5	0.5	0.8	0.4	0.7
Latvia	0.1	0.5	-0.6	0.0	-1.3	-0.3
Lithuania	6.5	1.7	0.9	2.8	-0.3	2.0
Luxembourg	2.9	1.9	1.7	2.1	-0.5	1.2
Malta	-1.8	1.6	1.5	-0.1	-2.9	-0.8
Netherlands	7.0	0.9	-2.7	1.9	0.5	1.4
Poland	1.5	2.2	2.5	1.9	2.5	2.1
Portugal	2.6	1.1	0.7	1.7	1.2	1.6
Romania	12.2	3.9	-0.1	4.9	-3.1	1.6
Slovakia	15.0	-0.7	-0.2	3.2	-1.0	1.2
Slovenia	2.5	0.5	-1.5	0.7	1.9	1.1
Spain	0.4	-0.4	0.4	0.2	1.8	0.5
Sweden	0.3	3.0	2.6	1.6	0.9	1.3
United Kingdom	2.4	0.1	-0.0	0.9	0.5	0.7
EU27	1.7	0.7	0.5	1.1	0.4	0.9

Note: The contribution of size classes to total employment growth is controlled for the population effect.

Source: EIM, based on European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011; data 2008-2010 estimates.

Table 9 Share of size classes in employment growth of the non-financial business economy, divided by their share in the total stock of employment, 2002-2010

	Micro	Small	Medium-sized	SMEs	Large	Average employment growth, all enterprises, in % p.a.
Austria	1.6	0.9	0.9	1.1	0.7	1.1
Belgium	1.6	0.4	0.4	0.9	1.1	0.9
Bulgaria	1.6	1.9	0.7	1.4	-0.0	2.4
Cyprus	0.9	1.1	1.3	1.1	0.7	2.5
Czech Republic	4.4	-0.8	-2.1	1.1	0.7	-0.4
Denmark	3.4	1.3	0.6	1.7	-0.4	0.4
Estonia	2.5	0.3	1.7	1.4	-0.5	0.8
Finland	3.4	1.6	1.0	2.1	-0.6	0.5
France	3.8	-1.1	-1.2	0.8	1.3	0.4
Germany	2.0	1.2	1.5	1.5	0.2	1.1
Greece	1.3	4.2	1.1	1.8	-3.5	0.6
Hungary	2.2	3.6	-1.5	1.7	-0.8	0.2
Ireland	4.0	0.1	0.5	1.5	0.0	1.0
Italy	1.4	0.6	0.7	1.1	0.6	0.7
Latvia	0.4	-0.3	1.5	0.5	2.6	-0.3
Lithuania	3.2	0.8	0.4	1.4	-0.2	2.0
Luxembourg	2.6	1.7	1.5	1.9	-0.6	1.2
Malta	2.2	-1.8	-1.6	0.2	3.5	-0.8
Netherlands	4.6	0.5	-2.5	1.4	0.2	1.4
Poland	0.7	1.1	1.2	0.9	1.2	2.1
Portugal	1.5	0.7	0.4	1.1	0.8	1.6
Romania	6.9	2.2	-0.1	2.9	-2.0	1.6
Slovakia	13.6	-1.5	-0.2	2.8	-1.1	1.2
Slovenia	2.3	0.4	-1.4	0.6	1.7	1.1
Spain	0.6	-1.2	0.9	0.1	4.3	0.5
Sweden	-0.0	2.2	1.9	1.2	0.6	1.3
United Kingdom	3.1	0.1	-0.0	1.2	0.7	0.7
EU27	2.0	0.8	0.6	1.3	0.5	0.9

Explanatory note: The share of micro in employment growth in Austria is 39%, the share in employment is 25%; therefore micro are overrepresented in employment growth by $39/25 = 1.6$.

Negative figures indicate a size class employment trend that is contrary to total employment growth, in particular growth vis-a-vis decline.

The contribution of size classes to total employment growth is controlled for the population effect.

Source: EIM, based on: European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

Analysis by sector of industry

In EU27, 3 NACE sections experienced an overall employment decline between 2002 and 2010: Mining and quarrying, Manufacturing, and Electricity, gas and water supply (Table 10). In mining and quarrying and in manufacturing, the employment decrease occurred in all size classes. In electricity, gas and water supply, the employment decline was limited to large and medium-sized enterprises: in the micro and small enterprises segments, employment actually has increased.

In the other sectors of industry, employment has increased. In transport, storage and communication, employment growth was relatively small, as a result of job decline in large enterprises. In the remaining sectors of industry - accounting for 61% of total employment in the non-financial business economy - employment has increased in both SMEs and LSE. Except for the trade sector, the contribution of SMEs - and micro enterprises in particular - to employment growth has been more than proportionate. In trade, employment growth and enterprise size are positively correlated, and micro enterprises have contributed less than proportionate to job growth.

Table 10 Total employment growth in the non-financial business economy and contribution of size classes, EU27, by NACE-section, average 2002-2010

		Micro	Small	Medium-sized	SMEs	Large	All enterprises
		average annual change in %					
c -i, k	Non-financial business economy	1.7	0.7	0.5	1.1	0.4	0.9
sections							
c	Mining and quarrying	-0.3	-0.7	-0.4	-0.5	-3.6	-2.6
d	Manufacturing	-2.9	-1.6	-1.4	-1.8	-1.5	-1.7
e	Electricity, gas and water supply	4.4	0.7	-0.2	0.5	-1.0	-0.7
f	Construction	1.1	0.3	0.2	0.7	0.3	0.9
g	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	0.5	1.1	1.4	0.8	1.7	1.1
h	Hotels and restaurants	3.1	2.1	2.2	2.6	1.0	2.4
i	Transport, storage and communication	2.2	2.0	2.3	2.1	-0.8	0.6
k	Real estate, renting and business activities	5.3	2.7	2.8	4.0	3.5	4.0

Note: The contribution of size classes to total employment growth is controlled for the population effect.

Source: EIM, based on: European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

Table 11 Share of size classes in employment growth, divided by their share in the total stock of employment, EU27, by NACE-section, 2002-2010

		Micro	Small	Medium-sized	SMEs	Large	Average employment growth, all enterprises, in % p.a.
c -i, k	Non-financial business economy	1.9	0.8	0.6	1.3	0.5	0.9
sections							
c	Mining and quarrying	0.1	0.2	0.2	0.2	1.4	-2.6
d	Manufacturing	1.7	0.9	0.8	1.1	0.9	-1.7
e	Electricity, gas and water supply	-6.3	-1.0	0.3	-0.8	1.5	-0.7
f	Construction	1.8	0.5	0.3	1.1	0.5	0.9
g	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	0.5	1.0	1.2	0.8	1.6	1.1
h	Hotels and restaurants	1.3	0.9	0.9	1.1	0.4	2.4
i	Transport, storage and communication	3.7	3.4	3.9	3.7	-1.3	0.6
k	Real estate, renting and business activities	1.4	0.7	0.7	1.0	0.9	4.0

Explanatory note: The share of mining and quarrying in employment growth in micro enterprise is 1%, the share in employment is 6%; therefore are underrepresented in employment growth by $1/6 = 0.1$.

Negative figures indicate a size class employment trend that is contrary to total employment growth, in particular growth vis-a-vis decline.

The contribution of size classes to total employment growth is controlled for the population effect.

Source: EIM, based on: European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011

Impact of enterprise birth and death

Employment change in the business economy is the result of growth and contraction of incumbent enterprises, as well as of the employment changes due to newly born or dying enterprises. Notwithstanding efforts by Eurostat and National Statistical Institutes, there are no comprehensive data on the employment effect of enterprise birth and death in the EU, but some indications - referring roughly to the last decade - can be given and are summarised in this section¹.

Each year, enterprise birth and death amount to approximately 8 to 10% of the total stock of enterprises in the EU business economy. Both new start-ups and

¹ Estimates based on Harmut Schrör, Business Demography: employment and survival, Eurostat, Statistics in Focus 2009/70 (these data refer to 2005/2006), and Harmut Schrör, Business Demography: the impact on employment, Eurostat, Statistics in Focus 2007/49 (these data refer to 16 out of 27 Member States, accounting for 52% of total employment in the non-financial business economy). All data have been extrapolated to EU27 using shares of the countries covered by the data in total employment.

dying firms are typically micro enterprises; very often¹ enterprise births and deaths concern enterprises with no employees.

The direct impact of enterprise birth on employment in the non-financial business economy in EU27 can be estimated to amount to 4 million jobs in 2003 (3% of total employment), of which 3 million in micro enterprises (8% of employment in micro enterprises). The direct impact of enterprise death on employment in 2003 was also 3%, both at the aggregate level and for micro enterprises.

Eurostat presents data on the direct employment impact of enterprise birth and death in 2003 Extrapolated to the EU27 non-financial business economy; almost 4 new million jobs are generated by enterprise births, of which almost 3 million occur in micro enterprises. From this, the direct impact of enterprise birth on micro enterprises' employment can be estimated at 8% in 2003; the corresponding figure for the total non-financial business economy can be estimated at 3%. It should be noted, though, that of newly created enterprises, about one half have disappeared after five years; conversely, some of the newly born enterprises have grown during the first five years of their existence. On balance, after five years, the total employment effect of enterprise birth amounts to approximately 85% of the initial impact. For the US, Stangler and Litan² show that young enterprises contribute significantly to employment growth in the SME-sector. This emphasizes the role of enterprise birth as an engine of employment growth. The direct impact of enterprise death on employment in 2003 was also 3%, both at the aggregate level and for micro enterprises. It follows that enterprise birth and death have been significantly contributing to gross employment change, as total employment growth amounted to 1%, while employment growth in micro enterprises was 4% in 2003.

4.4 Employment growth types before the crisis

A different approach is used to examine employment growth within enterprises in the last section of this chapter. Whereas the approach used in the previous sections is based on macro-economic data on business demography, this section uses employment data from individual enterprises³. These data are used to examine employment changes during the years 2005-2008 within SMEs from the business economy. Particular attention is paid to differences between enterprises from different age categories and different growth types.

This approach can only be applied to enterprises that exist throughout this period; the analyses on employment changes during the years 2005-2008 are concerned with the population of enterprises that survived during the years 2005-2008 and that were classified as SMEs at the end of that period. Amongst others,

¹ Roughly 50% of enterprise birth, 30% of enterprise death.

² Dane Stangler and Robert E. Litan, *Where Will The Jobs Come From?*, Kauffman Foundation Research Series: Firm Formation and Economic Growth, November 2009.

³ The analyses are based on the Orbis-Amadeus database, a very rich database that contains information on 2.9 million enterprises from the business economy of 30 European countries. For all of these enterprises, employment information for 2008 is available, and for just over one million enterprises, employment information is also available for 2004 (this information refers only to EU Member States). More details on the Orbis-Amadeus database can be found in Annex IV and in the separate methodological report for this study.

this means that two important groups of enterprises are not included in these analyses: enterprises that started out as SMEs at the beginning of this period and became large enterprises during 2005-2008, and enterprises that ceased to exist during this period. This section therefore starts with a description of the main characteristics of the population that is examined: the population of enterprises from the SME size class from the business economy, at the end of 2008.

4.4.1 Description of the population

According to Eurostat, the number of SMEs in the EU business economy in 2008 was approximately 21.6 million¹. Altogether these enterprises employed 94.0 million people. Including the selected non-European countries for which data is available, these numbers are 23.0 million and 99.5 million respectively. Table 12 gives a picture of the distinction of SME enterprises and their employment to country groups.

Table 12 Number of enterprises and employees in the SME business economy, by country group (2008)

	Number of persons employed	Number of enterprises
EU12	17,768,000	4,339,000
EU15	76,210,000	17,300,000
EU27	93,978,000	21,639,000
Selected non-EU countries (Croatia, Iceland, Liechtenstein, Norway, Serbia and Switzerland)	5,540,000	1,353,000
total	99,518,000	22,992,000

Note: Due to rounding off, aggregates may differ from the sum of constituent parts.

Source: Eurostat and Orbis-Amadeus.

4.4.2 Characteristics of SMEs by age class

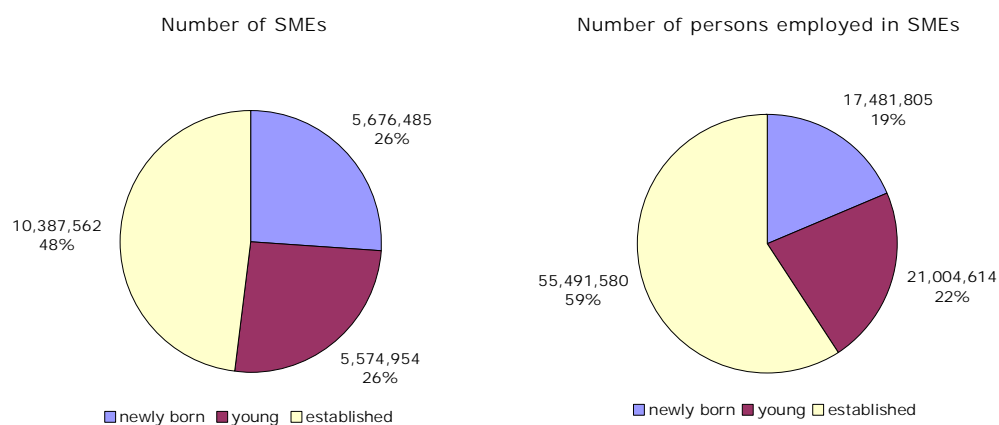
Enterprises from the SME size class have been classified into three groups, based on their age:

- newly born enterprises (survivors, up to 5 years old in 2008);
- young enterprises (survivors, 5 up to 10 years old in 2008);
- established enterprises (survivors, 10 years and older in 2008).

In Figure 9 the number of SMEs and the number of persons employed in SMEs in EU27 are distinguished by these age classes. Most employment is found in the established enterprises.

¹ This figure is somewhat larger than the figure presented in Table 3 in Chapter 3.1. This is mainly because the business economy includes NACE Sections N and O; these are not included in Table 3, which concerns the non-financial business economy.

Figure 9 The number of small and medium-sized enterprises and their employment in the EU27 business economy, by age of firm, 2008



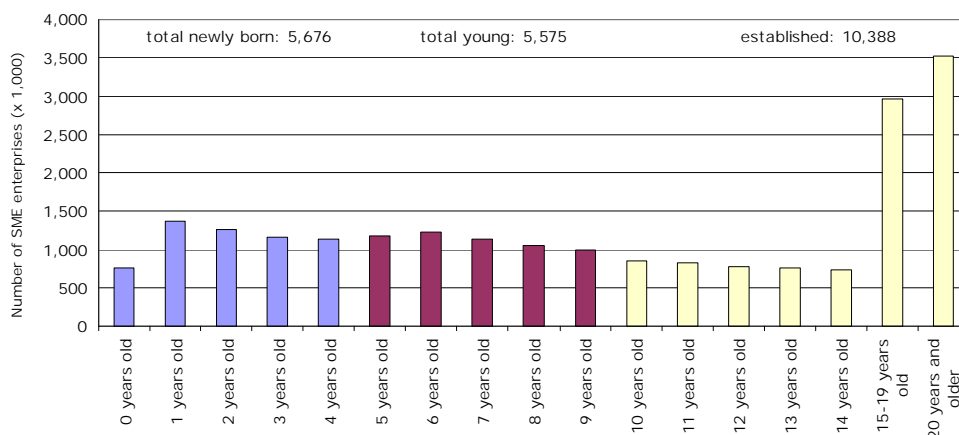
Legend: Newly born enterprises: up to five years old in 2008; Young enterprises: 5 up to 10 years old in 2008; Established enterprises: 10 years and older in 2008.

Source: Share of enterprises by age class and share of employment by age class extracted from the Orbis-Amadeus database (n=2,609,300 observations). The total number of enterprises and employment is extracted from Eurostat Structural Business Statistics database for 2008, which is supplemented by the financial industries and other services¹.

A more detailed distribution of enterprises by age, where up to an age of 15 years all age cohorts are distinguished separately, shows that the number of enterprises declines with age (except for enterprises less than one year old) (see Figure 10). The distribution of employment by age shows a different pattern (Figure 11). Here, employment levels first increase somewhat with enterprise age: the highest employment levels are registered for the age groups of enterprises of 6 to 9 years old. After that, employment levels of age groups decrease with the age of the firm.

¹ For the financial industries and other services, the size of the total labour force is based on the LFS (Eurostat), while the number of enterprises by size class, the average firm size and the size class distribution of enterprises of these supplemented sectors are estimated based on the Orbis-Amadeus database.

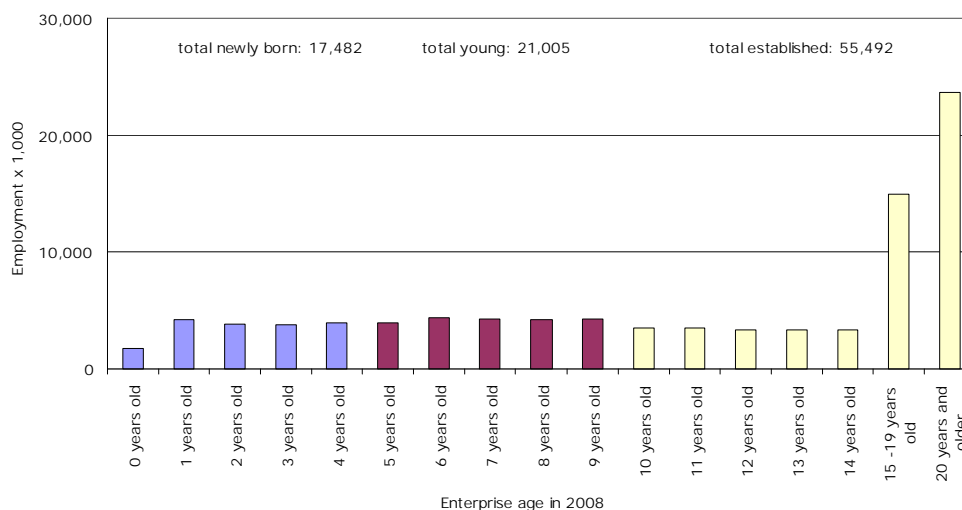
Figure 10 The number of enterprises in EU27 business economy, by enterprise age, for the SME size class, 2008 (x 1,000)



Note: Only enterprises that survived until 31 December 2008 are included. Average size = (persons employed/number of enterprises) by age class.

Source: Share of enterprises by age class extracted from the Orbis-Amadeus database (n=2,609,300 observations). The number of enterprises is extracted from Eurostat, which is supplemented by the financial industries.

Figure 11 The number of persons employed in EU27 business economy, by enterprise age, for the SME size class, 2008 (x 1,000)



Note: Only enterprises that survived until 31 December 2008 are included. Average size = (persons employed/number of enterprises) by age class.

Source: Share of employment by age class extracted from the Orbis-Amadeus database (n=2,609,300 observations). The level of employment is extracted from Eurostat and supplemented by the financial industries.

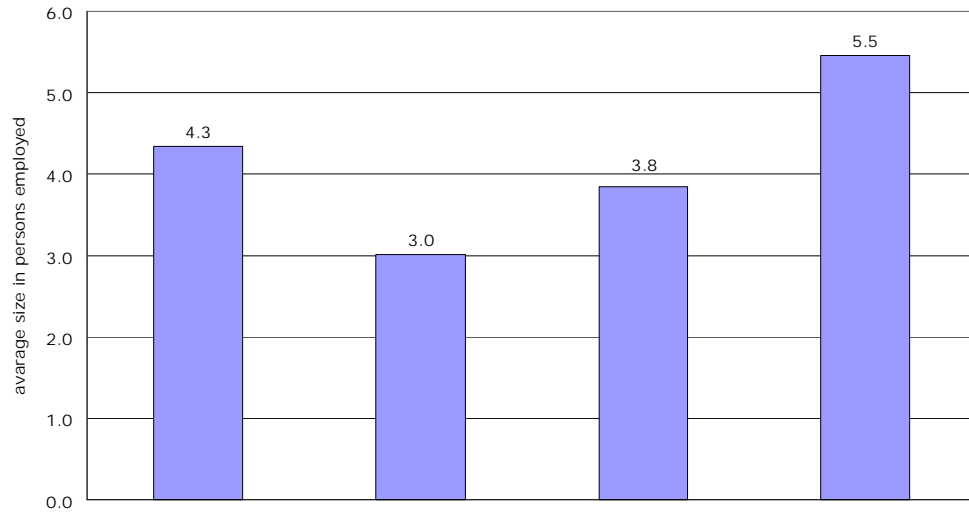
Average age

The average age of the SME enterprises was about 12 years old in 2008. The average age of the newly born is about 2 years old, of the young enterprises 7 years old, and the average age of the established enterprises is about 20 years.

Average size of SMEs by age class

About 92% of all SMEs belong to the category of micro enterprises; 7% to small firms and only 1% to medium-sized enterprises. The average size of an SME in EU27 increases with its age, as shown in Figure 12.

Figure 12 Average number of employees for enterprises in EU27 business economy, by firm age, for the SME size class, 2008



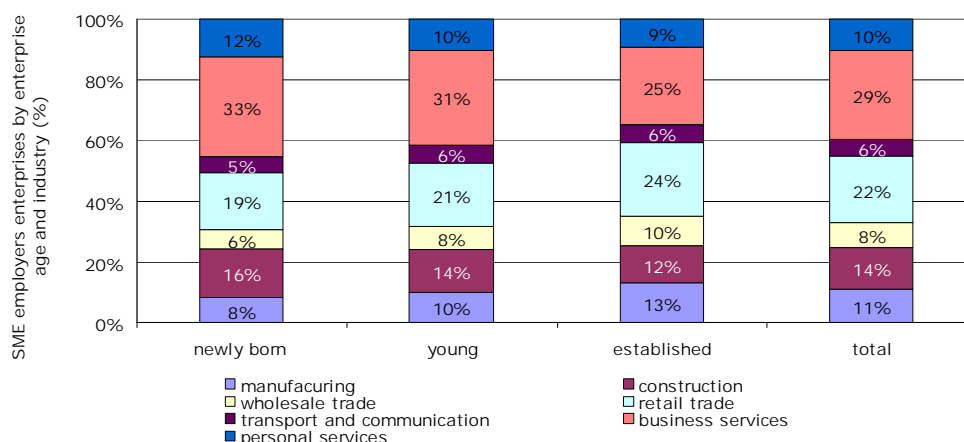
Note: Only enterprises that survived until 31 December 2008 are included. Average size = (persons employed/number of enterprises) by age class.

Source: The share of enterprises by age class and their employment is extracted from the Orbis-Amadeus database (n=2,609,300 observations). The number of enterprises and their employment is extracted from Eurostat, which is supplemented by the financial industries.

Distribution of SMEs by age and sector of industry

The distribution of the SMEs by sector of industry is shown for the newly born, the young and the established enterprises in Figure 13. About 50% of all SMEs in the EU27 can be found in business services and the retail trade. The overall distribution by sector of industry does not differ much between the age groups, but the newly born do have a higher share of enterprises in the services (business services, personal services) and the young and established enterprises do have a relatively large share of enterprises in the retail trade, construction and the wholesale trade.

Figure 13 Enterprises by sector of industry and age, for the EU27 business economy, for the SME size class, 2008



Note: Sectors of industry does not always add up to 100% due to rounding off Employment change by enterprise age.

Source: Share of enterprises by age class and industry extracted from the Orbis-Amadeus database (n=2,609,300 observations).

Employment within SMEs that survived the 2005-2008 period increased by approximately 13.5 million persons. Employment creation came chiefly from newly born enterprises¹. As a group, young firms barely grew and established enterprises showed a decline in employment.

These developments are in line with findings in the scientific literature. For the US, Haltiwanger et al. (2008) find that during the period 1987-2005 only newly born enterprises up to 3 years old contributed to net employment growth. For the Netherlands, Verhoeven² and for Denmark, Ibsen³ also found that although most employment growth comes from young enterprises, the death rate of the young enterprises is also relatively high. Employment dynamics are negatively correlated with the age of enterprises.⁴

In this decomposition of employment change in SMEs, the employment loss due to enterprise death is missing. In order to get a complete picture of employment change, an estimate is made of the employment loss due to enterprise deaths in SMEs. For this purpose, Eurostat business demography statistics have been used in combination with Eurostat statistics in focus.

¹ The number of persons employed at the moment of establishment and growth of same afterwards. Only enterprises that survived.

² Wim Verhoeven (2004), "Firm dynamics and labour productivity", published in Contributions to Economic Analysis: Fostering Productivity, Elsevier.

³ Rikke Ibsen, Niels Westergaard-Nielsen, 2011, "Job creation by firms in Denmark", IZA DP 5458.

⁴ Haltiwanger, John, Ron S. Jarmin, and Javier Miranda (2008), "Business Formation and Dynamics by Business Age: Results from the New Business Dynamics Statistics", preliminary draft. Haltiwanger, John, Ron S. Jarmin, and Javier Miranda, 2010, "Who creates jobs? Small versus large versus young", NBER working paper 16300.

Box 2: Entrepreneurship indicators: enterprise death

To make a complete decomposition of employment changes, the effects of employment loss due to the death of enterprises should be taken into consideration, but only for those enterprises that already existed on January 1st of 2005 (the young and established enterprises). The newly born enterprises did not yet exist at that time, so by definition the employment growth of newly born enterprises only concerns the employment of survivors (initial employment and the growth of the enterprise). Consequently, they should not be taken into consideration when determining the loss of employment due to the death of enterprises. In the Amadeus-Orbis database this information is, however, missing.

Survival rate

In 2008, the survival rate of newly born enterprises after 4 years was on average 60%¹. The average size of newly born enterprises is fewer than 2 persons employed. After four years the survivors have over 3 persons employed.

Death of enterprises older than four years

During the period 2004-2008 the share of young and established SMEs for enterprise deaths is roughly estimated at 56% of all enterprise deaths. These account for 64% of the destruction of employment by the enterprises that died during this period.

Source: Eurostat Employer enterprise database in co-operation with the OECD. This dataset comprises 14-18 EU countries that participate on a voluntary basis: Austria, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Hungary, Italy, Latvia, Luxemburg, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK. No data are available for the remaining countries.

During the years 2005-2008 the net employment growth of SMEs is estimated at 7.8 million persons employed (5.8%)². This estimate includes the impact of firm deaths, but does not control for the population effect: the employment growth of enterprises that started out as SME in 2005, but became large enterprises between 2005 and 2008 is excluded. This estimate is therefore not directly comparable to the estimates on net employment growth of SMEs presented in the previous sections of this chapter.

¹ Based on the Eurostat database of business demography (14-18 countries).

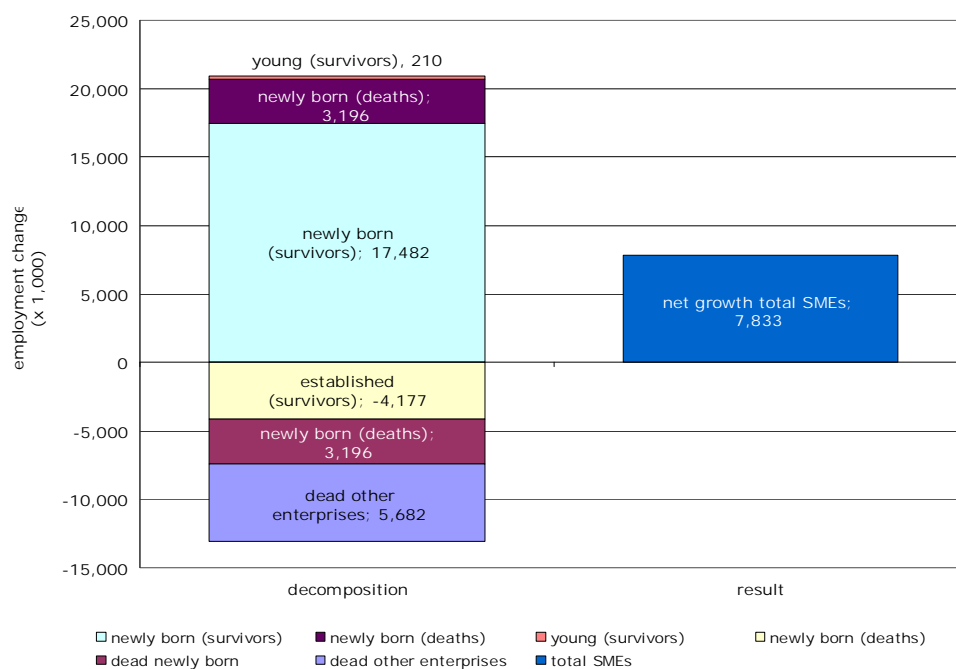
² This figure is somewhat lower than that found in the Eurostat database. The difference might be due to the fact that there is some selectivity in the Orbis-Amadeus database (micro enterprises with 1-5 persons employed are under-represented) and that the calculated loss of employment by death of enterprises is based on a selection of countries for the period 2005-2008. Another explanation might be that the sectors "Financial intermediation" (Nace Section J) and "Other community, social and personal service activities" (Section O) are included in the Orbis-Amadeus database, but are excluded from the Eurostat data.

In Figure 14 the decomposition of SME employment change is presented for the years 2005-2008¹. There is both employment creation and loss. Most employment creation comes from the newly born enterprises that survived (17.4 million persons employed). This concerns the employment in 2008 of those enterprises that were born during the period 2005-2008 and survived throughout that period. The employment creation is due to the initial size of start-ups and their further growth during the first years. Newly born enterprises that did not survive initially created 3.2 million jobs. The young firms that survived barely grew in employment. For this group employment only increased by 0.2 million. This is the balance of enterprises with employment growth and shrinkage. The established enterprises showed a loss of jobs of 4.2 million. The contribution of shrinking enterprises surpasses that of growing enterprises. The contribution of growing and shrinking enterprises within the young and established enterprises is discussed in more detail in Section 4.4.5.

Finally, in order to get a complete picture of the employment loss from the death of enterprises older than 5 years should be taken into consideration. The total loss of jobs due to the death of enterprises is estimated at 8.9 million. About 36% of them (3.2 million) relates to the newly born enterprises and 64% to young and established firms that did not survive. In balance, employment increased by 7.8 million jobs.

¹ Newly born employment increase is the share of enterprises 0-5 years old in the Orbis-Amadeus database multiplied by the total number of enterprises of Eurostat. The employment mutation of the young enterprises is the share of enterprises 5-10 years old in the Orbis-Amadeus database multiplied by the total number of enterprises of Eurostat in this age class, multiplied by the employment mutation in the weighted Orbis-Amadeus database of the young enterprises. The employment mutation of the established enterprises is the share of enterprises 10 years old and older in the Orbis-Amadeus database multiplied by the total number of enterprises of Eurostat in this age class, multiplied by the employment mutation in the weighted Orbis-Amadeus database of the young enterprises. The employment losses by deaths are estimated by Eurostat statistics on enterprises' employment losses.

Figure 14 Decomposition of employment changes of SME enterprises, EU27 business economy, 2005-2008

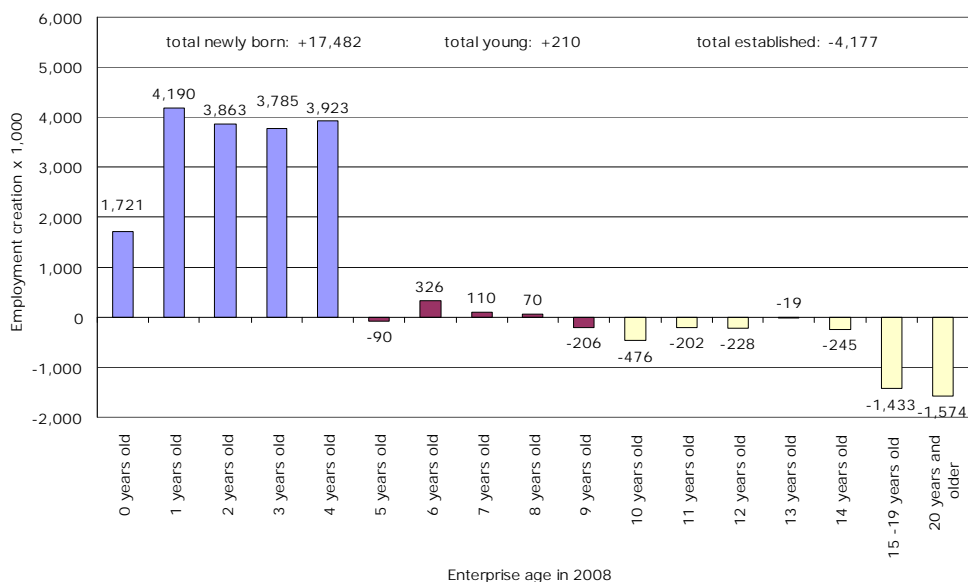


Legend: Newly born enterprises: up to five years old in 2008; Young enterprises: 5 up to 10 years old in 2008; Established enterprises: 10 years old and older in 2008; only enterprises that survived.

Source: Own calculations based on Eurostat and Orbis-Amadeus database.

To get a better idea of the net employment creation by age of enterprise, the contribution of the separate cohorts of 0-14 year old firms is shown in Figure 15. In general, it appears that employment creation is negatively correlated with the age of firms.

Figure 15 SME employment creation by age*, EU27 business economy, 2005-2008



* Only enterprises that survived.

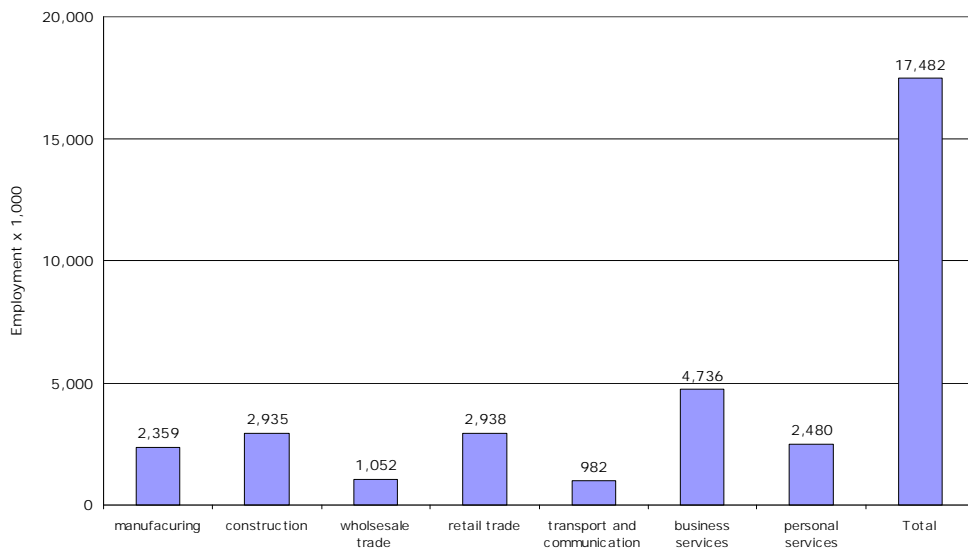
Source: Orbis-Amadeus (n=2,609,300).

