Economic Review

December 2009

National**Bank**
OF BELGIUM

Eurosystem

Contents

Economic projections for Belgium – Autumn 2009

Introduction

After the global economy had suffered the harshest recession of approximately the last sixty years, signs of recovery have multiplied in the course of 2009. Business and consumer confidence has picked up significantly since the spring, while industrial production and international trade – the two aspects which had suffered the most marked decline at the end of 2008 and beginning of 2009 – have stabilised or risen slightly in the main economic regions.

This revival of activity, borne along by the twin factors of economic policy measures and more technical factors, has appeared a little earlier than expected. While the financial crisis had strongly aggravated the slowdown in business activity, fears of a collapse in the financial system abated in the course of 2009 as the determined and massive action of monetary authorities and governments took effect. These fears gradually gave way to a renewed appetite for risk in the positioning of investors. Central banks also maintained their key rates at very low levels in the context of weak inflationary pressure. Furthermore, stimulus-oriented budget plans implemented in the majority of the advanced economies, but also in the emerging countries, gave a far-reaching impetus to the economy. Apart from this, the generalised running-down of inventories – which was a clear sign of the search for liquidity among firms after the financial crisis intensified, parallel-ing that pursued by the financial institutions – appears to be coming to an end.

It is now thought that, in general, GDP resumed a growth path from the third quarter of 2009, whereas six months ago, the first phase of recovery was only forecast to arrive in the course of 2010. However, there are still serious doubts as to whether the upturn will last beyond the next two quarters, since the impetus from economic policy should tail off and the contribution to growth connected to movements in inventories is temporary by nature. Over and above this, firms and private individuals in the advanced economies, and more particularly in Europe, must adapt themselves to the substantial fall in the level of activity and incomes. These adjustments are expected to continue to weigh on investment, employment and consumer spending for some time.

This is the setting – better than in the spring but nonetheless still very uncertain – in which the updates to the macroeconomic projections for 2009 and 2010, carried out as part of the six-monthly exercise for the Eurosystem, are taking place. The results for the whole area are published in the ECB's Bulletin for December 2009; they indicate that GDP will increase in 2010, albeit at a modest pace, after plummeting by around 4 p.c. this year, while inflation will remain low.

According to the flash estimate from the NAI, GDP in Belgium rose by 0.5 p.c. in the third quarter of 2009 after showing a cumulative decline of more than 4 p.c. during the previous twelve months. This result confirms the expected improvement in short-term prospects and consequently the upward revision of growth projections compared to the results published in June[1]. This contrasts sharply with the very rapid and very substantial downward revisions made over the course of twelve months during successive economic forecasting exercises. On the other hand, the current projections still include a substantial rise in unemployment and a considerable deficit in public finances, while inflation is expected to remain moderate.

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[1] The previous version of the economic projections for 2009 and 2010 was presented in more detail in the spring, in the Bank's June 2009 Economic Review.

The results presented briefly in this article incorporate the information available as at 20 November 2009. They were compiled on the basis of assumptions common to the Eurosystem, the principles of which are described in the box included in the first section. As is usual in the case of public finances, these projections only take account of measures formally approved by the authorities, particularly for the 2010-2011 federal budget and the 2010 budgets of the Communities and Regions, on which sufficient detail is available.

1. International environment and assumptions

Paralysed by the distinct worsening of the financial crisis and other factors, international trade in goods collapsed by almost 20 p.c. at the end of 2008 and beginning of 2009, very quickly plunging the advanced economies and most emerging economies into a generalised and very deep recession. In the second quarter of 2009, United States GDP expressed in real terms fell by 3.8 p.c.

CHART 1   DEVELOPMENTS ON THE FINANCIAL MARKETS, BUSINESS CONFIDENCE AND INTERNATIONAL TRADE

(monthly averages)
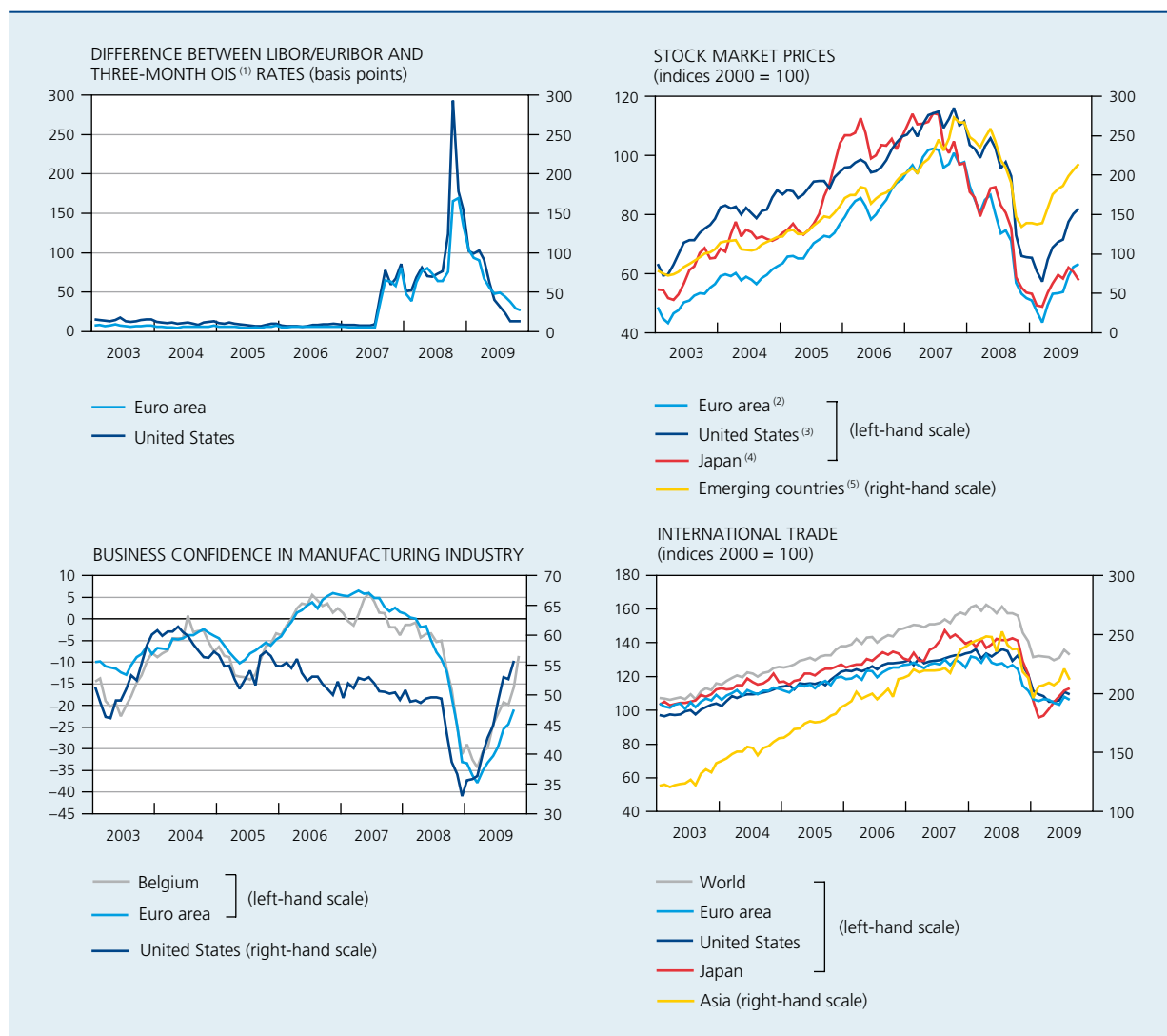
Sources: Bloomberg, CPB, HWWI, Thomson Reuters Datastream.
(1) Fixed rate paid by the party receiving the overnight rate (Eonia for the euro area, actual federal funds rate for the US) in a three-month interest rate swap.
(2) Dow Jones Euro Stoxx Broad index.
(3) Wilshire 5000 index.
(4) Topix index.
(5) MSCI Emerging Markets Index.

compared to the corresponding period of the previous year. The decline reached 4.8 p.c. in the euro area and 5.5 p.c. in the United Kingdom respectively, while it amounted to 8.4 p.c. in Japan in the first quarter. While most economies suffered serious effects, therefore, the scale of the decrease in activity varied from one region to the next, depending on the importance of foreign trade (this having been the main channel through which the recession spread), exposure to the financial sector and, in some cases, the bursting of a bubble in the real estate sector.

From the second half of 2009 onwards, however, the unprecedented measures taken on both sides of the Atlantic to prevent a financial system meltdown and the extremely flexible monetary and budgetary policies quickly put into place in most economies began to produce their effects.

On the one hand, financial tensions gradually eased under the combined impact of government guarantee mechanisms and injections of capital for the benefit of the financial institutions, and also generous grants of liquidity which the central banks took steps to provide. On the money markets, the gap between unsecured interbank deposit rates and those for risk-free investments, which had reached a peak in October 2008, returned to a level comparable to that prevailing prior to the failure of Lehman Brothers. A similar decline in spreads was seen for corporate and government bonds, as investors began to consider moving back into higher-risk investments, whereas they had frantically sought security and liquidity at the height of the financial crisis. On the main stock markets, share prices similarly began an upward movement; in rebounding by around 50 p.c. with reference to their lowest point reached in the course of March 2009, they recovered 30 p.c. to 50 p.c. of the losses suffered during the crisis.

On the other hand, business confidence picked up, in some cases strongly, when it became apparent that the rapid fall in activity had ceased against a background where central banks had maintained their key rates at very low levels since the start of the year and where measures taken by governments were on a massive scale. These stimulus measures took various forms in the United States and Europe, notably the speeding-up of public investment, the easing of taxes and even a helping hand for private investment or the purchase of motor vehicles, the automobile sector having been hit particularly hard by the recession. Emerging countries also implemented measures on a large scale; spending on infrastructure increased strongly in China, for instance.

With government support, rising demand helped to put an end to the process of running down inventories, which had been observed since the end of 2008. This development contributed to a revival in international trade, mainly under the impetus of China and other Asian countries; the recovery remains fragile, however, in the light of the scale of the drop which preceded it. Alongside these initial signs of strengthening demand, prices for raw materials on the international markets similarly picked up from spring 2009 onwards. In particular, the price of a barrel of Brent crude oil, which had fallen from a maximum of around 145 US dollars in July 2008 to about 40 US dollars in December, rose once again to about 80 US dollars in mid-November 2009.

Overall, the trend in activity in 2009 is still mainly dominated by the major recession which was rife at the end of 2008 and beginning of 2009. According to the autumn forecasts from the EC, global GDP is predicted to decrease by 1.2 p.c. in volume terms as an annual average, which would represent the first generalised contraction in activity since the Second World War. Among the large economic areas, GDP is forecast to decline by 2.5 p.c. in the United States, 5.9 p.c. in Japan and 4.1 p.c. in the European Union as a whole; only China and India are expected to maintain positive growth.

The improvement in the environment during the second part of 2009 would put the global economy in a better position in 2010. Consequently, the forecasts point to renewed positive growth in GDP in most areas. This is expected to remain limited, however, since the effects of factors at the root of the recovery underway are temporary in nature and set to tail off rapidly, while elements which should take over and stoke this recovery in a lasting manner are still fragile. Thus, there still seems to be a generous surplus of production capacity, which is directly damping down business investment and, due to the anticipated continuing rising unemployment, consumer spending too. In this situation, following an average decline of almost 13 p.c. in 2009, global trade is only expected to rise by a little over 3 p.c., a rate markedly down on that seen prior to the crisis. As for inflationary pressures, these are expected to remain limited.

By recording a rise in volume of 0.4 p.c., the euro area also returned to positive GDP growth in the third quarter of 2009, after five successive quarters of decline. As in the other advanced economies, this turnaround is based not only on strengthening foreign demand, notably that emanating from Asia, but largely on the effect of support measures announced by governments and on the cyclical movement in changes in stock levels. It has come earlier than previously anticipated so the updated projections for

<table>
<tr><th colspan="4">TABLE 1   PROJECTIONS FOR THE MAIN ECONOMIC AREAS
(percentage changes compared to the previous year,
unless otherwise stated)</th></tr>
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	2008	2009	2010
	Actual	Projections	
GDP in volume			
World	3.1	−1.2	3.1
of which :			
United States	0.4	−2.5	2.2
Japan	−0.7	−5.9	1.1
European Union	0.8	−4.1	0.7
China	9.7	8.7	9.6
India	6.7	5.7	6.4
Russia	5.6	−7.2	2.3
Brazil	5.1	−0.4	4.2
p.m. World imports	*3.4*	*−12.9*	*3.2*
Inflation [1]			
United States	3.8	−0.5	0.8
Japan	1.4	−1.2	−0.4
European Union	3.7	1.0	1.3
Unemployment rate [2]			
United States	5.8	9.2	10.1
Japan	4.0	5.8	6.3
European Union	7.0	9.1	10.3

Source : EC (autumn forecasts, November 2009).
(1) Consumer price index.
(2) Percentages of the labour force.

the Eurosystem assume a less pronounced drop in GDP for 2009 than the exercise carried out last June and even the interim exercise by the ECB, the results of which were published at the beginning of September. According to the new projections, GDP in the euro area as a whole is forecast to decline at a rate between -4.1 p.c. and -3.9 p.c. in 2009. The improved prospects in terms of activity for the end of the year similarly give rise to an upward revision in the growth envisaged for 2010. This is forecast to remain limited, however, at a level between 0.1 p.c. and 1.5 p.c.

The tentative nature of the recovery is due to the modest hardening of demand both outside the euro area, an issue referred to above, and domestically. In particular, investment by firms should shrink further in 2010 as a result of low levels of production capacity utilisation and falling profitability. A continuation of the adjustments taking place in real estate markets in various countries in the euro area should also lead to a decline in investment in housing. And the rise in consumer spending would be damped down by the expected deterioration in the labour market. While extending certain measures aimed at reducing working hours within firms initially actually softened the impact of the recession on employment in some countries, the adjustment should continue in 2010, giving rise to further growth in unemployment.

Overall inflation in consumer prices, for its part, has been in negative territory since June 2009 in the euro area, as a result of major underlying effects linked to the fall in raw materials prices compared to the previous year. As the impact of these factors rapidly tails off, and even reverses under the effect of the recent oil price

TABLE 2   EUROSYSTEM PROJECTIONS
(percentage changes compared to the previous year)

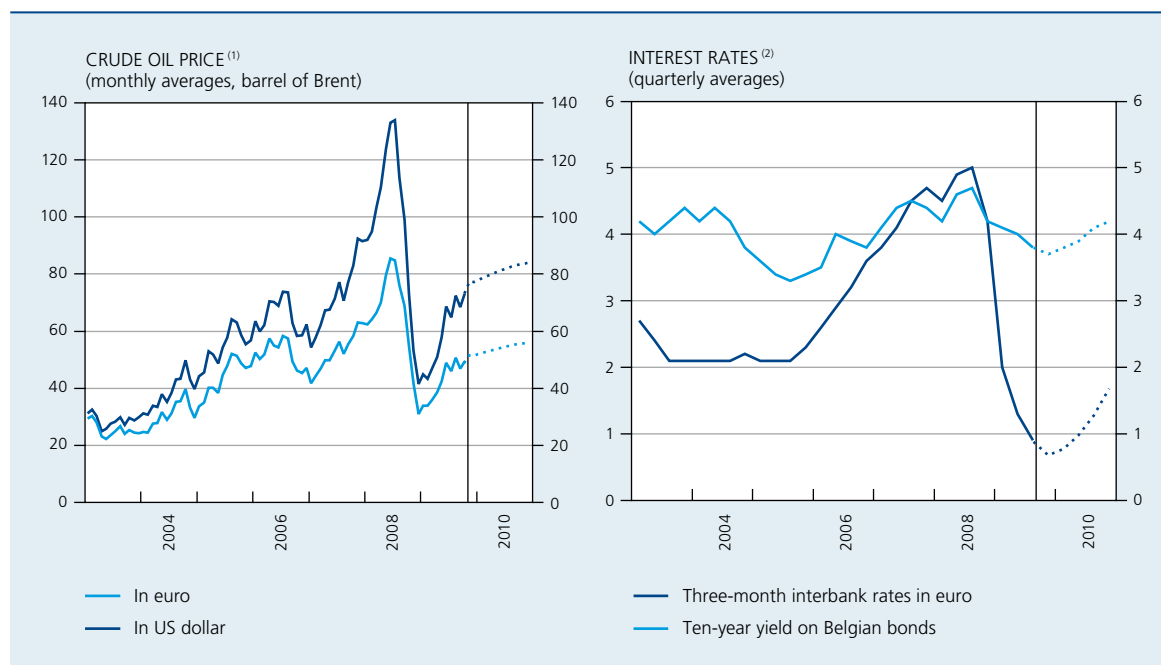|	Euro area			*p.m. Belgium*		
	2008	2009	2010	*2008*	*2009*	*2010*
Inflation (HICP)	3.3	0.3 / 0.3	0.9 / 1.7	*4.5*	*0.0*	*1.6*
GDP in volume	0.5	−4.1 / −3.9	0.1 / 1.5	*0.8*	*−3.1*	*1.0*
of which :						
Private consumption	0.4	−1.2 / −1.0	−0.2 / 0.8	*1.0*	*−1.6*	*0.8*
Public consumption	2.0	2.2 / 3.0	0.5 / 1.7	*3.3*	*2.2*	*1.1*
Investment	−0.6	−11.3 / −10.5	−3.1 / −0.1	*3.8*	*−4.1*	*−1.3*
Exports	0.8	−14.5 / −12.5	0.6 / 5.6	*1.4*	*−12.1*	*3.0*
Imports	0.9	−12.6 / −11.0	0.4 / 4.6	*2.7*	*−11.5*	*2.7*

Sources : ECB, NBB.

Box – Eurosystem assumptions

The Eurosystem's economic projections for the euro area and the Bank's corresponding projections for Belgium are based on the following technical assumptions:

– the interest rates are based on market expectations. As an annual average, the three-month interbank deposit rate is forecast to fall from 4.6 p.c. in 2008 to 1.2 p.c. in 2009 and 2010. The yield on ten-year Belgian government bonds is projected at 4.4 p.c. in 2008, 3.9 p.c. in 2009 and 4 p.c. in 2010. As noted above, after widening markedly during the financial crisis, the spreads between these reference yields and those applicable to firms and households generally fell back to a level comparable to that applying previsously;

– bilateral euro exchange rates are kept constant at the level reached in mid-November 2009, namely 1.49 US dollar to the euro. This represents a gain of almost 7 p.c. compared to the average level in 2009;

ASSUMPTIONS CONCERNING THE MOVEMENT IN OIL PRICES AND INTEREST RATES

CRUDE OIL PRICE [1]
(monthly averages, barrel of Brent)

— In euro
— In US dollar

INTEREST RATES [2]
(quarterly averages)

— Three-month interbank rates in euro
— Ten-year yield on Belgian bonds

Source : ECB.
(1) Actual figures up to October 2009, assumption from November 2009.
(2) Actual figures up to the third quarter of 2009, assumption from the fourth quarter of 2009.

– in accordance with the movement in implicit prices reflected in forward contracts, international market prices for a barrel of Brent crude oil are expected to average 62.2 dollars in 2009 and 81.4 dollars in 2010, against 97.7 dollars in 2008;

– relevant export markets for Belgium, measured as the weighted total of imports of the trading partners, including those in the euro area, are only likely to rise by 3.6 p.c. in 2010, after falling almost 11 p.c. in 2009. Given this background, and in view of the appreciation of the euro, prices among competitors on export markets are projected to decrease by 3.7 p.c. in 2009 and 0.6 p.c. in 2010;

– as is usual according to the Eurosystem conventions, the figures for public finances take account of the macroeconomic environment and budget measures which have already been announced and have been specified in sufficient detail.

	2008	2009	2010
ASSUMPTIONS UNDERLYING THE EUROSYSTEM PROJECTIONS			
		(annual averages)	
Three-month interbank rates in euro	4.6	1.2	1.2
Ten-year bond yields in Belgium	4.4	3.9	4.0
Euro exchange rate against the US dollar	1.47	1.39	1.49
Oil price (US dollar per barrel)	97.7	62.2	81.4
		(percentage changes)	
Export markets relevant to Belgium	2.1	−10.9	3.6
Competitors' export prices	2.4	−3.7	−0.6

Source : ECB.

increase on international markets, inflation should turn positive again as from the end of the year and remain so throughout 2010. The forecast is for it to remain at low levels, however, in a scenario of persistent weakness in demand and deterioration of the labour market. According to the new Eurosystem projections, inflation is predicted to lie within a range between 0.9 p.c. and 1.7 p.c. in 2010, after reaching around 0.3 p.c. on average in 2009.
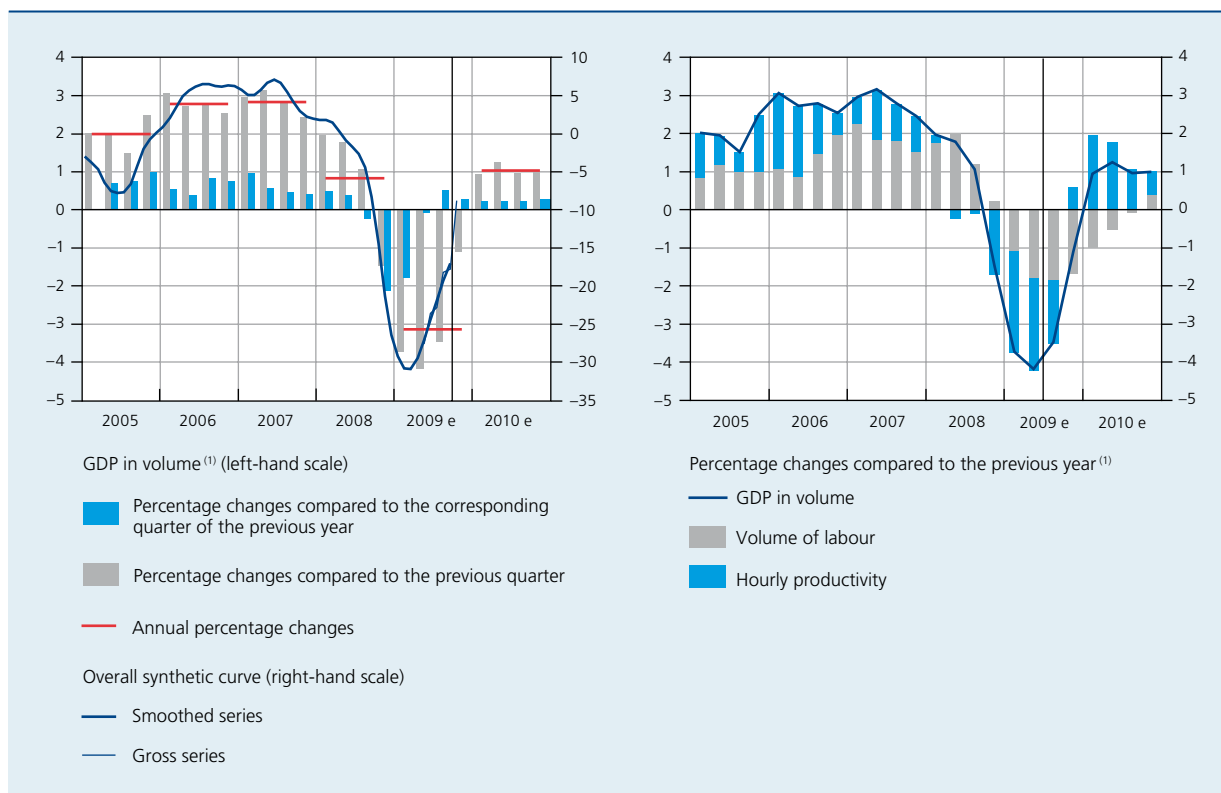
2. Activity, employment and demand

According to the flash estimate from the National Accounts Institute, GDP in Belgium rose by 0.5 p.c. in the third quarter of 2009 after showing a decline for four successive quarters. Having felt the effects of the recession most intensely at the end of 2008 and beginning of 2009, like the euro area as a whole, Belgium moved out of it at the same time as the latter. This parallel development is the direct result of the very close ties uniting Belgium with its partners in the euro area, in particular the neighbouring countries, not only in terms of production and commercial trade but also financial relations, elements that played a crucial role in the crisis. The overall scale of the decline in GDP was historical in Belgium too, reaching 4.2 p.c. between the high point reported in the second quarter of 2008 and the low point registered one year later, even if this is smaller than the drop of 5.1 p.c. seen in the euro area between the first quarter of 2008 and the middle of 2009.

In Belgium, the upturn in indicators of business activity suggests that the economy will maintain a growth path at the end of 2009 and in 2010. However, the rate of rise in Belgium is expected to remain relatively low next year as in the euro area, given the absence of a vigorous recovery in foreign demand and the predicted low levels of investment and private consumption, against a background of deterioration on the labour market. GDP is forecast to decrease by a total of 3.1 p.c. as an annual average in 2009, before growing by 1 p.c. in 2010.

While the labour market initially demonstrated its relative resilience, with only limited job losses in view of the severity of the recession, this situation stems partly from developments set to be reversed. Actually, in spite of intensive use of systems allowing some flexibility in the use of the workforce, the volume of labour mobilised within firms decreased less than production at the end of 2008 and beginning of the current year, this abrupt drop giving rise to very large losses in terms of hourly productivity of labour. In the first half of the year, this latter measure declined by 2.5 p.c. compared to the corresponding period of the previous year over the economy as a whole, dragging down firms' profitability. However, the trend in the volume of labour rapidly followed, gradually worsening in the course of 2009. Firms are expected to continue progressively rebuilding their productivity in 2010, in a climate of limited resurgence in activity, so that, measured as an annual shift, the change in the volume of labour is not forecast to return to positive values until the end of the year.

CHART 2   DEVELOPMENT OF GDP AND VOLUME OF LABOUR

(seasonally adjusted data)

GDP in volume [1] (left-hand scale)

Percentage changes compared to the corresponding quarter of the previous year

Percentage changes compared to the previous quarter

Annual percentage changes

Overall synthetic curve (right-hand scale)

Smoothed series

Gross series

Percentage changes compared to the previous year [1]

GDP in volume

Volume of labour

Hourly productivity

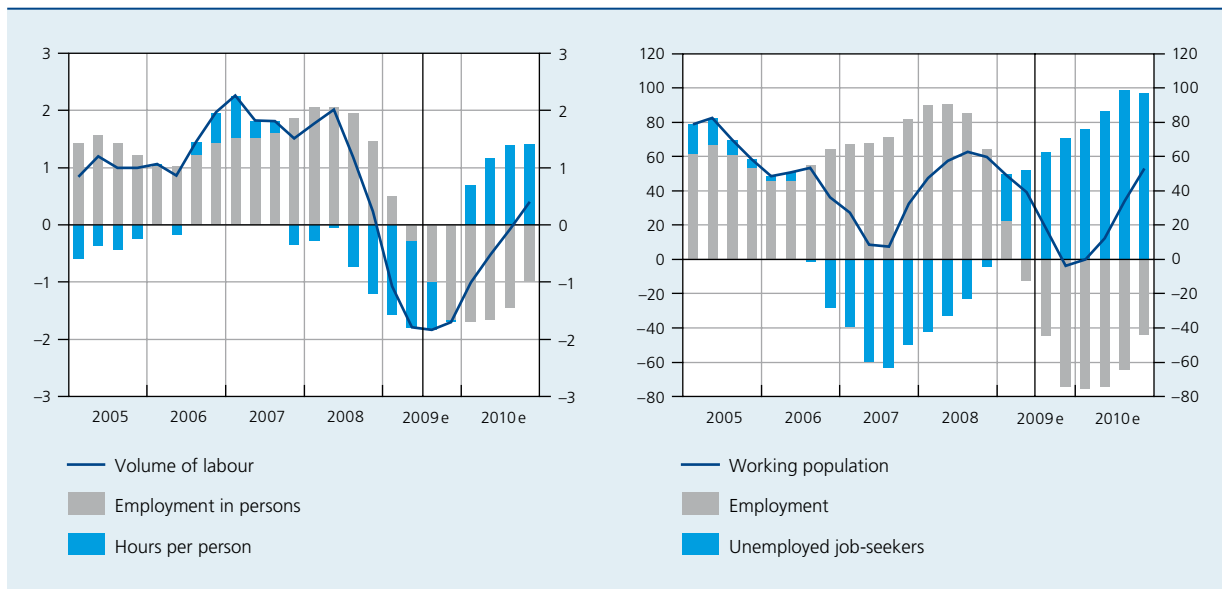Sources : NAI, NBB.
(1) Calendar adjusted data.

Furthermore, by allowing firms to adapt the volume of their staff without resorting to redundancies, the wide-scale introduction of temporary lay-offs for manual workers greatly contributed to limiting job losses, the average duration of work per employed person decreasing by 1.5 p.c. in the first six months of 2009. As in other European countries, additional measures moving in the same direction were adopted under the stimulus plan in 2009, notably by offering the possibility of suspending, subject to certain conditions, the implementation of employment contracts for clerical workers or by encouraging reductions in working hours. According to the information available, the number of persons affected by these new systems remained low when the forecasts were finalised. Given the anticipated reduction in the use made of these different flexible systems, however, destruction of jobs should continue in 2010 despite strengthening activity.

Overall, while GDP is forecast to show growth of the order of 1 p.c. in 2010, the expectation is that the volume of labour will continue to decline, albeit at a lesser rate

than in 2009, with the change falling back from –1.6 p.c. to –0.3 p.c. However, the annual average decrease in employment measured in persons is set to accelerate between these two years, climbing from –0.6 p.c. in 2009, a result bolstered by the rise that was still being recorded at the end of 2008, to –1.5 p.c. in 2010. Compared to the fourth quarter of 2008, 118,000 jobs are likely to be lost in overall terms during the two years covered by the projections, 74,000 of them in 2009. The number of jobless is in turn predicted to grow by 168,000 units over the same period, driven by the effect of the continuing rise in the number of persons coming onto the labour market. Whereas the unemployment rate stood at an average of 7 p.c. in 2008, it is set to climb to 7.9 p.c. in 2009 and 9 p.c. in 2010.

The combination of a virulent financial crisis and a generalised decline in activity had a major effect on households and firms in 2009. Except for consumption and investment in the general government sector, all the components of expenditure weighed on the development of GDP. The modest recovery in growth in 2010 would be

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CHART 3   EMPLOYMENT AND UNEMPLOYMENT

Volume of labour

Employment in persons

Hours per person

Working population

Employment

Unemployed job-seekers

Sources : NAI, NEO, NBB.

based on a slight strengthening of private consumption and exports, and a turnaround in movements of inventories. However, the downturn in private investments is expected to continue.

In 2009, firms were faced with a synchronised collapse in most foreign markets such that foreign demand focused on Belgium is estimated to have deteriorated by more than 11 p.c. on average over the year as a whole. In this context, exports of goods and services were to contract by over 12 p.c., constituting the largest drop ever recorded, with the decline being particularly severe at the end of 2008 and beginning of 2009. The volume of exports began to recover in April 2009 but remains weak and so is far from having regained the previous level. Alongside this, imports fell strongly, albeit at a slightly lower rate than that of exports. Overall, net exports would make a negative contribution to the change in GDP, to the tune of 0.6 percentage points. This contribution is expected to be slightly positive in 2010, in the wake of the gradual hardening of foreign demand.

Furthermore, faced with the prospect of a persistent deterioration in demand and anxious to protect their financial position, Belgian firms similarly participated in the broad process of running down inventories seen on the world stage. Over the current year as a whole, this process is likely to cut 1.3 percentage points from the change in GDP. It is expected to come to an end during the second half of 2009, so that the change in inventories would

make a small positive contribution to growth in 2010, of the order of 0.4 percentage point.

Finally, the very depressed economic environment should prompt firms, through the workings of a range of factors, to reduce their gross fixed capital formation. In the first place, the recent fall in production gave rise to an unprecedented drop in the degree of production capacity utilisation. According to the Bank's quarterly survey, this fell back from 82.4 p.c. in October 2008 to a historical low of 70.1 p.c. in April 2009. The degree of capacity utilisation increased slightly in the subsequent period, reaching 73.1 p.c. in October, but it remains substantially below the average level of the last thirty years, and the modest demand prospects do not point to a rapid rebound. Furthermore, the recession is forecast to weigh heavily on firms' operational profitability in 2009, due to the substantial decrease both in sales volume and productivity. By pushing up unit labour costs by a considerable amount, such a drop in productivity tends to reduce firms' margins in a scenario where selling prices are still under pressure, notably in foreign markets. However, this effect is largely offset by the fall in the price of imported inputs. Moreover, despite an improvement in the course of the year, real conditions for external borrowing are still affected by the financial crisis. According to the projections, business investments are set to decline by a total of 5.8 p.c. in 2009 and 1.6 p.c. in 2010, whereas they had been rising at a steady rate during the previous years.

TABLE 3 GDP, EMPLOYMENT AND MAIN CATEGORIES OF EXPENDITURE

(percentage changes compared to the previous year, calendar adjusted data)

	2007	2008	2009 e	2010 e
GDP[1]	2.8	0.8	−3.1	1.0
Total domestic employment in persons	1.6	1.9	−0.6	−1.5
Total volume of labour[2]	1.9	1.3	−1.6	−0.3
Real disposable income	2.0	1.3	2.1	−1.0
Components of expenditure[1]				
Final consumption expenditure of individuals	1.6	1.0	−1.6	0.8
Final consumption expenditure of general government	2.6	3.3	2.2	1.1
Gross fixed capital formation	5.7	3.8	−4.1	−1.3
Housing	−0.8	−1.6	−2.7	−1.9
Government	3.6	3.4	7.6	2.6
Business	8.7	6.1	−5.8	−1.6
p.m. Domestic expenditure excluding change in inventories[3] ..	*2.6*	*2.1*	*−1.2*	*0.4*
Change in inventories[3]	0.1	−0.2	−1.3	0.4
Net exports of goods and services[3]	0.2	−1.0	−0.6	0.2
Exports of goods and services	4.4	1.4	−12.1	3.0
Imports of goods and services	4.4	2.7	−11.5	2.7

Sources : NAI, NBB.
(1) In volume.
(2) Total number of hours worked in the economy.
(3) Contribution to the change in GDP.

Private individuals are also expected to rein in their expenditure strongly in 2009, both regarding household consumption and investment in housing. This behaviour mainly indicates a high level of caution in the face of uncertain prospects with regard to employment and future income, since their disposable income is set to increase steadily again – by 2.1 p.c. – in real terms. However, this improvement in purchasing power largely results from the interplay of two temporary factors. On the one hand, the effect of indexation on wages this year is set to be considerably greater than inflation in consumer prices given that, due to the time-lags incorporated in the mechanisms in the various sectors, part of the high inflation recorded in 2008 is reflected in salaries in 2009, and that the rise in the health index, which is used as a reference for indexation, is greater than the overall level of inflation this year. On the other hand, households are benefiting from reductions in tax in 2009, especially those located in Flanders, and from the fast-tracking of personal income tax assessments. This traditionally gives rise, on balance, to payments of refunds to taxpayers by the fiscal authorities. These factors will no longer play a part in 2010. On the contrary,

the Flemish government has decided to limit tax reductions, while earned incomes will be affected by the decrease in employment and the modest progress in salaries. Thus, disposable income is forecast to decline by 1 p.c. in 2010.