Newly born

The newly born enterprises that survived are responsible for the major part of the employment growth in SME (17.5 million employees)¹. The newly born enterprises that did not survive initially created about 3.2 million jobs that got lost during the period 2005-2008.

As can be seen in Figure 16, the employment creation by the newly born enterprises differs strongly by industry. The enterprises in the business services industry are responsible for more than a quarter (27%) of the newly born employment creation. The transport and communication industries contribute the least to the total newly born employment creation (6%).

Figure 16 SME employment creation by the newly born, EU27 business economy, 2005-2008*



* Only enterprises that survived.

Source: Orbis-Amadeus (n=2,609,300).

Some remarks concerning the contribution of newly born enterprises to employment creation

It should be noted that a further increase of the number of newly born enterprises does not automatically mean that total employment increases with the employment created by the newly born. There are some observations that weaken this conclusion. First of all, the group of newly born enterprises consists not only of start-ups. The age of the enterprise is based on the year that the

¹ The employment creation of newly born (0-5 years old) is derived from the weighted Orbis-Amadeus database. The enterprises that did not survive in the period 2005-2008 are missing in the database. Therefore, the estimation is based on Eurostat data concerning birth rates and enterprises born in 2004-2008 that survived in 2008. The employment creation of enterprises that did not survive relates to their initial employment.

current legal form of that enterprise was first registered by a Chamber of Commerce. A new enterprise registry can be created for several reasons¹:

- the start up of a new enterprise;
- the firm spins off a new firm (new subsidiary enterprise);
- acquisition and mergers;
- administrative reason.

Most new enterprise registries are issued because a new activity is started by a new enterprise. Start-ups create new employment. Spin-offs can create employment too, when a subsidiary enterprise is created for a new activity. But this is not always the case. Sometimes the company only divides the activities into different business units, by which no new employment is created. In addition, new enterprise registries are issued because of acquisitions and mergers. These enterprises rarely create net employment growth. Finally, there might be administrative reasons to issue a new enterprise registry, for instance when the activity of the enterprise has changed completely or when an enterprise has moved to another region. The Orbis-Amadeus database gives no information on the background of a new enterprise registry, so it is not possible to distinguish these groups.

In the second place, part of the employment created by the newly born enterprises will be at the expense of the young and established enterprises. Some young and established enterprises will shrink because of the competition from newly born enterprises and some will eventually die. Therefore, the net employment growth will be lower than the gross volume of the newly born employment².

Young and established enterprises

As seen before the employment of surviving young SMEs increased by 210,000 persons employed, while employment in surviving established SMEs declined by almost 4.2 million³.

For the young enterprises, the sector picture varies. In most sectors, employment is growing. The highest growth is found in wholesale trade (13%). A decline was found in retail trade (-4%) and business services (-2%). The total group of young enterprises showed a growth of just 1%.

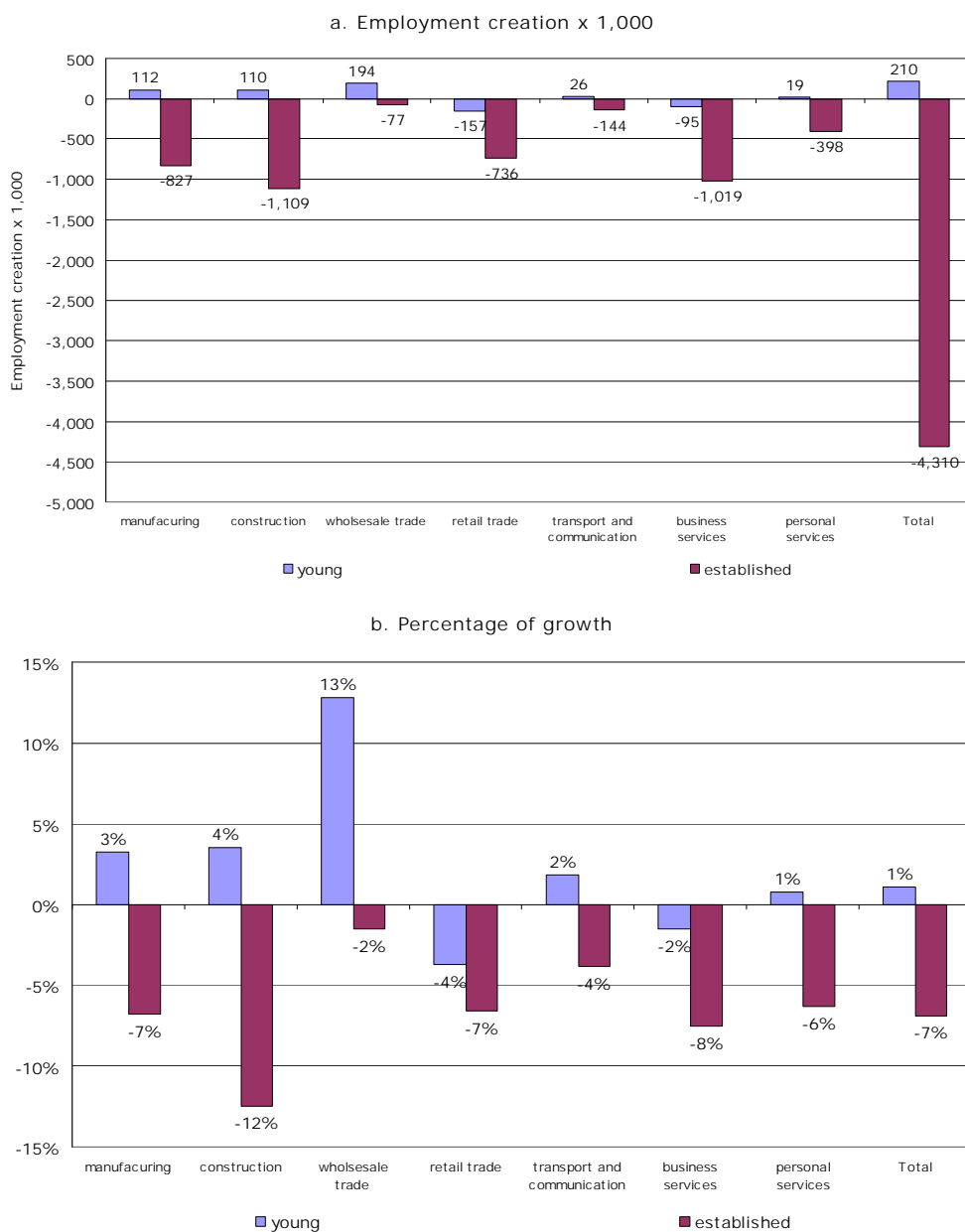
As can be seen in Figure 17, the employment of the established enterprises decreased in all sectors. Most employment losses occurred in construction (-12%), while the decrease was smallest in wholesale trade. The total group of established SMEs showed a decline in employment of 7%.

¹ Ibsen, R., N. Westergaard-Nielsen (2011): Job creation by firms in Denmark, Institute for the Study of Labour.

² The impact of more start-ups on employment and labour productivity for the Netherlands has been calculated in a theoretical model, using various scenarios. Wim Verhoeven, 2004, "Firm dynamics and labour productivity", published in Contributions to Economic Analysis: Fostering Productivity, Elsevier.

³ The enterprises that did not survive in the period 2005-2008 are not included in the database. Neither is there a correction for the population effect. Because of this, the net growth presented here cannot be considered as an estimate of total employment growth of these age classes.

Figure 17 SME employment mutation by enterprise age and sector of industry, EU27 business economy, 2005-2008



Legend: Young enterprises: 5 up to 10 years old in 2008; Established enterprises: 10 years and older in 2008; only enterprises that survived.

Source: Orbis-Amadeus (n=994,085).

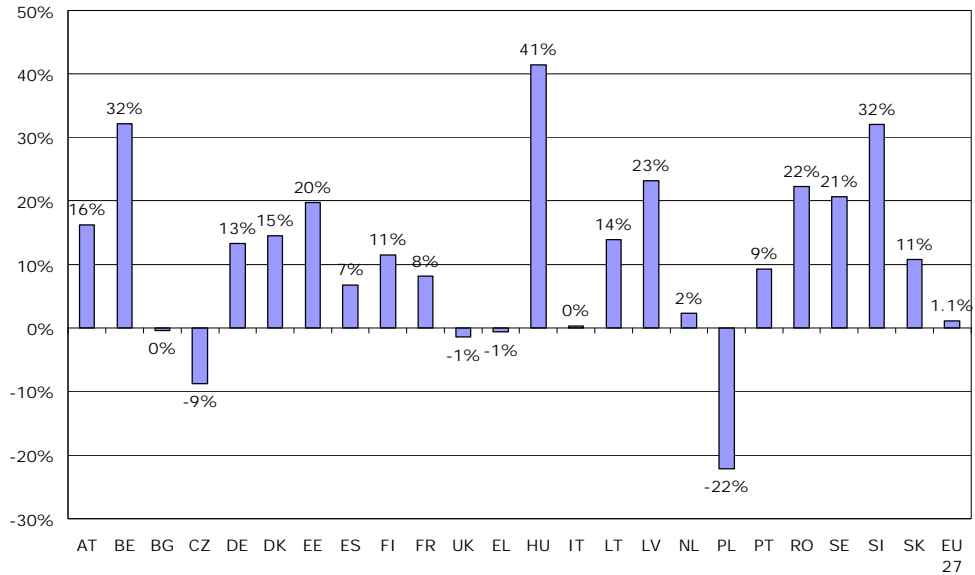
Country and age

In most countries young enterprises show an increase in employment, especially in Hungary, Belgium and Slovenia. It is only in Poland and the Czech Republic that the young SMEs showed a decrease¹ (see Figure 18). As can be seen in

¹ This decrease in Poland and the Czech Republic might be due to the fact that the transformation of former state owned enterprises into modern competitive enterprises was not completely finished in 2004.

Figure 19, the picture is less clear for the established SMEs. At the EU27 level employment decreased. However, in several countries employment increased, chiefly in Belgium. Again, the decrease in Poland and the Czech Republic is very high.

Figure 18 Young SME employment development (%), 2005-2008, by country*, **

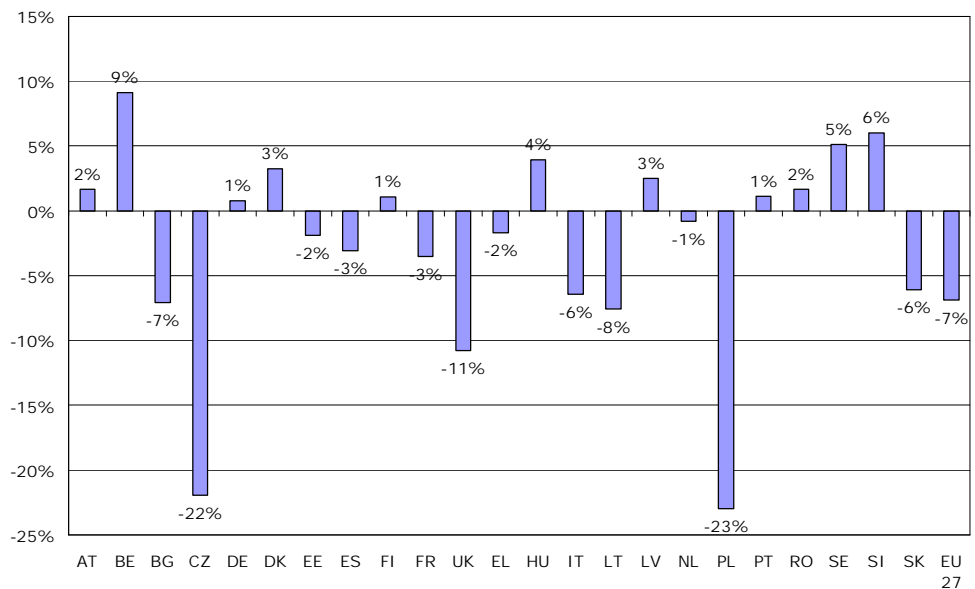


* Cyprus, Ireland, Luxemburg and Malta are missing; not enough observations.

** Only enterprises that survived.

Source: Orbis-Amadeus (n=284,146).

Figure 19 Established SME employment development (%), 2005-2008, by country*, **



* Cyprus, Ireland, Luxemburg and Malta are missing; not enough observations.

** Only enterprises that survived.

Source: Orbis-Amadeus (n=709,939).

4.4.3 Three enterprise growth types

Job creation and destruction may occur because of employment changes in incumbent enterprises, or because of entry and exit of enterprises (see also Chapter 2). For a better understanding of these underlying employment changes, individual enterprises can be classified into three different growth types:

- 1 Growing enterprises: enterprises with a net increase in employment.
- 2 Stable enterprises: enterprises with the same employment levels at the beginning and the end of a period.
- 3 Shrinking enterprises: enterprises with a net decrease in employment.

This classification is used to examine employment changes during the years 2005-2008. Only young and established enterprises are included in this classification. Newly born enterprises are not included in this analysis, since they did not yet exist at the beginning of the period under investigation.

In the next two sections, these growth types are analysed separately for established and young SMEs. For a good understanding of these results, it is important to realise that the classification into growth types is based on net employment developments over a four-year period. This does not mean that similar growth patterns occur in each single year. For example, about half of the enterprises that are classified as growing enterprises only show employment growth for one of the four years under consideration; only 3% have grown in each of these four years. Similar percentages apply to the enterprises classified as shrinking enterprises¹. The group of stable enterprises, finally, not only includes enterprises that remained stable during the whole period, but also enterprises that showed an employment increase in one year and an employment decrease in another year.

4.4.4 Growth types within established SMEs

In EU27, 43% of the established SMEs were stable enterprises during 2005-2008. About a quarter showed a net increase in employment and about one third a net decrease in employment. Compared to EU 12, the EU 15 had a larger share of SMEs that increased in employment and a smaller share of SMEs with a decrease. Within the group of non-EU countries, the share of SMEs that had an increase in employment was even larger than in the EU15 (see Table 13).

In 2004, growing established SMEs were on average smaller than shrinking SMEs, but in 2008 they were larger on average. Stable SMEs were much smaller. During this four year period employment increased in the group of growing SMEs by almost 40% (8.6% annually), while employment decreased in the group of shrinking established SMEs by 37% (-8.1%).

¹ In addition, some growing (shrinking) enterprises may have shown an employment decrease (increase) in one of the years.

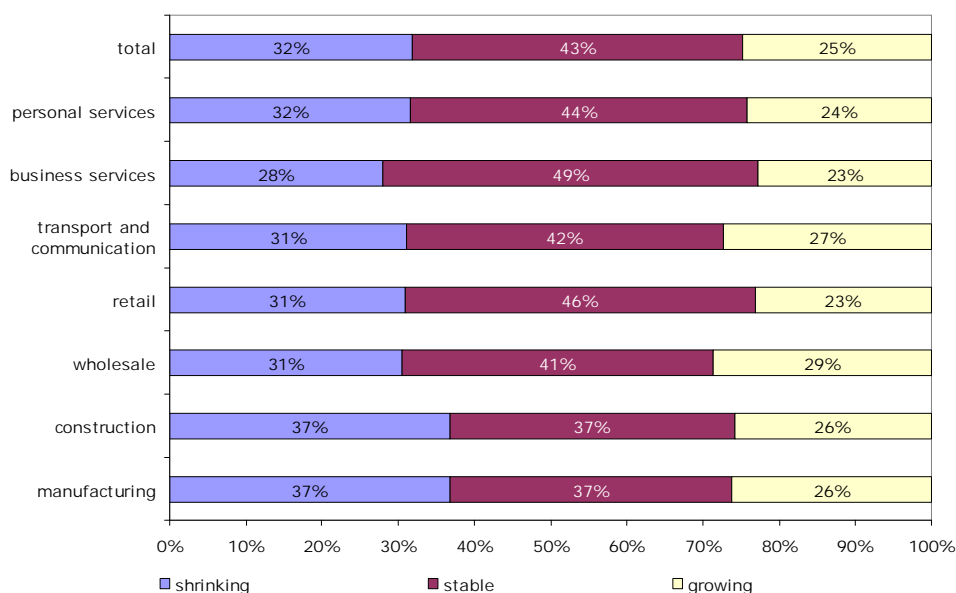
Table 13 Type of employment growth in established SMEs, 2005-2008*

country group	% shrinking established SMEs, 10 years and older, years 2005-2008	% stable established SMEs, 10 years and older, years 2005-2008	% growing established SMEs 10 years and older, years 2005-2008	% total established SMEs
EU12	36%	42%	22%	100%
EU15	30%	44%	26%	100%
EU27	32%	43%	25%	100%
Selected non-EU countries (Croatia, Iceland, Liechtenstein, Norway, Serbia and Switzerland)	26%	33%	41%	100%

* Only enterprises that survived.

Source: Orbis-Amadeus (n=784,694).

Figure 20 Type of employment growth by sector in established SMEs, 2005-2008*

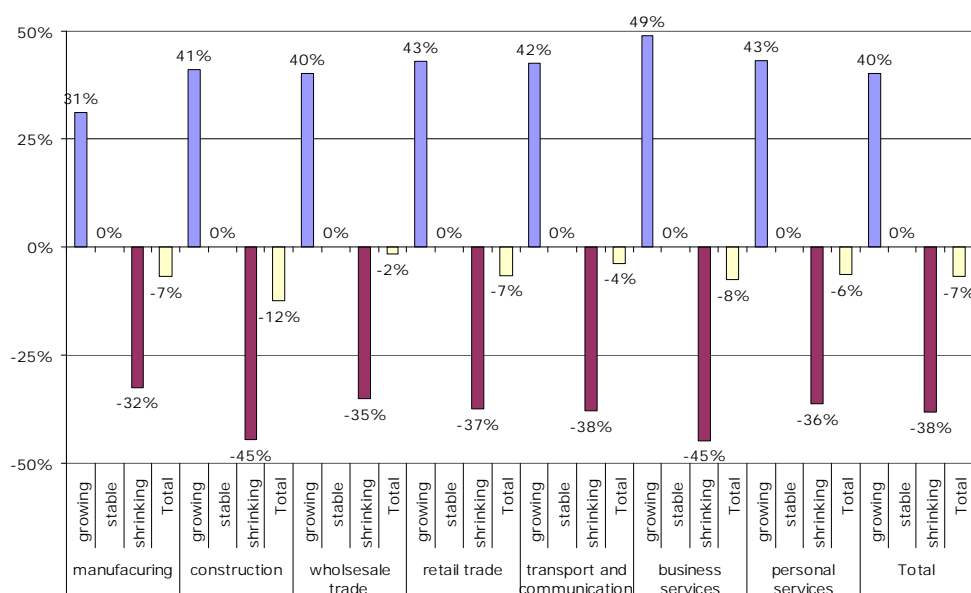


* Only enterprises that survived.

Source: Orbis-Amadeus (n=784,694).

Manufacturing and construction have the highest share of shrinking SMEs and the lowest share of stable SMEs in EU27. Retail trade and business services have relatively the most stable SMEs and the least shrinking SMEs. The highest share of growing SMEs is found in wholesale trade. The increase for growing SMEs in EU27 is relatively low in manufacturing and relatively high in business services. The decrease in employment for shrinking SMEs is relatively low in manufacturing and again relatively high in business services and in construction. See Figure 21.

Figure 21 Employment change by growth type and sector in EU27, established SMEs (%)*, 2005-2008



* Only enterprises that survived.

Source: Orbis-Amadeus.

Employment of growing established SMEs is increasing more in the EU12 (55%) than in the EU15 countries (38%). The decrease in employment of shrinking established SMEs is also higher for the EU12 countries (-49%) than for the EU15 countries (-33%). For the established growing SMEs, the non-EU countries show a higher increase in employment (55%) than the EU countries, while the shrinking established SMEs have a higher decrease in employment (-39%). For a more detailed picture see the annex.

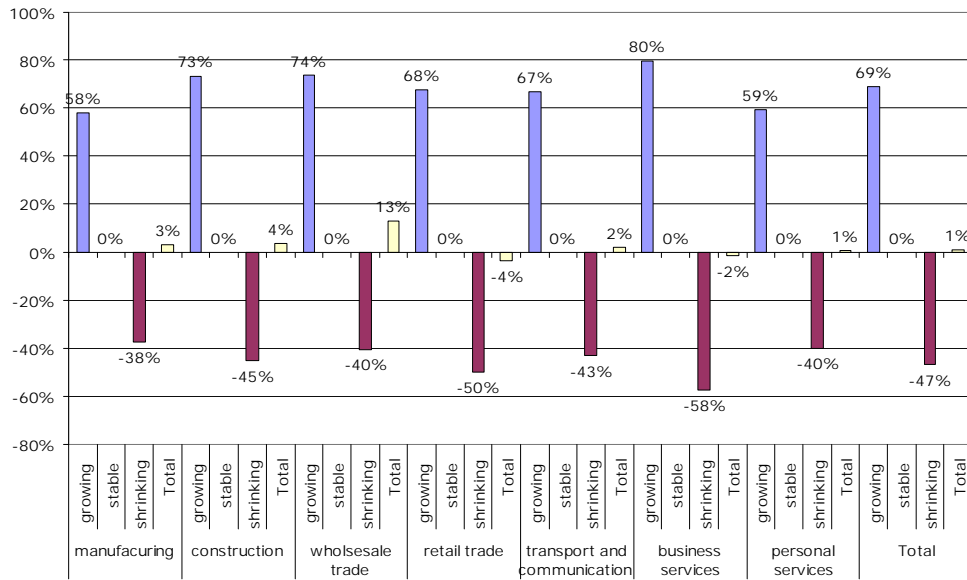
4.4.5 Growth types within young SMEs

Within the age group of young SMEs in EU27, approximately 40% belong to the group of stable enterprises (this is comparable to the population of established SMEs). Growing SMEs now have a share of one third and shrinking SMEs have a share of a quarter. Again the stable enterprises have the smallest size (4 persons employed). In 2004, the shrinking SMEs on average had the largest size (11 persons employed), while in 2008 growing SMEs had the largest size (8 persons employed).

Growing young SMEs show a relatively higher increase in employment than growing established SMEs, while shrinking young SMEs have a higher decrease than shrinking established SMEs. The sectoral pattern of growth and shrinkage is about the same as for established firms; however, the increase with respect to the decrease is somewhat higher¹.

¹ As the sample for the young SMEs is quite a bit smaller than the sample of established SMEs, some caution is needed when using the results on a detailed level.

Figure 22 Employment change by growth type and sector in EU 27, young SMEs (%)*, **, 2005-2008



* Only enterprises that survived.

** The employment mutation of the young enterprises (5-10 years old) from the weighted Orbis-Amadeus database. The enterprises that did not survive in the period 2005-2008 are missing in the database. Therefore the growth could be overestimated.

Source: Orbis-Amadeus n= 204,826).

Again, changes in the EU12 countries are higher than in the EU15 countries. The same holds for the non-EU-countries¹. See also the annex.

¹ The selected non-EU countries include Croatia, Iceland, Liechtenstein, Norway, Serbia and Switzerland.

5 The impact of the crisis

5.1 Impacts on size class level¹

5.1.1 Production and labour productivity

2009 was characterised by the largest GDP decline since the 1930s. This GDP decline was stronger in LSEs than in SMEs, amongst other reasons because of the uneven distribution of the decline across consumption demand on the one hand and investment and export on the other. In particular the export decline by -14% in 2009 strongly affected large enterprises. Conversely, if the recovery during 2010 is export led², large enterprises will benefit more than SMEs.

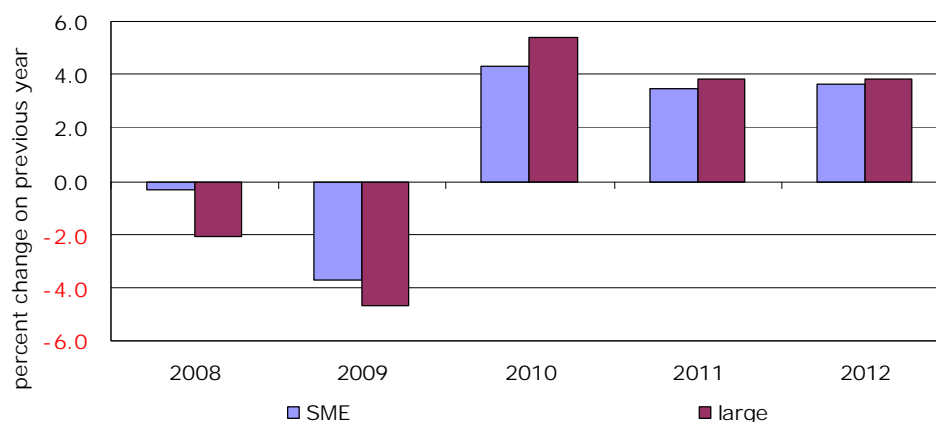
Both SMEs and LSEs are confronted with a production decrease that is expected to be temporary, even though full recovery may take a few years. Output changes do not normally effect employment immediately, and as a result labour productivity behaves pro-cyclically. During the crisis enterprises retain labour, notwithstanding falling production, because the fall in production is expected to be temporary (labour hoarding). Such labour hoarding is due, amongst other things, to adjustment costs and irreversibility of labour dismissal (in view of expected medium-term labour shortages because of demographic developments). Just as LSEs are hit hardest by the crisis in terms of value added growth, the available evidence suggests that the 2009 labour productivity decline was strongest in LSEs³. Conversely, during the recovery the labour productivity increase may well be greatest in LSEs, since due to the labour surplus collected during the crisis, they can expand production without having to increase labour use (Figure 23).

¹ Mainly based on: European Commission: Are European SMEs recovering from the crisis? Annual Report on EU small and medium-sized enterprises 2010/2011.

² As is assumed in the 2010 Annual report on EU Small and Medium-sized Enterprises.

³ Average enterprise size in the LSE size class slightly increased in 2009. This is due in part to the population effect (small LSEs becoming SMEs). Average enterprise size in the SME size class decreased.

Figure 23 Nominal value added per occupied person, non financial business economy by size class, EU27 (estimates and forecasts)



Source: European Commission: Are European SMEs recovering from the crisis? Annual Report on EU small and medium-sized enterprises 2010/2011.

5.1.2 Employment

As discussed, large enterprises are more oriented towards exports, and exports have declined more than domestic final demand. The 2009 production decline was largest in large enterprises. In the event of such a large adverse demand shock, enterprises face problems adjusting their labour use accordingly. Large enterprises were less flexible in adjusting their stock of labour to the production decrease. This shows from the rather large productivity decrease in LSEs (and medium-sized enterprises) in 2009. The result of these opposing processes was an employment decline in 2009 in all size classes, which is proportionately somewhat smaller in large enterprises than in SMEs. Conversely, the trend towards employment recovery has been strongest in medium-sized and large enterprises.

The analysis correcting for the population effect presented in Chapter 4 can also be used to estimate the expected net employment growth that can be attributed to SMEs (Table 14). Total employment in the non-financial business economy would decline by -2.8% in 2009 and by -0.8% in 2010, and then grow by 0.5% in 2011. The population effect on SMEs could be estimated at 0.9% in 2009, 0.2% in 2010, and -0.2% in 2011. Regarding the adjusted employment changes, the estimated net employment growth rates for these years confirm that in 2009 and 2010 SMEs were hit harder than large enterprises, and also that recovery will be faster in 2011 in large enterprises.

According to the corrected employment changes, total employment in the SME size class would decline by -2.9 million between 2008 and 2011, which would be the result of net job destruction of 3.4 million jobs that could be attributed to SMEs, and a net inflow of enterprises that previously were large, contributing to

SME employment by 363,000¹. On the other hand, employment in LSEs declined by 0.9 million jobs (after adjustment for the population effect).

Table 14 Forecasted population effect in the non-financial business economy, EU27, 2008-2011

	Employment change			Population effect			Employment change adjusted to population effect		
	SMEs	Large	Total	SMEs	Large	Total	SMEs	Large	Total
	%								
2009	-2.7	-2.9	-2.8	0.9	-1.3	0.0	-3.6	-1.6	-2.8
2010	-0.9	-0.6	-0.8	0.2	-0.3	0.0	-1.2	-0.3	-0.8
2011	0.4	0.7	0.5	-0.2	0.3	0.0	0.6	0.4	0.5
2008/10	-1.8	-1.8	-1.8	-0.5	-0.8	0.0	-1.3	-1.0	-1.8
	1,000s								
2009	-2,483	-1,298	-3,781	350	-350	0	-2,833	-948	-3,781
2010	-823	-271	-1,094	94	-94	0	-917	-177	-1,094
2011	357	296	654	-81	81	0	438	216	654

Source: EIM, based on: European Commission: Are EU SMEs recovering from the crisis? Annual Report on EU Small and Medium Sized Enterprises 2010/2011.

In 2010 and 2011 production will gradually recover. To the extent that recovery will be strongly export led, this effect will be felt strongest in large enterprises. Enterprises will also try to reconcile equilibrium between production and employment. This will result in productivity increases that will be stronger in LSEs. But as production growth increases, this will more than compensate the productivity increase in LSEs, and as a result employment growth in 2011 is expected to be strongest in LSEs.

Under these circumstances, profitability is likely to be negatively affected by the projected decline of labour productivity, particularly in micro and small enterprises. In addition, SMEs' access to finance seems to have been seriously limited. The economic crisis has increased business exits (either voluntarily or through bankruptcy). The impact on business start-ups has been mixed. On the one hand entrepreneurs' confidence has declined, leading to a reduced number of start-ups. On the other hand, there may have been start-ups "out-of-necessity" in countries with increased unemployment and limited social security options. On balance the effect on the number of start-ups may well have been negative. In effect, the growth of the number of enterprises is estimated to be significantly less in 2008-2012 than in 2002/2008, and the number of micro enterprises actually declined in 2009.

¹ Aggregated over 2009, 2010 and 2011, the job loss in the LSE size class due to enterprises changing size classes (previously large enterprises becoming SME) amounts to (-350,000) + (-94,000) + 81,000 = -363,000. By definition, this is also the job increase in the SME size class due to enterprises changing size classes.

5.2 Impact on enterprise level

The global decline in GDP that occurred in 2008 and 2009 resulted in a decline in the number of orders or total demand for individual enterprises. When asked, two out of every three enterprises mentioned that the demand for their product was negatively affected by the crisis between the fourth quarter of 2008 (2008Q4) and the fourth quarter of 2010 (2010Q4)¹. Not surprisingly, the negative demand effect of the crisis is mentioned more often in countries with relatively low GDP growth rates and low GDP levels. It is also the most often mentioned negative effect of the crisis. Other negative effects that are also often mentioned are an increase in late customer payments (mentioned by 50% of enterprises) and a shortage of working capital and/or long term finance (mentioned by 40% of all enterprises; Figure 24).

Almost all negative effects show a clear enterprise size effect: smaller enterprises report that they were faced with this negative effect more often than large enterprises do. The only exception is the negative effect of under-utilisation of the workforce. Firm size, however, is not the only factor that explains whether individual enterprises were faced with negative effects. For example, older and less innovative firms are also more likely to report the negative effect of the crisis on total demand². Enterprises from the business services (in particular, the financial intermediates) are affected somewhat less than other sectors of industry. Information on the competitiveness of individual enterprises is not available, but enterprises from highly competitive and more innovative countries are less likely to report a negative effect on the demand for their products (or to report any negative effect at all) (Figure 25). As innovativeness and competitiveness are highly correlated, a similar conclusion can be drawn for more competitive economies. Innovativeness and competitiveness thus strengthen the robustness of the economy.

¹ The results in this section are largely based on the Enterprise Survey 2010, a telephone survey of more than 7,500 employer enterprises in the European business economy. More details can be found in Annex I. The tables and figures presented in Sections 5.2 and 5.3 all refer to the EU37 business economy. The corresponding tables for EU27 can be found in Annex VII.

² Firms are considered innovative if they have innovated during the past three years. This is the case if during the past three years they have introduced new or significantly improved goods or services, new or significantly improved production processes, or if they have been engaged in activities to develop new goods, services, or production processes at least once a year.

Box 3: Measuring innovation performance and global competitiveness at macro level

The Innovation Union Scoreboard (IUS) is the main instrument of the EU for measuring the innovative performance of individual countries. The IUS collects information on various indicators regarding innovation enablers (such as available human resources and characteristics of the research systems), innovation activities by enterprises, and innovation output measures.

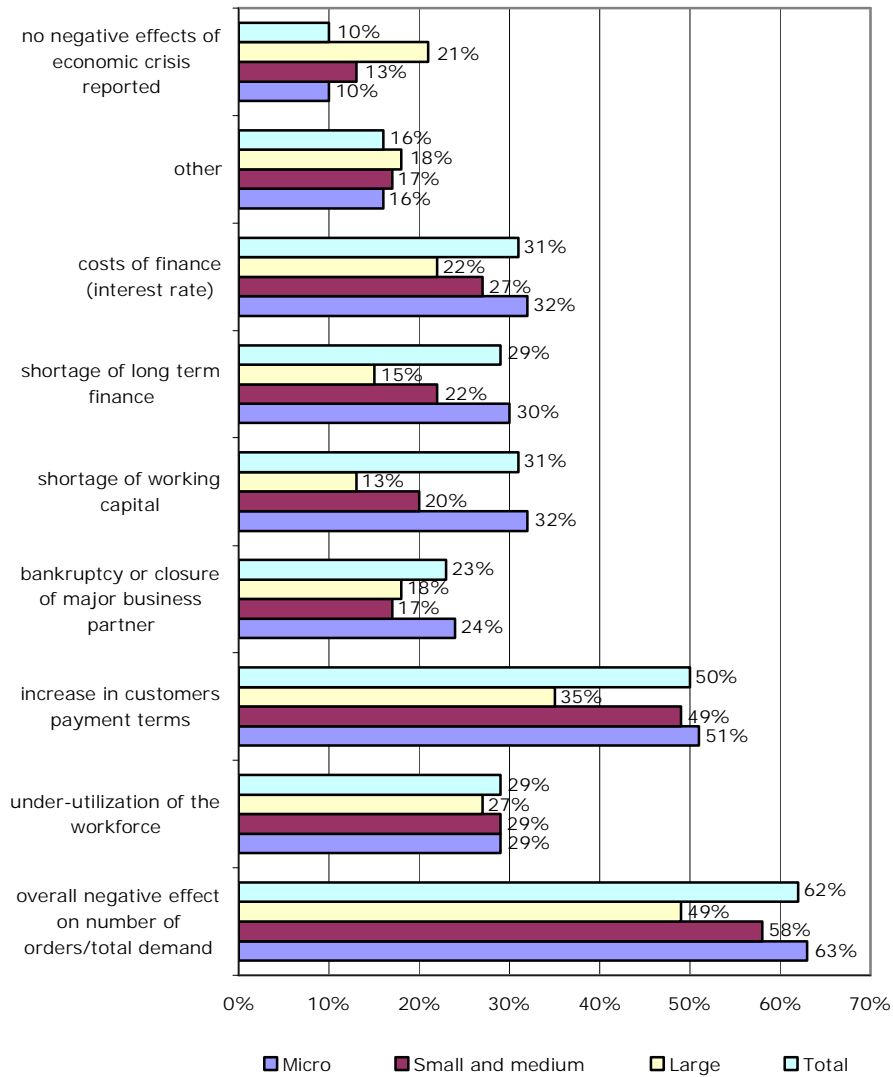
The classification used in this document is based on indicators on actual performance in 2007 (4 indicators), 2008 (10 indicators) and 2009 (10 indicators). As a consequence, the classification does not fully capture the impact of the financial crisis on innovation performance. The scores on the various indicators are used to classify countries into four different categories of innovation performance:

- Modest innovators (Bulgaria; Latvia; Lithuania; Romania; Serbia; Turkey; the Former Yugoslav Republic of Macedonia);
- Moderate innovators (Croatia; Czech Republic; Greece; Hungary; Italy; Malta; Poland; Portugal; Slovakia; Spain);
- Innovation followers (Austria; Belgium; Cyprus; Estonia; France; Iceland; Ireland; Luxembourg; Netherlands; Norway; Slovenia; United Kingdom);
- Innovation leaders (Denmark; Finland; Germany; Sweden).

The relative competitiveness of an economy is measured by the Global Competitiveness Index (GCI) 2010 from the World Economic Forum. The GCI score is based on the scores on 12 interrelated pillars regarding the basic requirements (including institutions and macroeconomic environment), efficiency enhancers (including higher education and training, labour market efficiency and technological readiness) and innovation and sophistication factors (including business sophistication and innovation).

Innovation is an important determinant of competitiveness; hence the country scores on the IUS and GCI are highly correlated (0.91 for the 33 countries for which these scores are available).

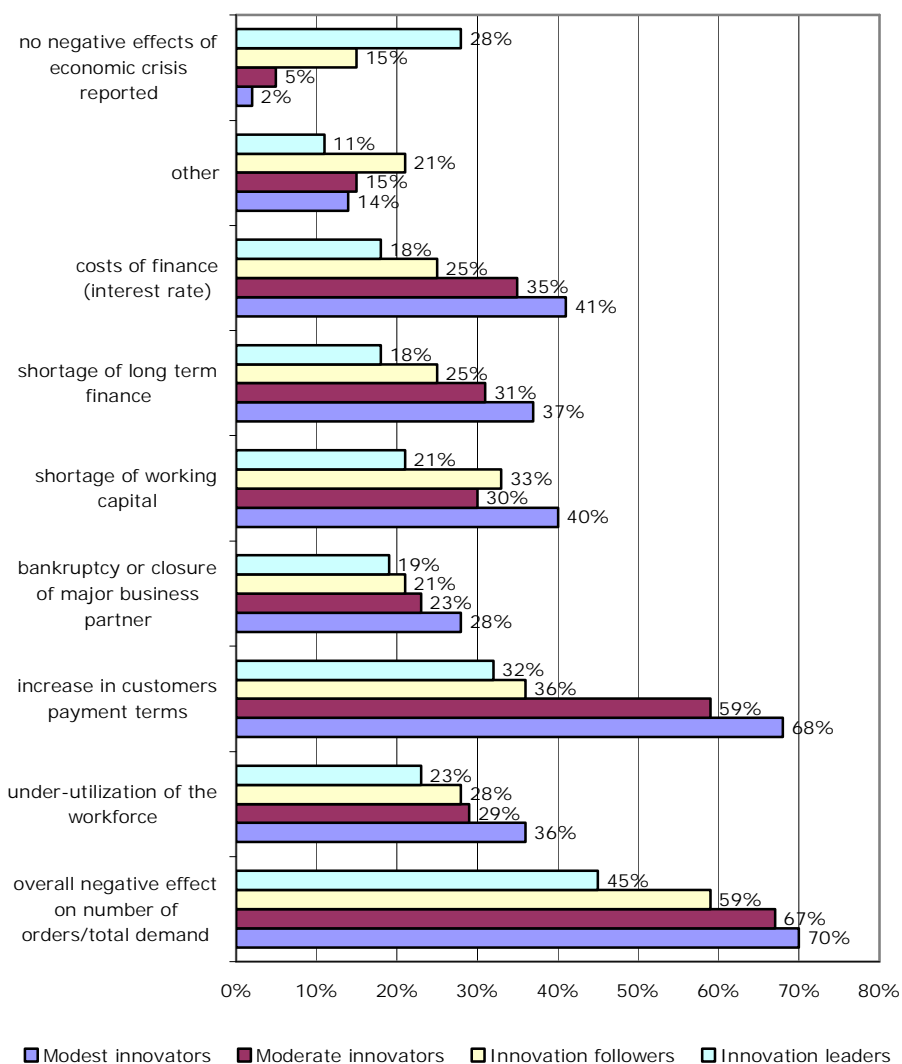
Figure 24 Negative effects of current crisis during 2008Q4 - 2010Q4, by size class, for the EU37 business economy



Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Figure 25 Negative effects of current crisis during 2008Q4 - 2010Q4, by innovation performance, for the EU37 business economy

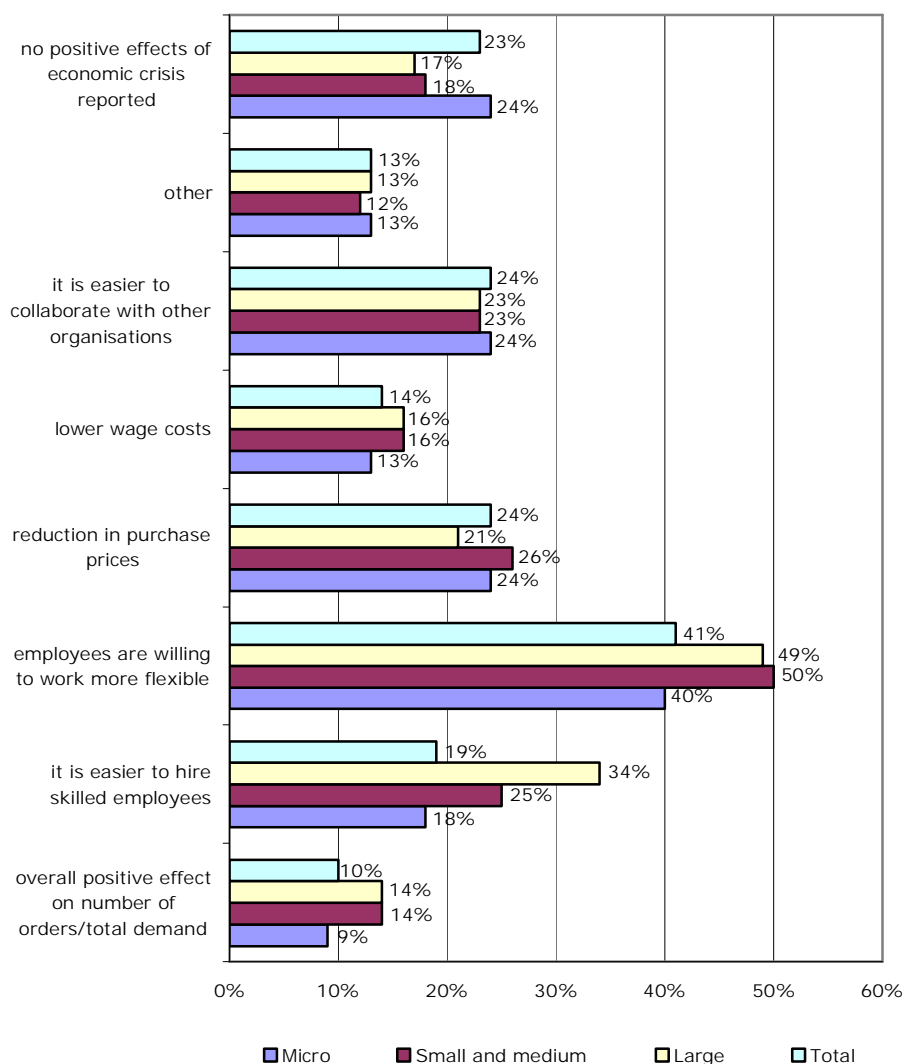


Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

The crisis also offered opportunities to various enterprises. About three quarters of all enterprises reported at least one positive effect of the current crisis. The positive effect that was mentioned most frequently (41%) is that employees are willing to work more flexibly. A quarter of all enterprises reported that it was easier to collaborate with other organisations. Size class effects are much less pronounced here (Figure 26), but generally speaking larger and innovative enterprises mention positive effects more often than smaller and non-innovative enterprises do.

Figure 26 Positive effects of current crisis during 2008Q4 - 2010Q4, by size class, for the EU37 business economy

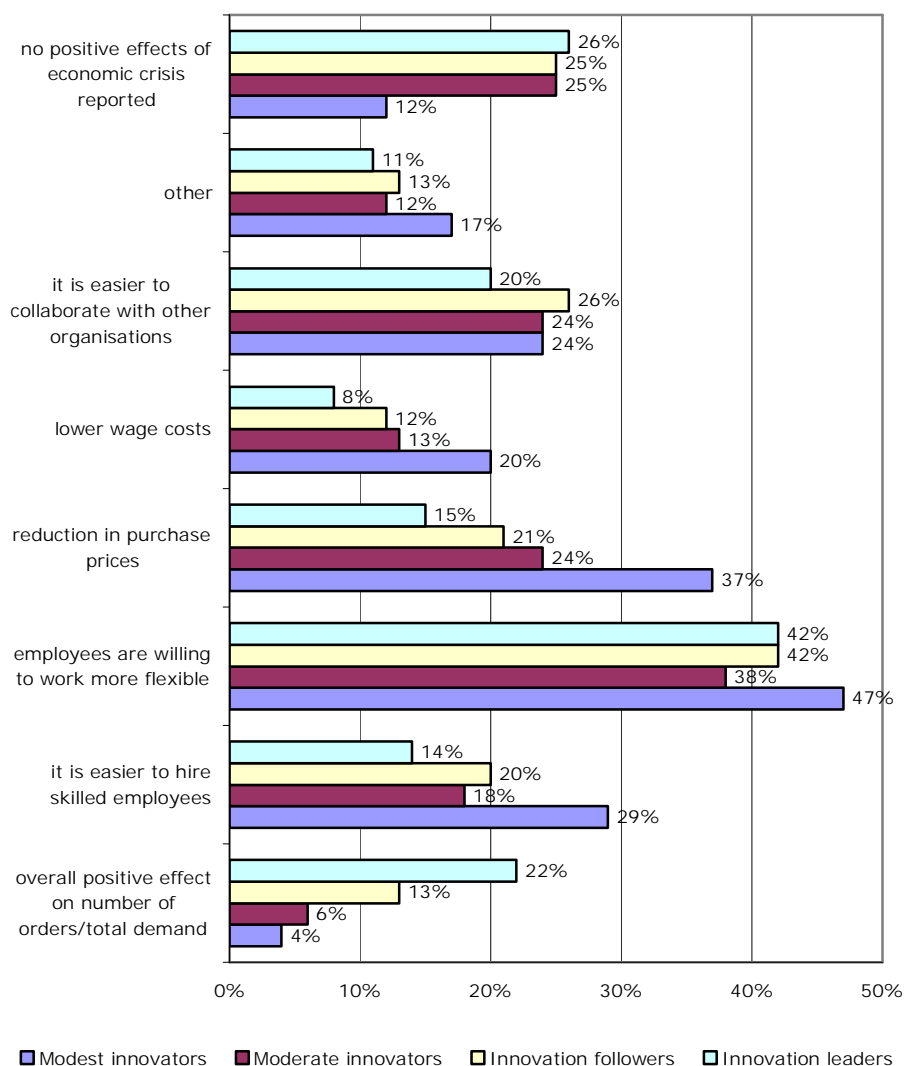


Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Just as with the negative effects of the crisis, the positive effects mentioned differ between countries that are more or less competitive or innovative (Figure 27). Enterprises from the most innovative countries (innovation leaders) are most likely to report an overall positive effect of the crisis on their total demand. At the same time, all of the other positive effects are mentioned least often by enterprises from these countries.

Figure 27 Positive effects of current crisis during 2008Q4 - 2010Q4, by innovation performance, for the EU37 business economy



Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

Innovation strengthens competitiveness

All in all, these results indicate that more innovative economies have suffered less from the crisis than less innovative economies: in innovative economies, enterprises are less likely to mention a reduction in the demand for their products, more likely to report an increase in the demand for their products, and the labour market is still relatively tight (judging from the fact that the positive effects for employers of a less tight labour market, such as lower wage costs, easier to hire skilled employees or employees willing to work more flexibly are mentioned the least in the most innovative economies). As mentioned before, the high correlation between innovativeness and competitiveness implies this holds true for competitiveness as well.

There are also indications that innovativeness strengthens competitiveness at the level of individual enterprises. Multivariate analyses¹ suggest that for innovative enterprises, the negative effect of the crisis on turnover levels was relatively low: innovative enterprises are less likely to mention an overall negative effect on their total demand, and more likely to mention an overall positive effect on their total demand. In addition, innovative firms are more likely to report several other positive effects². On the other hand, innovative firms were also more likely to mention negative effects of an increase in customer payment terms and of the cost of finance. The latter may reflect the fact that during 2009 and 2010 banks had become risk averse and hence required higher risk premiums (interest rates) to finance innovations.

5.3 Hiring and firing decisions

In the third quarter of 2008 employment growth in the EU became negative, and during 2009 and 2010 the annual employment growth rate remained negative. In 2009, the need to reduce staff levels - for some a first sign of an economic slowdown, while for others an ongoing development - was nothing less than alarming in Ireland, where half of the establishments conceded this fact. But staff reductions were also pending in the Baltic States, Denmark, Spain and Turkey for a third of the establishments. This had repercussions for the general working climate of establishments and it was observed that these countries have a higher percentage of establishments reporting a strained working climate.³

During 2010 the employment situation started to show some first signs of improvement, and the employment contraction in 2010 was much less severe than in 2009⁴. A more detailed picture of employment developments in 2010, based on information from the Enterprise Survey, is presented in this section.

Permanent layoffs

During 2010, 30% of the enterprises that still existed at the end of 2010 had fired at least one employee. Not surprisingly, it was often reported that these layoffs were due to the current crisis. If anything, the share of enterprises that reported that none of the layoffs were due to the crisis is higher than expected: over 40% of all enterprises that reported layoffs mentioned that the layoffs were solely due to reasons other than the current crisis. Furthermore, larger enterprises were more likely to report layoffs than smaller enterprises (Table 15).

¹ For each of the possible positive and negative effects of the current crisis, logistic regression models have been estimated. These models examine which characteristics can predict the probability that an enterprise has mentioned these effects. These characteristics include characteristics of the individual enterprise (size, age, sector, country and innovativeness) and of the enterprise workforce (gender, age and level of educational). More information on these analyses can be found in the methodological report of this study.

² This concerns the following positive effects: easier to hire skilled employees; employees are willing to work more flexibly; reduction in purchase prices; easier to collaborate with other organisations.

³ Eurofound (2009), European Company Survey 2009 overview, Dublin.

⁴ European Commission, Annual Report on EU Small and Medium-sized Enterprises 2010.

Table 15 Share of enterprises that laid off employees during 2009Q4 - 2010Q4, by size class, for the EU37 business economy

Employees laid off during past 12 months	Micro (2-9)	Small and medium (10-249)	Large (250+)	All size classes
No	73%	50%	32%	70%
Yes,	27%	50%	68%	31%
solely due to crisis	13%	17%	13%	13%
solely due to other reasons	11%	24%	34%	13%
due to crisis and other reasons	3%	8%	22%	4%
Total	100%	100%	100%	100%

Note: Questions regarding layoffs referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Enterprises in less wealthy countries were more likely to have laid off employees than enterprises from more wealthy countries. The differences are not directly linked to the impact of the crisis, however: the main difference lies in the share of enterprises that reported laying off employees solely due to other reasons (varying from 21% for countries where GDP was less than 75% of the EU27 average to 10% for countries where GDP was more than 125% of the EU27 average). Of more relevance is a country's innovation performance (Table 16). In more innovative countries (innovation followers and innovation leaders), 13% to 14% of enterprises reported having laid off employees due to the crisis, as compared to 21% for moderate innovators and 17% for modest innovators. Here also, enterprises from the least innovative countries were much more likely to report having laid off employees for reasons other than the crisis. As a result, the share of enterprises that laid off employees is strongly related to the innovation performance of their country of residence, ranging from 40% in the modest innovators to 22% in the innovation leaders.

Table 16 Share of enterprises that laid off employees during 2009Q4 - 2010Q4, by innovation performance of the country of residence, for the EU37 business economy

Employees laid off during past 12 months	Modest innovators	Moderate innovators	Innovation followers	Innovation leaders	All countries
No	60%	65%	78%	78%	69%
Yes,	40%	35%	22%	22%	31%
solely due to crisis	13%	16%	11%	10%	13%
solely due to other reasons	23%	14%	9%	8%	13%
due to crisis and other reasons	4%	5%	2%	4%	4%
Total	100%	100%	100%	100%	100%

Note: questions regarding layoffs referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

It cannot be ruled out that some portion of the employment reduction does not actually reflect a reduction in the amount of economic activities, but rather a switch of these economic activities from the formal economy to the informal economy. This might be particularly relevant for the modest and moderate innovators, which include relatively many Eastern and Southern European countries¹. Comparative data on the size and development of the informal economy are, however, hard to come by (see Box 4).

Box 4: How the crisis may increase the size of the informal economy

Does the economic crisis result in an increase of the informal economy? Before this question can be answered, it must be clear what is meant by "informal economy". Numerous attempts have been made to define the informal economy, but perhaps the most useful definition is the following one: "The informal economy represents a set of economic activities that are concerned with the production of goods and services which are legal in themselves, but the generation of which entails illegal or extralegal activities."

In general, undeclared work is more likely in small firms than in large ones, not least of all because small firms are very common in the sector where undeclared work is most prevalent (construction, hotels and catering, and personal services such as hairdressing). Almost a quarter of the population is thought to be involved in some form of irregular work. In continental and Nordic countries, undeclared work tends to be more of a side activity, while in Southern European and Eastern or Central European countries it tends to be of a more substantial nature.

In Bulgaria as well as in Romania, the informal economy was already considerable and increased further during the crisis. In Bulgaria for example the size of the informal economy is estimated at between 16% and 30% of total GDP. In order to reduce the size of the informal economy, the Bulgarian government introduced a compulsory registration of labour contracts and dismissals and increased control mechanisms. Although this was a good attempt to obtain a better picture of the size of the informal economy, it did not succeed in its objective of reducing it. Currently, micro enterprises in particular feel "forced" to (re)enter the informal economy in order to survive the current crisis. The crisis is also responsible for an increase in the share of the informal economy in Romania. Because of the heavy taxation of salaries, employers and employees choose to shift their activities from the formal to the informal economy. These developments may very well have a negative effect on the official employment statistics for these countries.

Sources: Annual review of working conditions in the EU, 2007/2008, European Foundation for the improvement of Living and Working conditions; Employment relations in SMEs 2006, Eurofound; and an interview with Prof. K. Vladimirova, labour expert in Bulgaria

Hiring new employees

Despite the crisis, many enterprises have also hired employees (Table 17). Just as with laying off employees, the likelihood of hiring employees in the past twelve months is strongly related to firm size. More than nine out of every ten large firms hired employees in 2010, and by and large this is not limited to replacements.

¹ See Annex V for an overview of the country classification by innovative performance.

Table 17 Share of enterprises reporting hiring employees during 2009Q4 - 2010Q4, by size class, for the EU37 business economy

Employees hired in past 12 months	Micro (2-9)	Small and medium (10-249)	Large (250+)	All size classes
No	68%	30%	7%	63%
Yes,	32%	70%	93%	38%
solely for replacements	16%	31%	24%	18%
solely for newly created jobs	13%	18%	16%	14%
replacements and newly created jobs	4%	21%	52%	6%
Total	100%	100%	100%	100%

Note: Questions regarding hiring new employees referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Gross and net employment changes

Hiring and firing of employees can occur simultaneously within individual firms. In fact, enterprises that laid off employees in 2010 were more likely to hire new employees than enterprises that did not lay off any employees (Table 18). Enterprises that laid off employees for reasons other than the crisis were especially likely to hire new employees, for replacement purposes as well as for newly created jobs. Perhaps these enterprises see the current crisis as an opportunity to restructure their organisation and replace some of the activities and/or employees with other activities and/or employees.

Given that hiring and firing often occur simultaneously, the question arises of what the net effects of these gross employment changes are. How many enterprises increased or decreased the total number of persons employed in 2010, and how many enterprises showed no change?

More than six out of every ten micro enterprises remained constant¹; the same applies to more than one out of every three large enterprises (Table 19). Within the size class of micro enterprises, employment decreases occur more often than employment increases. Within the size class of large enterprises, the opposite holds true. This size class difference is due in part to the population effect: enterprises that grew from 8 to 12 employees in 2010 are classified as small and medium-sized enterprises with employment increase, while enterprises that shrank from 12 employees to 8 employees in 2010 are classified as micro enterprises with employment decrease.

¹ In this section, employment changes over a period of one year are examined. In the previous chapter, employment changes over a period of four years were examined. The different lengths of the periods under investigation explain why the share of enterprises without employment changes as reported in this section is considerably larger than the share of stable enterprises reported in the previous chapter (as for example in Table 13).

Table 18 Enterprises reporting hiring and laying off employees during 2009Q4 - 2010Q4, for the EU37 business economy

Employees laid off during past 12 months	Employees hired during past 12 months				Total
	No	Yes, only for replacements	Yes, only for newly created jobs	Yes, for replacements and newly created jobs	
No	68%	13%	16%	3%	100%
Yes,	49%	29%	9%	13%	100%
due to crisis	71%	16%	10%	4%	100%
due to other reasons	30%	42%	11%	17%	100%
due to crisis and other reasons	40%	28%	3%	28%	100%
Total	63%	18%	14%	6%	100%

Note: Questions regarding layoffs and hiring of new employees referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 19 Share of enterprises with employment increase or decrease during 2009Q4 - 2010Q4, by size class, for the EU37 business economy

Employment change	Small and medium (10-249)			All size classes
	Micro (2-9)		Large (250+)	
Decrease	25%	28%	29%	26%
No change	62%	48%	39%	60%
Increase	13%	24%	33%	14%
Total	100%	100%	100%	100%

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

The extent to which enterprises were faced with various negative effects of the crisis is clearly related to the employment changes of these enterprises. For example, 28% of all enterprises that encountered any negative effect from the crisis showed a decrease in employment, as compared to only 7% for the enterprises that did not encounter any negative effect from the crisis. In this respect, the most important negative effects were the reduction in total demand, the bankruptcy or closure of a major business partner and a shortage of long-term finance.

Enterprises that encountered an increase in the demand for their products were more likely to show an increase of employment levels (28%, as compared to 13% of enterprises that did not encounter an increase in demand). For many other positive effects of the crisis, however, the relationship with the employment changes of enterprises was much less pronounced.

The majority of the Member States started to show an employment increase over 2010. Belgium, Germany, Cyprus, Latvia, Austria and Poland all showed employment growth rates between 1% and 2%, and Luxemburg, Hungary, Malta and Sweden even more than 2%¹. For Austria, Germany and Malta, and to a lesser extent also for Luxemburg and Sweden, this is reflected in below-average shares of enterprises reporting an employment contraction (Figure 28). Latvia, however, is one of the countries with the highest share of enterprises in which employment decreased in 2010. This very likely reflects the fact that the employment increase in Latvia only started in the third quarter of 2010: for the first two quarters of 2010, employment decreased at -13% and -7% respectively, as compared to the same quarter in 2009². Lithuania, Romania, Ireland, Bulgaria, Slovenia, Denmark, Greece, Spain and Portugal were still faced with employment contraction. In all of these countries except Portugal, more than one out of every three enterprises showed an employment decrease in 2010 (this also applies to Estonia, Latvia, and Slovakia).

Innovations support employment growth

The employment growth rate of enterprises is positively related to the innovativeness of the enterprises. This is true for all size classes, as can be seen in Table 20. The results of a multivariate analysis confirm the relevance of innovation, at the micro level as well as the macro level: controlling for various enterprise, country and workforce characteristics, the employment growth rate is positively related to the innovativeness of individual enterprises as well as the innovativeness of countries³.

There are various reasons why innovations by enterprises can stimulate employment growth. Innovations that lead to improvements in production processes can reduce production costs and hence stimulate demand for products. Product innovations may generate new demand from customers. A third explanation is that innovations may stimulate the internationalisation of enterprises, and that this internationalisation may in turn improve enterprise performance (employment growth as well as turnover growth). Indeed, various studies have shown that innovation and internationalisation are related to each other (although the causality of this relationship is often difficult to determine), and a recent study from the European Commission confirms that internationalisation is associated with higher employment growth rates.⁴

¹ This is based on statistics on employment growth rate for 2010Q4 as compared to 2009Q4 (Source: Eurostat).

² Other possible explanations are that the employment increase is mainly due to an increased number of self-employed or persons employed in the public sector.

³ A regression equation has been estimated in which the relative employment growth rate of enterprises is explained by various enterprise characteristics, workforce characteristics and country characteristics. The innovativeness of countries is measured by the Innovation Union Scoreboard 2010.

⁴ Source: European Commission, 2011, Internationalisation of European SMEs, DG Enterprise and Industry, Brussels.

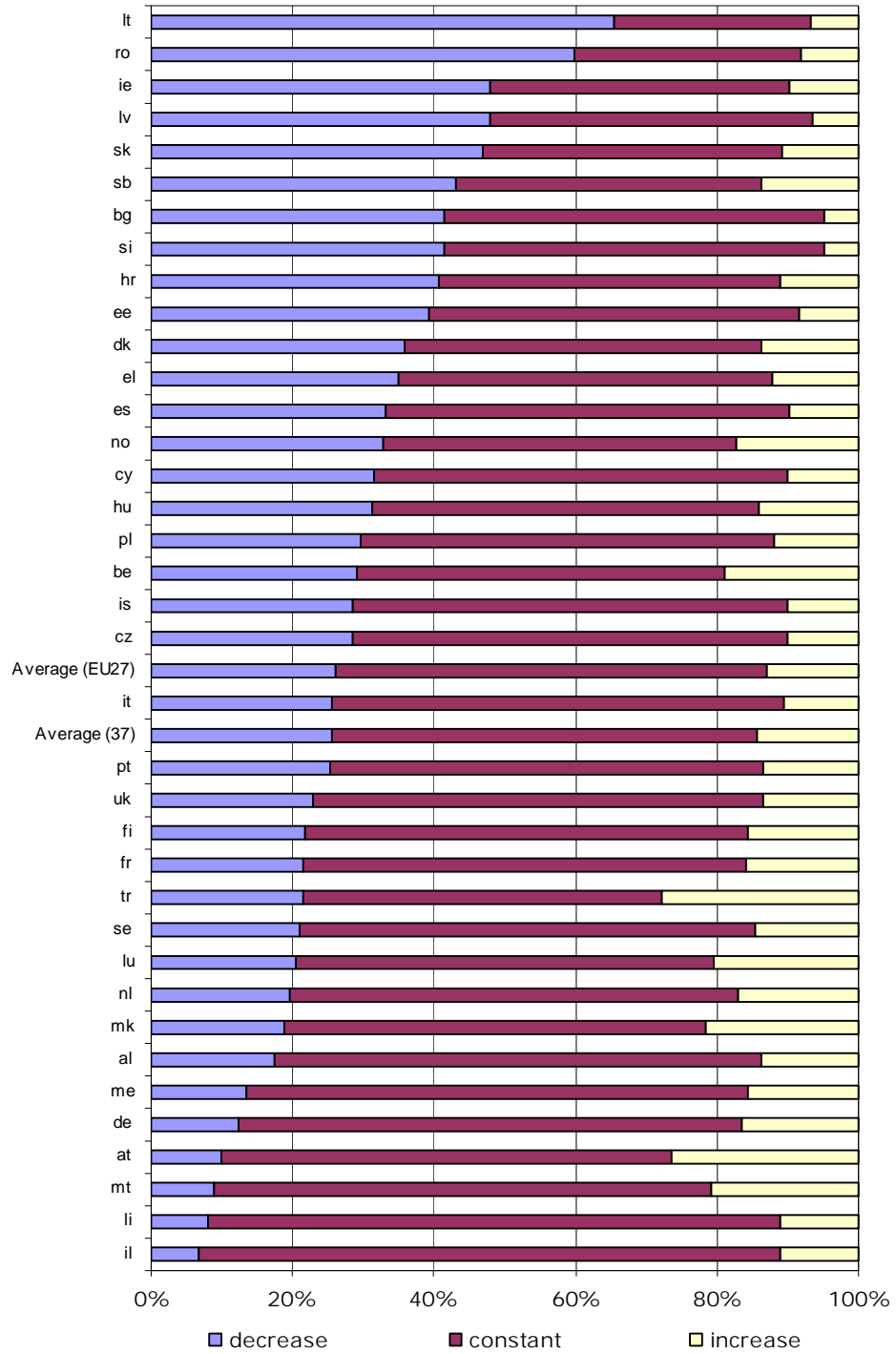
Table 20 Share of enterprises with employment increase or decrease during 2009Q4 - 2010Q4, by size class and innovativeness, for the EU37 business economy

Employment change	Micro (2-9)		Small and medium (10-249)		Large (250+)	
	Not innovative		Not innovative		Not innovative	
	Innovative	Not innovative	Innovative	Not innovative	Innovative	Not innovative
Decrease	26%	24%	28%	31%	29%	36%
No change	59%	68%	46%	55%	38%	36%
Increase	15%	8%	27%	14%	33%	29%
Total	100%	100%	100%	100%	100%	100%

Note: Firms are considered innovative if, during the past three years, they have introduced new or significantly improved goods or services, new or significantly improved production processes, or if they have been engaged in activities to develop new goods, services, or production processes at least once a year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Figure 28 Net employment changes during 2009Q4 - 2010Q4: share of enterprise with decreasing, constant or increasing number of persons employed, by country, for the EU37 business economy



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Optimistic about the future

By the end of 2010, the majority of the entrepreneurs seemed to be slightly optimistic about the future. Fewer enterprises expected that additional layoffs would be needed in the next 12 months as compared to the layoffs in the past 12 months (Table 21).

Table 21 Share of enterprises that expect to lay off employees permanently during 2010Q4 - 2011Q4, by size classes, for the EU37 business economy

Size class	Expecting layoffs due to the crisis	Expecting layoffs due to other reasons
Micro (2-9)	11%	4%
Small and medium (10-249)	12%	7%
Large (250+)	15%	16%
Total	11%	5%

Note: Questions regarding expected layoffs referred to the next twelve months.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

5.4 Publicly supported employment protection schemes

An enterprise's decision on whether (and when) to hire or fire employees depends on many different factors. These include the state of the economy as a whole and the competitiveness of the individual enterprise as well as the extent to which the labour market is regulated and employment is protected.

During the crisis, several measures have been introduced (or were already in place) to encourage employers to retain their current employees and/or hire new employees. These measures include temporary short-time working arrangements, wage subsidies and non-wage cost reductions (two examples of such measures are included in Boxes 5 and 6). Many of these measures have been introduced or enlarged as a reaction to the crisis, and in 2010 all Member States had such measures in place¹.

The nature of the available employment protection schemes differs considerably between countries as does the extent to which enterprises make use of them (Figure 29). Without knowledge of the nature and scope of the employment protection schemes in question, it is difficult to draw any conclusions from these country differences. In particular, to what extent are they due to differences in the employment protection schemes themselves (such as type, eligibility criteria and available budget), and to what extent are they due to different attitudes of the enterprises regarding the usage of these programmes? All that can be concluded here is that the available indicators on enterprise and country level can-

¹ Chapter 2 of "Employment in Europe 2010" contains a detailed review of these and other labour market measures.

not predict which enterprises are likely to make use of such employment protection schemes¹.

Employment protection schemes are least often used in transport and communication (3%) and are most common in manufacturing (17%). This sector (together with construction) witnessed the strongest decrease in output, and many support measures were taken as a direct result of these developments in manufacturing².

Box 5: Publicly supported employment protection scheme: the Dutch part-time unemployment benefit

In response to the economic crisis, part-time unemployment benefit (deeltijd WW) was introduced in the Netherlands in 2009. This protection scheme targets enterprises which have to deal with a decrease in demand which they expect to be temporary. This measure makes it possible for enterprises to retain core employees, so that relevant knowledge and skills will not be lost. One condition for making use of this measure is that the spare time of the employee be spent on education or training. This condition is not only positive for the company: the individual employee remains involved in the company and in contact with colleagues. According to the Dutch expert this compulsory education/training has a positive side effect as well: it creates a positive attitude of management with regards to education and training, giving it a higher priority within HRM policy. However, it is a complicating condition for SMEs; often they cannot organise this. That is probably the reason that utilisation of Deeltijd WW amongst large companies is at a higher level.