These short-term movements in disposable income are hardly reflected at all in the trend for private consumption. In fact, in a climate of great uncertainty and substantial losses in value on their financial assets, private individuals strongly reined in their consumption and increased their savings at the end of 2008 and beginning of 2009. The upturn in confidence among households which began in April 2009, notably with regard to general economic prospects and the situation on the labour market, should give rise to a progressive, but limited, strengthening of consumption. In total, private consumption is expected to decline by 1.6 p.c. in real terms in 2009, before increasing by 0.8 p.c. in 2010. At the same time, the savings ratio is forecast to rise by around 3 percentage points in the first year, rising from 16.6 p.c. of disposable income in 2008 to 19.7 p.c. in 2009, before falling back to 18.4 p.c. in 2010. Likewise,

private individuals are set to reduce their spending on investments in housing, by 2.7 p.c. in 2009 and 1.9 p.c. in 2010.
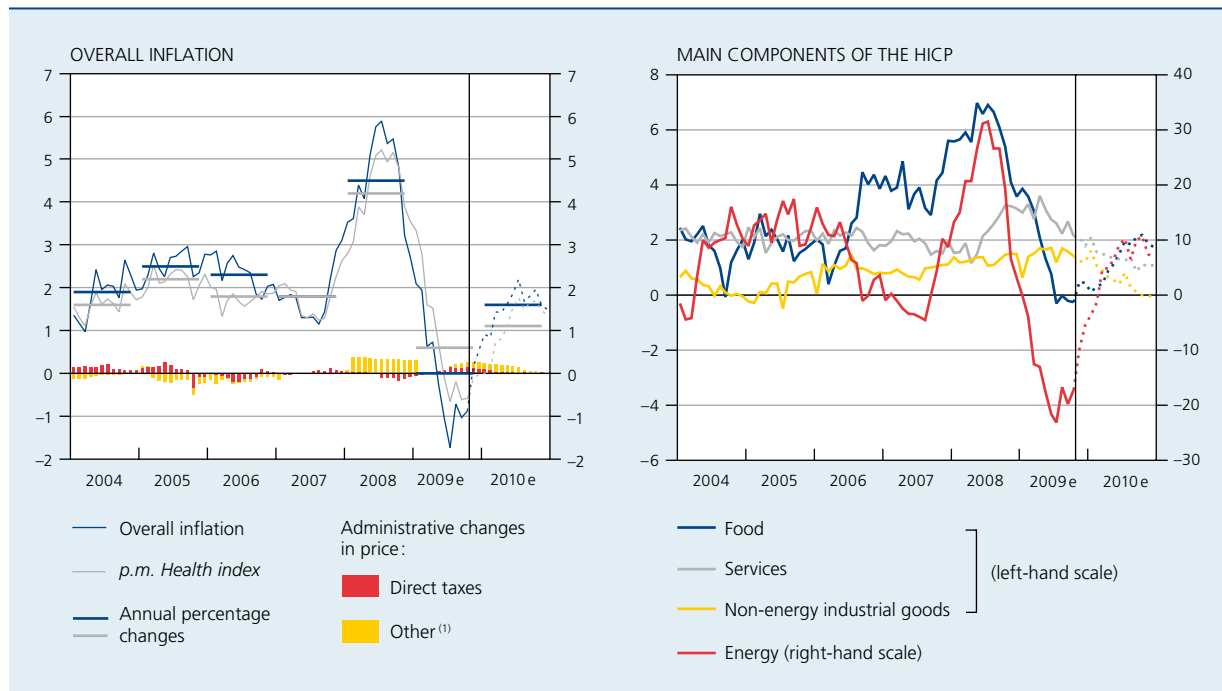
3. Prices and costs

Inflation slowed down markedly in Belgium in the course of 2009, just as in the euro area; it even went into negative territory from May onwards, and appears to have remained so up to November. At its most intense in July, the fall in the index reached 1.7 p.c. compared to the previous year. However, this period of disinflation is forecast to be short-lived. Far from being a general phenomenon, it stems almost exclusively from the considerable decrease in the level of energy prices compared to the situation prevailing a year earlier, when the price of oil on the international markets had reached a peak of more than 140 US dollars per barrel. This fell back to only 40 US dollars at the end of 2008, but the price has virtually doubled since then and according to the assumptions adopted for the current forecasts, it is projected to rise further in 2010. From then on, the underlying negative effects which influenced the development of energy prices for a large part of 2009 will rapidly reverse.

The profile of the "energy" component is therefore the main explanation for the marked slowdown in overall inflation, from an average of 4.5 p.c. in 2008 to 0 p.c. in 2009, just as it accounts for a large part of its anticipated rise in 2010, to a rate of 1.6 p.c. The health index, in turn, is forecast to rise by 0.6 p.c. in 2009 and 1.1 p.c. in 2010.

Food prices also contribute to this V-shaped movement in overall inflation, since they have, as it were, stabilised in the course of 2009 after increasing very sharply in 2008. The expectation is that they will return to a normal rate of rise in 2010. On the other hand, the slowdown in inflation that started in 2009 for non-energy industrial goods and services, that is to say the two main components of the HICP, is set to continue in 2010. This effect follows from an easing of inflationary pressures due to the generally low level of demand, through the import price mechanism and, in 2010, labour costs. Following a rise of 6.6 p.c. in 2008, the deflator for imports is forecast to decrease by more than 7 p.c. in 2009 against the backdrop of an appreciating euro, declining raw materials prices and sluggishness in global trade, before growing slightly by 1.1 p.c. in 2010. For their part, unit labour costs in the private sector are estimated to have risen again steadily by 4.4 p.c. in 2009, before declining by 1.1 p.c. in 2010.

CHART 4   **INFLATION**

(HICP, percentage changes compared to the corresponding period of the previous year)

OVERALL INFLATION

MAIN COMPONENTS OF THE HICP

— Overall inflation

p.m. Health index

— Annual percentage changes

Administrative changes in price:

■ Direct taxes

■ Other[1]

— Food

— Services

— Non-energy industrial goods

(left-hand scale)

— Energy (right-hand scale)

Sources: EC, NBB.

(1) Impact on overall inflation, in percentage points, of price changes connected with measures concerning the radio and television licence fee and changes to network industry tariffs.

TABLE 4 PRICE AND COST INDICATORS

(percentage changes compared to the previous year)

	2007	2008	2009 e	2010 e
Total HICP	1.8	4.5	0.0	1.6
Energy products	0.2	19.8	−13.8	5.9
Total excluding energy products	2.0	2.7	1.9	1.0
GDP deflator	2.3	1.8	1.1	0.9
Labour costs in the private sector:				
Unit labour costs	2.2	4.0	4.4	−1.1
Hourly labour costs	3.4	3.3	2.8	0.5

Sources: EC, NAI, NBB.

The strong increase in unit labour costs in 2009 and their marked slowdown the following year both result to a large extent from the status of labour productivity at each point in the business cycle. As explained above, and to an even greater extent than in 2008, when growth in activity had already slowed down markedly, the abrupt contraction in production in 2009 was only partly reflected in the volume of labour. The adjustment in the latter is set to continue again on a large scale in 2010, so that productivity per hour worked is expected to improve again, by 1.6 p.c., after dipping by 0.6 p.c. in 2008 and 1.5 p.c. in 2009.

The rise in hourly labour costs in the private sector is predicted to fall back from 2.8 p.c. in 2009 to 0.5 p.c. in 2010. This development essentially corresponds to the anticipated effect of indexation, the latter reacting with some lag to the hike in inflation measured by the health index in 2008, and then its slowdown in 2009. Moreover, a limited rise in real terms has been taken into account, in line with the provisions of the central agreement, which provide for the option of granting non-recurring bonuses of 125 euro in 2009 and 250 euro in 2010.

4. Public finances

According to the latest information, public finances are expected to end 2009 with a deficit of 6.1 p.c. of GDP. In the macroeconomic context described above, this deficit would shrink in 2010, reaching 5.4 p.c. of GDP.

Expressed as a percentage of GDP, public revenues are projected to decline by 1.1 percentage points in 2009 and rise by 0.6 percentage points in 2010. The fallout from the economic and financial crisis is particularly visible in terms of company taxation, the proceeds of which are set to fall in 2009 by close to one-third compared to the previous year. Revenue originating from registration fees and advance tax on income from securities is similarly projected to show a net downturn. Conversely, the tax take on earned incomes is likely to remain virtually unchanged this year with reference to GDP. It is true that revenues are being weighed down by a certain number of structural measures passed by the federal government with regard to personal income tax as well as the increased amount of the tax reduction granted by the Flemish Region. To this is added the fact that the federal government has speeded up personal tax assessments, a measure which has considerably increased tax refunds to households. However, the effect of these factors is projected to be cancelled out by the sharp increase in the share of earned incomes in GDP, which are subject to relatively heavy fiscal pressure. In 2010, fiscal and parafiscal revenues should once again show a rise due to the disappearance of the negative effect caused by the fast-tracking of assessments in 2009 referred to above. Moreover, several measures are having a favourable influence on revenues. This applies to the tax reduction approved by the Flemish Region, the scope of which will be reduced, and the tax take on company profits, which will increase following a restriction being placed on deductible expenses. For their part, non-fiscal and non-parafiscal revenues are projected to rise by 0.2 p.c. of GDP in 2009 and also in 2010 by virtue of payments made by financial institutions following the financial crisis.

Primary expenditure, which came to 46.2 p.c. of GDP in 2008, should grow to 50.1 p.c. of GDP in 2009, thus reaching a level not seen since the beginning of the 1980s. This increase stems from the concerted

	2007	2008	2009 e	2010 e
Revenues	48.2	48.8	47.7	48.4
Fiscal and parafiscal revenues	43.3	43.7	42.5	42.9
Others	4.9	5.1	5.3	5.4
Primary expenditure	44.5	46.2	50.1	50.1
Primary balance	3.6	2.6	−2.4	−1.7
Interest charges	3.8	3.8	3.7	3.7
Financing requirement (−) or capacity	−0.2	−1.2	−6.1	−5.4
p.m. Effect of non-recurrent factors	*−0.1*	*0.0*	*−0.8*	*0.0*
Consolidated gross debt	84.2	89.8	98.1	102.0

Sources : NAI, NBB.
(1) According to the methodology used in the excessive deficit procedure.

influence of three factors, namely the contraction in GDP, a considerable rise in spending on social security and non-recurring expenditure resulting from two legal judgements awarded against the Belgian State due to tax collected improperly in the past : on the one hand, from certain companies receiving dividends of foreign subsidiaries, and, on the other hand, from married unemployed workers. In 2010, primary expenditure as a percentage of GDP is set to nearly stabilise. Real structural growth in the former is once again set to be greater than the upward trend in GDP, but this effect is likely to be cancelled out by the disappearance of those sums paid out in implementation of the judgements awarded against the Belgian State in 2009.

Interest charges are expected to remain unchanged overall for the entire duration of the period covered by the projections, due to the low level of interest rates. Admittedly, public debt should increase, but the effect of this rise on interest charges is expected to be almost completely offset by the decrease in the implicit interest rate of the public debt.

The borrowing requirement thus estimated at 5.4 p.c. of GDP in 2010 is more favourable than predicted by the federal government (5.6 p.c. of GDP). On the one hand, the budget for general government assumes a scenario where economic growth will amount to 0.4 p.c. in 2010, whereas the current projections are based on it reaching 1 p.c. On the other hand, the federal government is proceeding on the assumption that the Communities and Regions will show a deficit of 1.1 p.c. of GDP in 2010, while the Bank's projections, which take account of the

Communities' and Regions' budgets, forecast that this deficit will amount to 0.9 p.c. of GDP.

The downward trend in the debt ratio of general government, which has been recorded since 1993, was suddenly interrupted in 2008. During that year in fact, the debt ratio grew strongly due to loans taken out by the Belgian government in order to come to the aid of financial institutions, notably in the form of injections of capital and loans. It is projected to increase considerably in 2009 under the combined effect of the contraction in nominal GDP and the net growth in borrowing requirement. In 2010, public debt would continue to expand, being projected to reach a level greater than GDP again.

5. Assessment of the risk factors

In Belgium as in the majority of the advanced economies, the recovery in activity which began in mid-2009 arrived earlier than was anticipated six months ago, against a backdrop of easing financial tensions, particularly accommodative economic policies and improving business and household confidence. From then on, the estimated scale of the fall in GDP for 2009 was a little less than in the Bank's previous forecasting exercise published in June and the projections currently refer to growth of 1 p.c. in 2010, while they previously foresaw a slight decrease.

There are grounds for hoping that this recovery will be maintained, or that it will pick up pace over the course of the next few quarters. However, several factors taken into account by the majority of forecasters indicate the

TABLE 6 COMPARISON OF THE FORECASTS FOR BELGIUM

(percentage changes compared to the previous year)

	GDP in volume		Inflation[1]		Budget balance[2]		Date of publication
	2009	2010	2009	2010	2009	2010	
NBB – Autumn 2009	−3.1	1.0	0.0	1.6	−6.1	−5.4	December 2009
p.m. Spring 2009	*−3.5*	*−0.2*	*0.1*	*1.3*	*−5.5*	*−6.0*	*June 2009*
NAI	−3.1	0.4	0.0	1.5	n.	n.	September 2009
IMF	−3.2	0.0	0.2	1.0	−5.9	−6.3	October 2009
EC	−2.9	0.6	0.0	1.3	−5.9	−5.8	November 2009
OECD	−3.1	0.8	−0.1	1.0	−5.7	−5.6	November 2009
p.m. Actual 2008	*0.8*		*4.5*		*−1.2*		

(1) HICP, except for NAI : national consumer price index.
(2) Percentages of GDP.

need for caution since, even if it appears to be over, the effects of the recession will be seen for a long time to come.

On the one hand, having benefited from emergency measures aimed at preventing a systemic collapse, financial institutions need to pursue their reorganisation, which will allow them to get back on a firm footing with a view to safeguarding their role of financing the economy. This kind of reorganisation is a difficult exercise, particularly in a weakened economic situation.

On the other hand, the massive stimulus measures taken by monetary authorities and governments were crucial in preventing the global economy from becoming locked into a scenario of depression. Nonetheless, these interventions cannot continue for long or they risk endangering the conditions for long-term development. The pace and timetable of exit strategies from these flexible budgetary and monetary policies are particularly difficult to determine, since there is a simultaneous need to ensure short-term support for demand and prepare the economy for structural challenges over the long term.

Therefore, beyond the cyclical turnaround in inventories, a sustainable economic recovery would need to be supported by endogenous engines of growth, such as investment and private consumption. Prospects remain dogged by a high level of uncertainty in this respect too. The large amount of surplus production capacity around the world resulting from the contraction in activity should persist and therefore continue to weigh on investment and employment.

These elements have been taken into account in the projections. Nonetheless, in view of the exceptional nature of the current situation, arriving at a precise assessment of the extent to which they will unfold is not easy. The forecasts for 2010 are therefore surrounded by a high degree of uncertainty.

Annex

PROJECTIONS FOR THE BELGIAN ECONOMY: SUMMARY OF THE MAIN RESULTS

(percentage changes compared to the previous year, unless otherwise stated)

	2006	2007	2008	2009 e	2010 e
Growth (calendar adjusted data)					
GDP in volume	2.8	2.8	0.8	−3.1	1.0
Contributions to growth:					
Domestic expenditure, excluding change in inventories	1.7	2.6	2.1	−1.2	0.4
Net exports of goods and services	0.4	0.2	−1.0	−0.6	0.2
Change in inventories	0.6	0.1	−0.2	−1.3	0.4
Prices and costs					
Harmonised index of consumer prices	2.3	1.8	4.5	0.0	1.6
Health index	1.8	1.8	4.2	0.6	1.1
GDP deflator	2.2	2.3	1.8	1.1	0.9
Terms of trade	−0.7	0.3	−2.2	2.4	0.5
Unit labour costs in the private sector	1.7	2.2	4.0	4.4	−1.1
Hourly labour costs in the private sector	3.2	3.4	3.3	2.8	0.5
Hourly productivity in the private sector	1.6	1.2	−0.6	−1.5	1.6
Labour market					
Domestic employment (average annual change in thousands of persons)	50.5	70.3	82.1	−27.3	−64.4
Total volume of labour[1]	1.3	1.9	1.3	−1.6	−0.3
Harmonised unemployment rate[2] (p.c. of the labour force) . . .	8.3	7.5	7.0	7.9	9.0
Incomes					
Real disposable income of individuals	2.8	2.0	1.3	2.1	−1.0
Savings ratio of individuals (p.c. of disposable income)	15.8	16.2	16.6	19.7	18.4
Public finances[3]					
Overall balance (p.c. of GDP)	0.3	−0.2	−1.2	−6.1	−5.4
Primary balance (p.c. of GDP)	4.2	3.6	2.6	−2.4	−1.7
Public debt (p.c. of GDP)	88.1	84.2	89.8	98.1	102.0
Current account (according to the balance of payments, p.c. of GDP)	**2.0**	**2.2**	**−2.5**	**−0.9**	**−0.4**

Sources: EC, DGSEI, NAI, NBB.

(1) Total number of hours worked in the economy.

(2) Adjusted series (Eurostat).

(3) According to the methodology used in the excessive deficit procedure (EDP).

Pension system reforms in the EU15 countries

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Introduction

In the very short term, all European countries will be faced with the challenge represented by the generation born between the end of the Second World War and the mid-1960s reaching retirement age. The elderly dependency

rate – i.e. the number of people aged over 65 expressed as a proportion of the working age population – is set to almost double between 2008 and 2060. This increased pressure on the working age population would vary, nevertheless, from one country to another.

As far as the problem of pensions is concerned, population ageing presents two main inseparable aspects, which must be taken into account by political decision-makers. The first relates to the increase in the budgetary burden which will weigh on public finances, namely the 'fiscal sustainability' constituent. The second is the 'social sustainability' constituent, in the sense that pensions have a role to play as a safety net. On the one hand, they need to limit the specific poverty risk affecting elderly persons. On the other hand, and more generally, the aim of social sustainability is to maintain living standards upon retirement.

The influence of population ageing on pension expenditure varies considerably from one country to another. These discrepancies are partially the result of disparities between the different national pension systems, be they original or due to the reforms which have been made.

The first section of this article sets out the main points of the existing systems with an emphasis on their diversity. The second presents, by category, the reforms which have been introduced or decided and the third looks at how the reforms have been introduced in some countries. Some effects of the reforms made are presented in a fourth section and, finally, a set of conclusions is drawn.

CHART 1   **ELDERLY DEPENDENCY RATE**

(number of persons aged 65 and over as a percentage of the number of persons aged 15 to 64)

■ 2008
■ 2008-2060
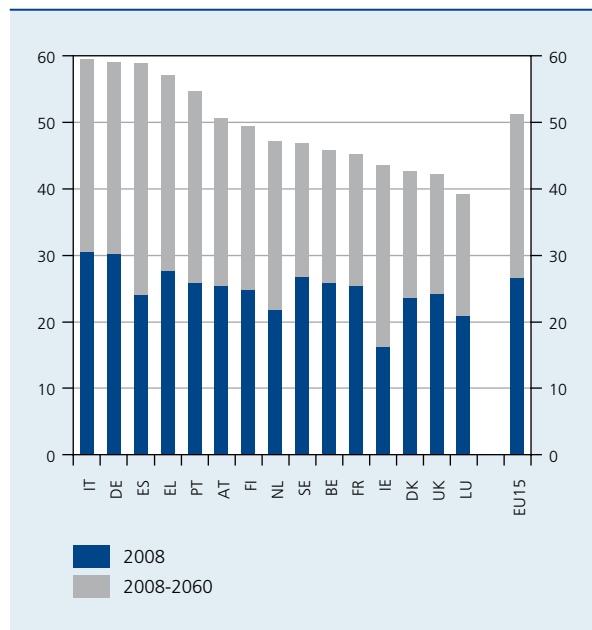
Source : Eurostat.

1. Pension system typology

The pension systems of European countries differ greatly in the way in which they are organised. Drawing inspiration to a large extent from the work of the OECD, published in successive editions of 'Pensions at a Glance' (2007 and 2009), which consider the pension systems for private sector employees only, it is possible to present a basic outline of these systems.