Source: interview with D. Grijpstra, labour expert in the Netherlands; information on the part-time unemployment benefit can be found at www.szw.nl and www.uwv.nl

Box 6: Short-time working arrangements in Germany

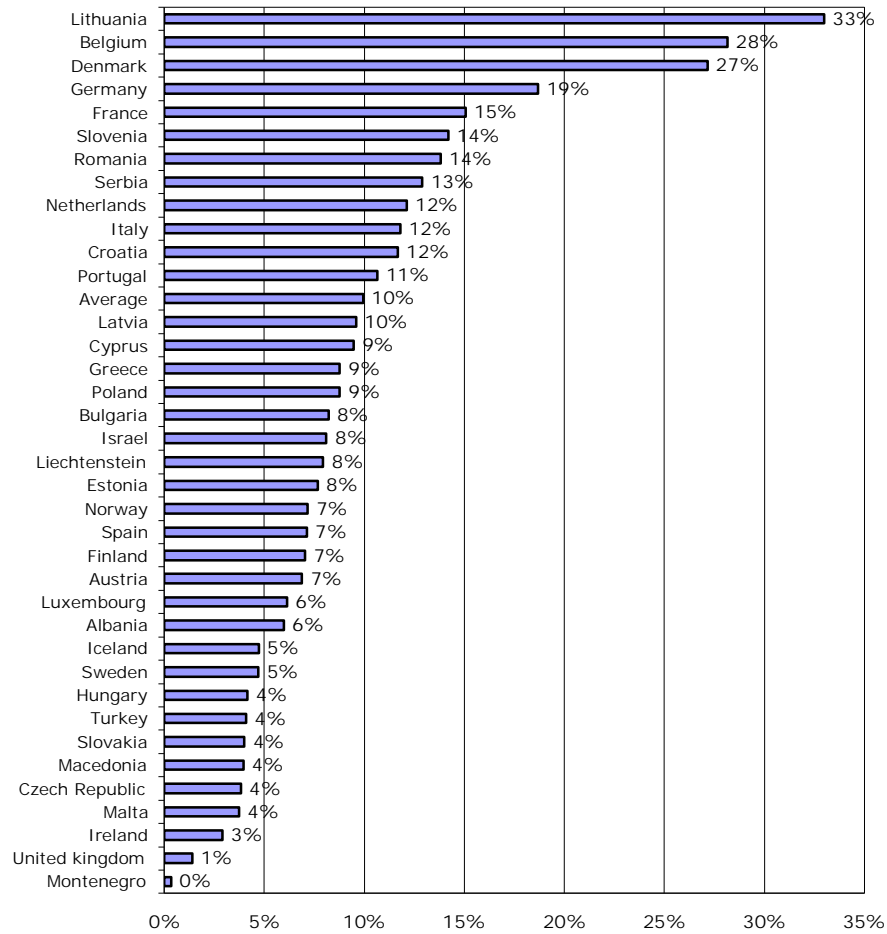
Germany, which has compensation programmes in place through which employers can apply for temporary state assistance to top up the wages of workers working reduced hours, provides a clear illustration of the important role that public authorities have played in facilitating firms' recourse to short-time working during the crisis. In the last quarter of 2008 the numbers of short-time workers in Germany rose dramatically, and this continued into the first part of 2009, with the result that by May 2009 the number of recipients of short-time working allowances had risen to approximately 1.5 million, much higher than in previous years

Source: European Commission, 2010, Employment in Europe 2010, DG Employment, Social Affairs and Equal Opportunities, Brussels, page 42

¹ This is concluded from a multivariate analysis, wherein the utilisation of publicly supported employment protection schemes is related to various enterprise-specific variables (including characteristics of the workforce, size and sector, and innovativeness) and macro-economic indicators (such as GDP level and growth rate, and indices on the difficulty and costs of firing; these indices are based on the SME Performance Review 2009).

² Source: European Commission, 2010, Employment in Europe 2010, DG Employment, Social Affairs and Equal Opportunities, Brussels.

Figure 29 Share of enterprises using publicly supported employment protection schemes during 2008Q4 - 2010Q4, by country, for the EU37 business economy



Note: Questions regarding publicly supported employment protection schemes referred to the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Part B: Do SMEs create better jobs?

6 Measuring "better jobs"

6.1 Introduction

Achieving a high quality of jobs is both a means to an end and an end in itself. In the first place, for those employed, the quality of a job has a significant effect on the quality of life¹. In the second place, the quality of jobs is related to the productivity of the workforce. As such, improving the quality of work is one of the means to improving productivity. The quality of life and improving productivity of the workforce are both important aspects of the Europe 2020 Strategy for smart, sustainable and inclusive growth².

This chapter begins with a discussion of the concept of "quality of jobs", and how job quality may affect labour productivity. Next, different ways of measuring the quality of jobs is discussed. The final section of this chapter presents how quality of jobs is measured in this study.

6.2 Quality of jobs: a multidimensional concept

What does quality of jobs mean?

There is a clear consensus that the quality of jobs is a multidimensional concept that covers many different aspects, varying from wages, formal training and (flexibility in) working hours to health implications of work, work autonomy and the meaningfulness of work. There is, however, less consensus regarding exactly which dimensions should be distinguished and which indicators should be used to measure it. This has long been debated in various scientific fields.

In 2001, the European Commission suggested distinguishing ten main elements of quality of work and suggested various indicators that could be used to measure these elements. These indicators are currently known as the "Laeken indicators of job quality", named after Laeken (Belgium), in which the Commission Communication was first presented at the European Council in December 2001. The Laeken indicators constitute the biggest attempt by the European institutions to present to construct an EU system of job quality indicators³.

"Any job quality indicator has to be strictly restricted to those aspects of the job that have an impact on the well-being of workers"
(European Parliament, 2009, "Indicators of job quality in the European Union", DG Internal Policies, page 14)

¹ Drobni, S., B. Beham and P. Präg (2010), "Good job, good life? Working conditions and quality of life in Europe", *Social Indicators Research* 99.

² In the Commission Communication on the flagship initiative of a resource-efficient Europe, the quality of life is mentioned as one of the objectives of the Europe 2020 Strategy (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM (2011) 21: Brussels).

³ European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies.

Since the Laeken indicators were introduced, several improvements have been made in the definition and demarcation of quality of jobs. First of all, the Laeken indicators used such a broad definition of job quality that it became very difficult to distinguish job quality from other labour market concepts¹. This severely restricts the practical use of the concept. Therefore, a stricter demarcation of job quality needed to be used. In 2009, a study conducted on behalf of the European Parliament suggested that the concept of quality of jobs should focus on the well-being of employees. Indicators of job quality should only include those aspects of a job that have an impact on the well-being of workers. This demarcation of the concept has several implications. For example, job attributes which do not have a direct impact on the well-being of workers should not be used as indicators of job quality. In addition, factors that determine the well-being of workers but are not attributes of their jobs should also be excluded from the list of quality indicators². Consequently, several elements from the Laeken indicators (including labour productivity, inclusion and access to the labour market, and diversity and non-discrimination) are no longer considered to reflect job quality.

A second improvement is the assessment of job quality for specific labour market segments (such as women, the elderly and people with disabilities). The Laeken indicators included separate indicators to measure the labour market participation for specific groups (such as employment rates for women, the elderly and people with disabilities). These indicators are, however, not related to aspects of individual jobs. A better way to assess the job quality for specific labour market segments is to use a set of indicators to measure job quality for all employed persons and to determine average indicator scores for relevant labour market segments afterwards. This way the quality of jobs can be studied for different groups of workers.

Dimensions of job quality

This study makes use of the suggestion that job quality should only refer to those aspects of a job that have an impact on the well-being of workers. Given this demarcation of job quality, two broad dimensions of job quality can be distinguished: employment quality and work quality. Employment quality is related to the contractual relationship between employer and employee. It refers to those aspects of the employment relationship that have a potential impact on the well-being of workers. This includes aspects such as the employment contract, remuneration, working hours, and career development. Work quality is related to the material characteristics of the task performed and the environment within which it is performed. It is concerned with the activity of work itself and the conditions under which it takes place, and how these aspects can affect the well-being of workers. This includes aspects such as work autonomy, intensity of work, the physical working conditions and the meaningfulness of the job.³ (See Box 7.)

¹ The Laeken indicators include unemployment rates and labour productivity, amongst other aspects.

² European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies, page 14.

³ European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies, page 121.

Box 7: Dimensions and areas of job quality

Dimension A: Employment quality

- Remuneration and social benefits
- Job flexibility (working hours, working time arrangements and time flexibility)
- Job security
- Employee participation
- Skills development

Dimension B: Work quality

- Work autonomy
- Physical working conditions, health variables and risks of accidents
- Psychosocial risk factors
- Intensity of work
- Meaningfulness of work

The social context

A: Private context

- Family and friends

B: Enterprise context

- Characteristics of the current workforce
- Recruitment practices

C: Public context

- Gender equality
- Inclusion and access to the labour market
- Diversity and non-discrimination

Elements of job quality are based on Chapter 7 from European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies. Elements of the public context include elements from the Laeken indicators that are not included as elements of job quality in "Indicators of job quality in the European Union".

Exactly how these various aspects of job quality affect the well-being of workers will depend on the social context of the worker. This social context includes the private context (family and friends), the enterprise context and the public context. The enterprise context refers to the relationships between workers and their colleagues and includes such workforce characteristics as gender, age and educational levels. The public context refers to the existing social security and welfare arrangements and the income distribution within countries. Some of the Laeken indicators that are no longer included in the definition of job quality (gender equality, inclusion and access to the labour market, diversity and non-discrimination) may instead be used as indicators of this public context. This context shows a large variation across countries. Different countries have very different welfare regimes with very different roles for the private and the public sector, and these differences should be taken into account whenever job quality indicators are compared across countries.

Quality of jobs, employment and productivity

Job quality is important not only because of its relevance for the quality of life in general, but also because it is related to employment and (labour) productivity. At a macro level, high levels of employment can only be achieved and main-

tained if individual enterprises show enough (external) flexibility¹, where the downward mobility in shrinking enterprises is more than compensated for by the upward mobility in new and expanding enterprises. Thus, the element of job flexibility and security is directly linked to the employment objective of the Europe 2020 strategy.

The way in which enterprises manage training and development, remuneration, job security, work organisation and work-life balance affects the performance of their organisation through various channels. This has been confirmed by empirical studies on the relationship between human resource management (HRM) activities and (organisational) performance². Some HRM activities (e.g. regarding training and development) chiefly affect the knowledge and skill levels of employees, while other HRM activities mainly affect the motivation of employees (e.g. remuneration and job security) or the quality of the match between employer and employee (e.g. work organisation). Knowledge, skills and quality of the employer-employee match each have a positive effect on (organisational) performance. This implies that job aspects such as remuneration, human resource development, work organisation and work-life balance are directly linked to the productivity objective of the Europe 2020 strategy. It is important, however, that HRM activities be implemented properly and account for the context of the organisation. If this is not the case, they may even have a negative effect on performance.

6.3 Different ways of measuring the quality of jobs

Another issue (besides the content) that has received attention in recent discussions on quality of jobs is how it should be measured. Generally speaking, three different ways of creating an indicator of job quality can be differentiated³.

Job satisfaction as an overall indicator of job quality

Job quality concerns the well-being of workers. A simple and straightforward way to measure job quality is therefore to ask workers about their well-being as far as their jobs are concerned. Indeed, there are many studies that examine employee job satisfaction.

Unfortunately, for various reasons job satisfaction is not a very suitable indicator, in particular when it comes to international comparisons. First of all, previous studies have shown differences in average levels of job satisfaction between countries that cannot be explained by any known aspects of job quality. This is

¹ Flexibility refers to the capacity of employers and employees to continuously adapt to changing economic circumstances. This flexibility may be manifested through changes in the number of jobs (external numerical flexibility), changes in hours worked and other working arrangements (internal numerical flexibility), changes in job contents (functional flexibility) and changes in wage levels (wage flexibility).

² For an overview of the current state of affairs in the research on strategic HRM, see Paauwe, J. (2004), "HRM and performance: achieving long-term viability", Oxford University Press, New York.

³ The discussion of these three approaches is based primarily on European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies.

probably due to differences in the institutional context (for example, social security) and culture.

A second and related disadvantage is that employees may not express their true feelings when they are asked to. Different factors may affect the extent to which the employees' answers reflect their true well-being and satisfaction with their job. Some of these factors may differ between countries, such as the way the survey was conducted and (again) cultural factors.

Finally, even if job satisfaction were a suitable indicator, it would not provide any direct clues regarding policy measures to improve certain aspects. For example, if job satisfaction were relatively low for certain groups, this finding in itself would not offer any suggestion on how to improve it. This would require additional information regarding the various aspects of job quality that may then be related to the scores on job quality.

Asking workers what makes a good job

A second approach is to ask workers what they consider to be important aspects of job quality, and then use their answers to model job quality. This approach provides insight into what employees consider the most important aspects of job quality to be. The main drawback of this method is that different measurements may result in different indicators that are used to measure job quality (because different groups of employees may consider different aspects to be important). This would make it difficult to compare the results across time or between countries. Also, the measurement instrument (a survey) has to include a predefined set of options that can be ranked or rated by the respondents. The question of which options to include in the survey then remains. Ultimately, this approach does not solve the problem of which aspects to include in the measure.

Drawing from the literature of the Social Sciences

The third approach is a theory-driven approach: select those indicators for which sound scientific studies have shown that they are related to quality of jobs, and assess the score on these indicators. This approach provides the best guidelines regarding which aspects to include in the job quality measure.

The obtained scores on the various indicators can be used to compose an overall or composite index, which summarises the scores in a single index. This, however, is not without difficulties. Specifically, there is no generally accepted guideline as to how the different indicators should be weighted. Neither is it clear how the composite index should be interpreted in the event the underlying indicators are independent of one another.

6.4 How job quality is measured in this study

At which level?

Quality of jobs is concerned with the well-being of employees and is therefore chiefly measured at the level of individual employees¹. This study takes a different perspective: the enterprise perspective. In this study indicators on quality of jobs will be related to enterprise and workforce characteristics. This requires that data be gathered at enterprise level rather than individual level. This has been done using the Enterprise Survey 2010.

When interpreting the results of the Enterprise Survey 2010, it is important to realise that the enterprise perspective on certain aspects may result in different outcomes than the individual perspective (see Box 8 for an explanation of how these perspectives present different results for workforce characteristics). The findings of this study can therefore not be directly compared to findings on the same indicators from the perspective of individual employees.

Box 8: Workforce characteristics of enterprises: the enterprise perspective versus the individual perspective

The characteristics of the workforce of enterprises can be presented from two different perspectives: the enterprise perspective and the individual perspective. An example serves to illustrate the difference between these perspectives. Suppose that the micro enterprises size class contains ten micro enterprises. Nine of these micro enterprises employ two employees each, both of whom are women. The tenth micro enterprise employs nine employees, all men. The following calculations are possible:

- From the enterprise perspective: 90% of the enterprises employ 100% women, 10% of the enterprises employ 0% women, so the average enterprise employs $0.9 \times 100\% = 90\%$ women.
- From the individual perspective: in total, the enterprises employ $9 \times 2 + 9 = 27$ employees, 18 of whom are women, so the share of women in the workforce is $18/27 = 66\%$.

If there are large differences between enterprises from different sizes (within a specific class), then the two perspectives may result in very different results, as this example clearly illustrates.

Which aspects of job quality?

For various reasons, this study focuses on employment quality. First of all, collecting data on work quality requires a different approach than collecting data on employment quality. Employment quality focuses on aspects of the employment relationship that are largely determined at the enterprise level (such as remuneration policy, flexibility and security, and participation). This relationship will be more or less comparable for employees within enterprises, and may be examined via an enterprise survey. The work relationship is about the work itself and involves aspects such as the physical working conditions, intensity of work and meaningfulness of the job. These aspects can only be evaluated by individual employees themselves. An employee survey is therefore the best way to measure work quality. A well-known example of such a survey is the European Work-

¹ European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies.

ing Conditions Survey by Eurofound (which is a primary source of information on quality of work)¹.

In the second place, employment quality is more directly related to the Europe 2020 strategy, and in particular the strategy of flexicurity. A decade ago, one of the key objectives in the context of the European Employment Strategy and the Lisbon strategy was to improve the flexibility of the European labour markets, in combination with an improvement of (social) security for the employees. This strategy is known as the strategy of flexicurity. The flexicurity strategy attempted to reconcile employers' need for a flexible workforce with workers' need for security (the confidence that they will not face long periods of unemployment if they should happen to lose their current job). Although the strategy of flexicurity was subject to criticism, the European Commission still considers flexicurity the right framework for modernising labour markets². The increasing importance of new and flexible employment patterns may conflict with some of the main elements of job quality like job security, possibilities of further training and career prospects. The challenge is to combine flexibility with security in ways that benefit workers and companies alike³. The EU has identified a set of common flexicurity principles and is exploring how countries can implement them through four components:

- 1 More flexible and secure contractual arrangements, from the point of view of both employer and worker.
- 2 Lifelong learning strategies in order to ensure workers' ongoing capacity to adapt, and increase their employability.
- 3 Effective active labour market policies facilitating transitions to new jobs.
- 4 Modern social security systems providing adequate income support during transitions.

The first two components (the flexibility part of the flexicurity strategy) refer to the employment quality. If anything, the debate on the flexicurity strategy stresses the importance of human resource development and flexibility and security as elements of the employment quality. The last two components are not related to the quality of jobs, but to the public context of job quality.

Which indicators?

This study follows the theory-driven approach and uses indicators which previous studies have shown to be related to the employment quality of jobs (see Box 9 for an overview of indicators). The indicators cover all areas of employment quality, with one exception: social benefits. The European Parliament (2009) concluded that it is questionable whether this aspect should be included, and it is not included in the current study.

The choices for the specific indicators used in this study are largely determined by the availability of data on employment quality, which allows for a distinction between enterprise size classes. The main data sources are the European Com-

¹ European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies.

² European Commission (2010), Employment in Europe 2010, DG Employment, Social Affairs and Equal Opportunities, Brussels.

³ European Commission (2001), Employment and social policies: a framework for investing in quality, Commission Communication COM (2001) 313, Brussels.

pany Survey (ECS) 2009 from Eurofound and the Enterprise Survey 2010 (ES 2010), which was carried out specifically for this study. The ECS 2009 contains more observations and more indicators on quality of employment than the ES 2010¹. Unfortunately, however, available data from the ECS 2009 only offer an indication of differences between size classes² in the business sector: micro enterprises are excluded from the ECS 2009, and available tables with aggregated results by size class tend to include all enterprises (business economy as well as public sector)³.

Box 9: Indicators used in this study

The quality of the employment relationship

- Remuneration:
 - Wage levels
 - Usage of performance-related pay schemes
- Job flexibility
 - Working overtime
 - Working part-time
 - Flexitime arrangements
- Job security
 - Job losses due to death of firms
 - Employing from temporary work agencies
 - Usage of fixed-term contracts
- Participation
 - Coverage by collective labour agreements
 - Employee representation
- Skills development
 - Usage of training and development activities

The overall job quality

- Job satisfaction

The enterprise context

- Aspects making it easier to attract skilled employees
- Hiring long-term unemployed
- Average share of female employees
- Average share of employees from different age groups
- Human capital of employees

How to determine whether SMEs create better jobs?

For this study, only indicators on employment quality have been gathered. Since no indicators on work quality have been obtained, the available scores cannot present a complete picture of job quality in enterprises from different size

¹ The ES 2010 was also used to obtain information regarding the enterprise context, developments regarding the quantity of jobs and how enterprises reacted to the economic crisis.

² The ECS 2009 is based on a survey of establishments, but tables with aggregated results are available that differentiate between enterprise size classes.

³ The findings from the ECS 2009 included in this study are based on publicly available tables and publications. No additional analyses on the survey results have been performed.

classes. Consequently, the available indicators cannot be used to answer the question of whether SMEs create better jobs.

There is, however, another source of information that can be used to provide an answer to this question: job satisfaction of employees. Measures of job satisfaction should not be used to compare the quality of jobs across countries. Nevertheless, it can be argued that measures of job satisfaction may be used to compare the job quality for employees from different size classes within countries. A few studies have done so, and the main findings of these studies will be used to examine differences in job satisfaction between employees from SMEs and large firms.

Structure of part B

Jobs cannot have any qualities if there are no employees occupying those jobs. The employment relationship is closely related to the way in which enterprises manage their human resources and to the general characteristics of these human resources. The next chapter therefore starts with a brief description of the social context of the enterprise: the management of the human resources (with specific attention on recruitment) and the main characteristics of the workforce of enterprises from different size classes. The following chapter presents and discusses available statistics regarding the different aspects of employment quality. This chapter concludes with a section that presents some tentative findings regarding the relationship between the employment quality and the (enterprise and public) context. Chapter 9 discusses the available evidence on job satisfaction, as an overall measure for size class differences in job quality. By comparing these findings to the findings regarding employment quality, it is possible to draw some tentative conclusions regarding size class differences in the quality of work.

7 The social context of the enterprise

7.1 Introduction

The enterprise population is far from homogeneous. Individual enterprises show a huge variation in terms of almost every aspect of their organisation, and the composition of their workforce is no exception. For example, while the average employment share of women equals 43% of total employment in the business economy, there are many individual enterprises that employ either (close to) 0% or (close to) 100% women. Likewise, some enterprises employ relatively many employees with a low educational level, while other enterprises only employ university graduates. Nevertheless, despite the considerable heterogeneity that exists within each size class, there are also differences between size classes, not only with regard to the characteristics of the workforce, but also with regard to how the workforce tends to be managed. This chapter describes such differences, not only for four characteristics of the workforce (gender, age, human capital and employment of employees with a disability), but also more generally for how the labour force is managed and how employees are recruited and selected.

7.2 Managing the human resources

The role of HRM

Enterprises from the SME size class show a large variety in how they manage their human resources. For example, family businesses tend to be more informal in how they manage their human resources (HRM) than non-family businesses, and enterprises with a formal business strategy tend to be more formal than those without such a strategy. Despite this heterogeneity, the HRM activities and policies of smaller firms are, generally speaking, less formal and professional than those of larger firms¹. The way in which the workforce is managed in (especially) micro and small enterprises can best be described by the key words "informality" and "the absence of an HRM manager". Especially in micro firms, it is often the owner or CEO that takes on personnel management, in addition to the diverse responsibilities of managing a company. This introduces the risk that personnel management becomes a mere response to acute problems rather than a sustainable strategy of development². The past few years have seen few, if any, developments on this issue³.

Two different explanations have been suggested for this size class difference. The more traditional explanation is that smaller firms are not aware of the usefulness of professional HRM activities or lack the (human and financial) resources to implement them. In smaller enterprise, relatively few people are involved in formulating business strategy and HRM strategy and policies, and these people are likely to have less knowledge of the subject and less relevant experience.

¹ De Kok, J.M.P., L.M. Uhlener and A.R. Thurik (2006), "Professional HRM Practices in Family Owned-Managed Enterprises", *Journal of Small Business Management* 44 (3).

² SKRAT consortium (2010), *SKRAT - Good practice manual*, Frankfurt, page 21.

³ Interviews with Prof. P. Edwards, labour expert in the UK and D. Grijpstra, labour expert in the Netherlands.

Implicitly, this explanation assumes that the positive effects of these professional HRM activities would be just as high for small firms as they are for large firms. It is, however, not certain whether this is indeed the case. It has also been argued that small firms pay less attention to HRM than larger firms do, because the impact of HRM is lower for smaller firms and because smaller firms have a shorter time-horizon¹.

Box 10: Some examples of the role of human resource management in SMEs

According to the Dutch expert, SMEs with fewer than 50 employees do not have HRM staff. Hence, they lack information about developments in this field and do not introduce specific human resource management policies. They generally follow the collective labour agreements and do not go any further. Many of their employees start as apprentices. Only larger medium-sized enterprises (about 250 employees) start introducing some HRM policy.

For Germany, the relatively low attention of SMEs for HRM practices is also related to lower levels of specialisation and professionalisation as compared to large firms. Companies with approximately 100 employees set up an HR department or have at least one staff member who is responsible for HRM matters. This generally increases the professionalism. Due to these size-related differences, more elaborate HRM measures are less frequently applied in SMEs. This has been the case for quite a long time and has hardly changed in recent years. LSEs seem to be more active than SMEs, especially in the field of recruiting highly qualified employees. According to the German expert, HRM is not a trigger for better jobs. HRM has a service function and implements the necessary actions to create better jobs.

In Bulgaria the managerial capacities of SMEs are low. The main objective of SMEs is to generate enough profits. Combined with the fact that SMEs have a very short time horizon, this results in little investment in the field of human resource management. Insecurity, which is much stronger in SMEs, prevents them from making investments in better jobs, training and other good HR management practices.

In the US, SMEs adopted more HRM practices than in Northern Europe.

Source: Interviews with various experts (Mr. D. Grijpstra, Mrs. R. Kay and Prof. K. Vladimirova)

Recruitment and selection

This general size class difference also applies to recruitment and selection practices. Whereas large firms will mostly use strict criteria when recruiting new employees (for example, demanding a degree indicating that a certain educational level has been obtained), entrepreneurs from micro and small firms will more often rely on informal, word-of-mouth recruitment methods². For these entrepreneurs, the actual level of an applicant's motivation, knowledge and skills may be more relevant than the presence of a particular diploma or certificate. Furthermore, jobs in smaller enterprises tend to be more general (less specialised) than jobs in larger enterprises, making specialised professional educations less relevant for smaller firms. Both of these size class differences suggest that smaller firms may more often hire employees that do not have a formal degree or certifi-

¹ Compeer, N., M. Smolders and J. de Kok (2005), "Scale effects in HRM research", EIM Scales Paper N200501, Zoetermeer: the Netherlands.

² Carroll, M., M. Marchington, J. Earnshaw and S. Taylor (1999), "Recruitment in small firms: processes, methods and problems", *Employee Relations* 21 (3).

cate that demonstrates their obtained knowledge and skill level¹. In addition, smaller firms also use different criteria than large firms when selecting employees. In particular, smaller firms put more weight on the question of whether an applicant will fit within the existing workforce².

Recruitment and selection of skilled employees

Before the economic crisis, the problem regarding recruitment and selection mentioned most often was the scarcity of skilled labour. At the end of 2006, 28% of all SMEs in the EU reported that their main recruiting problem was the scarcity of a skilled labour force³. There is little doubt that within the near future, this will again become the main recruitment problem for SMEs.

Whenever enterprises have to recruit and select employees, they have to compete with other organisations on the labour market. The strength of this competition, and the position of an enterprise on the labour market, depends on many different factors. These factors include general factors (such as the supply of labour, unemployment levels and GDP growth rates) as well as firm-specific factors (such as the working climate in the enterprise, remuneration, career opportunities, etc). These firm-specific factors are important in explaining the relative position of enterprises on the labour market.

Many of these firm-specific factors vary between size classes. This size class effect is not uniform, but differs from factor to factor both as far as the size and the direction are concerned. For example, there are considerable size class effects in regard to the extent to which training opportunities, career opportunities and the quality of the job profiles are considered to offer competitive advantages on the labour market. For each of these aspects, large enterprises seem to have an advantage over smaller enterprises. This size class effect is also found for remuneration, but here the difference between size classes is considerably smaller (Table 22).

Smaller firms are, however, not always at a disadvantage compared to large firms. For example, 65% of all micro enterprises report that the working climate of their enterprise offers them a competitive advantage when recruiting skilled employees (as compared to 56% for small, medium-sized and large firms). This is consistent with studies amongst employees, which also tend to find that employees in SMEs report higher job satisfaction than employees in LSEs⁴. In addition, about a third of all enterprises consider the working-time arrangements in their enterprise as such that they offer them a competitive advantage on the labour market for skilled employees (Table 22). This share is the same for micro

¹ If an employee with a high educational level is recruited and selected, smaller firms are more likely to select an applicant that does not have a formal certificate that confirms his or her educational level. This is independent of the share of highly educated employees in firms of different size classes. This is discussed further in Section 7.5.

² Meijers, J.M. and G.E. Evers (1999), "Ik wens u veel personeel toe; personeelsbeleid in het Kleinbedrijf", TNO-report 2580012, TNO Arbeid: Hoofddorp, the Netherlands.

³ Flash Eurobarometer 196 (2007), "Observatory of European SMEs: analytical report", Gallup.

⁴ Storey, D. J., G. Saridakis, S. Sen-Gupta, P.K. Edwards and R.A. Blackburn (2010), "Linking HR formality with employee job quality: The role of firm and workplace size", Human Resource Management 49.

and large enterprises and somewhat lower for small and medium-sized enterprises. Not surprisingly, a similar pattern is found for the work-life balance. Of all the aspects included in Table 22, the work-life balance is the least related to firm size¹.

Table 22 Employer's opinions on aspects that make it relatively easy to attract skilled people, for the EU37 business economy, by size class

Aspect	Share of enterprises reporting that an aspect makes it easier for them to attract skilled people compared to other firms			
	Micro (2-9)	Small and medium (10-249)	Large (250+)	All size classes
Working climate in the enterprise	65%	56%	56%	63%
Location of the enterprise	45%	39%	42%	44%
Training opportunities	39%	42%	54%	40%
Work-life balance	38%	31%	36%	37%
Exciting or challenging job profiles	34%	34%	50%	34%
Working-time arrangements	34%	29%	34%	34%
Career opportunities	25%	33%	51%	27%
Remuneration level	26%	29%	30%	26%

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

The employers' opinions regarding the aspects included in Table 22 not only vary between enterprise size classes, but are also related to other firm-specific characteristics. Amongst others, enterprises with a higher share of female employees are more likely to mention that their working-time arrangements offer them competitive advantages on the labour market. One possible explanation is that firms with better working-time arrangements attract more women, but the causality may also run the other way (firms that employ relatively many women are more likely to offer flexible working-time arrangements).

A more general finding is that innovative enterprises² consider themselves to be more competitive on the labour market than other enterprises. For all of the aspects considered here, innovative enterprises are more likely to mention that this aspect offers them a competitive advantage on the labour market. The same

¹ Multivariate analyses have been conducted, wherein the enterprises' answer to each of the questions (whether a certain aspect makes it easier for them to attract skilled people) is related to various characteristics of the enterprise, its workforce and the context in which it operates. Work-life balance is the only aspect that, once other characteristics are taken into account, is not significantly related to firm size.

² Innovative enterprises are enterprises that were involved in innovative activities in the past three years, that have introduced new or significantly improved products in the past three years, and/or have introduced new or significantly improved production processes in the past three years.

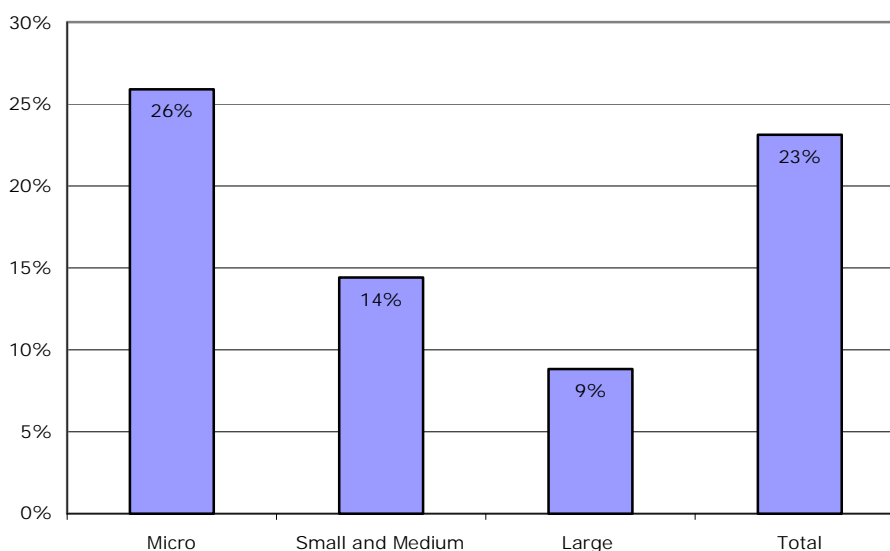
applies to enterprises with a relatively high share of employees with a medium or high educational level.

All in all, these results illustrate the different positions of small and large firms on the labour market. More to the point, they illustrate the multidimensionality of the labour market position of enterprises. Micro enterprises most often report that they have a competitive advantage over their competitors as far as "soft" aspects of an enterprises' human resources management (working climate, work-life balance and working-time arrangements) are concerned. Regarding the "hard" aspects (training and career opportunities, remuneration levels), large firms seem to have the best position on the labour market, followed by small and medium-sized enterprises.

Recruiting and selecting long-term unemployed

If new employees are hired, smaller enterprises are more likely than larger enterprises to hire people who have been unemployed for at least a year (Figure 30)¹. This may reflect a conscious choice of smaller firms (that they more often prefer to hire long-term unemployed, or that they are better suited to employ such employees), but it is equally possible that it is a result of a weaker labour market position (in which smaller firms would prefer to hire people who are currently employed, but are unable to so). Irrespective of the underlying reason, these results suggest that small firms play an important social role in re-integrating the long-term unemployed in the labour market.

Figure 30 Average share of newly hired employees who were unemployed for at least a year, per enterprise in the EU37 business economy, by size class (2010)



Note: The shares are calculated as the average share (of newly hired employees who were unemployed for at least a year) for all enterprises within a specific size class.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

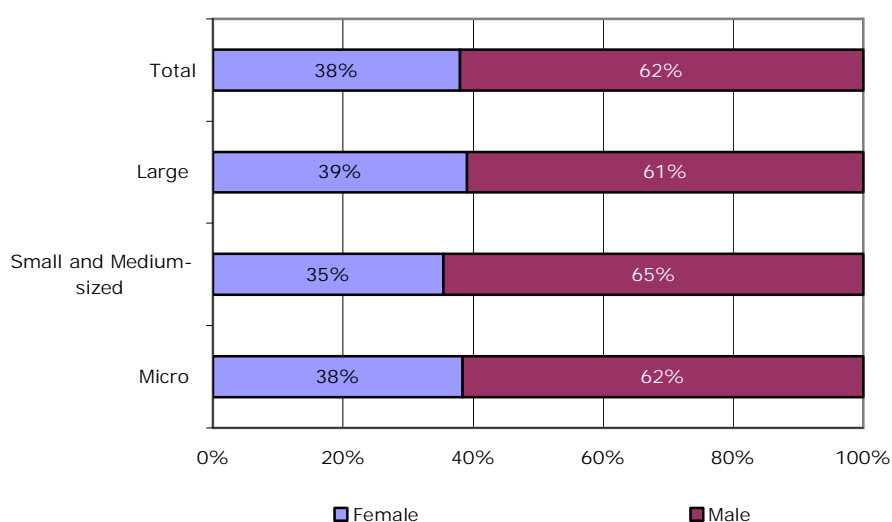
¹ The percentages presented in this figure follow the enterprise perspective. The percentages for the individual (employee) perspective may be different, especially if there are size effects within each size class (as explained in Box 8 in Chapter 6).

7.3 Gender

Within the EU business economy, the average enterprise employs 39% women and 61% men. Enterprises in the participating non-EU countries tend to employ relatively fewer women: on average, enterprises from these countries employ 32% women and 68% men. To a large extent, these country differences reflect differences in the share of women in the economically active population (i.e., employed plus unemployed), rather than high shares of female unemployment levels.

The gender distribution does not vary much between size classes: for micro and large enterprises the share is almost identical; for small and medium-sized enterprises the share is 3 to 4 percentage points lower (Figure 31).

Figure 31 Average share of male and female employees per enterprise, in the EU37 business economy, by size class (2010)



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

7.4 Age

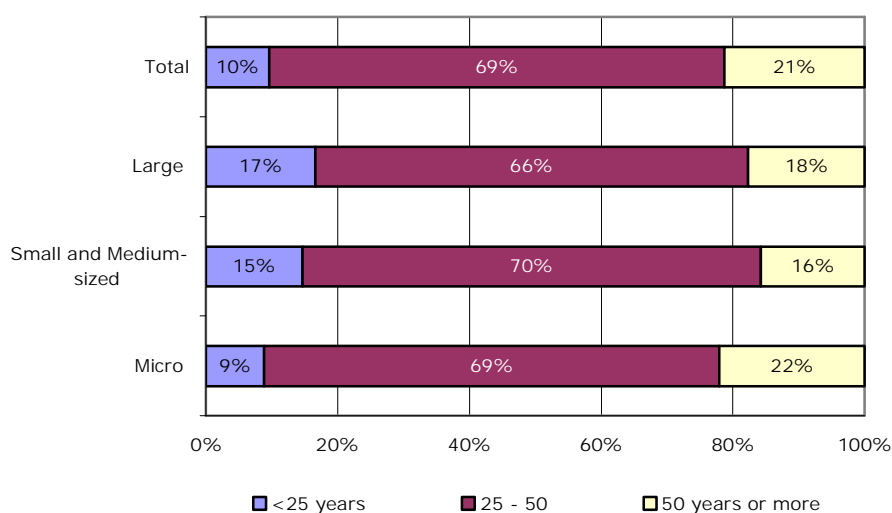
If the age of the workforce is considered, the differences between the size classes are more pronounced. On average, micro enterprises tend to employ the highest share of older employees (aged 50 years or older) and the lowest share of young employees (aged younger than 25 years) of the three size classes. Small and medium-sized enterprises employ the highest share of employees aged 25-50 and the lowest share of older employees. Large enterprises, finally, employ the highest share of young people (Figure 32).

Apparently, large firms tend to hire younger employees than smaller firms do. This has also been observed for the USA¹. One of the explanations offered for this behaviour is that large firms invest more in training activities (see also Section 8.5). Young employees may be more willing (and able) to follow firm-

¹ Hu, L. (2003), "The hiring decision and compensation structures of large firms", *Industrial and Labour Relations Review* 56 (4).

specific training activities and the costs of training tend to be lower for younger employees¹. This would make them more attractive to large firms. Smaller firms are generally less willing to invest in training activities and are therefore more often searching for applicants that already have some work experience. Another explanation concerns the behaviour of the job candidates rather than the behaviour of the firms: the large share of young employees in large firms may also reflect a preference amongst young people (who just finished their education) to start their career in large enterprises (amongst other reasons because the pay is higher and there are more career opportunities).

Figure 32 Average share of employees from different age groups per enterprise, in the EU37 business economy, by size class (2010)



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Country differences are also present, especially between the EU Member States and the ten non-EU countries that are included in the Enterprise Survey 2010. For the average enterprise within the 37 countries that participated in this survey, 21% of the employees are 50 years old or older. This percentage varies between 23% within the 27 EU Member States and 11% within the ten non-EU countries. This difference primarily reflects differences in the age distribution of the population: whereas in the EU, 28% of the working-age population² is aged 50 or higher³, for Turkey (which accounts for more than half of the enterprise population in the non-EU countries included in this study) this is only 18%.

Within the business economy, the age distribution also varies between sectors, but the magnitude of these sectoral differences is somewhat smaller than the size class differences are.

¹ The total costs of training consist of direct and indirect costs. Indirect costs include the costs of foregone production and are directly related to the wage of the trainees (in the case of training activities that take place during working time, wages have to be paid). Since younger employees tend to receive lower wages, this also reduces the total costs of their training activities.

² The working-age population includes all people aged 15-64.

³ Eurostat Labour Force Survey.

7.5 Human capital

It is often assumed that, on average, larger firms employ employees with higher levels of human capital¹ than smaller firms (although there are, of course, many exceptions to this rule, in particular in knowledge-intensive business sectors). The main explanation for this relationship is that larger firms tend to have a more capital-intensive production process, which would require employees with the capacities to use the available capital (machines, hardware and software, etc.) efficiently². Another explanation is that larger firms require a relatively larger share of managerial employees (because with increasing scale and increasing levels of specialisation, coordination of activities becomes more important and requires a relatively larger share of the workforce). To the extent that managers tend to have higher educational levels than non-managers, this also explains part of the phenomenon.

Different ways to measure human capital

The question is: is this assumption true? Do larger firms employ employees with higher levels of human capital than smaller firms? To answer this question, a measure of human capital is needed. Economic studies often measure human capital of employees by years of (post-primary) schooling, educational attainment, age and tenure. The first two measures indicate the amount of human capital that is obtained during initial education, while the last two measures indicate the additional general and firm-specific human capital that employees may have obtained throughout their careers.

Years of schooling

Several studies have found that, on average, the average number of years of schooling of employees increases with firm size³. Other studies find more mixed results. For the USA, for example, a difference has been found for white-collar and blue-collar workers⁴. For white-collar workers, the years of schooling tend to increase with firm size, but for blue-collar workers this relationship is u-shaped: the average number of years of schooling is lowest for enterprises with 25-99 employees and higher for smaller as well as larger enterprises. This u-shaped curve is found for four different years (in the period from 1979 to 1993).

Educational attainment

Scientific studies that use the years of schooling as a measure for human capital tend to focus their attention on a single country. The EU labour force survey offers the possibility to compare the educational attainment across countries. The EU labour force survey measures educational level not by years of schooling, but by educational attainment (the highest educational degree obtained). A distinc-

¹ Human capital refers to the amount of knowledge and skills of individuals, which can be utilised in the production processes of organisations and enterprises.

² Brown, Ch. and J. Medoff (1989), "The employer size-wage effect", NBER Working Paper Series no. 2870, Cambridge: Massachusetts, USA.

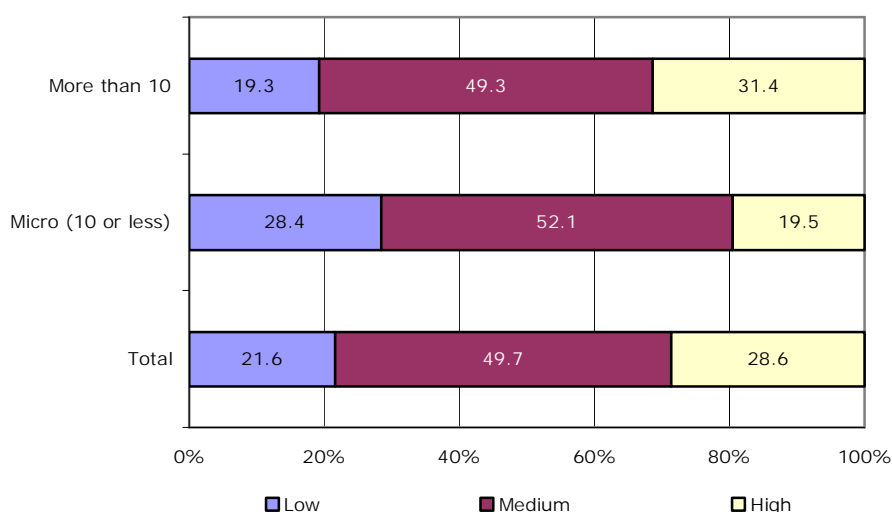
³ For the Netherlands, see H. Oosterbeek and M. van Praag (1995), "Firm-size wage differentials in the Netherlands", *Small Business Economics* 7.

⁴ Hu, L. (2003), "The hiring decision and compensation structures of large firms", *Industrial and Labour Relations Review* 56 (4).

tion is made between a low, medium and high educational level. The EU LFS does not distinguish between enterprise size classes, but a distinction can be made by size of local unit, distinguishing between micro units and larger units. The results show that in micro units (10 or fewer employees), relatively many of these employees have a low educational attainment and relatively few have obtained a high educational attainment (Figure 33). Despite the fact that this difference is based on size of local unit rather than enterprise, the differences between micro local units and larger units are so large that it is very likely that the same size class difference will exist between micro enterprises and larger enterprises.

All in all, the available data seems to be consistent with the general assumption that the average educational level of employees increases with enterprise size¹.

Figure 33 Share of employees with a low, medium or high educational degree obtained, in EU37 (business economy plus non-business economy), by size class of local unit (2009)



Note: The distinction between low, medium and high educational levels is based on the International Standard Classification of Education (ISCED). A low educational level corresponds to ISCED levels 0-2, a medium educational level to ISCED 3-4, and a high educational level to ISCED 5-6.

Source: EU Labour Force Survey, educational attainment of employees (2009).

Age and tenure

The average age of employees is highest amongst micro enterprises (Figure 32). Tenure has not been measured directly, but it tends to increase with firm size² (larger firms offer more possibilities for long tenure because they exist longer, amongst other reason). If age and tenure are used as indicators for the amount of human capital gained during employees' careers, the results indicate that em-

¹ Although a u-shaped relationship cannot be ruled out, since the EU LFS only compares two size classes.

² For the US, this is demonstrated in Hope, J.B. and P.C. Mackin (2007), The relationship between employee turnover and employee compensation in small business, Small Business Research Summary 308.

employees in smaller firms tend to gain more general human capital, while employees in larger firms tend to gain more firm-specific human capital¹.

Educational level

Years of schooling, educational attainment, age and tenure can be determined objectively and can be compared across enterprises and countries. These are important advantages for indicators, but they also have some disadvantages. For example, years of schooling and educational attainment only measure the human capital of employees that has been obtained from the initial education system. Any human capital that has been gained afterwards (because of experience, continuing vocational training, and life-long learning in general) is not included in these measures. Age and tenure are supposed to capture these effects, but the strength and size of their relationship with human capital will differ considerably between employees.

An alternative measure is to look at the educational level obtained, by asking respondents about the educational level of the employees in their firm (as has been done in the Enterprise Survey 2010). Although this is more subjective than the educational attainment or years of schooling, it does include the effect of life-long learning activities. The results of the Enterprise Survey 2010 suggest that smaller firms employ a larger share of employees with medium or high educational levels than larger firms (Figure 34). In particular, the share of employees with a medium educational level is highest in small and medium-sized enterprises, and the share of employees with high educational levels is highest amongst micro enterprises. Multivariate analysis confirms the negative relationship between firm size and the share of employees with a high educational level, controlling for differences between sectors, countries and various enterprise characteristics.

For several reasons, these statistics cannot be compared directly to the statistics from the EU Labour Force Survey:

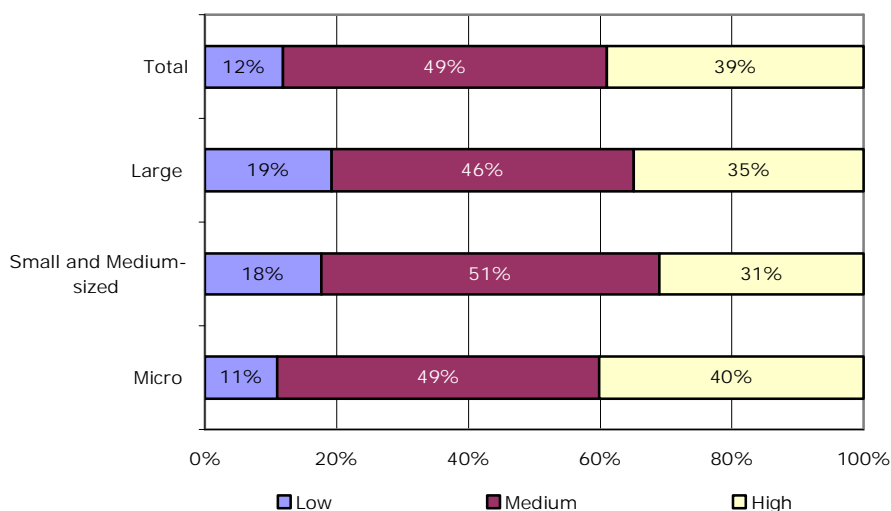
- the statistics from the Labour Force Survey compare local units, whereas the Enterprise Survey compares enterprises;
- the statistics from the Labour Force Survey refer to all economic activities (business and non-business economy), whereas the results from the Enterprise Survey are limited to the business economy;
- the statistics from the Labour Force Survey represent the individual perspective, whereas the results from the Enterprise Survey take the enterprise perspective.

Nevertheless, it is striking that the results from the EU Labour Force Survey and the Enterprise Survey indicate opposite directions for the size class effect. How can this be explained? One possibility is that the results from the Enterprise Survey suffer from a respondent's bias. The information from the Enterprise Survey

¹ General human capital refers to those aspects of an individual's human capital that are valued by many or all potential employers. Much of the knowledge and skills obtained during formal education count as general human capital, for example general reading and writing skills, programming skills for ICT educations, or calculus for many technical educations. In contrast, firm-specific human capital involves (specific combinations of) skills and knowledge that only have productive value for one particular company, for example knowledge on how to operate customised equipment and/or software, or the combination of knowledge on tax laws, economics, software and Java programming for a company that provides enterprise software that does tax optimisation.

is obtained by asking respondents to assess the educational level of the employees within their enterprise. In smaller firms, the distance between the respondent and the employees will be smaller, which could result in a larger and upward bias in their answers.

Figure 34 Average share of employees with a low, medium or high educational level per enterprise, in the EU37 business economy, by size class (2010)



Note: The distinction between low, medium and high educational levels is based on the International Standard Classification of Education (ISCED). A low educational level corresponds to ISCED levels 0-2, a medium educational level to ISCED 3-4, and a high educational level to ISCED 5-6.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Another explanation is that there is a difference between educational attainment and educational level obtained, and that this difference is larger for smaller firms. First of all, the average educational level obtained can be expected to be higher than the average educational attainment, because of life-long learning effects. A comparison between Figure 34 and Figure 33 shows that this is indeed the case. This difference may be particularly large amongst older employees for two reasons: they have had a longer time to gain additional experience and knowledge, and a few decades ago participation in higher education was much lower than it is currently (for example, the share of people aged 35-64 with a tertiary educational attainment is much lower than the share amongst people aged 25-34¹. This indicates that for older employees, the gap between educational level obtained and educational attainment is larger than for younger employees). This differential between the educational attainment and educational level obtained may be higher for smaller firms than for larger firms, because smaller firms employ a relatively higher share of older employees (see Section 7.4) and because of differences in the recruitment and selection procedures between smaller and larger firms (see Section 7.2).

¹ See Figure 4.6 in Chapter 4 of: Europe in figures: Eurostat Yearbook 2010 (page 266).

Additional analyses show that innovative enterprises tend to employ a higher share of highly educated employees than enterprises that are not innovative. The causality of this relationship may run both ways: innovative enterprises may hire more highly educated employees, but at the same time the presence of a large share of highly educated employees may have a positive effect on the innovative behaviour of enterprises.

7.6 People with disabilities

The average share of employees with a disability is very low across all size classes. The average shares show an increase with firm size, from 1% of the employees for micro enterprises to 2% of the employees for large enterprises¹. Relatively speaking, this is a large difference (the share in large enterprises is twice as high as in micro enterprises). This would indicate that people with disabilities are much more likely to find employment in large enterprises than in micro enterprises. The differences between the size classes, however, are too small to be statistically significant. So based on the results from the Enterprise Survey 2010, the conclusion is that the share of employees with a disability is equally low amongst all enterprises from all size classes.

¹ Enterprise Survey 2010.

8 The quality of employment

8.1 Remuneration

8.1.1 Remuneration systems

The remuneration of employees can include various components, which can be classified into the following three categories:

- Fixed wage: this includes any specific payment arrangements for overtime, working in shifts, working at night, working during holidays, etcetera.
- Performance-related payments: wage payments that are related to the performance of individual employees, groups of employees or the company as a whole, where performance may be measured either objectively (through observable measures of production) or subjectively (through evaluations).
- Employee (or fringe) benefits: various non-wage benefits for employees, for example employer-provided housing, health insurance, day care facilities and educational funding.

Generally speaking, remuneration systems in micro and small enterprises across Europe tend to be simple and straightforward. Medium-sized and large enterprises tend to have more elaborated and advanced remuneration systems. In comparison with the United States, European SMEs show a lack of attention to profit-based payment systems¹. The next two sections present indicators on wage levels and the usage of performance-related payments. Due to a lack of sufficient data, employee benefits are not discussed.

8.1.2 Wage levels

Employees in SMEs tend to receive lower wages than employees in large enterprises. This stylised fact is true for virtually all European countries and the US². From the 28 countries on which size class information on wage levels is available, the only exception to this rule is Slovakia, where the average wages for SMEs and large enterprises are virtually the same (Figure 35). The size class wage gap (measured as the ratio between the wage levels in SMEs and large enterprises) varies between 60% for Bulgaria and 100% for Slovakia, and is only just related to GDP per capita (the correlation is 0.19). As can be expected, the average wage levels are highly correlated with GDP per capita (the correlation is 0.82).

Within the size class of SMEs, the relationship between enterprise size and average wages is less straightforward. For 11 of the countries considered, micro enterprises on average pay higher wages than small enterprises³. There is also a similar non-linear relationship between wages and enterprise size in the US,

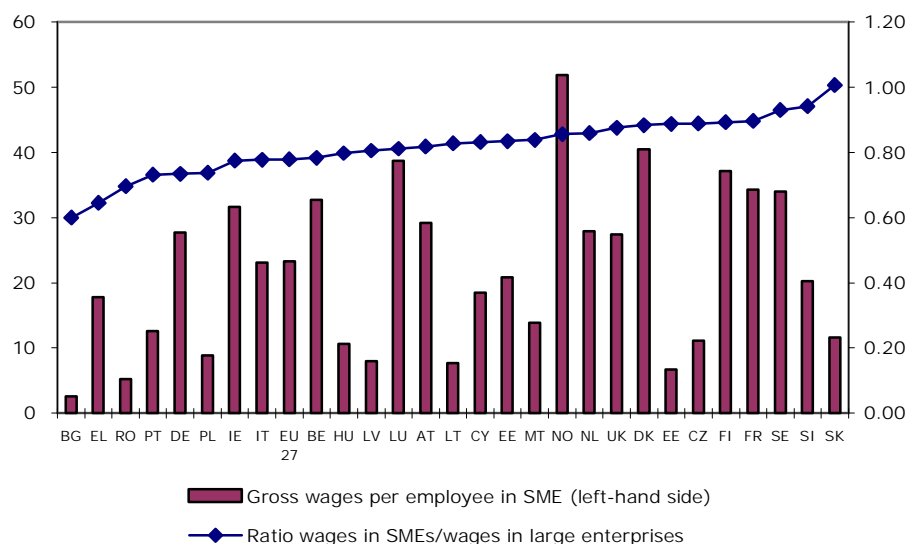
¹ Interview with Prof. P. Edwards, labour expert in the UK.

² Butani, S.J., R.L. Clayton, V. Kapani, J.R. Spletzer, D.M. Talan and G.S. Werking (2006), "Business employment dynamics: tabulations by employer size", *Monthly Labour Review* February 2006.

³ Austria, Bulgaria, Cyprus, France, Ireland, Latvia, Lithuania, Norway, Slovakia, Sweden and Romania (Source: European Commission: *European SMEs under Pressure*, Annual report on EU Small and Medium-sized Enterprises 2009).

where weekly wages in establishments with fewer than five employees are on average larger than in establishments with 5 to 9 or 10 to 19 employees¹.

Figure 35 Gross wages per employee (x € 1,000) for SMEs in the non-financial business economy (NACE c-i, k) and the ratio of gross wages per employee between SMEs and large enterprises, by country (2008)



Source: European Commission: European SMEs under Pressure, Annual report on EU Small and Medium-sized Enterprises 2009.

One of the explanations for the observed size class wage gap is that the nature of the jobs varies between size classes. Size classes differ in enterprise characteristics (including sector), job characteristics (including number of hours worked per week) and employee characteristics (including educational level). Even if similar wages are paid for similar employees in similar jobs, these factors may cause average wages to differ between size classes. Nevertheless, to some extent, average wages vary between size classes because smaller enterprises pay lower wages for similar employees in similar jobs than larger enterprises do. Various factors have been identified that contribute to this firm size wage premium. The main factors are²:

- Labour productivity increases with firm size, for example due to an increase in the capital/labour ratio, due to benefits of specialisation and because larger firms invest more in firm-specific human capital.
- Larger firms have more financial resources, which enables them to pay higher wages.
- Efficiency wages: for larger firms it is more difficult to monitor the conduct, behaviour and performance of each individual employee closely. This introduces the risk of shirking behaviour by employees. To prevent this, larger

¹ Butani, S.J., R.L.Clayton, V.Kapani, J.R.Spletzer, D.M.Talan and G.S Werking (2006), "Business employment dynamics: tabulations by employer size", Monthly Labour Review February 2006.

² Oi, W.Y. and T.L. Idson (1999), "Firm size and wages, Handbook of Labour Economics", Vol.3, Part 2, Chapter 33; Carrasco-Hernandez, A. and G. Sanchez-Marin (2007), "The determinants of employee compensation in family firms: empirical evidence", Family Business Review 20 (3); De Kok, J.M.P. and A. Roepers (2007), "The relevance of size, gender and ownership for performance-related pay schemes", EIM Research Report H200722, Zoetermeer: EIM.

- firms pay higher wages (that way, employees have more to lose if their shirking behaviour is found out, which makes it less attractive for them to shirk).
- Ownership: family owned and managed firms pay lower wages than their direct competitors, and they make less use of performance-related pay systems. Since family owned and managed firms are relatively often SMEs, this partially explains the size class wage gap.¹

Box 11: Low wages and high unemployment

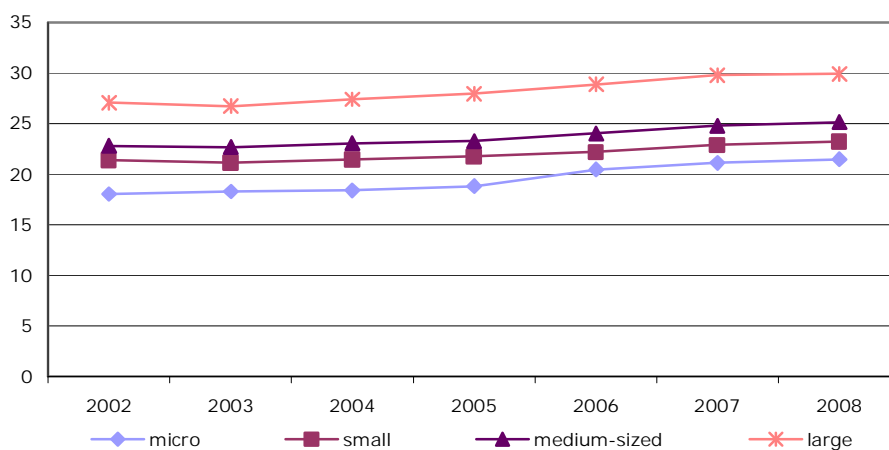
In Bulgaria, Estonia, Lithuania and Romania, the average wage per employee is less than € 10,000. At the same time, unemployment levels in these countries are high. This might suggest a causal relationship: firms can offer low wages, because the reservation wages of people without employment in these countries are low (the reservation wage is the lowest wage rate at which a worker would be willing to accept a particular type of job). Other explanations, however, are also possible. For example, in Bulgaria it has been noticed that despite the high unemployment levels, firms currently find it very hard to fill vacancies for low-skilled jobs. The low wages are apparently not due to the high unemployment levels, but due to the low added value of these jobs. This is particularly true for micro enterprises: their revenues do not allow them to offer higher remuneration levels. The lowest wage levels can be found in the tourism sector (where SMEs prevail) and other sectors where mainly low-skilled jobs are present. These low wage levels result in high emigration, especially of young and qualified persons.

Source: Interview with Prof. K. Vladimirova, labour expert in Bulgaria.

Developments over time

From 2002 to 2008, wages in the EU27 Member States continuously increased within all size classes (Figure 36). Although the micro enterprises are catching up somewhat, the ratio of gross wages per employee between SMEs and large enterprises has remained fairly constant during this time span.

Figure 36 Gross wages per employee (x € 1,000) in the EU27 non-financial business economy (NACE c-i, k), by size class (2002-2008)



Source: European Commission: European SMEs under Pressure, Annual report on EU Small and Medium-sized Enterprises 2009.

¹ Carrasco-Hernandez, A. and G. Sanchez-Marin (2007), "The determinants of employee compensation in family firms: empirical evidence", Family Business Review 20 (3); De Kok, J.M.P. and A. Roepers (2007), "The relevance of size, gender and ownership for performance-related pay schemes", EIM Research Report H200722, Zoetermeer: EIM.

In the last quarter of 2008, the growth rate of wages per employee became much smaller (but still remained positive). In Ireland and the Baltic States, average wage rates actually declined two years in a row^{1,2}. This slowdown reflects both a reduction in the growth rate of wages per hour and a reduction in the number of hours worked per employee. This indicates that there is at least some wage flexibility (where wage flexibility is interpreted as the degree of responsiveness of wage costs to economic conditions)³.

8.1.3 Performance-related payments

Pros and cons of performance-related pay schemes

With performance-related payments, the financial reward for an employee is partially dependent upon the performance of that employee, of the performance of a group of employees, or on the performance of the company as a whole. The underlying idea is that when two people are hired for the same task and one person substantially outperforms the other, this superior contribution should be rewarded financially. Formulated differently, performance-related pay reflects the traditional "a fair day's pay for a fair day's work"⁴. Survey evidence suggests that employers as well as employees generally support this principle⁵.

Enterprises may use performance-related payments for a variety of reasons. The first and most common reason to apply performance-related pay is to motivate employees to increase their efforts and to improve their personal performance. By making employee compensation dependent upon (determinants of) organisational performance, employees have a direct interest in improving organisation performance. Another reason for using performance-related payment is that such payment schemes may help to attract and retain skilled employees. Enterprises may communicate their application of performance-related payment in the hope of selecting employees who consider themselves to be high performers. In addition, performance-related pay may signal a wish for employees with an entrepreneurial spirit. A final reason for using performance-related payment is that it introduces (downward) wage flexibility. This applies in particular to performance-related payment schemes where employee wages are related to the financial performance of the organisation as a whole (such as profit sharing schemes). Such schemes reduce the financial risk of the organisation by transferring part of this risk to the employees. This argument is least often mentioned by employers⁶.

¹ 2008q2-2009q2 and 2009q2-2010q2.

² European Commission (2010), "Employment in Europe 2010", DG Employment, Social Affairs and Equal Opportunities, Brussels, page 48.

³ Data relating the level of wage flexibility to firm size is not available.

⁴ LeBlanc, P.V. (1994), "Pay for Work: Reviving an Old Idea for the New Customer Focus", *Compensation and Benefits Review*, Vol. 26, No. 4.

⁵ Mamman, A. (1997), "Employee Attitudes toward Criteria for Pay Systems", *The Journal of Social Psychology*, Vol. 35, No. 1.

⁶ In 2009, 14% of managers from establishments that applied profit-sharing schemes responded that downward wage flexibility had been a major motivation for applying these schemes. By comparison, the argument of increasing employee motivation was mentioned by 63%. (Eurofound (2009), "European Company Survey 2009 overview", Dublin, Chapter 3).

However, there is also serious concern that these advantages are often not met in practice. The effect of a performance-related pay scheme for a specific organisation strongly depends on how it is designed and implemented. When this is not done properly, performance-related pay can have a negative effect on employees' intrinsic motivation, self-esteem, motivation to participate in teamwork, and creativity. Furthermore, performance-related pay may motivate employees to focus excessively on what is being measured. Particularly if outcome measurability is low, this may come at the expense of performing activities that may be just as relevant for organisational performance, but are not being measured. In other words, it may lead to dysfunctional behaviour¹. Finally, there are also concerns amongst employees regarding the fairness of pay allocation decisions².

Smaller firms less likely to apply performance payment

Smaller firms are less likely to have performance payment systems in place than larger firms. This can be concluded from the results of the European Company Survey 2009. This survey identifies, amongst others, establishments with performance-related pay schemes where wages are related to the performance of individual employees or groups of employees (team or department). The results show that the share of enterprises with such performance-related pay schemes in place increases from around 33% for enterprises with 10 to 19 employees, to 57% in enterprises with 500 or more employees. In smaller establishments, the schemes are more often applicable to the whole workforce, whereas in larger establishments they are more often limited to a specific share of the workforce.³

Although these results include public as well as private enterprises, the results are likely to reflect differences between private enterprises from different size classes. This is confirmed by the finding of a similar size class effect for the usage of profit-sharing schemes, which are only reported for private enterprises: the share of private-sector establishments with a profit-sharing scheme in place ranges from 12% for enterprises with 10-19 employees to 27% for enterprises with 250 or more employees.⁴

Independent of size, establishments with employee representation and establishments with foreign ownership were found to be more likely to practise performance payment or have a profit-sharing scheme in place than those without employee representation or foreign ownership⁵.

¹ Prendergast, C. (1999), "The Provision of Incentives in Firms", *Journal of Economic Literature* Vol. 37, No. 1.

² Lowery, C.M., Petty, M.M., Thompson, J.W. (1996), "Assessing the Merit of Merit Pay: Employee Reactions to Performance Based Pay", *Human Resource Planning*, Vol.19, No.1.

³ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 3).

⁴ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 3).

⁵ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 3).

8.2 Job flexibility

Flexibility refers to the flexibility of employers and employees to continuously adapt to changing economic circumstances. This flexibility may occur through changes in the number of jobs (external numerical flexibility), changes in hours worked and in other working arrangements (internal numerical flexibility), changes in job contents (functional flexibility) and changes in the wage levels (wage flexibility). Job flexibility can be seen as the combination of internal numerical flexibility and functional flexibility.

The importance of job flexibility has become very clear over the past few years. For the EU as a whole, approximately 40% of the reduction of total hours worked that occurred after the crisis was due to job flexibility (the remaining 60% was due to employment reduction). This reduction in hours per worker is one of the reasons why the employment contraction during the past two years was much weaker than the overall fall in economic activity. This reduction mainly occurred between the second quarter of 2008 and the second quarter of 2009; during the following twelve months, there was a slight increase in the average working hours¹.

A reduction in hours worked can be due to a reduction of overtime hours, using short-time working arrangements or a reduction of the length of the standard work week (for example, by converting fulltime jobs to part-time jobs). This section presents information on these types of job flexibility during 2010.

8.2.1 Working overtime

Working overtime is the most traditional way for enterprises to achieve a certain amount of internal numerical flexibility. By changing the amount of overtime, enterprises can react quickly to temporary workload peaks. Between spring 2008 and spring 2009, working overtime occurred in just over two-thirds of all establishments (public as well as private) in the EU². Within the establishments where working overtime occurred, on average almost half of all employees were involved in overtime work.

Working overtime occurred somewhat more in larger enterprises than in smaller enterprises. On the other hand, in the larger establishments overtime affected a smaller part of the workforce than in smaller establishments³. Combined, these findings suggest that the share of employees involved in working overtime did not vary much between size classes. This is consistent with available results showing that the share of enterprises with considerable overtime (more than 20% of workers working overtime in the past 12 months) increased only slightly with firm size (from 48% for small enterprises to 52% for large enterprises)⁴.

¹ European Commission (2010), "Employment in Europe 2010", DG Employment, Social Affairs and Equal Opportunities, Brussels, page 42.

² This refers to all establishments of enterprises with at least 10 employees.

³ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 1).

⁴ The European Company Survey 2009 did not collect data on the overall volume of overtime per establishment. A more precise estimate of the amount of working overtime for enterprises from different size classes is therefore not available.

Differences between sectors are not very large either: in practically all sectors, approximately two thirds (between 61% and 74%) of establishments had overtime work between spring 2008 and spring 2009. This suggests that the difference between public and private establishments is also limited (and thus, that working overtime occurred in about two thirds of establishments from the private sector), but this is not explicitly mentioned.

The variation between countries is considerably larger than the variation between sectors and size classes. In Germany, the Netherlands and the Nordic countries, working overtime occurs in well over 75% of all establishments. In most Southern and Eastern or Central European countries overtime is much less widespread (especially in Bulgaria, Latvia, Lithuania and FYROM, where working overtime occurred in 30% to 40% of all establishments). Exceptions to this rule are the Czech Republic and Italy, where the share of establishments with overtime work was above the EU average¹.

8.2.2 Working part-time

On average, 18% of the employees of an enterprise work part-time. This share varies somewhat between size classes, but the differences are limited. Within micro enterprises, 18% of the employees have a part-time contract, as compared to 14% for large enterprises (Table 23). Working on a part-time basis is least common in manufacturing, construction, wholesale and transport & communication (varying between 13% and 15%). Working part-time is most common within the personal services sector (24%), although here also fulltime is still the dominant contract type.

Table 23 Share of people working for enterprises on a part-time basis, in the EU37 business economy, by size class (2010)

Size class	Average share
Micro (2-9)	18%
Small and medium (10-249)	15%
Large (250+)	14%
Total	17%

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Just as with working overtime, the variation between countries is considerably larger than the variation between sectors and size classes. The percentage of employees working part-time varies from less than 5% for Montenegro, Croatia, Serbia, Turkey and Slovenia to more than 20% for Belgium, Germany, Iceland, Italy, the Netherlands, Poland and the United Kingdom. What is specific for the Netherlands is that in this country part-time work is not limited to low-skilled workers, but is also relatively common amongst highly educated employees².

¹ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 1).

² European Commission (2010), "Employment in Europe 2010", DG Employment, Social Affairs and Equal Opportunities, Brussels.

Country differences can be explained in part by differences in their innovation performance and GDP growth rate in 2010: the share of part-time employees is particularly low in the least innovative countries (Table 24) and particularly high in countries where GDP growth was relatively low in 2010.