A mandatory part and a voluntary part can be distinguished among these systems. The mandatory part of pensions comprises most often a universal cover part and an 'insurance' part.

The universal cover part, which aims to establish safety nets and guarantee a minimum standard of living on retirement, is generally organised according to three main types: basic systems, means-tested plans and minimum pensions. The basic systems grant an amount, unconditionally, which may be a lump sum (identical for all retired persons) or which may depend on the number of years in work or of residence without taking account of wage levels. Means-tested plans aim in particular to protect persons on low incomes, the benefits being dependent on any other income and, in certain cases, assets. Minimum pensions are targeted at the same people but are conditioned only by the level of retirement income, excluding other sources of income or assets.

The aim of the insurance part of mandatory pensions is to maintain an adequate standard of living upon retirement compared to before retirement. The management of this insurance part may be entrusted to the public sector, as is most often the case, or to the private sector, as is the case in Denmark and the Netherlands. Here, the occupational systems are quasi-mandatory, and the coverage rate exceeds 90 p.c. of employees in the private sector. They are associated with the mandatory systems in the rest of this article. In Sweden, the management of the system is entrusted to both sectors.

In nine of the EU15 countries, the insurance parts managed by the public sector are defined benefit systems, which are the most common type of retirement insurance system. This type of system is also managed by the private sector in the Netherlands. In these systems, the pension received depends mainly on the number of years for which contributions have been paid and the individual wages from work.

Alongside, or in the place of the defined benefit systems, some countries have set up defined contribution systems. In a defined contribution system, the contributions are capitalised on an individual account and converted into income flows upon retirement. This capitalisation may be real or fictitious. In the latter case, it involves point systems or notional account systems.

Two countries (France, in addition to the general defined benefit system, and Germany) have established a point system operating on a pay-as-you-go basis. These points are acquired on the basis of individual wages for each year of contribution. Each point has the same value and gives entitlement to a certain pension amount upon retirement.

A notional account system exists in two countries, Sweden and Italy. This system works in the same way as traditional insurance, the individual contributions being 'capitalised' on an individual account, but in a fictitious – notional – manner since there is no real capitalisation and the system continues to operate on a pay-as-you-go basis, i.e. where workers' contributions are used to pay for the pensions in payment. Upon retirement, the – fictitious – capital and investment income are converted into income flows paid in the form of a retirement pension taking life expectancy into account.

Pure defined contribution systems, i.e. by capitalisation, and managed privately, are in place in Denmark and Sweden. In the latter case, this system supplements the notional account system.

Despite these numerous differences in the organisation of pension systems, they do have a number of important shared characteristics. Thus, in most cases, pension entitlements are calculated based on the same parameters: length of career, wages, adjustment of wages, income ceilings considered, indexation of pensions in payment, etc. However, the reference values of these various parameters differ considerably from one country to the next.

Based on the pension systems in place in 2006 and considering a worker joining the labour market that year, who will have a full career, the OECD has modelled the sources of income which this worker will receive on average upon retirement, for the mandatory pension element.

Overall, more than 95 p.c. of pensions received will come from the insurance element in 10 of the EU15 countries. This share is less in Luxembourg, Denmark and the Netherlands, very limited in the United Kingdom and non-existent in Ireland, where the pension is lump-sum. In these five countries, the universal cover element plays a more important role. Therefore, despite the many systems in existence, the insurance purpose dominates pension expenditure to a large extent, even if the protection element for the underprivileged plays an essential social role.

CHART 2   STRUCTURE OF MANDATORY PENSIONS

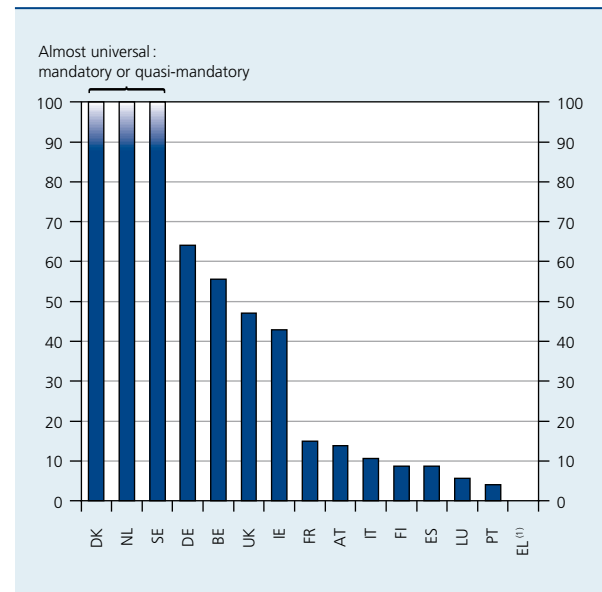(contribution of the different pension system components[1], percentages)
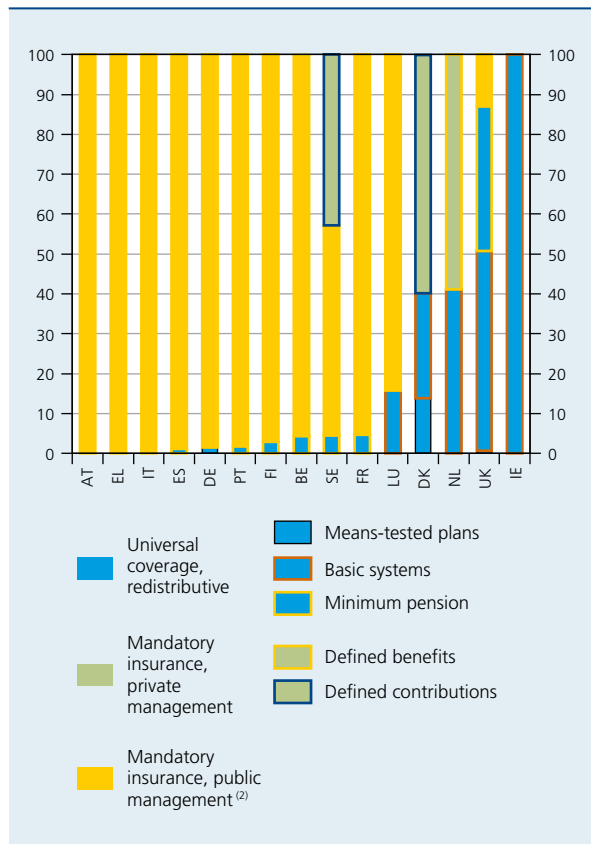
Source : OECD.
(1) Percentage of the weighted average of pension assets for a worker in the private sector joining the labour market in 2006 and working a full career.
(2) Defined benefits in most cases but also notional accounts in Sweden and Italy and point systems in France and Germany.

Legend:
- Universal coverage, redistributive
- Mandatory insurance, private management
- Mandatory insurance, public management[2]
- Means-tested plans
- Basic systems
- Minimum pension
- Defined benefits
- Defined contributions

CHART 3   COVERAGE RATE OF OCCUPATIONAL PENSION SYSTEMS

(private sector employees covered as a percentage of total employment, mid-2000s)

Source : OECD.
(1) The coverage was less than 1 p.c. in Greece.

Within mandatory insurance itself, the vast majority of payments to those drawing pensions come from systems managed by the public sector, whether these are defined benefit systems, point systems or notional account systems. The share of private management is significant in Sweden, Denmark and the Netherlands.

In addition to these mandatory pension systems, almost all EU15 countries have established opportunities to form a second, private, source of income. This relates to private pension entitlements obtained under the contract of employment, which are not, generally speaking, mandatory in legal terms, but are sometimes imposed by the employment contract binding employee and employer. Therefore, these systems are considered as being established on a voluntary basis and are most often defined as second pillar systems.

Besides the three countries already mentioned where this pillar has been greatly encouraged, indeed imposed, namely Denmark, the Netherlands and Sweden, in the mid-2000s, more than 40 p.c. of the employed population was covered by private occupational plans in Germany, Belgium, Ireland and the United Kingdom. By contrast, this cover was limited to less than 15 p.c. of the working population in the other EU15 countries. Where the cover exceeds 90 p.c. of employees, these systems will be considered as mandatory parts and, therefore, analysed later in this article.

Finally, it is possible to join an individual private pension system, often defined as a third pillar system. The international data on this pillar are particularly incomplete and, as a result, it is not considered below.

2. Cross-sectional analysis of the reforms

Many countries have reformed their pension systems as a result of demographic pressure and its consequences on public finances and on the risk of poverty among the elderly. These reforms, of variable extent, are most often staggered over time. Furthermore, some decisions have yet to be implemented on a gradual basis. The reforms examined in this section are those introduced since the

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1990s. The analysis is limited in general to the insurance element of mandatory pension systems.

The reforms which have been introduced are divided into three main categories below. Structural reforms, which are characterised by a fundamental change in the way the pension system is organised, form the first group of reforms. The second comprises parametric reforms, which mainly focus on the values of the parameters used to calculate pension entitlements within a given system. Finally, the third set of reforms relates to public sector pensions, which have been separated owing to their specific nature. Therefore, the analysis of structural and parametric reforms relates only to the pension systems of workers in the private sector. Furthermore, it concentrates on the reforms affecting a vast majority of the population, with frequent exceptions.

2.1 Structural reforms

Two principal trends characterise the structural reforms of the pension systems which have been adopted by certain EU countries: a change of system to a capitalisation system and a change of pension type from the 'defined benefit' type to a 'defined contribution' type.

Thus, the first trend in terms of structural reform is moving from a pay-as-you-go system in which the costs of the pensions in payment are paid for by the social security contributions of the generation currently in work, to a capitalisation system, in which each generation finances its own future pensions. These capitalised systems exist, at least partially, in Denmark, Finland, the Netherlands and Sweden and reserves have been created in several countries. In addition, many new EU Member States have also adapted their pension systems in this way recently[1].

This type of system, particularly if introduced when first setting up the pension system, offers clear advantages in terms of fiscal sustainability during a period of demographic decline. Indeed, each generation (or each person) contributes for its own future entitlements, so that no generation will have to contribute for a generation more numerous than its own. By contrast, the move from a pay-as-you-go system to a capitalisation system is very difficult to introduce since it involves the pivot generation contributing to the pensions of the previous generation and the formation of its own capital at the same time. This burden is almost too great to bear, unless spread out over a very long period, spanning several generations. Finally, a capitalisation system is susceptible to risks taken on financial markets. Therefore, if financial assets depreciate, this loss

of value needs to be offset by increasing contributions or reducing the amount of the benefits.

A second trend characterising structural reforms is that of the move from a defined benefit system to a defined contribution system. Originally, pension payment systems were most often designed in the form of defined benefits.

As already stated, mandatory defined contribution systems with capitalisation have been established in Denmark and Sweden. The latter country has also set up a system of notional accounts, in the same way as Italy. The point system has been introduced in France for the mandatory supplementary system and in Germany. The move from a defined benefit system to a defined contribution system does not necessarily involve a change in the management method (capitalisation or pay-as-you-go), or managing sector. However, the contribution rate becomes a determining factor since it provides the basis of the capitalisation which takes place during the careers of workers. It is a fundamental difference in relation to the defined benefit systems, in which this contribution rate has no impact on pension entitlements. On retirement, the actual or fictitious capital in a notional account system or the entitlements acquired in a point system are converted into an income flow, which generally involves the consideration of life expectancy, a factor rarely considered in defined benefit systems.

One of the advantages of these systems in relation to defined benefit system is that, in principle, they are more transparent and the direct and clear link between contributions and entitlements acquired is able to provide an incentive to remain in the labour market longer.

Again from the point of view of fiscal sustainability, if the introduction of these systems does not include actual capitalisation, it only resolves the imbalances resulting from demographic impacts indirectly – by the effects generated by this introduction, such as a greater incentive to continue working – and partially, since a pay-as-you-go system will continue to weigh on less numerous generations. Nevertheless, the consideration of life expectancy offers an important advantage in terms of fiscal sustainability, since the risk linked with the expected average increase in life expectancy is covered.

In terms of fairness, these systems present a positive aspect with respect to long careers, which are more common among those workers with the lowest incomes. These are rewarded, in fact, since the capitalisation begins

(1) Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland and Slovakia.

earlier, and so generates higher income from investments, and lasts longer. The ambivalent effects of taking life expectancy into consideration will be discussed later, in the part dedicated to this type of reform.

2.2 Parametric reforms

Alongside structural reforms, it is possible to carry out major reforms whilst retaining the same basic system, such as a defined benefit system, for example. Within this context, these reforms will be described as parametric, since they mainly influence the values of the parameters used to calculate pension entitlements.

The two main objectives pursued by pension system reforms, namely the improvement of fiscal sustainability and social sustainability, have been used to create a diagram of the main parametric reforms which are possible and other non-systemic reforms linked to pensions.

In order to improve fiscal sustainability, it is possible to increase revenues or limit the (para-)fiscal benefits which pensioners' income go with. However, these reforms will not be analysed in this article, which is limited to expenditure in terms of pensions.

By raising the actual retirement age, it is possible to reduce expenditure, since the period which has to be covered by the pensions is then shorter, and increase revenues as the period of work is longer. The retirement age can be raised coercively, by raising the statutory retirement age or early retirement age, or by means of incentives. These incentives may take the form of a bonus-malus system linked to career extension or early retirement, or enter in the calculation of pension entitlements by changing the reference career considered.

It is also possible to reduce expenditure by acting directly on the amounts of benefits or their growth. In this way, the wage considered for the calculation of entitlements may be limited in different ways. Firstly, it is possible to take wages into account over a less favourable period. In fact, the reference period is limited sometimes to the best or last years of the workers' careers rather than all of it. Secondly, it is possible to cap the share or absolute level of the wage considered. Finally, pension entitlements may be tempered by a limited revaluation of the previous wages entering in their calculation. With regard to the growth of pensions already in payment, it is possible to use more limited indexation or restrict the welfare adjustments. Lastly, the penalties and the increase in the number of reference years used to calculate entitlements are also a

SCHEMA 1   A TYPOLOGY OF PARAMETRIC AND NON-STRUCTURAL REFORMS OF PENSION SYSTEMS
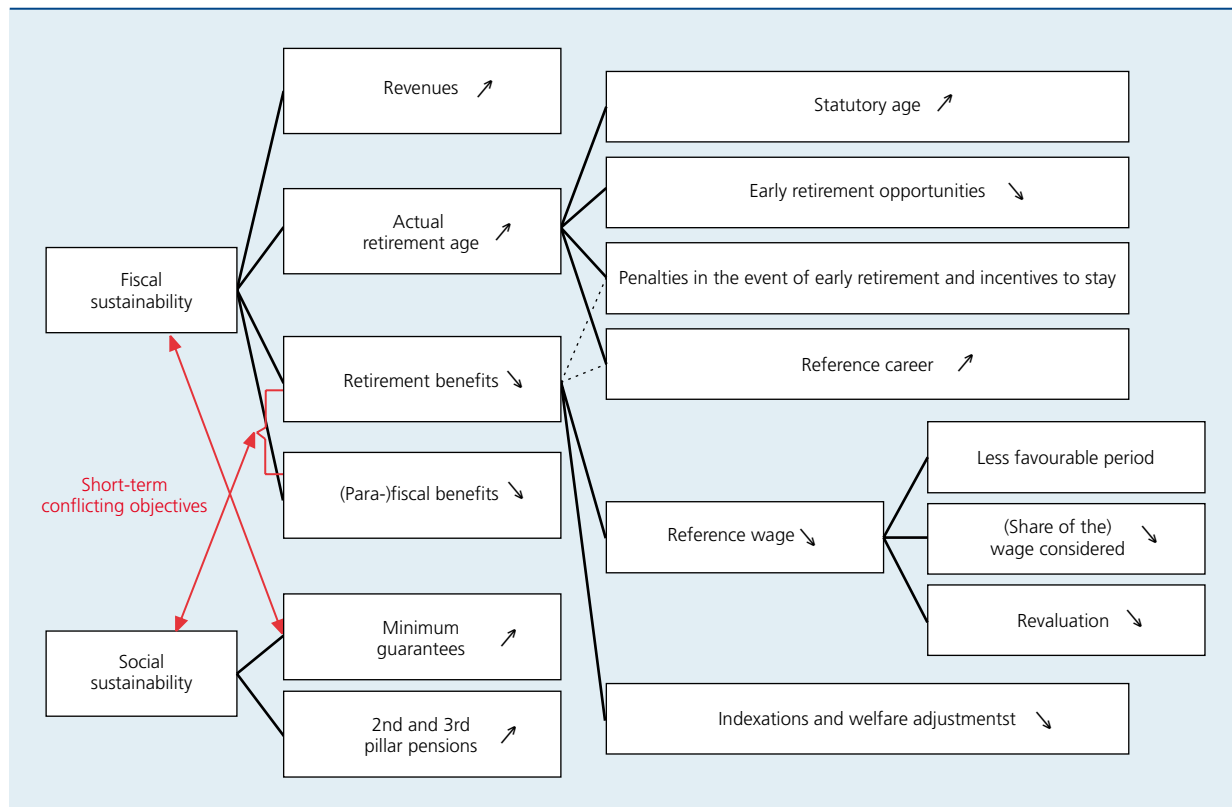
way of reducing the pensions or their growth, as well as being incentives to continue working.

Other reforms may aim more at improving the social sustainability of pension systems. As far as persons in a poverty risk situation are concerned, the minimum guarantees must be strengthened. Furthermore, in order to raise the replacement rate, increasing participation in the second and third pillars also offers possibilities. It may involve (para)fiscal stimuli, improving the legal framework to increase protection and, therefore, the trust of the actual and potential affiliates, or mandatory affiliation for all workers or some of them.
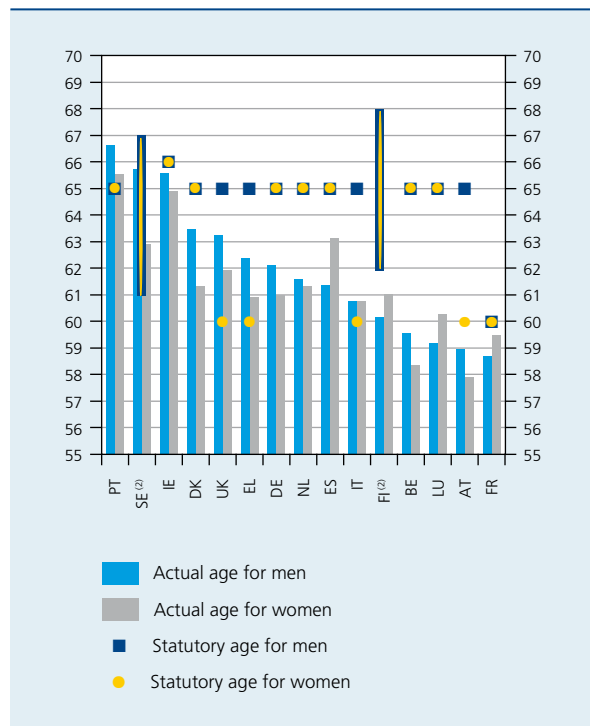
Some reforms are a means of achieving one of the two main objectives set – fiscal and social sustainability – to the detriment of the other. In this way, restricting the (para)fiscal advantages from which pensioners benefit and the measures which would limit the pension amount are contradictory, to a large extent, with the aim of improving social sustainability. On the other hand, some social protection measures, such as granting minimum guarantees, are a burden on public finances. Nevertheless, it is necessary to underline that in some cases, such as raising the retirement age or extending the second and third pillars, as far as they do not offer huge tax benefits, these objectives are pursued jointly. Finally it is advisable to note that, in the long term, fiscal sustainability is crucial to guaranteeing social sustainability.