Table 24 Share of people working for enterprises on a part-time basis, in the EU37 business economy, by country classification in innovation performance groups (2010)

Innovation performance	Average share
Modest innovators	5%
Moderate innovators	19%
Innovation followers	18%
Innovation leaders	21%
Total	18%

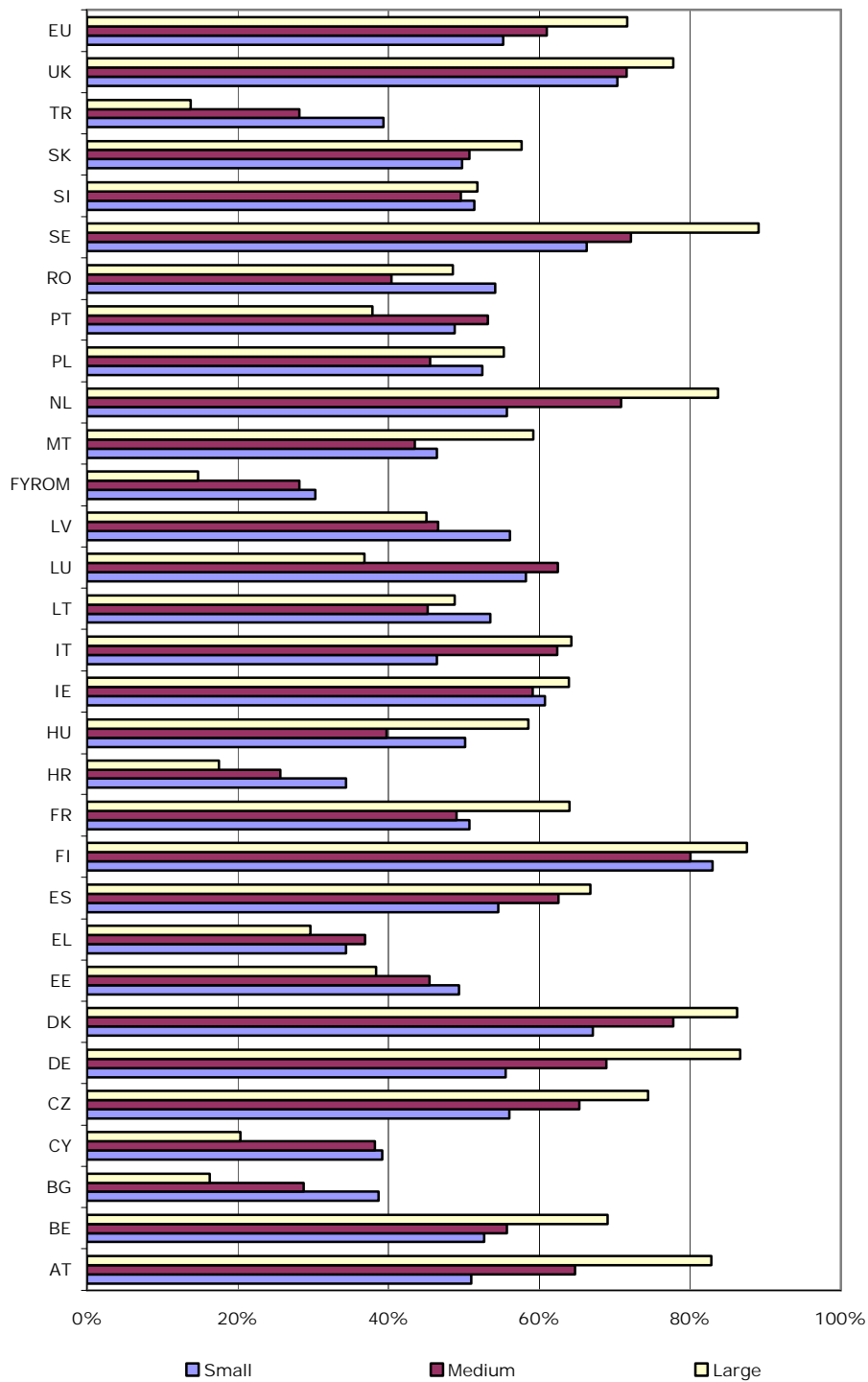
Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance groups based on Innovation Union Scoreboard (2010).

8.2.3 Flexitime arrangements

Flexitime arrangements are arrangements that offer employees the possibility to adapt the time when they begin or finish their daily work according to their personal needs or wishes. More than the previous two indicators discussed, this indicator demonstrates the willingness of employers to consider the requests of employees to balance their working schedule with their private activities.

For the EU as a whole (covering private as well as public establishments), flexitime arrangements are more often found amongst large enterprises than amongst small enterprises. There are, however, several countries where the opposite is true, including two of the three Baltic States (Latvia and Estonia), several Eastern European countries (including Bulgaria, Cyprus, Croatia and the Former Yugoslav Republic of Macedonia) and Turkey (Figure 37).

Figure 37 Share of establishments with flexitime arrangements, in EU Member States plus Croatia, Turkey and the Former Yugoslav Republic of Macedonia (FYROM), by size class (excluding micro enterprises) (2009)



Note: Flexitime stands for establishments offering employees the possibility to adapt the time when they begin or finish their daily work according to their personal needs or wishes.

Source: European Company Survey 2009 (Eurofound).

8.3 Job security

Job security represents a very important dimension for workers' perceptions of job quality. Previous studies on working conditions, job satisfaction and quality of life concluded that the issue of security (including job security and income security) is the key element affecting people's quality of life in a straightforward manner¹. The most widely used indicator to measure job (in)security is the percentage of workers with temporary positions². In this section two indicators are presented regarding workers with temporary positions: the share of enterprises working with temporary work agencies, and the share of enterprises employing staff with fixed-term contracts. First, however, a different indicator is introduced: job losses due to firm deaths.

8.3.1 Job losses due to firm deaths

An indicator that is especially relevant when comparing size classes is the risk of losing one's job due to firm death. Although it is not possible to present accurate estimates of this risk³, it is clear that this risk is higher for employees in the SME size class, and in particular in micro and small enterprises. For example, in 2003 more than 80% of all jobs lost due to firm deaths occurred in enterprises employing fewer than 20 employees⁴, while these size classes employ a far smaller percentage of total employment (the size classes of micro and small enterprises together account for 50% of total employment).

8.3.2 Working with temporary work agencies

Amongst large enterprises, it is rather common to hire workers from temporary work agencies. Small and medium-sized enterprises, and especially micro enterprises, make much less use of this possibility (Figure 38). Size class differences are also present regarding the share of workers from temporary work agencies (relative to the total workforce of enterprises⁵), but these differences are much smaller: amongst micro enterprises, 1.6% of the workforce consists of workers from temporary work agencies, as compared to 1.8% for small and medium-sized enterprises and 3.8% for large enterprises⁶. This size class difference is much smaller, because for smaller enterprises, hiring a worker from a temporary work agency has a relatively larger effect on the size of its workforce than for larger enterprises.

Amongst SMEs, the share of enterprises that hired workers from temporary work agencies decreased during 2010, while this share increased somewhat amongst larger enterprises.

¹ Drobni, S., B. Beham and P. Präg (2010), "Good job, good life? Working conditions and quality of life in Europe", *Social Indicators Research* 99.

² European Parliament (2009), "Indicators of job quality in the European Union", DG Internal Policies, page 132.

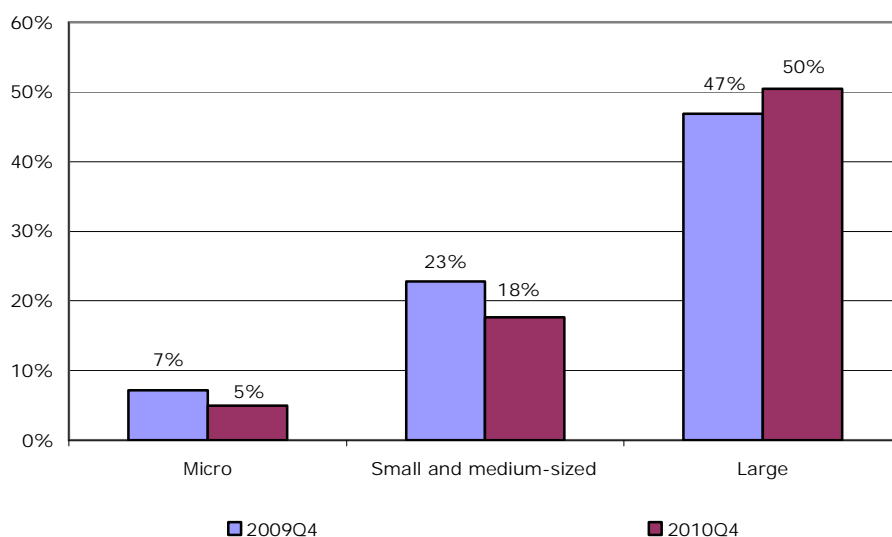
³ There are no comprehensive data on the employment effect of enterprise birth and death in the EU; see also Chapter 4.3.

⁴ Harmut Schrör, *Business Demography: the impact on employment*, Eurostat, *Statistics in Focus* 2007/49. Data refer to 16 out of 27 Member States, accounting for 52% of total employment in the non-financial business economy.

⁵ The workforce of an enterprise is defined here as the sum of the number of employees and the number of workers hired from temporary work agencies.

⁶ Source: Enterprise Survey 2010.

Figure 38 Share of enterprises that employ employees from temporary work agencies, for enterprises in the EU37 business economy, by size class (2009q4 and 2010q4)



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Temporary employment is affected very strongly by the crisis. For example, in 2008 only 14% of employees in the EU were temporarily employed, but they accounted for 44% of the overall reduction in the number of employees from the second quarter of 2008 to the end of 2009. During the first quarter of 2010, temporary employment started to recover again¹. As a result, caution should be used when interpreting the figures presented in this section: the identified size class differences may be due to structural size class differences, but could also be due to differences in the reaction of enterprises from different sizes to the crisis and to differences in the speed of recovery.

8.3.3 Employing employees with fixed-term contracts

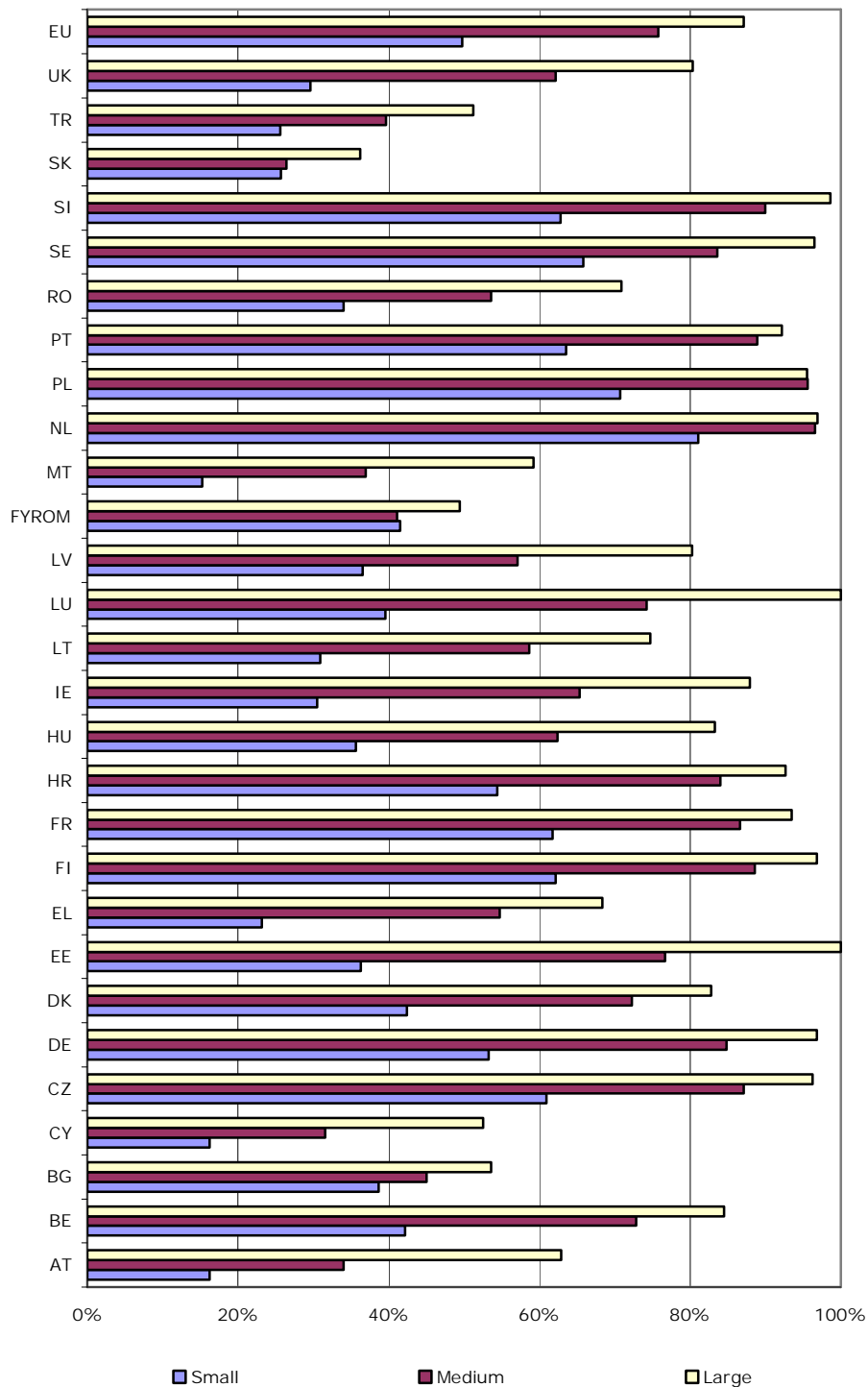
Fixed-term contracts are mostly used when new employees are recruited. Since large firms are more likely to have recruited employees during the past year than SMEs (see also Section 5.3), it can be expected that the share of enterprises employing staff with fixed-term contracts also increases with firm size. This is indeed the case. During 2009, 50% of small enterprises in EU27 employed staff with fixed-term contracts, as compared to 75% for medium-sized and 87% for large enterprises (Figure 39). No data are available for micro enterprises.

The share of enterprises employing people on a fixed-term contract ranges from less than 20% in Austria and Cyprus to 75% or more in Poland and the Netherlands. Across all countries, this share is lower amongst small enterprises than amongst medium-sized and large ones, but in some countries the differences between medium-sized and large enterprises are very small. This is true for Portugal (where the difference is 3%) and in particular for the Netherlands and Poland (where the difference is less than 0.5%).

¹ European Commission (2010), "Employment in Europe 2010", DG Employment, Social Affairs and Equal Opportunities, Brussels, page 41.

Again, the extent to which these statistics represent structural differences between size classes and countries and the extent to which they reflect different reactions to the crisis is not clear. Nevertheless, the results indicate that during 2009 job insecurity was higher amongst large enterprises than amongst SMEs.

Figure 39 Share of enterprises that employed staff with fixed-term contracts during the past 12 months, for public and private sector enterprises in EU Member States plus Croatia, Turkey and the Former Yugoslav Republic of Macedonia (FYROM), by size class (excluding micro enterprises) (2009)



Source: European Company Survey 2009 (Eurofound).

8.4 Employee participation

8.4.1 Coverage of collective labour agreements

For most enterprises and most employees, wages are set by means of collective wage agreements. It is estimated that 67% of all employees in the private sector of the 27 Member States are covered by a collective wage agreement¹. The variation between countries is, however, considerable: the share of employees in the private sector that is covered by a collective wage agreement varies from more than 90% in Italy and Slovenia to less than 20% in Latvia and Bulgaria (and in Turkey as well)². There is also a considerable size class effect: the coverage of wage agreements ranges from 65% for small enterprises to 74% for medium-sized enterprises and 81% for large enterprises. These statistics include enterprises from the public as well as the private sector³. It is not clear how large the differences between enterprises from different size classes are within the private sector.

8.4.2 Employee representation

Regarding employee representation, all EU countries show the same pattern: employee representation is more common amongst larger firms than amongst smaller firms. On average, the percentage of enterprises in EU27 with employee representation in place varies between 34% for small enterprises to 72% for medium-sized and 88% for large enterprises. This large difference between small enterprises on the one hand and medium-sized and large enterprises on the other hand, is probably related to legislation (wherein micro and small enterprises may be exempted from certain obligations). Larger enterprises are also more likely to consult employees in case of changes in the remuneration system, the organisation of the work process, working time arrangements, or the introduction of restructuring measures, but these differences are not very large⁴.

Again, the differences between Member States are large. For example, the share of small enterprises with employee representation in place ranges from less than 5% in Greece and Portugal to almost 65% in Denmark⁵.

¹ Eurofound (2009), "European Company Survey 2009 overview", Dublin (Chapter 4).

² Source: tables with selected findings from the ECS 2009 survey at <http://www.eurofound.europa.eu/surveys/smt/ecs/results.htm>.

³ For some countries, notably Bulgaria, Croatia, Luxembourg, Latvia and Malta, the difference between the coverage rate in the private and public sector exceeds 30% points; for Latvia it is actually more than 50% points (12% versus 65%).

⁴ For example, in the case of changes in the organisation of the work process, the share of enterprises that consulted employees ranges from 81% for small enterprises to 84% for medium enterprises and 88% for large enterprises. For the other changes, the size class differences are similar. Source: Eurofound, tables on Companies consulting employees, by company size, based on ECS 2009.

⁵ Source: Eurofound, table on Companies with employee representation by company size, based on ECS 2009.

8.5 Skills development

8.5.1 Training and development activities

Rapid changes in production technologies and customer demands require that employees constantly keep their skills up-to-date. To ensure that this is the case, enterprises can make use of various types of training and development activities.

The most common training methods within SMEs are on-the-job training and self-directed learning. For these training activities, more than half of all European SMEs mentions that they have been applied for some or many of their employees in the previous year. Somewhat less common are enterprise-provided training courses. These have been used in about half of all European SMEs. Activities like mentoring programmes, job rotation, learning cycles, study visits and exchanges or secondments are not common practice amongst SMEs (Figure 40).

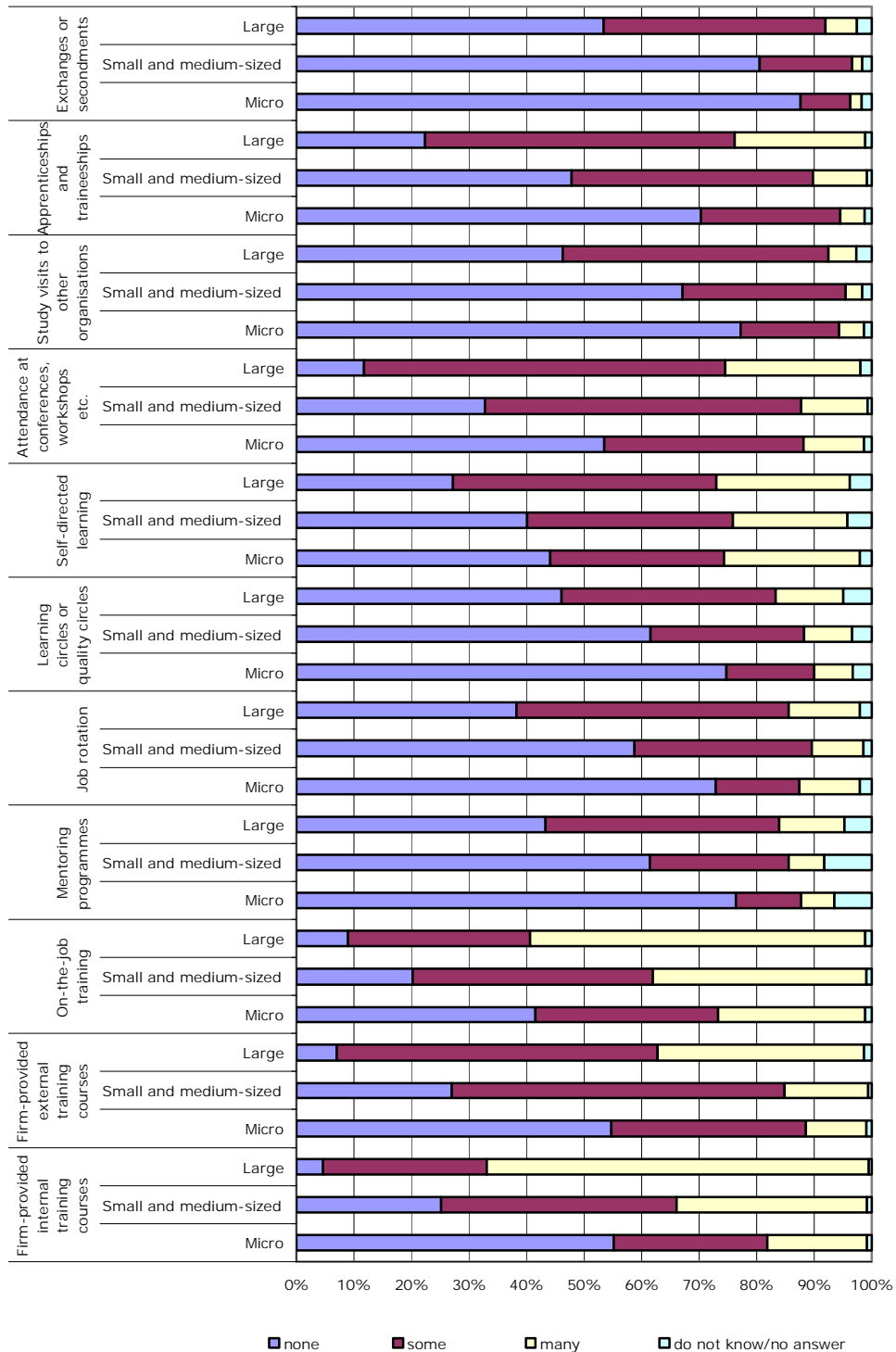
For large enterprises, the most common training methods are on-the-job training and internal and external training courses. These activities are in use at more than 90% of all LSEs. Least common are mentoring programmes, learning circles, study visits and exchanges: 43% to 53% of all LSEs has not made use of these activities during the past year.

These findings suggest that micro and small enterprises have a preference for less formal training activities, especially in comparison to large firms. This is also the conclusion from a recent study on training activities in the UK. According to this study, "Formal training is indeed limited in small firms, and links between formal practices and outcomes in terms of workers' skills are much weaker than they are in large firms. There is some evidence that informality acts as a substitute, and that small-firm workers are more satisfied with training opportunities than their large-firm counterparts."¹

Additional analyses show that the usage of training activities is related to various characteristics of the workforce and of the enterprise. Regarding the workforce, enterprises with a higher share of full-time employees, of employees with a high educational level, and of young employees are more likely to use training activities. Regarding the enterprise, training activities are more likely amongst larger enterprises and innovative enterprises. Innovation is not only relevant at the micro level, but also at the macro level: training activities are used more often by more employees in countries with a higher score on the Innovation Union Scoreboard 2010. This applies to all of the training activities considered here.

¹ Edwards, P. (2010), Skills and the small firm: a research and policy briefing, UK Commission for Employment and Skills.

Figure 40 Usage of different training and development activities by enterprises during 2009Q4 - 2010Q4, for none, some or many of the enterprises' employees, in the EU37 business economy, by size class (2010)



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

The relationship with a country's GDP per capita is mixed. Training activities such as internal training courses, on-the-job training, mentoring and study visits to other organisations are just as likely to occur in countries with relatively low lev-

els of GDP per capita as in countries with relatively high levels (controlling for other characteristics). The usage of external training activities, job rotation, learning circles and self-directed learning is more likely for enterprises from countries with high GDP per capita levels.

Who is responsible?

Who should be responsible for investments in training? Different points of view are possible, depending on who benefits most from training.

- If training is mainly used to obtain general human capital, employees are assumed to be the primary beneficiaries of the economic gains of training investments: an increase in general human capital should increase their wage (either within their current firm or at another firm). In this case, it is often argued that employees should be primarily responsible for following an adequate amount of training activities.
- If training is mainly used to obtain firm-specific human capital, the primary beneficiary of the increase in human capital is the enterprise. In this case, the enterprise can be held responsible for providing an adequate amount of training to its employees.
- If the social benefits to training exceed the private benefits (because of positive external effects of training. This may occur if, for example, better educated employees are less often unemployed and therefore require less social security support), then it can be argued that government may offer (financial) support.

In practice, different countries make different choices. In the Netherlands and Germany, for example, employers, employees and government often work together. In Anglo-Saxon countries the investment in one's career is seen as the employee's own responsibility. This applies even more so for employees in the US¹.

8.5.2 Why enterprises do not provide training courses

Despite the importance of keeping the knowledge and skills of the workforce up-to-date, a considerable percentage of (especially small and medium-sized) enterprises did not provide internal or external training courses to any of their employees in the past year.

It is often mentioned that small firms lack the (financial or human) resources to conduct a proper personnel management². This lack of resources would then explain why small firms participate to a lesser extent in training activities than larger firms do. Another reason why small enterprises would participate less in training activities is that they fear to "train for the competition": employees might leave the enterprise after they completed their training. However, neither of these two assumptions is supported by results of the Enterprise Survey 2010. When asked, the reason mentioned most often for not providing training courses is that employees already possess all the required skills (Table 25). This answer is provided by more than half of all enterprises that did not provide any training courses. Smaller enterprises are more likely to provide this answer than larger enterprises, but still about half of all large enterprises provided this answer. In

¹ Interview with D. Grijpstra, labour expert in the Netherlands.

² SKRAT consortium (2010), SKRAT - Good practice manual, Frankfurt, page 21.

addition, enterprises from non-EU countries, enterprises that do not innovate and enterprises with a high share of elderly employees were more likely to provide this reason. Only 6% of the micro enterprises (and even less amongst larger enterprises) do not provide training out of fear of "training for the competition".

Table 25 Main reasons for not providing training courses, for enterprises from the EU37 business economy, by size class (2010)

	Micro (2-9)	Small and medium (10-249)	Large (250+)	All size classes
Employment change				
Employees have all the required skills	62%	56%	49%	62%
Training and development activities would not produce any benefits	27%	22%	35%	26%
Financial costs of training	27%	34%	48%	27%
Lost working time while workers are being trained	25%	20%	24%	25%
Unable to cover work while workers are being trained	21%	20%	12%	21%
Lack of information about training opportunities	12%	9%	13%	12%
Can't find suitable external training and development	13%	11%	9%	13%
Lack of space or skills to provide internal training and development activities	10%	4%	2%	9%
Fear of trained workers leaving the enterprise	6%	4%	3%	6%
Lack of interest of employees in training and development activities	13%	22%	14%	14%
Other reasons	17%	16%	23%	17%
Total	100%	100%	100%	100%

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

8.6 Employment quality and the enterprise and public context

It has been possible to examine several indicators on employment quality concerning their relationship with characteristics of the individual enterprise (size, age, sector, country and innovativeness) and of the enterprise workforce (gender, age and educational level)¹. These characteristics represent the enterprise context and the public context within which the employment quality should be evaluated. The employment quality indicators are: the share of employees working part-time; the share of enterprises hiring employees from temporary work-agencies; and participation in internal training courses, external training courses, on-the-job training and self-directed learning.

¹ Regression analyses have been performed for available indicators from the Enterprise Survey 2009. Depending on the measurement level of the dependent variable, the regression technique used is ordinary least squares (in case of a scale variable), a logit regression (in case of a nominal or dummy variable) or a multinomial logit regression (in case of an ordinal variable). More information on these analyses can be found in the methodological report of this study.

The average scores on the various indicators are indeed related to the specific enterprise context. First of all, the multivariate analyses confirm the size class effects that have already been indicated in previous tables in this chapter. Large firms employ a higher share of full-time employees, are more likely to employ workers from temporary work agencies, and are more likely to provide their employees all four training activities considered. Sectoral differences are also present, but firm age is not related to the various indicators. Apparently, the quality of the employment relationship does not improve when firms exist longer: in other words, young firms do not seem to have a disadvantage regarding established enterprises. Just like firm age, the gender distribution of the workforce is scarcely related to the scores on the employment quality indicators. Age and educational level of the employees, however, are. Firms with a higher share of older employees tend to invest less in internal training courses and on-the-job training (but not less in external training courses or self-directed learning) and employ fewer employees with part-time contracts. Firms employing more employees with higher educational levels tend to offer more training to their employees (regarding all four training activities examined) and also employ fewer employees with part-time contracts. Finally, innovative firms also provide more training activities to their employees. These firms are also more likely to employ workers from temporary work agencies.

Despite all of these relationships between employment quality and the enterprise context, it is often the public context that seems to matter most. Within the international context of this study, firm size and country by far account for the largest share of the variation in the data. Other aspects of the enterprise context are less relevant.

Only a few indicators could be used to examine the relationship between employment quality and (enterprise and public) context. It is therefore not possible to generalise the findings to quality of employment in general. In addition, the analyses that have been performed implicitly assume that the relationships between enterprise context and employment quality are the same for all countries. This assumes a certain level of homogeneity that may very well not exist. For example, the relationship between educational level of employees and the share of employees working part-time may very well differ between countries depending on wage levels, the availability of adequate childcare facilities and other institutional arrangements.

9 Job quality and the quality of work

9.1 Job quality

The indicators presented in the previous chapter provide unique insight into the employment quality. Indicators on employment quality have been measured before, but this is the first time that employment quality has been considered from an enterprise perspective, with a focus on size class differences.

The main research question of Part B, however, is not whether SMEs provide jobs with a better employment quality, but whether SMEs provide jobs with a better overall quality. This involves not only employment quality, but also work quality. The indicators discussed in the previous chapter are not sufficient to answer this research question. Therefore, another method, or rather another indicator has to be used: the reported job satisfaction by employees.

Employee job satisfaction may be interpreted as an overall assessment of employees regarding the quality of their jobs. In Chapter 6, several arguments were made as to why job satisfaction is not a suitable indicator for international comparisons. The institutional context, culture, and the way the data is gathered differ considerably between countries, and these differences affect the levels of self-reported job satisfaction. However, this becomes considerably less problematic when levels of job satisfaction are compared between size classes, rather than between countries: employees from different size classes within individual countries are faced with the same institutional context, culture and data gathering process.

Previous studies on job satisfaction indicate that job satisfaction tends to be higher for employees from smaller enterprises¹. Data from the European Community Household Panel on Member States from EU15 confirms that job satisfaction amongst employees is higher within SMES than within large enterprises, at least during the period 1994-2001². This is consistent with the finding from Section 7.2 that micro enterprises most often report that they have a competitive advantage over their competitors regarding the working climate in their enterprises.

This answers the research question for Part B: based on the available information on reported job satisfaction, the conclusion seems justified that the quality of jobs is highest amongst SMEs.

¹ Storey, D. J., G. Saridakis, S. Sen-Gupta, P.K. Edwards and R.A. Blackburn (2010), "Linking HR formality with employee job quality: The role of firm and workplace size", *Human Resource Management* 49.

² Millan, J.M., J. Hessels, A.R. Thurik and R. Aguado (2011), "Determinants of job satisfaction across the EU15: a comparison of self-employed and paid employees", EIM Research Report H201101, EIM, Zoetermeer.

9.2 Quality of work

Overall conclusion on employment quality...

Part B began with the observation that the quality of a job is often treated as a multidimensional concept. The results from the Enterprise Survey 2010 confirm that this is indeed the case. At the level of individual enterprises, the various quality indicators that are based on this survey are hardly correlated with one another. This means that if enterprises score relatively high on one of the indicators of quality of jobs (for example, providing training courses to employees), this does not guarantee (or even hint) that the enterprise will also score relatively high on other indicators of quality of jobs (for example, the possibility of working part-time). In such cases, building a composite index does not add much to the general understanding of what is going on. It may even result in an oversimplification of the issue by offering a one-dimensional index for a multidimensional phenomenon.

For this study, no attempt is made to construct an overall indicator on employment quality. Nevertheless, the results suggest that the employment quality is not higher amongst SMEs than amongst large enterprises: for seven aspects of employment quality, the indicator scores are highest amongst large enterprises, while only three aspects are highest amongst SMEs (Table 26).

... results in a tentative conclusion on quality of work

If overall job quality is higher amongst SMEs, while the employment quality is not, then the conclusion seems to be that SMEs score particularly high regarding the quality of work.

The quality of work concerns the actual tasks employees carry out. Suggested indicators include aspects of the environment and conditions under which the tasks are performed, such as physical working conditions, health variables and risks of accidents. Available statistics on health and safety at work suggest that SMEs do not score relatively high on these indicators. In 2007, the standardised incidence rate of accidents at work (pertaining to accidents resulting in 4 days of absence or more) was highest for medium-sized and small enterprises (3.73 resp. 3.67); somewhat lower for large enterprises (3.36), and lowest for micro enterprises (2.26)¹. This incidence rate has declined since 2000, but the differences between size classes have remained the same.

Given these results, the main reasons why job satisfaction is higher amongst SMEs than amongst large enterprises must be related to aspects such as work autonomy and the meaningfulness of the work. Experts confirm that it is particularly the "soft" side of the work relationship that is valued highly by employees in SMEs. Employees seem to value the face to face relationships in SMEs positively, and most managers at SMEs are not autocratic².

¹ Source: Eurostat, Standardised incidence rate of accidents at work by economic activity and size of enterprise, for EU15 plus Norway. The incidence rate represents the number of persons who had an accident at work per 100,000 employees.

² Interview with Prof. P. Edwards, labour expert in the UK.

Table 26 Main outcomes of indicators on employment quality, for EU37 business economy (2010)

Area	Indicator	Size class with highest indicator score
Remuneration	Wage levels	LSE
	Usage of performance-related pay schemes	LSE
Job flexibility	Working overtime	LSE
	Working part-time	SME
	Flexitime arrangements	LSE
Job security*	Employing from temporary work agencies	SME
	Usage of fixed-term contracts	SME
	Job losses due to firm death	LSE
Employee participation	Coverage by collective labour agreements	-
	Employee representation	LSE
Skills development	Usage of training and development activities	LSE

- Based on the available information, the size class with the highest indicator score cannot be determined.

* Indicators used to measure job security actually measure job insecurity; this table reverts the scores so that they indicate the size class for which job security is highest.

Source: EIM.

This is of course a tentative conclusion. Amongst other reasons, it assumes that the indicators on employment quality discussed in the previous chapter capture all relevant aspects of employment quality, which is not certain. Furthermore, job satisfaction may also depend on aspects of the enterprise context: characteristics of the enterprise (or entrepreneur, in the case of SMEs) that affect the well-being of employees, which are not aspects of individual jobs. An example of such a contextual variable has been offered by one of the experts interviewed for this study¹. He suggested that job satisfaction is relatively high amongst SMEs because the organisational stability is higher: in smaller firms, strategies change less often and mergers and take-overs occur less often, resulting in more stable environments. Nevertheless, the suggestion that the "soft" side of the work relationship is better amongst SMEs, and that this would result in higher levels of job satisfaction amongst employees from SMEs (and, hence, in "better jobs") is a compelling one, which is substantiated by several experts.

¹ Interview with Prof. P. Edwards, labour expert in the UK.

10 Conclusions and policy recommendations

The main conclusions drawn from the research findings in this report are presented in this section. In addition, policy recommendations that follow from these conclusions are discussed. These recommendations are placed in the context of the Small Business Act (SBA) and the Europe 2020 strategy. A brief sketch of this context is provided first to improve readability. Next, some general conclusions and policy recommendations are presented. Following these, separate sections focus attention on "more jobs" and "better jobs".

10.1 Towards even more and even better jobs in SMEs

Small Business Act for Europe

In June 2008, the Small Business Act (SBA) for Europe was adopted¹. The aim of the Act is "to improve the overall approach to entrepreneurship, to irreversibly anchor the 'Think Small first' principle in policy making from regulation to public service, and to promote SMEs' growth by helping them tackle the remaining problems which hamper their development." The Act includes a framework of measures carried out at EU level and Member States level. The most relevant principles on which it is based in the context of this study are:

- Create an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded.
- Make public administrations responsive to SMEs' needs.
- Promote upgrading of skills in SMEs and all forms of innovation.
- Encourage and support SMEs to benefit from the growth of markets.

The SBA review was presented in February 2011². The most relevant new actions suggested were in the area of promoting entrepreneurship, job creation and inclusive growth.