STATUTORY AND ACTUAL RETIREMENT AGE

Currently, the statutory retirement age in most EU15 countries is 65 years both for men and women. For both sexes it is 66 years in Ireland and 60 in France, however. For women only, this age is still 60 years in the United Kingdom, Greece, Italy and Austria. Moreover, in Sweden and Finland, the statutory retirement age is flexible between 61 and 67 years and between 62 and 68 years respectively. Finally, early retirement is possible in several countries, generally subject to conditions relating to the length of career.

Unlike the statutory age, the actual retirement age varies considerably from one country to another. Calculated on the basis of the average number of retirements between 2002 and 2007 and including the different forms of early retirement, the bracket of actual retirement ages ranges from 57 years and 11 months for women in Austria to 66 years and 7 months for men in Portugal. Actual retirement takes place on average below 60 years only in Austria, France, Belgium and, for men, in Luxembourg. Therefore, given the existence of a number of early retirement or pre-retirement systems, the actual age of

Actual age for men

Actual age for women

Statutory age for men

Statutory age for women

Source: EC, OECD.
(1) The actual retirement age includes all final withdrawals from the labour market, including the different forms of early retirement.
(2) In Sweden and Finland, the statutory retirement age is flexible.

withdrawal from the labour market is lower than the statutory age in almost all EU15 countries.

The increase in the actual retirement age improves fiscal sustainability. Indeed, extending the working life is synonymous with supplementary budget revenues and lower costs. Even if the entitlements of future pensioners increase, the net effect remains favourable. In terms of social sustainability, there is an increase in the replacement rate in principle.

REVISION OF THE STATUTORY RETIREMENT AGE

The difference between the actual and statutory retirement ages shows that an increase in the statutory age is not sufficient to bring the actual age to this level. However, it may contribute towards delaying retirement and several countries have raised the statutory retirement age. In most cases, these adjustments have been spread over time and some are yet to take place (in part). Three types of change have characterised the reforms in the EU15: flexibility, increase for all workers and alignment of the statutory age for women with that for men.

CHART 5   RAISING THE STATUTORY RETIREMENT AGE1 [1]

(private sector employees, mandatory element)

Women
- Starting position (light blue)
- Situation after full application of the reform (yellow)

Men
- Starting position (dark blue)
- Situation after full application of the reform (orange)
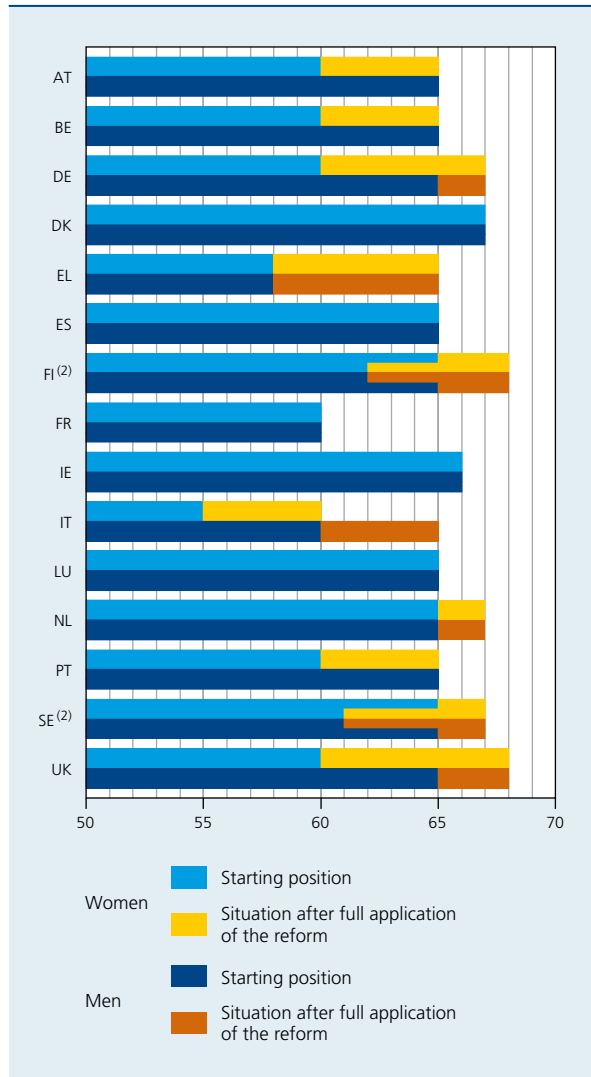
Sources: EC, OECD.
(1) Reforms decided upon since the start of the 1990s.
(2) Flexible statutory age.

A flexible statutory age has been introduced in Finland and Sweden where it is now possible to retire at the age of 62 and 61 at the earliest and 68 and 67 at the latest respectively, compared with 65 previously. This flexibility, however, comes with financial incentives as set out below, so that it should not lead to a lowering of the actual age.

The statutory age for women has been adjusted to that for men by an increase of 5 years, in four of the EU15 countries: Belgium, Germany, Portugal and the United Kingdom. In Austria, this increase will be implemented gradually by 2033. Only Italy will, in future, retain a statutory age for women below that for men, if there is no policy change.

The aim of a general increase has been to bring the retirement age to at least 65 in those countries where this was not yet the case, with the exception of France and Italy. In France, the statutory age remains 60 whilst in Italy, it has been increased by 5 years for men and women, but is still 60 for the latter. The general revision has been most significant in Greece where the statutory age has increased from 58 to 65, staggered over time for women. In the Netherlands and Germany, the statutory age will be increased to 67 between now and 2025 and 2029 respectively. In the United Kingdom, the statutory age will be increased gradually from 65 to 68 between 2024 and 2046. In Denmark, the statutory age had been lowered by two years in 2004 but will be gradually put back up to 67 between 2024 and 2027. It will then be raised in line with the increase in life expectancy.

REVISION OF THE EARLY RETIREMENT AGE

Alongside regulations concerning the statutory retirement age, early retirement is permitted in most EU countries [1]. In general, this right is linked to conditions regarding the length of career. Some countries have also increased the age from which early retirement may be taken. These are Denmark, which has raised the age by 2 years, Italy, where the increase is in progress and will be by 5 years in total between now and 2013, and Austria. In the latter country, the total increase will be 1.5 years for men and 3 years for women by 2017. In the United Kingdom, the possibility of early retirement has been withdrawn. This is also the case in Spain, except for persons entering the system before 1967 or those who are unemployed. In the Netherlands, the restrictions linked to its authorisation had been strengthened. When the statutory retirement age is raised there from 65 to 67, it will be possible to retire at 65, under certain conditions.

BONUS-MALUS SYSTEMS

The actual retirement age can also be delayed by the introduction of penalties for early retirement or incentives for staying in work, also known as a bonus-malus system. This procedure is less restrictive than raising the statutory age but can achieve comparable results. According to Queisser and Whitehouse (2006), the actuarially neutral annual penalty or incentive rate – i.e. the rate at which the extension or ending of career is budgetary neutral – would be 6.2 p.c. and 5.6 p.c. on average respectively for men and women at 60 and 7.4 and 7 p.c. respectively at 65.

(1) The analysis is limited to people taking early retirement in the strict sense. Consequently, there has been no consideration of other types of early retirement such as pre-retirement, invalidity or unemployment.

CHART 6

PENALTIES FOR EARLY RETIREMENT AND INCENTIVES TO STAY IN WORK

(percentages of penalty by year of early retirement or bonus for postponement in relation to the statutory age, unless otherwise stated, for private sector employees, mandatory element)
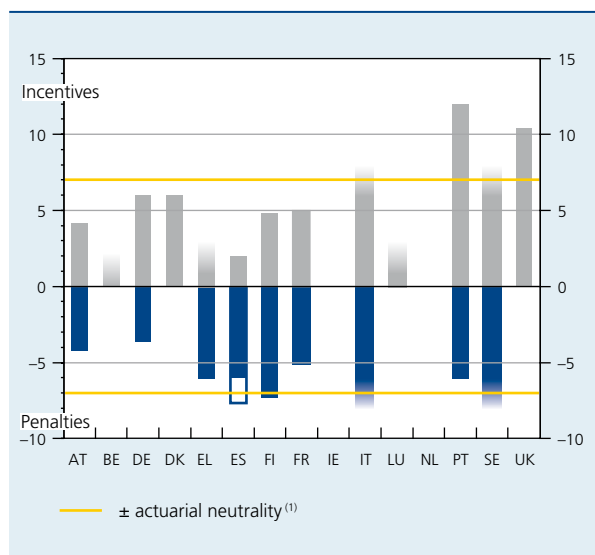
Sources: EC, OECD.

(1) From a budget point of view, actuarially neutral rates would average 6.2 p.c. and 5.6 p.c. respectively for men and women at 60 and 7.4 p.c. and 7 p.c. at 65, according to Queisser and Whitehouse (2006).

Seven of the EU15 countries have introduced bonus-malus systems, most often paired with conditions relating to the length of career, and four other countries have introduced the incentive element only. In addition, the Italian and Swedish notional account systems intrinsically comprise the equivalent of these incentives and penalties, the rate of which would be equal to actuarial neutrality. These incentives and penalties are generally calculated on a monthly basis in relation to the statutory retirement age but are expressed here as annual rates. The incentives and penalties are generally activated for maximum durations which match, in particular, the limits of early retirement possibilities.

In addition to a specific penalty for unemployed persons who wish to benefit from a pension in Spain, the penalty rate is highest in Finland, at 7.2 p.c. per year, for persons aged between 62 and 65. The penalty rates are also equal to or close to actuarial neutrality in Greece, Portugal and France. The penalty is more limited in Austria and Germany.

The incentive to continue in work is highest in Portugal, at 12 p.c. per year after 40 years of work and for a maximum of 5 years. It is also higher than the actuarially neutral

rate in the United Kingdom and close to this in Germany and Denmark where it depends on the ratio between the number of years of postponement and the average life expectancy on retirement. It is more limited in France at 5 p.c. In Finland, the incentive amounts to 4.8 p.c. but is only triggered after the age of 68. In Spain, the incentives are more limited. Finally, in Belgium, the annual bonus comprises a lump-sum of 2 euro per day worked beyond the age of 62 or after 44 years of contributions.

Moreover, by means of a system which can be likened to a bonus, Finland grants an acquisition rate – that is the rate at which a worker acquires pension entitlements for each year of cover – which is clearly higher between 63 and 67 years. Luxembourg and Greece do the same but in a limited way. Italy grants its elderly workers a "super bonus" in the form of an exemption from personal social security contributions.

As far as the bonuses are lower than the actuarially neutral rate and do not generate a large windfall effect, the introduction of a bonus-malus system should have a generally favourable impact on the fiscal sustainability of pension systems. In effect, penalties for early retirement reduce entitlements or delay retirement – with a favourable effect on both revenues and expenses – and incentives are only granted if retirement is postponed, with decrease in expenditure that is greater than the supplementary entitlements acquired. However, these bonuses represent a simple opportunity for some who would remain in the labour market beyond the age when this system is triggered, even without an incentive. From a social point of view, a bonus-malus system has a potentially favourable impact in that the equity between those taking their retirement at different ages or with different lengths of career is improved thereby. Replacement rates can also be improved by career extension. However, there would be a risk if a penalty affected those who had to leave the employment market prematurely.

CAREER CONSIDERED FOR CALCULATING ENTITLEMENTS

The basis for calculating pension entitlements in the mandatory insurance constituent integrates the average wage level of each individual during a specific part of his or her career. Whilst five of the EU15 countries – including Belgium – have for a long time considered the entire career for this calculation, others only took part of it into account. Therefore, pension entitlements were calculated sometimes based on income from the final years of a career and sometimes on income from the best years which, in practice, is not very different since the income from the final years of a career is generally the highest.

Six countries have significantly extended the career considered for calculating entitlements or are going to do so on a gradual basis. In the Netherlands, it is now the income from the entire career which is considered rather than the final year as was the case before. In Finland, Sweden, Portugal and Austria also, the entire career is considered rather than the final or best 10 to 15 years as was the case previously. In France, the extension is more limited, the career in consideration moving from the best 10 to the best 25 years. Therefore, the number of EU15 countries, which now consider the entire career is eleven, with the exceptions including France, Spain and Greece. In Ireland, this parameter does not apply, since the basic pension is entirely lump-sum.

This parametric change has a positive effect for fiscal sustainability since the consideration of the impact of a less well remunerated part of a career, is to lower the average reference wage used to calculate the entitlements. However, the social effects of this change are mixed, at best, since most retirement benefits are lower after this adaptation. In principle, there is no significant negative effect on the poverty risk as the persons with the lowest wages are also those whose wages have risen the least during their careers. On the other hand, the replacement rates of the highest paid persons, already generally lower than the population average, are further planed down by the consideration of a less favourable part of their wages.

Along the same lines, some countries have increased the duration of the reference career considered in order to obtain a full pension. In general, this latter actually requires a person to have worked a minimum number of years, the entitlements being calculated pro rata to the number of years worked where a career is incomplete. Four countries have recently changed the length of a full career. In Italy, it has risen from 37 to 40 years for a seniority pension and in France from 37.5 to 41 years. In Belgium, it has been raised from 40 to 45 years for women, in order to bring it into line with that for men. However, in the United Kingdom, it has been reduced from 44 years for men and 39 years for women to 30 years for everyone, where the basic state pension is concerned. An increase in the reference career automatically reduces the entitlements of those who do not have a full career and this is an added incentive for staying in work and has a positive effect on budgetary sustainability. As far as social sustainability is concerned, the effects are also mixed.

Finally, several countries impose minimum lengths of career, either to be able to benefit from early retirement or to be able to benefit from the granting of the pension itself. Some have also carried out reforms in the area, following the same logic as the reforms affecting length of career.

INDEXATION OF PENSIONS IN PAYMENT AND ADJUSTMENT OF WAGES

Pension entitlements are adjusted to take account of changes in the cost of living and/or welfare of the working population. To do this, the previous wages used to calculate the entitlements are adjusted, on the one hand, and the pensions currently being paid are indexed, on the other.

At the start, the indexation of pensions in payment was carried out on the basis of wage changes in seven of the EU15 countries and on the basis of prices in five of them. Finland applied a formula based on a weighting of these two components and Ireland made adjustments which were decided upon within the framework of the annual budgetary procedure. Greece also took discretionary measures, generally more significant than the increase in prices, at least where the most modest pensions are concerned.

Several countries have made changes in terms of the indexation of pensions in payment but in sometimes opposite directions. Four countries have thus become less generous: France and Italy, which have moved to an indexation on the basis of prices rather than wages, Finland where the weight of wages has decreased in favour of that of prices, and Portugal. In the latter case, the pension now develops at the most according to the rate of inflation and by 0.2 times the actual growth of the GDP, when the pension level is low and economic growth vigorous. Besides Portugal, Italy is applying less favourable indexation rules to the highest pensions. On the other hand, three countries are now more generous: Sweden and the United Kingdom, which make an adjustment on the basis of wages rather than prices, and Belgium, which takes discretionary measures linked with welfare in addition to indexation on prices – but via a system imposed by law. Eight countries have not changed their method of indexation for pensions paid. Four of these carry out indexation on the basis of the rise in wages (Germany, Denmark, Luxembourg and the Netherlands), two on the basis of prices (Austria and Spain) and two by discretionary measures (Greece and Ireland).

The adjustment of wages used in calculating entitlements upon entering the system is made necessary by the erosion in monetary terms which the previous income has suffered over time. Five countries used to carry out adjustments limited to the rise in prices, whilst five others took

account of the growth in wages. Finland considered both these factors by weighting them equally. In Greece, the decision was taken in a discretionary manner and in Italy it is the increase in GDP which determined the extent of the revaluations. Finally, in Denmark, the parts with defined contributions benefited from the application of an interest rate and, possibly, a share of the profits realised by the funds. In Ireland, there is no reason to adjust past wages, since the basic pensions are lump-sum.

Eight countries have carried out reforms in this area. Half of them are now more generous: Austria, Sweden and the United Kingdom make adjustments on the basis of the growth in wages instead of prices and Belgium regularly makes welfare adjustments of some reference wages, beyond price indexation. Four countries are less generous, however. France limits itself to an adjustment on the basis of prices rather than wages, Finland weights prices more, at 80 p.c., to the detriment of wages and Portugal has introduced the development of prices into the adjustment formula, at three-quarters of the weighting. Germany, for its part, links the increase in the value of points to the growth of the net rather than gross wage – so that when the contribution rate of individuals rises, it does not lead to any growth in the value of points – and limits it where there is a variation in the sustainability factor, which reflects the changes in the elderly dependency ratio. Five countries have retained their previous adjustment method: on the basis of the growth in wages (the Netherlands and Luxembourg), in prices (Spain), in the nominal GDP (Italy) or even on a discretionary basis (Greece). Finally, two countries do not have to make these adjustments: Denmark, where the capitalised defined contribution system involves past income benefiting from interest and any capital gains, and Ireland where the lump-sum pension does not depend on the previous income level.

CONSIDERATION OF THE INCREASE IN LIFE EXPECTANCY

The increase in life expectancy is set to continue in all European countries. Seven countries have now introduced an amendment to automatically reduce the negative budgetary effects of this future increase. This amendment takes various forms. Finland and Portugal have introduced a sustainability factor linking pensions to life expectancy, within the framework of a defined benefit system. Therefore, the amount of pension entitlements is multiplied by the ratio between life expectancy at a given moment in the past – that observed on average over 2004-2008 and in 2006 respectively – and life expectancy at the time of actual retirement. In Sweden, Italy and Denmark, the defined contribution and notional account systems which give entitlement genuinely or fictitiously to a capital distributed later over the supposed remaining life, intrinsically take account of life expectancy. In Sweden, for example, the individuals in the cohort born in 1990 should work two years more than the cohort born in 1940 to neutralise the effect of increased life expectancy and maintain their standard of living at the same level as that of preceding generations. Germany takes account of the increased life expectancy via a sustainability factor introduced in order to adjust past wages and for the indexation of pensions in payment. As for France, it links the number of years required for a career to be considered complete to life expectancy. In Denmark, the statutory age for an early pension and public old-age pension will be revised every 5 years to be adapted to the increase in life expectancy, as from 2025.