Europe 2020 Strategy for smart, sustainable and inclusive growth

On 3 March 2010, the Commission launched the "Europe 2020 Strategy for smart, sustainable and inclusive growth."³ Europe 2020 is the EU's growth strategy for the coming decade, which entails transforming itself into a smart, sustainable and inclusive economy leading to high levels of employment, productivity and social cohesion. The strategy presents concrete actions to be taken at the EU and the national levels. Smart growth refers to fostering knowledge, innovation, education and digital society. Sustainable growth refers to making EU production more resource efficient while improving competitiveness and inclusive growth focuses on raising participation in the labour market, the acquisition of skills and fighting poverty.

¹ The Council's Action Plan for a Small Business Act for Europe, http://ec.europa.eu/enterprise/policies/sme/files/docs/sba/sba_action_plan_en.pdf

² Communication from the Commission to the European Parliament, the Council, Economic and Social Committee and the Committee of the Regions, Review of the "Small Business Act" for Europe, Brussels, 23.2.2011, COM(2011) 78 final

³ http://ec.europa.eu/europe2020/tools/flagship-initiatives/index_en.htm

In total seven flagship initiatives are to be developed. The activities to be undertaken as part of the Europe 2020 strategy will improve job creation by SMEs and quality of jobs provided by SMEs, although these measures are not specifically aimed at SMEs. The most relevant flagships for this study are the Innovation Union and the Agenda for new skills and jobs. Under the latter, the actions mentioned¹ are aimed at improving the functioning of the EU labour market through:

- stepping up labour market reform to improve flexibility and security of labour markets ("flexicurity");
- giving people and businesses the right incentives to invest in training to continuously upgrade people's skills in line with labour market needs;
- ensuring decent working conditions while improving the quality of employment legislation;
- ensuring the right labour market conditions, such as fewer administrative burdens or lowering the taxes on labour and mobility, are in place for job creation.

10.2 Research conclusions match current EU policies

Conclusions

Research findings are in line with current EU policies and practices. The fact that SMEs provide more jobs justifies specific attention for this group. Innovative SMEs and Member States are more able to withstand the crisis.

In addition, internationally active SMEs are more innovative and report higher employment growth.

Conclusions on better jobs are less clear. In terms of (general) job satisfaction, SMEs perform better. Other aspects like training show that SMEs perform worse. Aspect such as this form complex issues for SMEs, many of which do not employ specialised human resource management (HRM) staff.

A crucial difference between the "more jobs" and the "better jobs" part is that conclusions from the "more jobs" part are roughly the same for all countries, while differences between countries in the "better jobs" part are larger than differences between size classes and sectors of industry.

Policy recommendations

The conclusions support the EU2020 strategy and the SBA. Specific recommendations follow. The conclusion regarding the degree to which Member States are comparable implies that policy at EU level is instrumental for creating more jobs. However, creating better jobs is a national policy issue, which may be facilitated by EC coordination. Progress, a program run by DG Employment designed to support the development of EU policies in employment, working conditions, gender equality, social protection and social inclusion and non-discrimination and diversity uses a so-called open method of coordination and is already targeting a number of the relevant issues.

¹ <http://ec.europa.eu/social/main.jsp?catId=958&langId=en>

10.3 SMEs (to) create more jobs

1 SMEs are providing more jobs

Conclusions

In 2010 about 87 million jobs, 67% of total employment in the non-financial business economy, in the European Union were provided by SMEs. About 33% were provided by LSEs.

As SMEs grew more than LSEs between 2002 and 2010, SMEs' share in employment rose. Overall, between 2002 and 2010, the total number of jobs in the non-financial business economy increased by 1.1 million annually. Corrected for the population effect caused by enterprises changing size class due to growth or shrinkage, about 0.9 million of these newly created jobs can be attributed to micro, small and medium-sized enterprises. This is 85% of total employment growth in the non-financial business economy in the EU. Consequently, SMEs had a much higher employment growth rate (1% annually) than large enterprises (0.5% a year) between 2002 and 2010. Within the SME-sector, the highest growth rate was found in micro enterprises (1.3% annually).

The employment growth rate of SMEs lies at a higher level than the growth rate of total EU population (about 0.4% annually over 2002-2010) and the corresponding growth rate of the total EU active population (0.8%).

Policy recommendations

The conclusions justify policies targeted at improving the business environment for SMEs.

2 Huge net impact of enterprise birth

Conclusions

Enterprise birth and death play a very important role in terms of job creation. The net impact of birth and death together is small, but Eurostat estimates the gross number of jobs created through enterprise birth as higher than total net employment growth: for the total non-financial business economy a direct effect of 4 million, or 3% of total employment, was estimated.

In the period 2004-2008, most employment growth was generated by newly born SMEs (up to 5 years old in 2008). Employment growth of newly born enterprises more than compensated for the employment destruction caused by enterprise deaths across all age groups (but of which a majority also took place in the group of newly-born enterprises). Net employment growth of newly born enterprises was 17.5 million, whereas total destruction by deaths is estimated at 8.9 million.

Young enterprises (5 up to 10 years old) grew at a much slower pace. This pattern was seen in all sectors of industry. In business services and retail, this effect was stronger than average. In wholesale trade the newly born enterprises grew at a lower rate. Young wholesale trade enterprises grew more than average. Employment of established SMEs (10 years and older in 2008) declined by an average of 7% in the same period.

Taking into account the growth of newly born enterprises (< 5 years old), 85% of the jobs created during the first five years of enterprises still existed when the enterprises were five years old. This figure includes employment – created and lost - by enterprise that died before they could cross the five year mark, roughly 50% of all start-ups.

Policy recommendations

Stimulating enterprise birth has a clear connection to the first principle of the SBA. The actions formulated under this principle, both for the Commission and the Member States, focus specifically on stimulation of entrepreneurship. Follow-up measures are included in the Review of the SBA. This study does not provide grounds to revise the current policies at EU level. A noteworthy result for policies at country level is the tendency of enterprises in wholesale trade to grow at a lower rate but over a longer period.

At the high end of entrepreneurship, governments can specifically stimulate ambitious, innovative start-ups by facilitating the commercial exploitation of scientific discoveries. This includes encouraging universities to establish science parks, technology offices, business incubators and venture funds.

More extensive and effective entrepreneurship education seems sensible for promoting all sorts of entrepreneurship.

Many micro enterprises without personnel appear not to grow. It is not completely clear what the reasons for this are. It is likely some do not want to grow and some perceive barriers. Guiding these enterprises, or rather entrepreneurs, to cross this barrier may well result in substantial additional growth. Reducing risks of hiring and firing and making the involved processes easier are important elements. Reducing risks is related to making labour markets more flexible and predominantly requires changes in national legislation.

An easier process of hiring and firing fits in the framework of the Think Small First principle: specific characteristics of SMEs are considered in developing new legislation and in simplification of existing legislation. In this context the Commission has set the ambition to reduce the administrative burdens on business by 2012. This includes adopting tailor-made approaches, especially for micro and small enterprises. Follow-up actions on this principle are included in the Review of the 2011 SBA.

By making the process of hiring and firing easier, the external numerical flexibility of enterprises will increase. At the same time, this may result in a decrease of job security, as is recognised by the Commission: "The increasing importance of new and flexible employment patterns may conflict with some of the main dimensions of job quality like job security, possibilities of further training and career prospects. The challenge is to combine flexibility with security in ways that benefit workers and companies."¹

¹ European Commission (2001), Employment and social policies: a framework for investing in quality, Commission Communication COM (2001) 313, Brussels, page 9.

3 Established enterprises are stable in most years

Conclusions

Over the period 2004-2008, established SMEs (10 years or older) showed a decrease in employment. However, one quarter of this group had an increase in employment. In five years time, total increase of employment for this group was 40%. Considering the fact that the group of established SMEs contains about half of all SMEs and employs close to 60% of all employees working in SMEs, it is clear that this is a group to be reckoned with.

Over the whole period 2004-2008, both growing and shrinking established SMEs showed a consistent growth pattern. The group of growing established SMEs had an increase in employment every year. The shrinking SMEs had a decrease in employment every year. However, further analysis made clear this only holds for the groups, not for single enterprises. Most enterprises were stable for 3 years during the four year period and had only one year of growth or decline. Only 3% of the growing established SMEs increased employment each year.

Policy recommendations

The results above show both the relevance of this group to employment growth and the apparent difficulties in identifying the growing enterprises. General enterprise stimulation policies will be useful, but targeting the group of growing established enterprises will be difficult.

4 Crisis: smaller enterprises report negative impacts more often

Conclusions

The main effects of the economic crisis during 2009 and 2010 were the overall negative effect on total demand, the increase in customer payment terms and the problems with obtaining finance. Smaller enterprises more often mentioned negative effects of the crisis than larger enterprises.

More than large enterprises, SMEs held on to their employees. Most SMEs did not fire staff as a result of the crisis. As production declined in SMEs as well as in large enterprises, it can be concluded that the average SME currently has overcapacity. Consequently, it can be expected that recovery in SMEs will be slower than in large enterprises. This is more the case as recovery in 2010 was primarily export led. SMEs are less influenced – at the least directly - by export developments.

Policy recommendations

Under principle 6 of the SBA, various actions are taken to improve the access to finance and reduce late payment. Financial support schemes are set up by the Commission as well as by the Member States. As described in the SBA review, further actions are taken to address SMEs' financing needs.

Considering the budget deficits of national governments, support of demand is not a realistic option. Better access to government procurement for SMEs is, however, a realistic alternative. This should be a priority for institutions at both the European and the Member State level. Actions under principle 7 (SBA) are formulated to encourage SMEs to benefit more from the single market, principle 9 focuses on the exploitation and opportunities of the green markets and energy

efficiency and principle 10 focuses on the benefits resulting from the growth of markets outside the EU.

5 Innovativeness is a weapon against the crisis

Conclusions

Being innovative has proved to be a good defence against the crisis: the crisis has had less negative impact on more innovative enterprises. This conclusion holds at country level: innovative countries have experienced less negative impact. Due to a very strong correlation between the two characteristics, the same is true if competitiveness is considered. Also, when they are active in internationalisation or have concrete plans to become active, SMEs report an employment growth of 7% versus only 1% for SMEs without any actual or concrete plans for international activities.

Policy recommendations

The evidence strongly supports important elements of both SBA and Europe 2020 strategy. Although some of the actions taken in the framework of Europe 2020 strategy are aimed at the business sector as a whole and not specifically at SMEs, they will directly or indirectly benefit the SME sector.

- Under principle 8 (SBA), actions are taken to improve innovation by SMEs through investment in research, participation in R&D support programmes, clustering and active industrial property management.
- The aim of the Innovation Union (Flagship action 2, EU 2020 strategy) is to "improve conditions and access to finance for research and innovation in Europe, to ensure that innovative ideas can be turned into products and services that create growth and jobs."
- The aim of the industrial policy for the globalisation era (Flagship action 5, EU 2020 strategy) is "to boost growth and jobs by maintaining and supporting a strong, diversified and competitive industrial base in Europe offering well-paid jobs while becoming less carbon intensive."

6 SMEs employ different employees and thus provide better jobs

Conclusions

SMEs, specifically micro enterprises, appear to play a different role on the labour market. They report different competitive advantages over large enterprises and use different processes of recruiting and selecting new staff. For society as a whole, important consequences appear to be higher percentages of older employees and previously unemployed employees. This seems likely to be related to the softer aspects of working climate and work quality. It also connects better jobs with more jobs: SMEs employ persons less likely to have found a job in a world solely consisting of large enterprises.

Policy recommendations

Governments and SMEs can cooperate to increase participation on the labour market. This should be arranged at a regional level, as SMEs are strongly oriented at this level when recruiting.

10.4 SMEs (to) create better jobs

7 SMEs are providing better jobs

Conclusions

One way to measure the quality of jobs is to directly ask employees about their job satisfaction (how satisfied they are with their current job). Although job satisfaction is not a very suitable indicator for international comparisons, it can be used to compare the job quality for employees from different size classes within countries. A few studies have done so, and the main findings of these studies are that job satisfaction tends to be higher for employees from SMEs as compared to employees from large firms. This leads to the conclusion that SMEs are providing better jobs than large enterprises.

One disadvantage of using job satisfaction to measure quality of jobs is that it is a unidimensional measure, while job quality covers many different aspects. The mere conclusion that SMEs provide better jobs than large enterprises therefore does not provide any direct clues regarding policy measures to improve certain aspects of job quality. This requires additional information regarding the various aspects of job quality.

8 Employment quality in SMEs lower than in large enterprises

Conclusions

Job quality consists of two broad dimensions: employment quality and work quality. Both of these dimensions include a substantial number of aspects. Given the focus on the enterprise as a unit of measure, the results of the study mainly provide information on employment quality. For the majority of the available indicators, large enterprises score better than SMEs. This suggests that the employment quality in SMEs is lower than in large enterprises (at least as far as the aspects that are included in this study are concerned).

The results also show that the scores on the available indicators are barely correlation with each other (or with many enterprise and workforce characteristics). This implies that employment quality is not a unidimensional characteristic of enterprises that can be targeted with general policies. Instead, it is a multidimensional concept, where each specific aspect should be targeted with specific policies.

Policy recommendations

Even though in many aspects the employment quality is lower in SMEs than in large enterprises, this does not necessarily mean that specific policies are required to improve the situation amongst SMEs. Some of the size class differences are inherently related to scale effects. For example, micro and small firms are often exempted from specific social legislation rules (e.g. regarding employee representation or employee participation), because the associated costs for micro and small firms to adhere to these rules are too high. Another example is that job losses due to firm death are higher amongst SMEs than amongst large enterprises. This is directly related to the high levels of entry and exit in the SME size class; the high levels of job losses due to firm exits are more than compensated for by the high levels of job creation due to the entry of new firms. Measures that aim at improving the scores of SMEs on these specific indicators of employ-

ment quality might do more harm than good if they were to increase the costs and bureaucracy for small and micro firms (for social legislation rules) or restrict the process of entry and exit. This does not apply, however, to training investments by SMEs.

9 Improve training investments in SMEs

Conclusions

The importance of education and lifelong learning can hardly be stressed too much. It is important for enterprise to invest in lifelong learning, not only to improve the knowledge and skill levels of employees, but also to improve their employability (either within the firm, or between firms).

The type of training provided differs between SMEs and large enterprises. The most common training methods within SMEs are on-the-job training and self-directed learning. For large enterprises, the most common training methods are on-the-job training and internal and external training courses. Irrespective of the specific training method, the share of employees involved in training and development activities tends to be lower for smaller enterprises than for large enterprises. In addition, training activities are also more likely amongst innovative enterprises, and amongst enterprises from more innovative countries.

The main reason why enterprises do not provide training courses to their employees is that they believe that their employees already possess all the required skills. This argument is mentioned by 62% of all firms. Only a small minority of enterprises (6%) do not provide training out of fear of "training for the competition."

Policy recommendations

One way to stimulate training investments by SMEs might be to assist enterprises in establishing their training needs. Many entrepreneurs may believe that their employees already possess all the relevant skills because they have not given this question any thought. It is conceivable that, once they are stimulated (and supported) to properly determine their training needs for the near future, they will arrive at a different conclusion. The challenge for policy makers is thus to find a way to stimulate individual entrepreneurs to think about the knowledge and skills that they actually need, and the extent to which their current employees already possess these skills.

This coincides with the creation of the "EU skills panorama", which is one of the actions included in flagship initiative 6 "An Agenda for new skills and jobs." The EU skills panorama should help people better see which skills are most needed now and in future. This panorama should not only target employees, but employers as well.

10 Public context dominates enterprise context in scores on employment quality

Conclusions

In terms of policy implications, one very important conclusion is the dominance of public context (culture, economic development, innovativeness and competitiveness, social security, gender equality) over enterprise context (size, sector,

innovativeness, age and educational level of employees). Although both are deemed important, differences in employment quality indicators between countries are in most cases much larger than differences between enterprises within one country.

Policy recommendations

This suggests that EU policies that strive to improve specific aspects of quality of jobs will be more successful if they (also) target the public context, rather than (only) targeting specific size classes.

For example, to improve employee representation, it may be more effective to target countries with low scores (e.g. Greece and Portugal, where the share of small enterprises with an employee representation is less than 5%) rather than targeting SMEs across EU.

11 Flexicurity: undecided

Conclusions

No clear conclusion can be drawn on the size class performance on flexibility and security. The size class of SMEs scores higher on both if changes in the number of jobs are stressed. This is principally due to birth and death, in which SMEs, specifically micros and small enterprises, play a dominant role. The use of temporary work agencies, fixed term contracts and working overtime on the other hand would point to large enterprises as scoring highest on both. Once again it should be noted that the crisis may have had a large impact on the results of these two indicators.

12 Newly born enterprises provide equal job quality

Conclusions

As discussed above, analyses did not show most enterprise characteristics to be correlated in a structural manner to quality indicators. More specifically, young enterprises do not score lower on indicators, with the exception of lower job security resulting from the higher chance of exit. The higher chance of enterprise growth would logically lead to career opportunities, but this topic is not covered in the study. In any case, it is apparent that newly born enterprises provide more jobs without losing (much) on the better job side.

ANNEX I Characteristics of the Enterprise Survey 2010

The Enterprise Survey 2010 was conducted in the final quarter of 2010: a telephone survey of more than 7,500 employer enterprises from 37 different countries. The objective of the questionnaire was to obtain information on relevant indicators on the quality and quantity of jobs at enterprise level, and on the impact of (and the reaction to) the economic crisis that started in autumn 2008. The main characteristics of this survey are presented in this Annex. A more in-depth discussion, as well as the questionnaire, can be found in the separate methodological report on this study.

Questionnaire

The questionnaire includes questions on the following topics:

- general characteristics of the enterprise (sector, age, innovative behaviour);
- general characteristics of the workforce (decomposition by age, educational level and gender; employment of people with a physical or mental handicap);
- indicators on quantity of jobs (number of employees, currently and twelve months ago; working with employees from temporary work agencies, currently and twelve months ago; employees laid off during the past twelve months; employees hired during the past twelve months; expected layoffs and hires for the next twelve months);
- indicators on quality of jobs (attention for training and other forms of life-long learning; main reasons for not providing training, if relevant; employees with part-time contracts; employees with fixed-term contracts; share of newly hired employees that was unemployed for at least one year);
- labour market position of the enterprise (factors making it easier or more difficult to attract skilled employees);
- effects of the crisis (various negative and positive effects encountered during the past twelve months; layoffs due to the crisis; usage of publicly supported employment protection schemes).

The questionnaire was designed in close cooperation between EIM and the European Commission. The final draft version was tested in the UK in early September 2010. After this pilot, several final changes were made to the questionnaire. The fieldwork began by the end of September.

Interviews in the 37 countries concerned were conducted using questionnaires and native speakers in all relevant languages. The average length of the interviews varied by country and language: the French version was relatively long, for instance.

Survey population

The survey covers 37 countries, 3 different size classes and 18 elementary sectors. The countries include all EU Member States plus 10 non-EU states (Albania, Croatia, Iceland, Israel, Liechtenstein, the Former Yugoslav Republic of Macedonia, Montenegro, Norway, Serbia and Turkey) and the three size classes are micro enterprises (2-9 employed persons), small and medium sized enterprises (10-249 employed persons), and large enterprises (250 or more employed persons).

Within the business economy (NACE D, F -K, N, O excl. 91), seven main sectors are distinguished¹. Within some of these main sectors (manufacturing, business services and personal services), a further distinction of elementary sectors is made:

- Manufacturing (NACE Section D), comprised of the following elementary sectors:
 - metal industry;
 - food products, beverages and tobacco;
 - pulp, paper and paper products, publishing and printing;
 - textile and leather;
 - electrical and optical equipment;
 - wood and wood products and furniture;
 - other manufacturing.
- Construction (NACE Section F).
- Wholesale trade (NACE Division 51).
- Retail trade (NACE Divisions 50, 52), including sale, maintenance and repair of motor vehicles and motorcycles, and retail sale of automotive fuel.
- Transport and communication (NACE Section I).
- Business services (NACE Section J, K), comprised of the following elementary sectors:
 - financial intermediation;
 - real estate activities;
 - research and development, computer related activities;
 - other high-skilled business activities (accounting, consulting, market research, architectural and engineering activities, technical testing, advertising and recruitment services);
 - other low-skilled business activities (includes renting of machinery and equipment without operator and of personal and household goods);
- Personal services (NACE Sections H, N and O (excl. 91), comprised of the following elementary sectors:
 - hotels and restaurants;
 - other community, social and personal service activities (excluding activities of membership organisations).

Disproportionate stratified sample

Together, these different countries, sectors and size classes identify 1,998 different combinations. A disproportionate sample plan has been used to guarantee that each of these combinations was included in the final sample. Enterprises were randomly selected from each of the strata.

To allow presenting percentage distributions that indeed represent the situation across the 37 European countries covered by the sample, the results have been weighted using the actual distribution of the 15 million employer enterprises over:

- the three size classes;
- the 18 sectors of industry distinguished;
- the 37 countries.

¹ NACE Rev. 1.1 is used for the sample plan and reporting.

Implementation

After piloting, etc. the actual fieldwork started at the end of September 2010. By December 31, 7,566 interviews had been completed. 11 additional interviews were conducted in January and February 2011 to ensure that enough observations were available in a few quota regarding "micro" and "small and medium-sized" enterprises. Nearly all quota of the sample plan were satisfactorily covered, in particular for micro and small and medium-sized enterprises.

ANNEX II List of experts

The following experts were interviewed on different aspects of more and better jobs for SMEs:

- Prof. Paul Edwards (UK), Professor of Industrial Relations, Warwick Business School, University of Warwick; expert in human resource development, remuneration and general labour trends, amongst other subjects.
- Prof. Katia Vladimirova (Bulgaria), Professor at the Management and Marketing Department, University of National and World Economy, Sofia; expert in flexibility of the labour market, remuneration, working time arrangements, informal economy, amongst other subjects.
- Mr. Ciprian Fartusnic (Romania), Institute of Educational Sciences, Boekarest; expert in flexibility of the labour market, human resource development and training, public policy for SME support, amongst other subjects.
- Mr. Michael Holz (Germany), Institut für Mittelstandsforschung (IfM), Bonn; member of the ENSR network.
- Mr. Douwe Grijpstra (Netherlands), member of the management team of Research voor Beleid; expert in human resource development and training in SMEs, future challenges for SMEs, amongst other subjects.

ANNEX III Decomposition of employment changes by size class

Measuring employment growth by enterprise size class

At the macro level as well as by sector of industry, employment growth is the balance of job creation on the one hand and job destruction on the other. Job creation and destruction may occur because of employment change in incumbent enterprises or because of entry and exit of enterprises.

An enterprise size class is defined as a population of enterprises that falls within certain size class boundaries at a specific point in time. Available data measure employment by size class in a certain year as the total employment in all enterprises that belong to that size class in that particular year. By comparing such employment figures for, say, SMEs, in two years t_0 and t_1 , one compares the number of employed persons in enterprises in the SME population in t_0 with the number of employed persons in enterprises in the SME population in t_1 . However, enterprises can cross size class boundaries at any time. The incumbent SMEs at time t_1 may have been large enterprises at time t_0 ; conversely, enterprises that had fewer than 250 employed persons at time t_0 (and thus were SME at that time) may have become large enterprises at time t_1 . Comparing employment figures for SMEs in the two years t_0 and t_1 therefore includes the impact of previously large enterprises that became SME (positively affecting the measured employment change in the SME population), as well as the impact of enterprises that previously were SMEs that have become large (negatively affecting the measured employment change in the SME population). This example shows that changes in the employment level of a certain size class can be attributed to either one of two different causes:

- changes in the level of employment of individual enterprises: job creation and destruction by enterprises (including entry and exit of enterprises);
- changes in the classification of enterprises in size classes: the population effect.

Once the impact of one of these causes is known or estimated, the impact of the other can be calculated by subtracting the known effect from the measured employment change in the size class under review.

Decomposing employment changes by size class: adjusting for the population effect

To what extent have enterprises from different size classes contributed to gross or net employment changes? To what extent are employment changes caused by enterprises from different sizes? Because of the population effect, this question cannot be answered by looking at changes in the employment level of size classes. An adjustment must be made for changes in employment statistics that are due to enterprises crossing size class boundaries.

One way to adjust for the population effect is to classify each enterprise in a single size class for the period between two measurements. This corrects for the population effect, since the number of enterprises in each size class is now constant during that period. The question that remains is how individual enterprises

should be classified into size classes. In the literature¹ one or more of the following three classification methods have been applied:

- 1 Classification by initial size: the size of the enterprise at the beginning of each measurement period determines the size class in which the enterprise is classified;
- 2 Classification by end size: the size of the enterprise at the end of each measurement period determines the size class in which the enterprise is classified;
- 3 Classification by average size: the average of the enterprise's size at the beginning and the end of each measurement period determines the size class in which the enterprise is classified;
- 4 Classification by current size: this approach does not classify enterprises, but directly classifies individual employment changes, based on the size of the enterprise prior to each individual change. Basically, it works as follows: if an enterprise employs 230 persons at t_0 and 255 persons at t_1 , then its employment increase from 230 to 250 is attributed to SMEs, while the employment increase from 250 to 255 is attributed to large enterprises.

Classification by current size solves a series of problems associated with (some of) the other methods. In the first place, classification by initial size and by end size shares the problem that the results are affected by fluctuations around size class boundaries (see text box). This problem does not occur with classification by current size (nor with classification by average size). In the second place, if enterprises are classified into specific size classes (as is the case with the first three methods), the results depend on how often employment is measured. For example, suppose that enterprise A employs 9 employees in January, 11 employees in June, and 15 employees the following January. If for instance employment was only measured each January, classification by initial size would attribute an employment growth of +6 to the size class of micro enterprises. If employment was measured on a semi-annual basis (e.g., January and July), classification by initial size would attribute an employment growth of +2 to the size class of micro enterprises and an employment growth of +4 to the size class of small and medium-sized enterprises. Classification by current size does not suffer from this measurement bias, because it does not involve classifying enterprises in specific size classes. In the third place, classification by current size is the only classification method that can be used to decompose net employment changes by size classes without using micro data.

¹ See the literature review in De Kok, J., G. de Wit and K. Suddle (2006), SMEs as job engine of the Dutch private economy: A size class decomposition of employment changes for different sectors of the Dutch economy, EIM, 2006, Research Report H200601.

Impact of enterprises crossing size boundaries on the size class pattern of employment according to four classification methods: an example

The size of enterprise B fluctuates around the size class boundary of 10 employees. In the first year employment increases from 9 to 14 employees, while in the second year employment drops back to 9 employees.

- Classification by initial size attributes an employment increase of +5 to the size class of micro enterprises in the first year, while the employment decrease of -5 in the second year is attributed to the size class of small enterprises.
- Classification by end size attributes an employment increase of +5 to the size class of small enterprises in the first year, while the employment decrease of -5 in the second year is attributed to the size class of micro enterprises.
- Classification by average size attributes the employment increase of the first year as well as the employment decrease of the second year to the size class of small enterprises.
- Classification by current size attributes an employment increase of +1 to the size class of micro enterprises and an employment increase of +4 to the size class of small enterprises, and for the second year attributes an employment decrease of -4 to the size class of small enterprises and an employment decrease of -1 to the size class of micro enterprises.

In the cases of classification by initial size and by end size, the size class fluctuations of enterprise B do not cancel out over the two years together.

Because of these advantages, classification by current size is used here to adjust for the population effect.

Estimating the population effect using classification by current size

Statistics on changes in the number of enterprises per size class are used to correct for the population effect. The appropriate adjustments are presented in Table 27. A formal proof of these adjustments can be found elsewhere (see previous footnote). Here an intuitive argument is presented. For the largest size class boundary, the net number of times that the boundary between medium-sized and large enterprises is crossed is equal to the change in the number of large enterprises: $\bullet N_l^1$. Hence, the adjustment for the size class of medium-sized (large) enterprises is plus (minus) $\bullet N_l$ (the net number of crossings) times 250 (employment size at the boundary). It is plus $250 \cdot \bullet N_l$ for medium-sized enterprises because the (net) change in the number of large enterprises relates to enterprises that previously were assigned to size class medium-sized, and minus $250 \cdot \bullet N_l$ because previously these enterprises were not yet large enterprises. Similarly, it is clear that the net number of times that the boundary between small and medium-sized enterprises is crossed must be equal to the change in the number of medium-sized and large enterprises together: $\bullet N_{ms+l}$. Hence, the adjustment for the size class of small (medium-sized) enterprises is $\bullet N_{ms+l}$ times 50. The adjustment for the size class of micro (small) enterprises is $\bullet N_{s+ms+l}$ times 10.

¹ Entries and exits of large enterprises are treated as enterprises that move through all size classes and pass all size class boundaries in the process. Changes in the number of large enterprises are therefore due to crossings of the boundary between medium-sized and large enterprises only.

Table 27 Required adjustment for the population effect (classification by current size)

size class	Adjustment	
	for lower boundary	for upper boundary
Micro enterprises (1-9)	0	+ 10 • N_{s+ms+l}
Small enterprises (10-49)	-10 • N_{s+ms+l}	+ 50 • N_{ms+l}
Medium-sized enterprises (50-249)	-50 • N_{ms+l}	+ 250 • N_l
Large enterprises (≥ 250)	-250 • N_l	0 (not applicable)

• N_{x+y} : the net change in the total number of enterprises in size classes x+y; "s" represents small enterprises; "ms" represents medium-sized enterprises; "l" represents large enterprises.

Notice that the value of the adjustment does not depend on the initial or end size of enterprises crossing boundaries. This allows for calculating the adjustment for all enterprises together without the help of micro data.

ANNEX IV Characteristics of the Orbis-Amadeus database

The Orbis and Amadeus databases

The Orbis-Amadeus database is based on two databases, Orbis and Amadeus, which are built and maintained by Bureau Van Dijk (an organisation that specialises in providing company information). The Orbis database contains general information on more than 40 million enterprises in Europe. It includes the following information, amongst others:

- general contact information;
- summary of company details, including number of employees, age of company, legal form, industry and activities (including primary and secondary codes in several local and international classifications);
- financial statistics, in specific formats for corporate, banking and insurance companies;
- ownership information.

The Amadeus database contains even more detailed information for 14 million European enterprises.

Characteristics of the complete Orbis-Amadeus database

The population of interest: size, sector and country

For this study a subset of all enterprises from the Orbis and Amadeus databases has been used. This subset includes enterprises that:

- are included in either the Amadeus or the Orbis database (or in both).
- are located in the EU, in Switzerland or in one of the 10 non-EU countries that are also included in this study.
- are active in the business economy.
- existed at the end of 2008.
- employed fewer than 250 employees at the end of 2008.
- and for which employment statistics were available for 2008.

Demarcation of the business economy

The business economy is made up of the following seven broad areas of economic activity:

- 1 Manufacturing (NACE D);
- 2 Construction (NACE F);
- 3 Wholesale trade (NACE 51);
- 4 Retail trade (NACE 50, 52);
- 5 Transport and communication (NACE I);
- 6 Business services (NACE J and K);
- 7 Personal services (NACE H, N and O).

Together these seven sectors define the business economy (NACE D, F-K, N and O). Notice that NACE Division 91 (Activities of membership organisations, such as professional organisations, trade unions and political organisations) is included as part of the personal services and hence as part of the business economy. In the Structural Business Statistics (SBS) and the Enterprise Survey 2010,

NACE Division 91 is excluded from the definition of personal services and hence of the business economy. Business demography indicators from the SBS indicate that within the EU, NACE Division 91 includes only a relatively small number of enterprises¹. This indicates that the Orbis-Amadeus database covers virtually the same part of the economy as the Enterprise Survey 2010.

Micro enterprises under-represented in Orbis-Amadeus

To a large extent, the Orbis-Amadeus database is based on register data that is obtained from local Chambers of Commerce and/or tax agencies. Micro enterprises in particular are not always obliged to deliver detailed company information (including employment levels). As a result, the Orbis-Amadeus database contains information on most of the small and medium-sized enterprises, but only on a small share of all micro enterprises. This is especially true for enterprises with no employees or only one employee. These enterprises account for a significant part of the actual SME population, but the Orbis-Amadeus database contains relatively few enterprises with fewer than 2 employees. In the analyses it is assumed that the development of enterprises with 2-9 persons employed is representative for all micro enterprises.

The complete Orbis-Amadeus database

The large majority of the enterprises included in the Orbis and Amadeus databases do not meet the criteria required for the Orbis-Amadeus database. In particular, the criteria that the enterprise had to exist at the end of 2008 and that employment information for 2008 had to be available were often not met. Also, many observations relate to enterprises from European countries that are outside the scope of this project (in particular Russia, Belarus and Ukraine). The resulting complete Orbis-Amadeus database includes 2.9 million SMEs from 30 European countries. For the 27 Member States of the EU, 2.6 million observations are available. This complete Orbis-Amadeus database is used to prepare the tables regarding the employment situation in 2008.

The number of observations varies by industry, but especially by country. For Cyprus, Malta and Luxembourg the number of observations is actually so low that these countries are not included in the database. An overview of the number of observations by country and industry is shown in Table 28.

Results weighted to correct for under-representation of smaller enterprises
Micro enterprises in particular are under-represented in the Orbis-Amadeus database. All tables that present employment statistics based on the Orbis-Amadeus database therefore present weighted results, where the weights are based on statistics from the Structural Business Statistics regarding the total numbers of SMEs by size class and sector². This ensures that the overall employment dynamics are representative for the SME population.

¹ The enterprises in NACE Division 91 account for 6% of all enterprises in NACE Section O and 2% of all enterprises in the personal services.

² The weights are calculated by dividing the actual level of SME jobs according to the Structural Business Statistics (within each sector and size class) by the number of SME jobs in the Orbis-Amadeus database. The weights are computed for 2008 and are used back to 2004.