This consideration of life expectancy in the calculation of pensions means, in particular, that it will not be necessary in future to impose new reforms with every increase of this life expectancy. Therefore, the demographic impact on fiscal sustainability will be limited as a result. However, where it has an impact on the total retirement benefits, the consideration of life expectancy risks reducing the replacement rate of future generations of pensioners fairly considerably if there is no change in behaviour. In addition, the consideration of the same life expectancy for all socioeconomic categories and for both sexes presents a major risk in terms of equity. In fact, life expectancy is not the same for all social categories[1]. By using a single life expectancy value for all social categories, the capital accumulated individually would not therefore be distributed in full to low-education workers, whilst it would be insufficient to pay for the end of retirement of high-education workers, on average. The problem of the differences in life expectancy between men and women could also undoubtedly be considered in this type of system.

2.3 Reforms to the pensions of public sector workers

In most EU15 countries, public sector workers are subject to a specific pension system, whether it be so-called special schemes like those in force in Germany, Belgium and France, among other countries, or a scheme which is an addition to a national system. In many countries in other regions of Europe or the world, such a system does not or no longer exists[2].

(1) In the Netherlands, for example, life expectancy at 65 years was 17.5 years for men with a high level of education and 13.9 for men with a low level of education, in 2008.

(2) According to Palacios and Whitehouse (2006) at the start of the 2000s, the pension schemes in the public sector were integrated with those of the private sector in 74 countries, including Eastern Europe nations, whilst 84 countries had a separate specific pension scheme for the public sector.

Originally, the specific scheme for the public sector was generally more generous than that for the private sector. This was characterised by less strict conditions of access – earlier retirement in the public sector – and more generous pension benefits, the special defined benefit systems often being based on the final salaries. Consequently, replacement rates were higher. The adjustment and indexation regulations were also generally more favourable for workers in the public sector. In addition, contributions, for their part, could have been lower and/or borne by the State in full or in part.

In general, the special schemes for the public sector apply only to statutory civil servants. In many countries, a significant group of civil servants is recruited on a contractual basis, which means that the social security system and, consequently, pensions in the private sector are applied to some general government staff.

In terms of fundamental pension system reforms, some EU15 countries including Denmark, have switched gradually, by analogy with the private sector, from a defined benefit system to a defined contribution system. Other countries, including Austria, Finland, Italy and Portugal, have amended the public sector system towards convergence with the private sector system. In some cases, new workers in the public sector were hired with the social security system of the private sector applying. This was the case, most notably, in Italy and Luxembourg. In Portugal, the reforms affected not only new workers but also those already in employment. Privatisations, subcontracting and contractualisation[1] also reduced the relative weighting of public sector pensions. Furthermore, certain parts of the public sector, such as defence, police and justice, often escaped reforms in full or in part. Preferential treatment was, and sometimes still is, granted to public enterprise workers in certain branches of activity such as transport or energy.

Parametric reforms have been carried out successfully in the public sector in most EU15 countries. As in the private sector, these reforms have changed key parameters such as the statutory or minimum retirement age, the contribution period and the calculation of benefits, etc., simultaniously or not. They have also been able to try to change the actual retirement age by curbing early retirement or providing bonuses for deferring retirement.

In most EU15 countries, the age at which pension entitlements are paid has been brought up to 65, in particular in Austria, Italy and Portugal, and the retirement age has been harmonised between men and women. Increasingly, the statutory retirement age has also been replaced by a minimum age, thereby making the choice of when to retire more flexible.

Beyond the statutory retirement age, all EU15 countries have tried to raise the actual retirement age by limiting access to early retirement, such as by applying penalties or by encouraging or facilitating deferred retirement.

The contribution periods to obtain a full pension have been extended and brought up to at least 40 years in several countries including Germany, Austria and France.

(1) In Denmark, for example, the appointments of civil servants have been limited to a set of occupational categories since 1 January 2005. Staff not appearing on this list are recruited as contract civil servants, with a status comparable to the private sector.

TABLE 1   MAIN PARAMETRIC REFORMS TO THE PENSIONS OF PUBLIC SECTOR WORKERS[1]

	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UK
Raising of retirement age or minimum retirement age	X			–[2]			X[3]		X	X	X	X	X	X[3]	X
Restraints on early retirement or promotion of deferred retirement	X	X	X	X	X	X	X	X	X[4]	X	X	X	X	X	X
Extension of contribution periods	X		X				X	X		X	X	X	X		
Reduction of retirement benefits	X		X				X	X		X	X	X	X	X[5]	–[6]

Sources : Kings et al. (2007), OECD (2007a), Palacios and Whitehouse (2006).

(1) A cross in a cell means that it has been possible to find a convincing indication of the presence of this reform element for the country in question since 1990, whatever the significance of the change introduced.

(2) In Denmark, the normal retirement age had been lowered from 67 to 65 in 2004 but will be raised by 2 years between 2024 and 2027.

(3) Flexibility of statutory age.

(4) Ireland, only the compulsory retirement age has been withdrawn.

(5) By means of switching to notional accounts.

(6) Retirement benefits have been revised upwards, especially via indexation based on wages rather than prices.

This extension has generally been accompanied by a reduction in pension benefits. In this way, when calculating entitlements, the final wage is being replaced more and more often by an average wage over a longer period, indeed by the average income received throughout life. In several countries, including Germany, Austria and Italy, the reforms have aimed explicitly at reducing replacement rates. Conversely, in the United Kingdom, the aim of the reforms has been to make the retirement system more generous.

In all, the reforms have affected more parameters in some countries than in others. In Austria, Finland, Italy, Luxembourg, the Netherlands and Portugal, they have affected many parameters, whilst some countries, including Belgium, have made minor reforms to public sector pensions.

3. Reforms in a selection of countries

The aim of this section is to provide a more detailed presentation of the reforms which have been made in six particularly interesting countries. These countries are, in fact, either precursors or major reformists. The countries in question are the three major countries neighbouring Belgium – Germany, the Netherlands and France – as well as Sweden, Italy and Austria. An analysis by country makes it possible in particular to understand the reasons which made these reforms necessary.

3.1 Germany

Since the start of the 1990s, Germany has reformed its pension system considerably. Consequently, whilst statutory retirement pensions here were fairly generous in the past, those pensions which can be claimed by new beneficiaries have been lowered significantly.

Since 1992, pensions have been indexed to net rather than gross wages. This change has reduced pensions indirectly, insofar as the taxes and social security contributions have then risen, thus decreasing net wages pro rata to gross wages. In parallel, the pension is now penalised in the event of early retirement and the statutory retirement age has been raised to 65 years for women and other types of pensionholder, such as the unemployed.

Nevertheless, the reform in 1992 seemed too limited to guarantee the sustainability of the German pension system. Therefore, it was followed by a second reform in 2001. With a view to controlling labour costs and achieving a fairer distribution of the increasing pension burden between

generations, the stabilisation of contribution rates has been inscribed in law. In order to guarantee the long-term sustainability of the public pension system, a decision was also taken to reduce the actual replacement rate gradually from 70 to 63 p.c. between now and 2030 by way of a weaker adjustment of pension rights than to the growth of net wages. This substantial drop in statutory retirement pensions should be offset by an increase in supplementary pensions. To achieve this objective, the supplementary pension plans intended to create pension funds are promoted either by tax reductions or direct subsidies granted independently to each pension plan or occupational pension scheme.

In order to prevent a sharp rise in contribution rates, in 2004 a sustainability factor was added to the formula used to calculate pensions. More precisely, pensions have been coupled with a dependency ratio, which corresponds to the relationship between beneficiaries and contributors. When the dependency ratio increases, pensions are not fully indexed to the increase in income. The gross replacement rate cannot be lower than 43 p.c., however. In order to be able to comply with this minimum, the changes in the dependency ratio are not fully reflected in the pension benefits but are offset in part by raising the contribution rate. Whether working or retired, all workers are affected to the same extent by the sustainability factor, given that the reference income is affected by the same coefficient as the pensions paid.

Finally, it was decided in 2007 to raise the statutory retirement age from 65 to 67 on a gradual basis between 2012 and 2029.

3.2 The Netherlands

The Dutch pension system is based on two main pillars. The first, a public pillar, comprises a basic pension – the AOW pension for "*Algemene Ouderdomswet*" or general old-age insurance law –, the total of which increases according to the number of years of residence in the Netherlands. The second, a private pillar, comprises supplementary pensions which practically all employers offer their staff. Managed by a large number of pension funds, this pillar has a coverage rate of more than 90 p.c. and represents a little over half the pension benefits. It also applies to civil servants. The *Algemeen Burgerlijk Pensioenfonds* (general civil pension fund), which manages the pension assets of all Dutch civil servants is, also, the largest pension fund in Europe.

Given that the Netherlands has a significant second pillar financed by capitalisation and that, consequently, the country depends less on the pay-as-you-go system than

most other European countries, the ageing of the population seems to jeopardise the funding of pensions less. Nevertheless, the impact of this problem on public expenditure in terms of pensions is considerable, due in particular to the indexation of public pension benefits to minimum wages. To date, the generosity of the pensions has remained almost intact, despite the decision taken in 2005 to remove the tax benefits from early retirement systems.

With regard to the second pension pillar, there has been a slide in recent years towards supplementary pension schemes based on average wages and no longer on the last wage, under pressure from general government which feared that the liabilities in terms of pensions would weigh too heavily on the cost of employment and its tax revenues, since increasing contributions imply higher tax deductions and the government would have to contribute more to the general civil pension fund. The indexation of contributions and pension benefits has also become conditional more often. The non-indexation of pension entitlements may now be used more easily as a regulatory element in order to perpetuate the financial health of pension funds. Consequently, the beneficiaries of pensions now and in the future are faced with an increased risk of a relative decrease in their standard of living.

With a view to increasing the transparency of pension funds, a law on pensions was approved in 2007, replacing the law on pensions and savings. This new law aims, in particular, at better measuring the solidity of the pension funds. Very close attention has also been paid to transparency in respect of the affiliate. Therefore, pension funds are now required to explain more clearly the method of indexation used as well as the conditions under which indexation is reduced.

It was recently decided to raise the statutory retirement age from 65 to 66 in 2020 and again to 67 in 2025. However, a transitional phase is planned until 2047 enabling some working people to retire at 65, provided that they have worked for a sufficiently long time. Those who take up this opportunity, however, will receive a lower AOW pension.

3.3 France

Before the reforms, France was characterised by the coexistence of numerous specific occupational retirement funds and a relatively high level of generosity. This generosity was extended until the start of the 1980s. The statutory retirement age was then lowered to 60, in most cases, as long as the required number of years of contribution is reached. In addition, a minimum pension

(*minimum contributif*) was established: any person having contributed for at least 37.5 years, was entitled to 85 p.c. of the minimum wage at the time.

In the general system applying to salaried workers in the private sector, the pension amount was the product of three terms: the payment rate (equivalent to 50 p.c. at full rate), the mean annual wage calculated on the basis of the 10 best years – these wages being capped and adjusted – and the relationship between the period of contribution and the period which was required in order to obtain the full rate (150 quarters for a full rate).

A first parametric reform to improve fiscal sustainability was introduced in 1987 when it was decided to adjust the wages used to calculate entitlements and no longer to index-link the pensions in payment and minimum entitlements on the basis of wages but on prices. In 1993, this measure was confirmed without a time limit.

The reform of 1993 related only to the private sector and, in particular, the general system as well as three so-called aligned schemes, those of salaried agricultural workers (who have since become financially integrated into the general system), craftsmen and manufacturers and tradesmen. In addition to confirming the method of indexation, this reform included various changes to parameters and measures. In this way, the period of contribution was increased from 37.5 to 40 years on a gradual basis, at the rate of one quarter per year. The reference period for calculating the mean annual reference wage was increased gradually from the 10 best years to the 25 best years. Therefore, the mean annual reference wage is lowered by the consideration of 15 less good years. In the – likely – case that these years are also earlier, this reduction is reinforced by the fact that the 25 best years are adjusted on the basis of prices and not average wages.

In order to encourage older workers to stay in work, the 1993 reform also established an annual 10 p.c. penalty for each year less than the full contribution period. This penalty is added to the reduction of the pension amount resulting from the ratio between the contribution period, expressed in quarters, and 160, which is less than 1.

Between 1993 and 2003, the main striking element was the salvage of the supplementary schemes organised according to a point system, in several stages. The raising of these two pillars took place by reducing the yield rate and increasing contributions.

A second major pension reform took place in 2003. It related to both the private and public sectors. With a view to reconciling the more generous public system

with the private system, the contribution period in the public sector was gradually aligned with that in force in the private sector, increasing it from 37.5 years to 40 years at a rate of six months per year and the pension amounts were henceforth index-linked to prices rather than average wages. However, in the public sector, the retirement benefit continues to be determined by wages in the last six months, which are generally also the highest.

The 2003 reform also reduced the penalty per missing year to 6 p.c. in the private sector. In parallel, it introduced a 2 p.c. penalty in the public sector, which rose to 3 p.c. in 2008. For both the private and public sectors, a bonus was also established in order to encourage older workers to remain in employment: pension entitlements rise by 3 p.c. for every year worked beyond the normal length of career.

The 2003 reform created an original system enabling the period of contribution to be increased so that a career is considered complete in line with the increase in life expectancy, for both the private and public sectors. In this way, it planned that the period of contribution would rise gradually from 40 to 41 years between 2009 and 2012, at the rate of one quarter per year. It was planned that this rise could be updated if the context was changed in the light of developments in the rate of employment of persons aged over 50, the financial situation of pension schemes and the employment situation. This issue was debated in 2008 as planned and the increase has been maintained.

Finally, the 2003 reform also involved a social element designed to raise the lowest pensions. It again set a target for the minimum pension. So, in 2008, for those who had worked a full career, a minimum replacement rate of 85 p.c. had to be reached. Moreover, the minimum old-age pension granted irrespective of the contributions if the other resources are insufficient, was also raised.

In 2007, special pension schemes were reformed. These schemes cover some 500,000 salaried workers in public enterprises who had been spared by the previous reforms to a large extent and were enjoying even more generous schemes than those in the public sector. These enterprises operate, *inter alia*, in transport, energy, mining and the navy. This reform related to the same parameters as that of the public sector in 2003. Therefore, the contribution period must be increased from 37.5 years to 40 years by 2012 and to 41 years between now and 2016. It also establishes a penalty and a bonus, within certain limits. Retirement pensions are now also index-linked to prices and no longer to wages. However, the effects of the reform have been offset in the short and medium term by various advantages for existing staff, for example, the incorporation of bonuses in the calculation of the pension amount.

In 2008, various adjustments were made to increase the actual retirement age. Therefore, the bonus was brought to 5 p.c. per year under certain conditions. The government also relaxed certain restrictions which slowed down the employment-retirement combination for persons aged 60 and over and the mandatory retirement age was increased from 65 to 70 for most salaried workers in the private sector. However, the penalty was brought to 5 p.c. and the statutory retirement age, set at just 60, has remained a taboo subject.

3.4 Sweden

Sweden has gone further than implementing one or more parametric reforms and changed the very nature of its pension systems, both for the statutory system (first pillar) and the supplementary scheme (quasi-mandatory second pillar).

Before the reform, the first pillar comprised a universal basic pension created to combat poverty among the elderly and a supplementary allowance for those who had regularly received income from work. This supplementary allowance responded to the logic of a defined benefit pay-as-you go pension system.

In order to receive a full supplementary allowance, 30 years of contributions were required. The contribution rate was relatively high, which enabled surpluses to be generated. These were accumulated in a fund designed to act as a buffer in the event of a problem. This reserve represented up to 40 p.c. of GDP. The contributions served not only to finance retirement pensions but also survival pensions and invalidity benefits. The pension allowance was calculated on the basis of the 15 best annual wages and the aim was to achieve a replacement rate of 60 p.c. up to a ceiling equivalent at the start to 1.5 times the mean wage. The normal retirement age was fixed at 65 years but workers could retire earlier, to some extent – once they reached 60 – or later – up to 70 –, subject to penalties and bonuses, the aim of which was already at achieving actuarial neutrality.

Persons with little or no income were entitled to a pension supplement as well as an allowance which could cover up to 95 p.c. of housing costs. The basic allowance and supplement were to reach approximately 30 p.c. of the average wage.

TABLE 2   MAIN CHARACTERISTICS OF FIRST PILLAR PENSIONS IN SWEDEN

	Before the reform	After the reform
Basic schemes (other than those based on wages)	• basic universal pension • in the absence of sufficient income from work, right to a pension supplement and housing allowance[1]	(residual) guaranteed minimum pension and housing allowance financed by general budgetary resources

Wage-based scheme	supplementary pension based on defined benefits covering wages up to a ceiling:
	• 15 best wages
	• indexation to prices (for the ceiling also)
	• 30 years of contributions
	• 18.5 p.c. contribution rate
	• normal retirement age: 65 years but possible retirement from 60 years
		pension based on defined contributions covering wages up to a ceiling:
		• benefits determined by contributions paid
		• yield and indexation linked to wages (for the ceiling also)
		• 18.5 p.c. contribution rate:
		  – 16 p.c. notional accounts
		  – 2,5 p.c. capitalisation
		• flexible working age from 61 years

Survival pensions	funded by social security contributions	distinct system financed by general budgetary resources

Source: Sundén.
(1) The basic universal pension was financed by social security contributions but the funding was supplemented by general budgetary resources.
    These resources were also used to grant the pension supplement and housing allowance.

The second pillar of the Swedish pension system involved mainly four major occupational schemes: one for blue-collar workers in the private sector, one for white-collar workers, one for central government workers and one for local authority workers. These schemes granted defined benefits.

The reform of the system was fine-tuned during the 1990s but only entered into force as from 1999. As in most countries, long transition periods were provided for.

In the new pension system, the basic pension has been removed and replaced by a residual guaranteed minimum pension. It is only granted to persons having little or no other income from work. This guaranteed pension was established at a level equivalent to 1.5 times the previous basic pension, so as to maintain the standard of living of those who were receiving this basic pension and the pension supplement at the same time. The housing allowance was maintained.

The earnings-related system still covers salaried workers up to a certain income ceiling. However, this ceiling is now index-linked to wages and no longer to prices in such a way that the statutory system should no longer be eroded as in the past.

The system is financed by a contribution of 18.5 p.c. of which 16 p.c. is paid to the notional account system operating on the pay-as-you-go principle. This part of the retirement pension is determined on the basis of contributions paid plus a imputed yield, all divided by the average life expectancy for a given cohort at the age of 65. The yield rate is equal to the growth rate of the actual wage per capita. The life expectancy is calculated uniformly, without taking account of sex or socioeconomic category. The remaining 2.5 p.c. is paid to the defined contribution system by capitalisation. In this system, the contributions paid are frozen on individual accounts and each worker may choose the managing pension funds. The rate of return is that of the investments and the financial risk is transferred to the individual.

The pension is index-linked according to a system which, in the long term, is equivalent to indexation on the basis of wages. However, the indexation may be reduced automatically if the financial stability of the system is jeopardised, that is, when the total liabilities exceed the total assets. In this case, it is reduced by multiplying it by the ratio between assets and liabilities. This scenario seemed unlikely on the basis of projections drawn up but could result notably from a change in life expectancy which does not comply with that expected or a downward movement in the number of workers.

The retirement age has become totally flexible as far as pension legislation is concerned and a statutory retirement age no longer exists. The minimum retirement age has been increased from 60 to 61 and there is no longer a maximum age. The age of 65 now serves only as a reference for the calculation of life expectancy.

The second, quasi-mandatory pillar, which covers more than 90 p.c. of workers, has also undergone considerable transformations since the four main schemes have switched, one by one, from a defined benefit system to a defined contribution system.

The successful implementation of the reform is based on a number of factors. First of all, the importance of the second pillar was able to cushion the impact of a reform to the first pillar. Next, the substantial buffer funds accumulated over the years have served, on the one hand, to supply the new system with reserves and, on the other, to transfer the resources to the State in order that it takes back cover for schemes previously coming under social security. This has enabled social security contributions to be maintained at a reasonable level. Thirdly, the reform was supported by a very large majority in parliament. Whilst some were interested, in particular, in the greater link between benefit and contribution, others were interested in safeguarding a first pillar, based mainly on the pay-as-you-go principle. This first pillar was threatened by the fact that an increasing number of workers were affected by the wage cap. In fact, as this ceiling was indexed exclusively to prices, the rise in real wages over a long period had resulted in an ever increasing share of the population being affected thereby. In addition, the reform has made it possible to put an end to redistribution carried out to the detriment of low-education workers and for the benefit of high-education workers. In fact, contributions were deducted from all wages from the age of 16 until the age of retirement whilst benefits were based on the best 15 years of wages only. Therefore, the difference between these two formulae led to a transfer of income to the detriment of those who had a long and smooth career and for the benefit of those who had a shorter career characterised by sharper growth in the income profile.

The reform does not prevent certain pitfalls, however. Although the consideration of life expectancy enables the budgetary burden that this represents to be confronted, the system remains sensitive to demographic changes insofar as the first pillar is still based, above all, on the pay-as-you-go principle. Therefore, the costs linked to the pensions of large cohorts weighing down smaller cohorts, remain problematic.

Certain unexpected or pernicious effects have also manifested themselves. During the first few years of the implementation of the reform, the actual retirement age remained around 62, a relatively low figure in respect of the measures which should have contributed to its rise. This increase did not take place immediately, essentially for three reasons. First, the applications for disability allowances soared among older workers and it was necessary to await a reform of this type of allowance, in 2004, to stem the flow. Secondly, labour market legislation dissuades many salaried workers from working beyond the age of 67 and employers from keeping very elderly workers. Thirdly, several occupational second pillar schemes include incentives for early retirement.

In 2008, for the first time, the liabilities of the system exceeded its assets, so that the automatic balancing mechanism was activated. Therefore, pensions rose at a slower pace than wages.

3.5 Italy

As in other countries, the pension system in Italy became increasingly generous and costly until the start of the 1990s. Pension costs absorbed a larger share of GDP then than in most other EU15 countries and the loss of control over these costs was increasing. Another major feature of the Italian system was its complexity. In fact, besides a multiplicity of schemes specific to certain professions, Italy had two pension systems, one for seniority and the other for old-age. The seniority pension was granted irrespective of age after 35 years of contributions in the private sector, 25 years in local authorities and 20 years (15 years for women) in central administrations, whilst the old-age pension was subject to a dual condition of age (60 for men and 55 for women) and contribution period (15 years).

Since the starting point was more unfavourable than in other countries, the reforms were more substantial. The most significant reforms were also adopted from the 1990s within a context of monetary and budgetary crisis.

The 1992 reform was parametric, above all, but its originality lies in the fact that the reform concerned several significant parameters at the same time. The age required for granting an old age pension was gradually brought to 65 years for men and 60 years for women, as opposed to ages ranging from 55 to 65 years according to sex and socio-occupational category before. The period of contribution required for granting an old age pension was also extended by 5 years, thereby increasing to 20 years. For new entrants, the reference salary was from

then on based on the entire career, instead of the last 10 years for the self-employed, the last 5 years in the private sector and the last month in the public sector previously. The contribution period required for the seniority pension in the public sector, for its part, was brought in line with that in force in the private sector, that is, 35 years. Finally, pensions are index-linked and reference wages adjusted to prices and no longer to salaries with the possibility of increases, nevertheless. Furthermore, tax incentives have been established in order to promote the development of the second and third pillars.

The 1995 reform was structural: the pension system moved from a defined benefit system to a defined contribution system for new workers, with a long transitional period for those who were in the system for less than 18 years, the others remaining in the old system. The pension system is now based on notional accounts, capitalisation being only fictitious here. Contributions are adjusted according to the growth of the nominal GDP. The transformation coefficient of the retirement capital into income is an increasing function of age and decreasing function of life expectancy, which provides an incentive to postpone the age of retirement. The coefficient which was to be revised every 10 years, was lowered in 2007 and will now be revised every three years directly by the administrative authorities.

In parallel with the introduction of notional accounts, the 1995 reform brought other changes. Thus, pensions are index-linked to prices only. The conditions for starting old-age pension entitlements have been lowered: 5 years of contributions suffice. On the other hand, 40 years of contributions are now required before there is any entitlement to a seniority pension. However, 35 years could suffice but the persons must have reached the age of 57. In other words, a minimum age has been introduced for the seniority pension. Some rules have been harmonised between private and public sectors.

In 2004, a new stage was crossed in the process of pension reform in Italy. This reform gradually increased the age of granting seniority pensions, raising it from 57 to 62 years between 2007 and 2014. It also increased the system resources, among other things by establishing of a solidarity contribution from the highest incomes towards the more modest incomes. One part of these savings or revenues was devoted to funding a temporary "super bonus", that is an exemption from personal social security contributions for workers deciding to continue to work beyond the statutory retirement age. Furthermore, this reform encouraged the second pillar, above all.

In 2007, the government reconsidered certain elements of the 2004 reform by slowing the rate of increase in the minimum retirement age, and granted various social measures. Having done this, for the first time since the start of the 1990s, pension measures resulted in an increase in expenditure. The measures included, inter alia, more favourable conditions for the accumulation of contributions for atypical workers (redemption of study periods and full cover in the event of career interruptions) and an extension of the list of occupational groups whose employment conditions are deemed hard, these groups now being able to claim retirement 3 years earlier than the normal age but without being able to retire before the age of 57.

In 2009, following formal notification from the EC for failure to comply with the principle of equality between men and women, the authorities were forced to gradually harmonise the retirement age of women (60) with that of men (65) in the public sector.

3.6 Austria

Before reforms were undertaken, the public pension system in Austria could be described as generous and costly. In addition, the participation rate of persons over the age of 55 was particularly low in the country. Without reforms, the high and increasing pension expenditure within the context of ageing would have seriously jeopardised the sustainability of public finances.

These structural weaknesses were offset by several in-depth reforms of the pension system, which were decided on a gradual basis. The 1997 and 2000 reforms concentrated above all on raising the actual retirement age whereas those of 2003 and 2004 related to the numerous parameters influencing the retirement benefits. The raising of the actual retirement age and changes to retirement benefits aimed at easing the pressure on pension expenditure considerably and, therefore, improving the sustainability of public finances.

In order to encourage people to work longer, it was decided in 1997 to reduce the replacement rate by 2 percentage points per year of early retirement prior to the statutory age with a maximum replacement rate reduction of 15 p.c. Furthermore, that year, pension entitlements acquired by year worked were increased, reaching 2 p.c. The maximum replacement rate of 80 p.c. would then be reached after a career of 40 years. Retirement benefits, therefore, became more generous as a result of this last measure.

The 2000 reform further increased the penalty per year of early retirement, bringing it to 3 percentage points, the maximum replacement rate reduction being maintained. However, an exception was included for persons who had almost reached statutory retirement age, for whom the former legislation continues to apply. Furthermore, the bonus per year worked after the statutory retirement age was increased from 2 to 4 percentage points, but the replacement rate cannot exceed 90 p.c. In addition, the minimum early retirement age was raised from 60 to 61.5 years for men and from 55 to 56.5 for women. Finally, the possibility of retiring early owing to reduced working capacity was removed.

In 2003, the reduction of retirement benefits in the event of early retirement was again increased, namely to 4.2 percentage points. In addition, the possibility of early retirement owing to unemployment was removed. Pension entitlements acquired per year worked will be gradually brought to 1.78 p.c. and the reference period used to calculate pensions has been extended from the 15 best years in terms of wages to 40 years. The increased generosity of retirement benefits resulting from the 1997 reform was thus cancelled out by that of 2003. The reforms to the pension system applicable to civil servants reflect those implemented for workers in the private sector. In relation to the benefits which would have been obtained prior to reform, the maximum reduction to the pension resulting from these measures was limited, however, to 10 p.c. until 2032. Furthermore, exceptions to the new regulations were planned for certain groups, such as workers performing heavy work.

The 2004 reform brought several changes to the existing pension system. In this way, the "80/65/45" formula acts as a guideline for the new pension system. This formula means that a pension received at the age of 65 is equal to 80 p.c. of the calculation basis after 45 years of insurance. Bearing in mind this new formula, the reference period is now extended to the entire career. Moreover, the possibility of retiring early was restored by establishing a pension corridor between the age of 62 and 68, by means of an adjustment to pension penalties and bonuses. Finally, the contributions paid are adjusted on the basis of the increase in wages rather than prices. Existing pensions are price-indexed as was already the case before, in fact. As a result of the introduction of individual pension accounts, pension entitlements acquired are now notified in complete transparency. The new regulations only apply fully to persons in work who had not yet acquired pension entitlements prior to 2005. The others are subject to both the old and new regulations *pro rata temporis*. The ceiling relating to the maximum reduction in the retirement benefit resulting from the reform was also lowered from

10 to 5 p.c. until 2024 whilst remaining fixed at 10 p.c. after this date.

Finally, following a decision issued by the Constitutional Court, the statutory retirement age for women will be gradually brought in line with that for men, so increasing from 60 to 65 years by 2033.

4. Effects of the reforms

This section sets out the extent to which the reforms to the pension systems decided upon in most of the EU15 countries have produced certain effects. Firstly, it will be a question of knowing whether these reforms have led to an increase in the actual retirement age. Next, the examination will focus on the impact of the reforms from the point of view of fiscal sustainability and social sustainability.

4.1 Actual retirement age

Many coercive measures and incentives have been introduced to raise the actual age at which workers leave the labour market. In fact, this type of increase makes it possible to face both the budgetary and social challenges posed by an ageing population at the same time, increasing the number of years of contributions and reducing the number of years of benefits, without in any way affecting the level of benefits received by persons drawing their pensions.

The changes in the average actual retirement age indicate the extent to which the reforms have had a visible impact on this, in particular. To do this, the OECD data established by a moving average of 5 years are used, and this enables the economic climate elements to be eliminated to a large extent. In addition, these data integrate all the forms of retirement from the labour market including the various forms of pre-pensions, which come under other branches of social security, such as unemployment or invalidity. Consequently, any reforms affecting these other branches may also have an impact on the actual retirement age reported here.

In the EU15 considered as a whole, the average retirement age fell significantly between the start of the 1970s and the mid 1990s – which is when retirements were at their earliest – dropping from more than 67 years to 61 years and 3 months among men and from 66 years and 6 months to 60 years and 3 months among women. Consequently, the average age rose somewhat to nearly 62 years and 61 years and 5 months

CHART 7   AVERAGE ACTUAL RETIREMENT AGE [1]

(by 5 year period)

EU15 (unweighted average) [2]

Men
Women

Variation in the actual retirement age, between 1990-1995 and 2002-2007

Men
Women
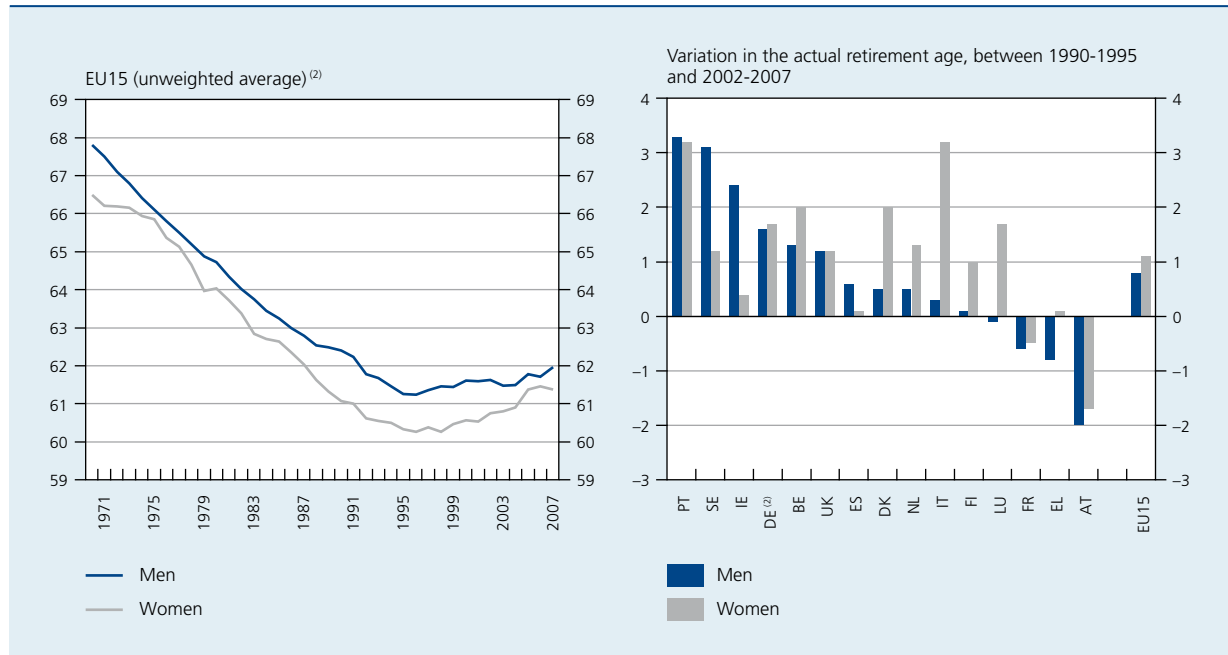
Source : OECD.

(1) The average actual retirement age from the working population is based on a comparison, over a period of five years, of the rate of activity of successive groups (by five-year group) of working people aged 40 years and over.

(2) The data for Germany are only available from 1991-1996.

respectively in 2007. These movements affected almost all EU15 countries, albeit to various extents and with slight time differences.

Between 1990-1995 and 2002-2007 – that is before and after the most significant reforms carried out in Europe –, most countries saw the actual retirement age begin to increase. This postponement of the retirement age averaged 9 months for men and 13 months for women; this difference can be explained in part by the fact that the measures for raising the statutory retirement age were more significant for women than for men.

The increase in the actual retirement age reached more than 3 years in Portugal, for women in Italy and men in Sweden and approximately 2 years for men in Ireland and women in Belgium, Denmark and Luxembourg. However, retirement continued to be taken increasingly early in France, as well as among men in Greece and to a lesser extent, in Luxembourg. In Austria, the downward trend still did not appear to have been halted in 2007.

In some countries where the increase is significant, such as Portugal and Sweden, major reforms may be partly at the origin of this increase. On the other hand, some

countries where the erosion of the retirement age has continued, have adapted certain parameters which are supposed to delay the retirement age. This confirms that long transition periods tend to only bring about very few changes in behaviour in the short term. The increase in the retirement age should continue, therefore, since many reforms are staggered over time and have yet to produce their effects, at least partially.

4.2 Fiscal sustainability

The effect of the reforms can also be measured in terms of fiscal sustainability. Therefore, the Working Group on Ageing Populations or AWG – an EC working group which carries out joint projections on the subject of the cost of ageing – has made a forecast of the increase in the share of pension expenditure in GDP by 2060. The last projections give a glimpse of the major developments expected in EU countries, taking into account, in particular, the future effects of the reforms decided. Insofar as they date from the middle of 2008, however, these projections do not take account of the effects of the current economic crisis or the latest pension reforms.

The increase in pension expenditure in GDP can be broken down into five factors: the elderly dependency rate, the coverage of senior citizens, the employment rate, the benefit rate and a residual factor. Among these factors, two can be directly influenced by the implementation of pension system reforms. On the one hand, coverage, which is equal to the ratio between the number of pensioners and the population aged 65 and over, can be influenced by delaying the actual retirement age. On the other hand, the benefit rate, that is, the ratio between the mean pension and mean wage is influenced if the reforms affect the total benefits received. The other factors do not depend, or at least not directly, on the pensions policy. Thus, the dependency rate, which expresses the size of the population aged 65 and over as a percentage of the working population, only depends on demographic factors. And the employment rate depends on factors which exceed the framework of the pension systems to a large extent, even if this framework may also influence it.

The reduction in coverage indicates an increase in the average actual retirement age, an increase which may result from the increase in the statutory age, the decrease

in early retirement opportunities, a bonus-malus system or an extension of the reference career. In addition, the coverage may be influenced by factors of generation cohorts or changes in mentality which do not come directly under economic policy instruments.

The coverage rate should decrease significantly in Italy, Denmark, Austria, France and Portugal as well as in Finland and in Germany. Among these countries, the statutory retirement age has been or will be raised – sometimes gradually – in Italy and, for women, in Austria and Portugal. The early retirement age will also be raised in Austria. Systems establishing a significant bonus-malus system for early retirement or retirement postponed beyond a pivot age have been introduced in all these countries. Finally, the full career serving as a reference for the calculation of certain entitlements has been extended in Italy and France.