Table 28 Number of observations in the complete Orbis-Amadeus database, by country and industry (2008)

Country	Manufacturing	Construction	Wholesale trade	Retail trade	Transport and communication	Business services	Personal services	Total
Austria	8,199	8,448	6,393	12,360	3,637	26,711	8,355	74,103
Belgium	14,038	18,768	15,760	21,485	6,419	26,332	19,789	122,591
Bulgaria	1,198	552	1,540	981	555	712	339	5,877
Czech Republic	4,371	2,166	4,999	3,894	871	6,522	1,594	24,417
Germany	24,000	15,234	20,211	37,220	9,939	51,371	15,046	173,021
Denmark	6,385	7,690	7,431	6,874	2,369	13,106	4,567	48,422
Estonia	3,151	3,412	2,839	3,012	2,238	4,785	2,110	21,547
Spain	45,003	45,101	34,309	39,155	13,321	59,823	28,627	265,339
Finland	5,051	4,730	3,092	3,604	2,552	7,260	3,268	29,557
France	70,108	90,410	46,798	103,532	21,335	102,474	92,189	526,846
United Kingdom	8,941	3,946	5,207	3,150	2,536	19,064	10,074	52,918
Greece	4,539	935	4,928	1,870	819	1,845	1,951	16,887
Hungary	2,221	971	1,839	1,518	1,142	1,136	277	9,104
Ireland	2,363	1,465	1,670	1,830	482	2,098	582	10,490
Italy	80,741	44,559	40,250	36,132	14,984	58,144	33,518	308,328
Lithuania	6,924	4,745	5,942	14,077	5,783	13,034	8,898	59,403
Latvia	5,550	4,797	5,264	11,532	4,157	13,851	6,277	51,428
Netherlands	9,762	9,012	13,644	7,657	4,125	23,637	4,457	72,294
Poland	2,805	822	2,214	875	393	969	260	8,338
Portugal	31,299	27,420	24,280	43,741	15,157	38,186	37,883	217,966
Romania	40,602	35,105	34,651	84,664	25,687	66,557	31,075	318,341
Sweden	21,293	23,131	17,382	23,304	11,544	58,521	20,431	175,606
Slovenia	2,482	735	2,274	904	690	741	157	7,983
Slovakia	857	445	832	572	191	782	353	4,032
Total EU 27	401,883	354,599	303,749	463,943	150,926	597,661	332,077	2,604,838
Switzerland	22,763	22,681	22,410	29,949	6,146	61,813	16,624	182,386
Croatia	5,116	3,555	5,497	4,372	1,692	4,748	2,366	27,346
Iceland	286	536	196	296	140	549	382	2,385
Liechtenstein	157	67	84	125	31	452	73	989
Norway	8,851	11,978	8,632	15,394	4,613	25,506	12,229	87,203
Serbia	3,863	1,158	3,936	1,387	863	1,291	585	13,083
Total non-EU countries	41,036	39,975	40,755	51,523	13,485	94,359	32,259	313,392
Total Orbis-Amadeus database	442,919	394,574	344,504	515,466	164,411	692,020	364,336	2,918,230

Source: Orbis-Amadeus, Bureau van Dijk.

The restricted Orbis-Amadeus database

The complete Orbis-Amadeus database can be used to present a picture of the employment situation for 2008. For many enterprises, the Orbis-Amadeus database also includes data on the employment history. This offers the possibility of determining patterns of employment changes over time at the level of individual enterprises. This requires a database that contains annual employment information on enterprises for a certain period. The restricted database refers to those enterprises from the complete database for which the required annual employment information is available.

The analysis of employment changes refers to the period 2004-2008. For the case in which employment data is missing for 2004, the enterprise is removed from the database. This is the case for a substantial number of the enterprises from the complete database. Once these are removed, the restricted database includes employment information on 2004 and 2008 for just over one million enterprises from 24 EU countries. No data are available for Cyprus, Malta and Luxembourg. For the non-EU countries, the number of observations in the restricted Orbis-Amadeus database is so small that it is not possible to present average statistics (not even at the level of the non-EU countries as a group). The restricted Orbis-Amadeus database therefore only includes enterprises from the EU. This database is used for the analyses regarding employment changes of individual firms from 2004 to 2008. The majority of these enterprises were established during the period under investigation (from 1-1-2004 onwards); about a quarter of the enterprises in the database (994,000) were established before 1-1-2004 (and still existed on 31-12-2008).

ANNEX V Different country classifications

Classification by EU Membership status

Enterprises are located in individual countries, which in turn can be classified into different country groups. The standard country classification that is used for this study is based on the country's relationship with the European Union. Countries are classified into one of the following three country groups:

- EU15 (the 15 original Member States of the EU).
- EU12 (the 12 Member States that joined the EU after 1990).
- Non-EU countries (these include the following 6 countries: Switzerland, Croatia, Iceland, Liechtenstein, Norway and Serbia. Data was not available for Montenegro, Albania, Israel, the Former Yugoslav Republic of Macedonia and Turkey).

This classification can be reduced to a classification into two groups:

- EU27 (the 27 Member States of the European Union on 2010).
- Non-EU countries.

There are many other criteria that can be used to classify countries into different groups. For this study countries have also been classified based on their relative competitiveness, innovation performance and size class dominance.

Classification by competitiveness

The grouping of countries by competitiveness is based on the Global Competitiveness Report 2010-2011 from the World Economic Forum. The (unweighted) average score on the Global Competitiveness Index for EU27 is used as a threshold (4.7). Countries for which the Global Competitiveness Index is above this threshold are classified as highly competitive countries, and the remaining countries are classified as less competitive countries (Table 29).

Table 29 Classification of countries by competitiveness

Highly competitive countries		Less competitive countries	
Country	Competitive	Country	Competitive
Switzerland	5.63	Iceland	4.68
Sweden	5.56	Estonia	4.61
Germany	5.39	Czech Republic	4.57
Finland	5.37	Poland	4.51
Netherlands	5.33	Cyprus	4.5
Denmark	5.32	Spain	4.49
United Kingdom	5.25	Slovenia	4.42
Norway	5.14	Lithuania	4.38
France	5.13	Portugal	4.38
Austria	5.09	Italy	4.37
Belgium	5.07	Montenegro	4.36
Luxembourg	5.05	Malta	4.34
Ireland	4.74	Hungary	4.33
		Slovakia	4.25
		Romania	4.16
		Latvia	4.14
		Bulgaria	4.13
		Croatia	4.04
		Former Yugoslav Republic of Macedonia	4.02
		Greece	3.99
		Albania	3.94
		Serbia	3.84

Source: Global competitiveness report 2010-2011, World Economic Forum.

Classification by size class dominance

A country is said to be micro, SME, or LSE dominated if either micro, small and medium-sized (taken together), or large-scale enterprises have the largest share in total employment of the non-financial business economy. The majority of countries is SME dominated, six countries are micro-dominated and five countries are LSE dominated (the size class dominance could not be determined for Turkey).

Table 30 Classification of countries by size class dominance

Size class dominance		
Micro	Small and medium-sized	Large
Greece	Austria	Finland
Italy	Belgium	France
Portugal	Denmark	United Kingdom
Malta	Germany	Slovakia
Poland	Ireland	Iceland
Albania	Luxembourg	
	Netherlands	
	Spain	
	Sweden	
	Bulgaria	
	Cyprus	
	Czech Republic	
	Estonia	
	Hungary	
	Latvia	
	Lithuania	
	Romania	
	Slovenia	
	Norway	
	Switzerland	
	Liechtenstein	
	Croatia	
	Former Yugoslav Republic of Macedonia	
	Montenegro	
	Serbia	

Note: The size class dominance could not be determined for Turkey.

Source: Own calculations, based on Structural Business Survey.

Classification by innovation performance

Information on the innovation performance of countries is based on the Innovation Union Scoreboard (IUS) 2010, published by DG Enterprise and Industry. The IUS collects information on 25 different indicators of innovation. These indicators are classified into three main types and eight dimensions:

- Type one: enablers
 - human resources (3 indicators);
 - open, excellent and attractive research systems (3 indicators);
 - finance and support (2 indicators).

- Type two: firm activities
 - firm investments (2 indicators);
 - linkages and entrepreneurship (3 indicators);
 - intellectual assets (4 indicators).
- Type three: outputs
 - innovators (3 indicators);
 - economic effects (5 indicators).

The data used for the IUS 2010 relates to actual performance in 2007 (4 indicators), 2008 (10 indicators) and 2009 (10 indicators). As a consequence, the IUS 2010 does not fully capture the impact of the financial crisis on innovation performance. The scores on the different indicators are used to construct a summary innovation index (SSI). Based on the scores on this index, countries are classified into four different categories of innovation performance (Table 31).

Table 31 Innovation performance of individual countries

Modest innovators	Moderate innovators	Innovation followers	Innovation leaders
Bulgaria	Croatia	Austria	Denmark
Latvia	Czech Republic	Belgium	Finland
Lithuania	Greece	Cyprus	Germany
Romania	Hungary	Estonia	Sweden
Serbia	Italy	France	
Turkey	Malta	Iceland	
Former Yugoslav Republic of Macedonia	Poland	Ireland	
	Portugal	Luxembourg	
	Slovakia	Netherlands	
	Spain	Norway	
		Slovenia	
		United kingdom	

Note: The innovation performance is not determined for Albania, Montenegro, Israel and Liechtenstein.

Source: Innovation Union Scoreboard (IUS) 2010, Annex G.

ANNEX VI Tables on employment changes of individual SMEs

Detailed results employment mutations (2004-2008) by country and industry EU-27

Table 32 SME employment change (%) by industry and country 2004-2008, established enterprises

Country code	Manufacturing	Construction	Wholesale trade	Retail trade	Transport and communication	Business services	Personal services	Total
AT	2.1	-2.2	1.1	1.7	6.9	1.6	3.0	1.6
BE	3.2	9.9	11.1	11.7	10.3	13.3	7.1	9.1
BG	-11.4	4.0	6.6	-5.6	-1.6	-3.3	-18.8	-7.1
CZ	-20.4	-30.8	-12.8	-22.2	-16.5	-20.3	-27.2	-22.0
DE	1.2	-6.4	3.5	2.1	6.7	-0.7	0.1	0.8
DK	1.8	1.4	2.1	4.6	5.0	4.7	4.8	3.2
EE	-5.0	5.6	2.3	1.4	-0.6	-7.6	-3.8	-1.9
ES	-4.1	-7.2	2.6	-3.7	-1.9	0.6	-4.0	-3.1
FI	2.2	-0.6	4.0	1.1	1.3	1.7	-5.0	1.1
FR	-5.0	-0.6	-2.1	-6.2	0.2	-2.6	-5.0	-3.5
UK	-13.2	-6.9	-10.4	-14.9	-10.9	-6.0	-13.6	-10.8
EL	-1.0	-2.9	-0.5	-0.7	-1.6	-3.9	-2.5	-1.7
HU	-	-	-	-	-	-	-	3.9
IT	-3.3	-15.6	-4.4	-7.8	-2.6	-10.9	-4.4	-6.5
LT	-	-	-	-	-	-	-	-7.6
LV	-8.1	20.7	12.6	5.4	16.3	-8.4	2.3	2.5
NL	-0.9	-0.1	0.2	-9.2	6.0	-0.8	-9.5	-0.8
PL	-15.4	-45.2	-10.3	-16.6	-19.2	-31.7	-9.9	-23.0
PT	0.2	6.4	-1.6	-4.6	6.0	8.7	-2.7	1.1
RO	-13.0	12.6	15.3	9.8	8.2	10.0	8.4	1.7
SE	5.6	9.7	6.9	3.4	6.5	2.7	3.7	5.1
SI	0.2	7.7	12.1	8.9	28.7	4.6	2.6	6.0
SK	-	-	-	-	-	-	-	-6.1
Total EU27	-6.8	-12.5	-1.6	-6.6	-3.9	-7.5	-6.3	-6.9

Source: Orbis-Amadeus. n=709,939 observations. Cyprus, Malta, Luxembourg and Ireland not enough enterprises to publish on country level. Hungary, Lithuania and Slovakia not enough enterprises to publish on industry level.

Detailed results of SME employment by industry and growth

Table 33 SME employment dynamics by type of growth EU-12

Main industry	Type of growth	Employment mutation established SMEs (%) 2008-2004	Employment mutation young SMEs (%) 2008-2004
Manufacturing	growing SME	41.3	64.5
	stable SME	0.0	0.0
	shrinking SME	-43.3	-44.2
	Total	-14.9	1.5
Construction	growing SME	50.9	88.3
	stable SME	0.0	0.0
	shrinking SME	-63.5	-54.6
	Total	-32.5	8.9
Wholesale trade	growing SME	56.9	83.5
	stable SME	0.0	0.0
	shrinking SME	-45.3	-45.7
	Total	-3.5	14.8
Retail trade	growing SME	51.9	84.3
	stable SME	0.0	0.0
	shrinking SME	-42.7	-64.3
	Total	-12.5	-18.3
Transport and communication	growing SME	49.9	57.9
	stable SME	0.0	0.0
	shrinking SME	-47.4	-44.5
	Total	-13.3	-8.1
Business services	growing SME	65.1	79.2
	stable SME	0.0	0.0
	shrinking SME	-58.5	-76.5
	Total	-24.3	-26.7
Personal services	growing SME	70.4	62.2
	stable SME	0.0	0.0
	shrinking SME	-38.0	-46.0
	Total	-12.7	1.5
Total	growing SME	51.0	74.0
	stable SME	0.0	0.0
	shrinking SME	-49.2	-58.6
	Total	-17.3	-8.5

Source: Orbis-Amadeus (n= 204,826).

Table 34 SME employment dynamics by type of growth EU15

Main industry	Type of growth	Employment mutation established SMEs (%) 2008-2004	Employment mutation young SMEs (%) 2008-2004
Manufacturing	growing SME	28.7	52.9
	stable SME	0.0	0.0
	shrinking SME	-27.7	-32.3
	Total	-3.7	4.6
Construction	growing SME	38.9	69.0
	stable SME	0.0	0.0
	shrinking SME	-34.5	-43.0
	Total	-4.6	2.2
Wholesale trade	growing SME	36.2	67.2
	stable SME	0.0	0.0
	shrinking SME	-32.3	-36.8
	Total	-1.0	11.6
Retail trade	growing SME	40.1	62.0
	stable SME	0.0	0.0
	shrinking SME	-34.7	-37.4
	Total	-4.2	5.0
Transport and communication	growing SME	40.6	71.6
	stable SME	0.0	0.0
	shrinking SME	-33.9	-41.6
	Total	-0.6	8.3
Business services	growing SME	46.9	80.0
	stable SME	0.0	0.0
	shrinking SME	-39.5	-45.6
	Total	-2.6	9.6
Personal services	growing SME	40.1	58.4
	stable SME	0.0	0.0
	shrinking SME	-35.9	-38.8
	Total	-5.1	0.6
Total	growing SME	37.6	67.1
	stable SME	0.0	0.0
	shrinking SME	-33.4	
	Total	-3.4	5.8

Source: Orbis-Amadeus (n= 789,259).

Table 35 SME employment dynamics by type of growth NON-EU

Main industry	Type of growth	Employment mutation established SMEs (%) 2008-2004	Employment mutation young SMEs (%) 2008-2004
Manufacturing	growing SME	49.9	67.5
	stable SME	0.0	0.0
	shrinking SME	-36.1	-40.3
	Total	1.1	8.9
Construction	growing SME	59.9	78.3
	stable SME	0.0	0.0
	shrinking SME	-39.4	-42.7
	Total	7.9	17.3
Wholesale trade	growing SME	69.3	95.0
	stable SME	0.0	0.0
	shrinking SME	-40.4	-43.6
	Total	13.6	33.2
Retail trade	growing SME	60.1	74.9
	stable SME	0.0	0.0
	shrinking SME	-39.9	-43.7
	Total	6.1	10.1
Transport and communication	growing SME	68.6	90.7
	stable SME	0.0	0.0
	shrinking SME	-41.4	-44.2
	Total	9.1	19.3
Business services	growing SME	73.3	88.3
	stable SME	0.0	0.0
	shrinking SME	-43.3	-43.5
	Total	10.4	19.4
Personal services	growing SME	62.3	71.4
	stable SME	0.0	0.0
	shrinking SME	-45.6	-48.0
	Total	-5.0	0.2
Total	growing SME	61.8	79.9
	stable SME	0.0	0.0
	shrinking SME	-40.0	-43.3
	Total	6.0	14.7

Source: Orbis-Amadeus (n=28,509).

Alternative country groupings

Two alternative country groups are analysed as alternative for the usual country groups.

Table 36 SME type of employment growth by type of growth in established SMEs 2004-2008

Country group	% shrinking established SMEs, period 2004-2008	% stable established SMEs, period 2004-2008	% growing established SMEs, period 2004-2008	% total established SMEs
Less competitive	32.0%	43.5%	24.5%	100%
High competitive	30.3%	42.5%	27.2%	100%

Source: Orbis-Amadeus (n=784,694 observations).

Table 37 SME type of employment growth by type of growth in established SMEs 2004-2008

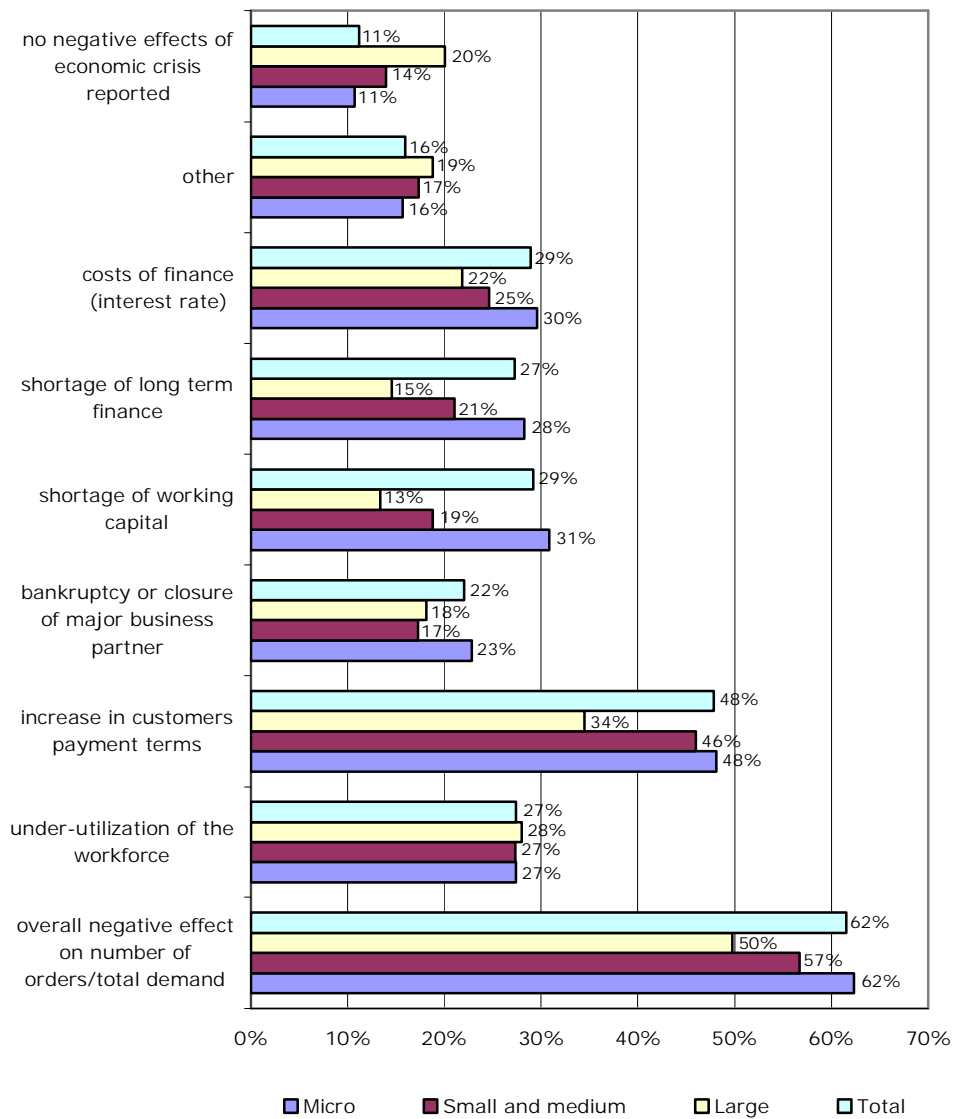
Country group	% shrinking established SMEs, period 2004-2008	% stable established SMEs, period 2004-2008	% growing established SMEs, period 2004-2008	% total established SMEs
LSE	35.6%	39.0%	25.4%	100%
Micro	29.4%	53.9%	16.7%	100%
SME	30.1%	39.3%	30.6%	100%

Source: Orbis-Amadeus (n= 784,694 observations).

ANNEX VII Impact of the crisis: tables for EU Member States

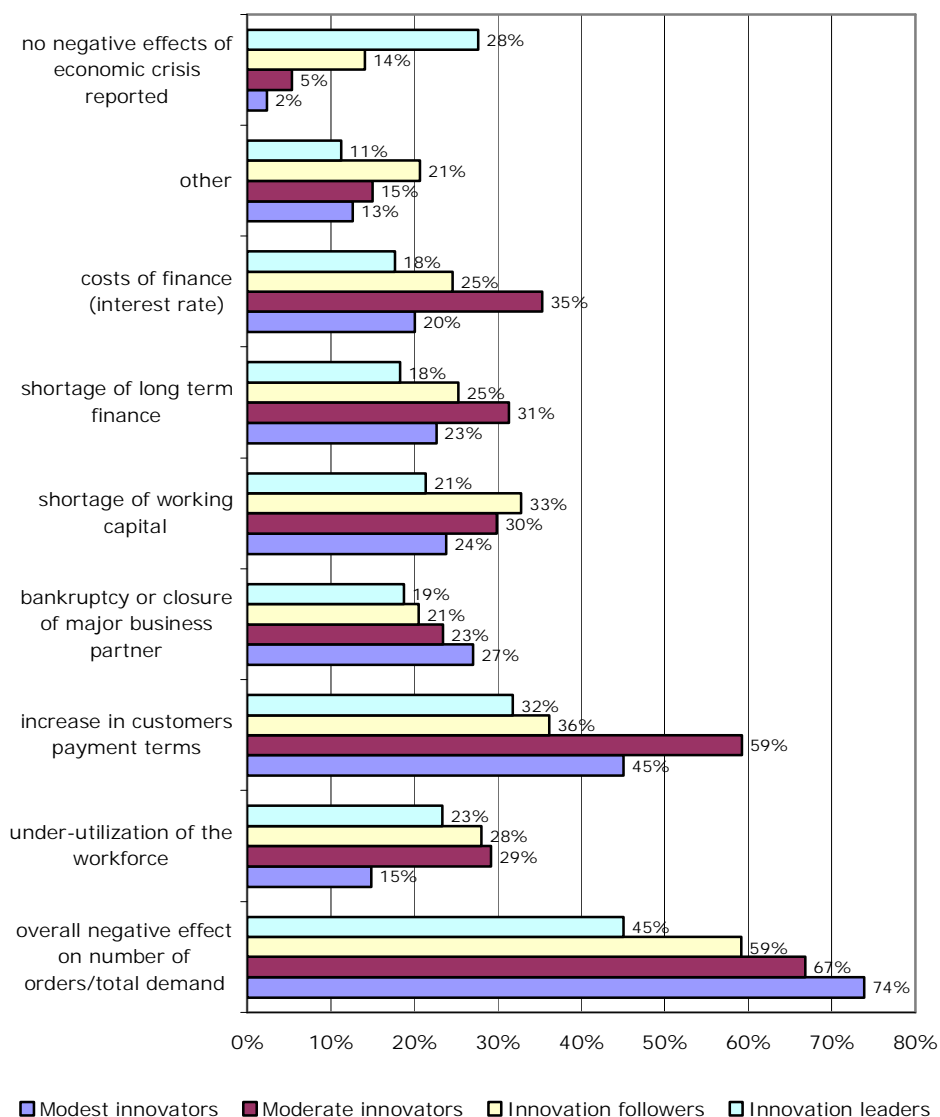
This annex includes figures and tables on the impact of the crisis on enterprise level and on hiring and firing decisions (as discussed in Sections 5.2 and 5.3), specifically for the 27 EU Member States.

Figure 41 Negative effects of current crisis during 2008Q4 - 2010Q4, by size class, for the business economy of the 27 EU Member States



Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

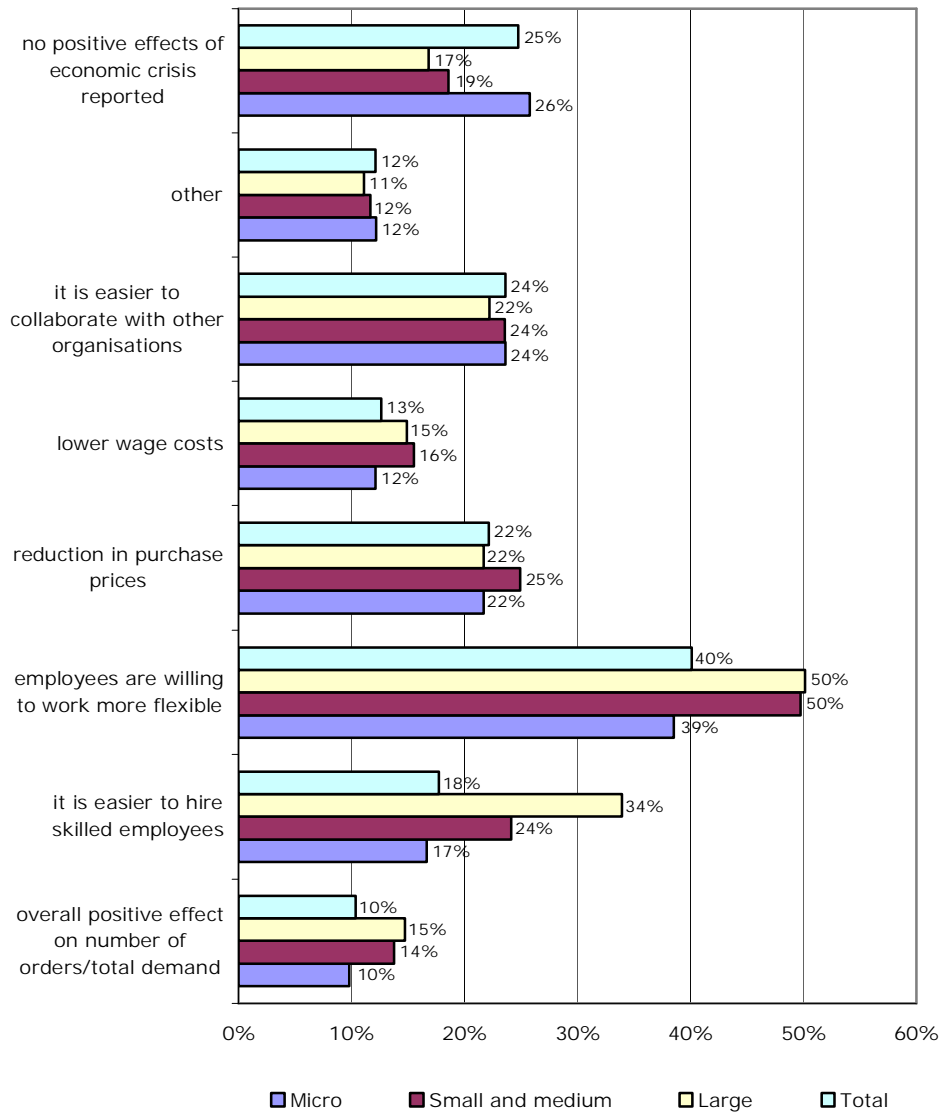
Figure 42 Negative effects of current crisis during 2008Q4 - 2010Q4, by innovation performance, for the business economy of the 27 EU Member States



Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

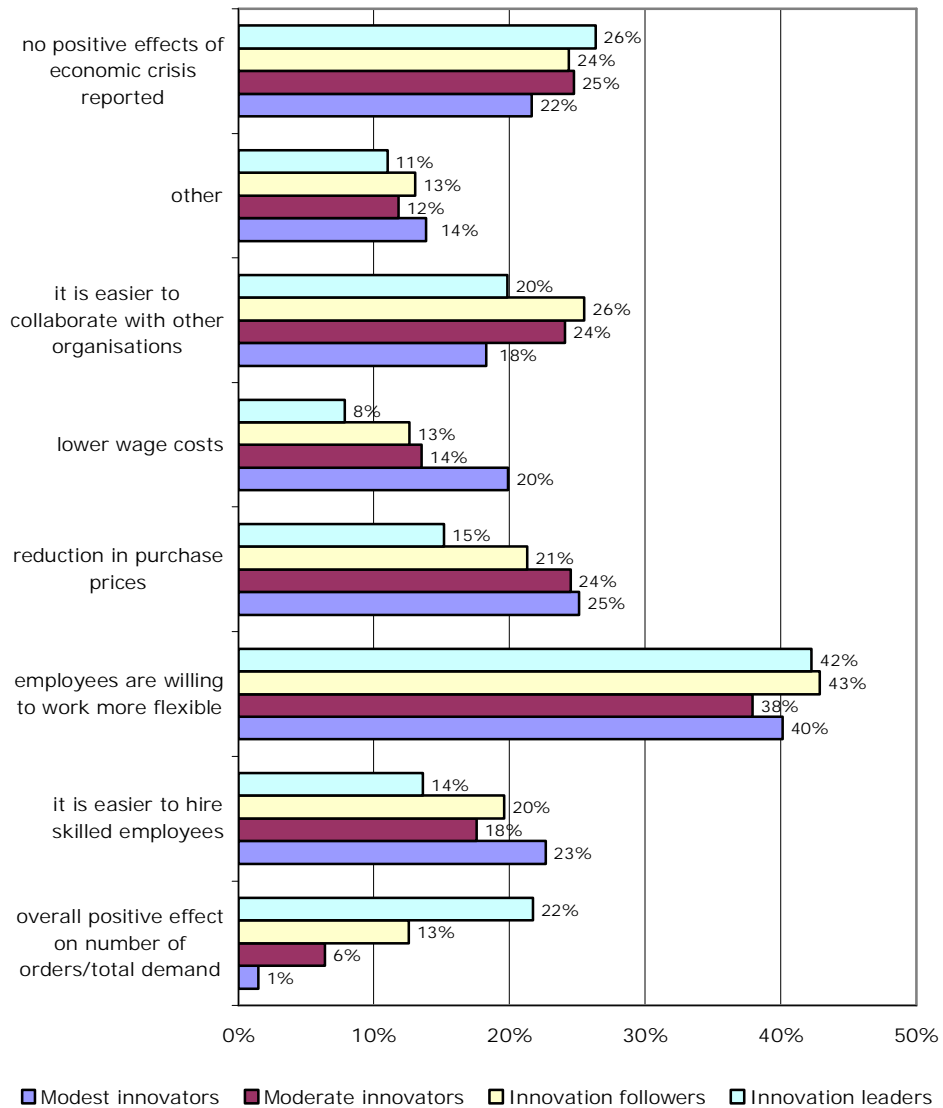
Figure 43 Positive effects of current crisis during 2008Q4 - 2010Q4, by size class, for the business economy of the 27 EU Member States



Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Figure 44 Positive effects of current crisis during 2008Q4 - 2010Q4, by innovation performance, for the business economy of the 27 EU Member States



Note: Questions regarding the negative effects of the current crisis referred to the effects in the past two years.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

Table 38 Share of enterprises that laid off employees during 2009Q4 - 2010Q4, by size class, for the business economy of the 27 EU Member States

Employees laid off during past 12 months	Small and medium Large All size			
	Micro (2-9)	(10-249)	(250+)	classes
No	73%	50%	32%	70%
Yes,	27%	50%	68%	30%
solely due to crisis	14%	19%	13%	14%
solely due to other reasons	10%	23%	32%	12%
due to crisis and other reasons	3%	8%	23%	4%
Total	100%	100%	100%	100%

Note: Questions regarding layoffs referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 39 Share of enterprises that laid off employees during 2009Q4 - 2010Q4, by innovation performance of the residing country, for the business economy of the 27 EU Member States

Employees laid off during past 12 months	Modest Moderate Innovation Innovation				All countries
	innovators	innovators	followers	leaders	
No	50%	65%	78%	78%	70%
Yes,	50%	35%	22%	22%	30%
solely due to crisis	32%	16%	11%	10%	14%
solely due to other reasons	11%	14%	9%	8%	12%
due to crisis and other reasons	7%	5%	2%	4%	4%
Total	100%	100%	100%	100%	100%

Note: Questions regarding layoffs referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4); Innovation performance is based on the results of the Innovation Union Scoreboard 2010.

Table 40 Share of enterprises reporting hiring employees during 2009Q4 - 2010Q4, by size class, for the business economy of the 27 EU Member States

Employees laid off during past 12 months	Small and medium Large All size			
	Micro (2-9)	(10-249)	(250+)	classes
No	69%	32%	7%	64%
Yes,	31%	68%	93%	36%
solely due to crisis	15%	30%	25%	17%
solely due to other reasons	12%	18%	16%	13%
due to crisis and other reasons	3%	21%	52%	6%
Total	100%	100%	100%	100%

Note: Questions regarding hiring new employees referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 41 Enterprises reporting hiring and laying off employees during 2009Q4 - 2010Q4, for the business economy of the 27 EU Member States

Employees laid off during past 12 months	Employees hired during past 12 months				Total
	No	Yes, only for replacements	Yes, only for newly created jobs	Yes, for re-placements and newly created jobs	
No	69%	13%	15%	3%	100%
Yes,	51%	26%	10%	13%	100%
due to crisis	71%	16%	10%	4%	100%
due to other reasons	31%	39%	11%	18%	100%
due to crisis and other reasons	40%	27%	3%	30%	100%
Total	64%	17%	13%	6%	100%

Note: Questions regarding layoffs and hiring of new employees referred to the past year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 42 Share of enterprises with employment increase or decrease during 2009Q4 - 2010Q4, by size class, for the business economy of the 27 EU Member States

Employment change	Micro (2-9)	Small and medium (10-249)		Large (250+)	All size classes
Decrease	26%		29%	30%	26%
No change	63%		48%	38%	61%
Increase	11%		23%	32%	13%
Total	100%		100%	100%	100%

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 43 Share of enterprises with employment increase or decrease during 2009Q4 - 2010Q4, by size class and innovativeness, for the business economy of the 27 EU Member States

Employment change	Small and medium (10-249)					
	Micro (2-9)		Large (250+)		All size classes	
	Innovative	Not innovative	Innovative	Not innovative	Innovative	Not innovative
Decrease	27.3%	23.0%	28.9%	30.2%	29.2%	39.7%
No change	59.7%	69.6%	44.8%	56.6%	38.1%	35.5%
Increase	12.9%	7.4%	26.3%	13.2%	32.7%	24.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Firms are considered innovative if, during the past three years, they have introduced new or significantly improved goods or services, new or significantly improved production processes, or if they have been engaged in activities to develop new goods, services, or production processes at least once a year.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).

Table 44 Share of enterprises that expect to lay off employees permanently during 2010Q4 - 2011Q4, by size classes, for the business economy of the 27 EU Member States

Size class	Expecting layoffs due to the crisis	Expecting layoffs due to other reasons
Micro (2-9)	12%	5%
Small and medium (10-249)	12%	7%
Large (250+)	16%	17%
Total	12%	5%

Note: Questions regarding expected layoffs referred to the next twelve months.

Source: Enterprise Survey 2010, SMEs and EU Labour Market, EIM/GDCC (N=7559); conducted during the final quarter of 2010 (2010Q4).