For its part, the benefit rate is influenced instead by a limitation of the benefits or growth thereof, mainly obtained by reducing the reference wages – obtained by referring to a less favourable period, by capping the wages used in

- ● Total development of public pension expenditure between 2007 and 2060
- ■ Contribution of coverage rate [2]
- ▨ Contribution of benefit rate [3]
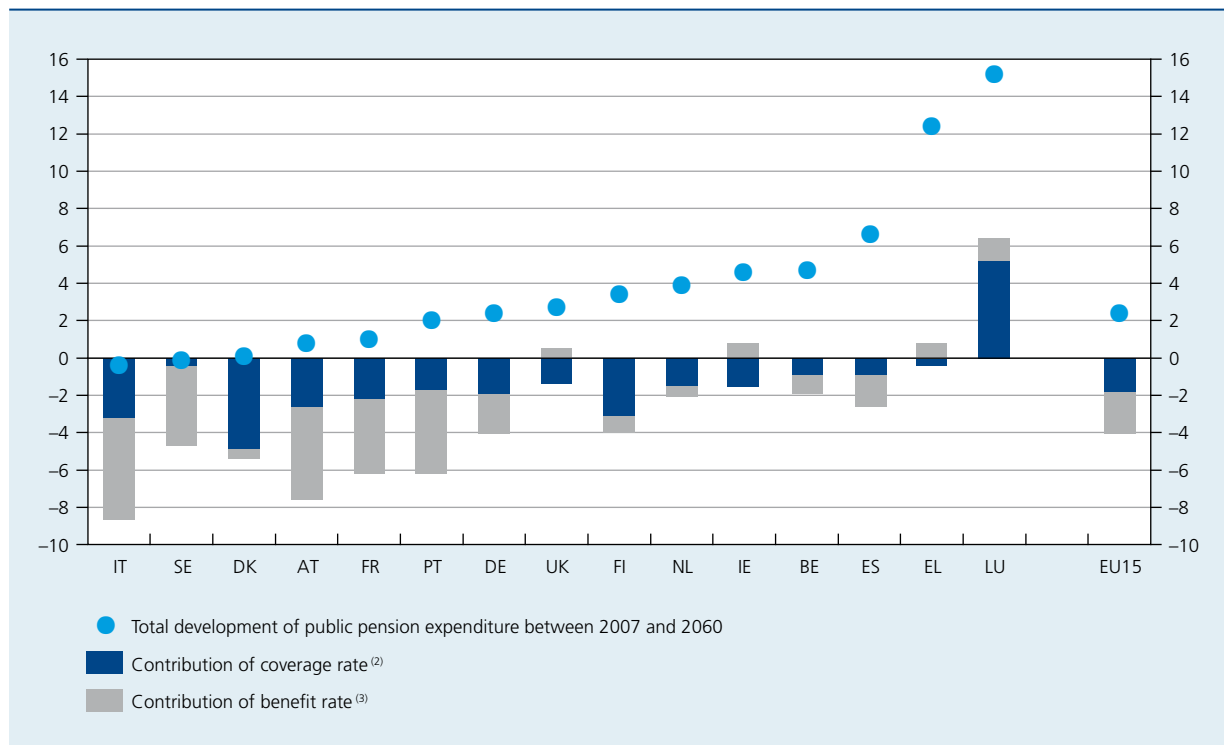
Source: EC.
(1) Public expenditure relating to the pensions of workers in the private and public sectors.
(2) Ratio between the number of pensioners benefitting from a public system pension and the number of persons aged over 65.
(3) Ratio between the mean pension and mean wage.

the calculation of the entitlements or limiting their adjustment – or by a less favourable indexation of the pensions in payment.

The benefit rate should drop significantly by 2060 in Italy, Sweden, Austria, France and Portugal. This is also the case to a lesser extent in Germany and Spain. A less favourable period will be taken into account for most of these countries (Sweden, Austria, France and Portugal) with a lowering impact on the benefit rate. The adjustment of wages in the past when calculating entitlements has been limited in France and Portugal where there has been a move from adjustments on the basis of wages to adjustments limited to inflation, at least in part. However, the adjustments are now more generous in Sweden and Austria, which to some extent limits the gain obtained by considering a less favourable period. Finally, pensions are not indexed as heavily as in the past in Italy, France and Portugal, which also reduces the benefit rate by 2060. In Sweden, however, the heavier indexation tempers the other factors.

Despite the generalised ageing of the population, it follows from these projections that some countries seem to have kept the increase in pension expenditure under control: Italy and Sweden, which would even see a slight reduction in this expenditure, and Denmark, Austria and

France where their increase would be less than 1 percentage point of GDP between now and 2060. All these countries have carried out an active policy of reform which will have an impact, at least in future, on the coverage and/or benefit rate, which reduces their expenditure linked to ageing all the more. On the contrary, other countries such as Greece and Luxembourg will have to face up to a dramatic increase in these costs, with an unchanged policy. Finally, a median group seems to have already partially limited the consequences of ageing on the cost of pensions, but will have to face an even greater increase in spending if new reforms are not introduced. Belgium forms part of this group and the expected rise in pension expenditure is clearly higher there than that of the average in the EU15.

4.3 Replacement rate

The improvement in the budgetary outlook is sometimes accompanied, however, by a reduction in retirement benefits, to the detriment of social sustainability. A simulation by the OECD enables some observations to be made.

In countries where the net replacement rates – the average pension expressed as a percentage of the final wage – were the highest, the reforms implemented have reduced

CHART 9   IMPACT OF PENSION SYSTEM REFORMS ON INDIVIDUAL ENTITLEMENTS IN CERTAIN COUNTRIES
(net replacement rates before and after reform, men employed in the private sector)
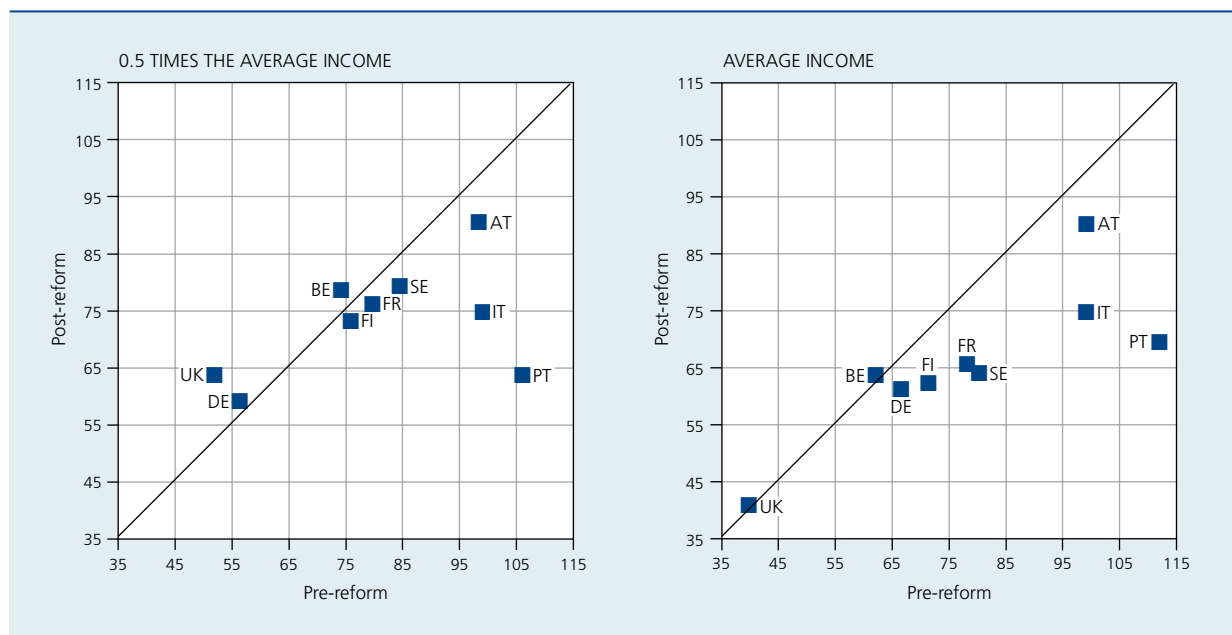
Source : OECD.
(1) The OECD has selected the countries which had implemented major pension reforms between the mid-1990s and the mid-2000s. Within the EU15, this relates to nine countries, which include most of the major reformists.

it. This is the case of Portugal in particular where this rate was higher than 100 p.c. prior to reform, and in Italy and Austria where it was close to this level. The replacement rate has also fallen in Sweden, France and Finland, albeit to a lesser extent. In Germany, the replacement rate of workers on modest incomes was improved a little, whilst for average incomes, it has been revised downwards. This tendency towards a less significant reduction for the lowest incomes is widespread[1].

The countries where the replacement rates were lowest will retain replacement rates which are at least as high as those before the reforms, however. They will even be clearly improved in the United Kingdom, as far as the lowest incomes are concerned.

In this way, the replacement rates in the EU15 tend to be converging, both for average income and modest income.

Conclusions

All European countries are faced with the challenges of ageing populations. In particular, the increase in the elderly dependency rate is already underway and is set to almost double in the EU15 by 2060. These developments call into question pension systems based to a large extent on a demographic situation which was considerably different in the past. For this reason, almost all European countries, but not every one, have already carried out reforms – major reforms in some countries – or plan to do so in the more or less short term.

Some countries have made systemic changes involving either capitalising a part of the amounts required to pay for future pensions or moving to a defined contribution rather than a defined benefit system. In addition, the parameters used to calculate pension entitlements have generally been changed, either specifically or within the framework of a system change. It has been possible to observe these parameter changes in most countries, with those countries where no reforms have been made being rare. However, since the reforms are staggered over sometimes very long periods, it is common for them not to have generated all their consequences yet.

This study shows that most countries have attempted to raise the actual retirement age. On the one hand, this has been done coercively, by raising the statutory retirement age and reducing the opportunities for early retirement. On the other hand, some countries have introduced incentives, including the establishment of a system of bonuses for delayed retirement and penalties for early retirement, increasing the length of career required to be able to

claim a full career or taking account of the increase in life expectancy in the calculation of annuities, sharing out the accumulated capital. The effects of these reforms have been that the downward trend in the actual retirement age was interrupted in the mid-1990s and since then this age has risen in most EU15 countries. In future, this rise is set to continue also, some of the effects of certain reforms having yet to be produced in a number of cases.

Another line of reforms broadly followed consists of reducing the entitlements of (future) pensioners. To this end, the parameters used to calculate these entitlements have been changed in various ways: reducing the reference wage by using a less favourable period, capping the wage considered, less generous adjustments or limiting the indexation of pensions in payment. However, these reforms were mainly established in countries where the replacement rates were particularly generous and the governments there have ensured in general that the least favoured are not made weaker.

In all the EU15 countries, a specific pension scheme, usually more generous, is applied to (statutory) workers in the public sector. In addition to the measures sometimes taken to limit this group of people, such as the reduction of public employment, subcontracting or the hiring of contract workers, a number of countries have carried out reforms on the pension schemes of this group. These reforms have often taken the form of a reconciliation with the pension schemes of workers in the private sector, limiting the specific characteristics, by harmonising further or even removing this specific scheme. Parametric reforms have also concerned the public sector in almost all the EU15 countries.

Following these reforms, several countries seem to have succeeded in controlling the growth of their pension expenditure. Thus, Italy, Sweden and Denmark, for example, should maintain pension expenses which are generally comparable with those in 2007 by 2060. Other countries such as Luxembourg or Greece, however, have every reason to be concerned by the surge in these costs. Finally, a median group, including Belgium, seems to have already introduced reforms limiting the rise in pension expenditure but not sufficiently enough to prevent a considerable increase.

Finally, following reforms, the replacement rates in different EU15 countries have converged or are set to do so. In this way, countries where these rates were the lowest, such as the United Kingdom or Belgium, or even Germany

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(1) For income equivalent to 1.5 times the average income, the overall effect of the reforms is comparable to the effect on the average income.

for modest incomes, have higher replacement rates post-reform than before. On the contrary, countries which had high replacement rates have carried out sometimes major reforms, which have lowered these rates, whilst frequently ensuring the social sustainability of the new system.

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Methodology or pricing: how can the higher volatility of consumer gas and electricity prices in Belgium be explained?

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Introduction

In recent years, gas and electricity prices in Belgium have contributed significantly both to inflation and to an increase in the volatility of inflation. Furthermore, they have considerably fuelled the inflation differential relative to the three main neighbouring countries and the euro area as a whole, upwards in 2008 and downwards in 2009. This article first describes the high volatility of gas and electricity prices in Belgium and the increase in volatility over the recent period. Offering an initial analysis of the factors that could explain this phenomenon, the second section assesses the impact of the new methodology used to record these prices: in 2007, prices ceased to be recorded using the payments approach (yearly bills) and are now based on monthly tariffs. Far from explaining the differences relative to other countries, this change actually brought Belgium into line with practices in those countries. Thus, the greater volatility is related to the intrinsic characteristics of gas and electricity price-setting in Belgium. Section three examines the extent to which this heightened intrinsic volatility may be attributed to changes made to price-setting since the full liberalisation of the gas and electricity market in 2007. It also looks at the role that fixed taxes and transport and distribution tariffs may have played. In the fourth section, gas and electricity prices for residential use in Belgium are compared with those in the three main neighbouring countries and those of the euro area. Particular attention is paid to whether more volatile gas and electricity prices may ultimately have led to higher price levels. The final section presents the conclusions.

1. Higher volatility of consumer gas and electricity prices in Belgium

Based on trends in the harmonised index of consumer prices (HICP), gas price movements in Belgium up until 2006 were seen to move in line with those in the three main neighbouring countries[1] and in the euro area as a whole. However, from 2007 onwards, fluctuations became much more pronounced in Belgium. Gas prices began to fall faster in early 2007 and then rose much more sharply, before again declining more rapidly in 2009. With respect to electricity, prices during the period 1996-2006 were slightly more volatile in Belgium than in the three main neighbouring countries and the euro area. But volatility subsequently increased rapidly from 2008: electricity prices first experienced a strong rise, clearly more significant than in the reference areas, before falling much more steeply in 2009. These trends have led to an increase in the volatility of Belgian inflation in recent years. These observations have been confirmed by a statistical analysis of the volatility, based notably on standard deviations, while taking into account the possibility of an aggregation bias. In effect, a series produced by aggregating trends from several countries tends to be less volatile than the series composing it because national trends that move in opposite directions can offset each other. Nevertheless, the results described here still hold

[1] As in the rest of the article, the series illustrating trends in the three main neighbouring countries correspond to the average of their national trends, weighted according to their weighting in the euro area HICP.

CHART 1

CHART 1   CONSUMER GAS AND ELECTRICITY PRICES

(monthly HICP data, percentage change compared to the corresponding month of the previous year)

GAS

ELECTRICITY

- ——— Belgium
- ——— Belgium, HICP estimated based on the payments approach (annual invoices)
- ——— Three main neighbouring countries [1]
- ——— Euro area
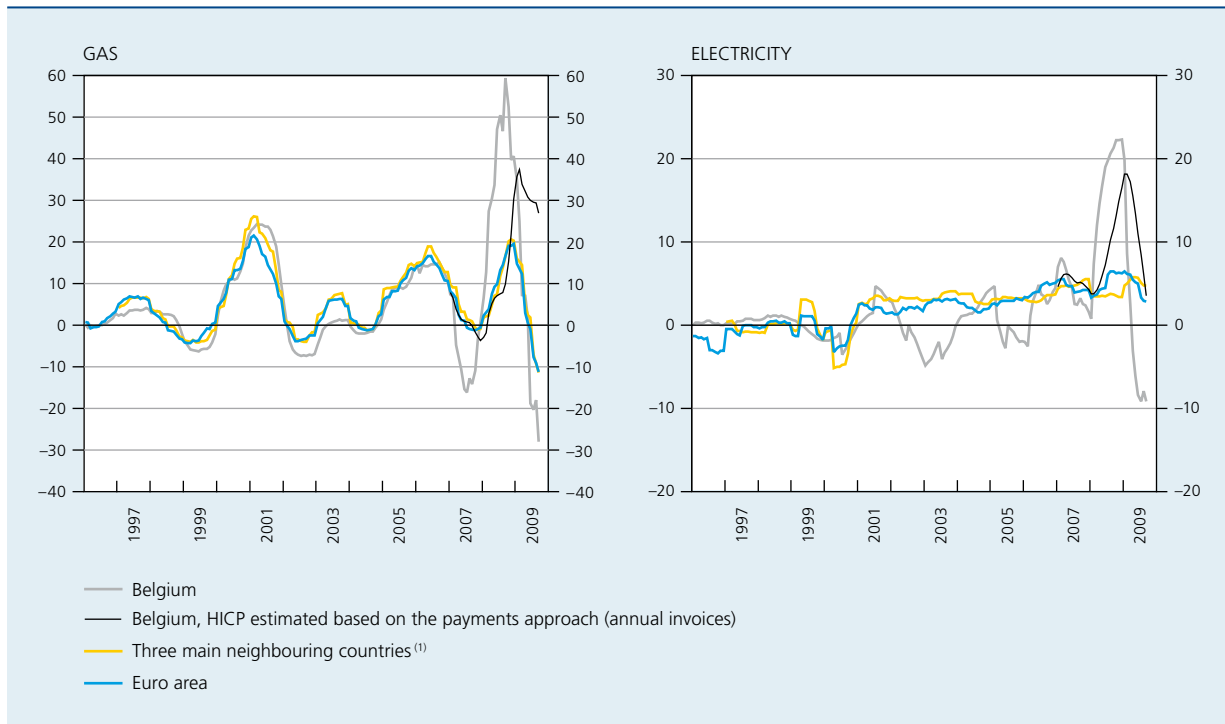
Sources: EC, NBB.
(1) The "Three main neighbouring countries" series are weighted according to the euro area HICP weighting.

true if we conduct a more in-depth analysis comparing the countries individually. For example, for the period following 2007, we can show that, among the 11 euro area countries used as a reference [1], Belgium had the most volatile gas prices and the second most volatile electricity prices [2], whereas previously its position had been much less atypical.

What is the reason for this increased volatility? There appear to be two possible explanations. The first is the change in the method of recording gas and electricity prices in Belgium, both in the HICP and in the national consumer price index (CPI) and the health index derived from it. Since the beginning of 2007, consumer gas and electricity prices have been recorded monthly on the basis of actual price changes, whereas they had previously been recorded each month based on the annual invoices paid by consumers that did receive their detailed annual account during that month. By switching from tariffs relevant for the preceding twelve months to tariffs for

the month itself, the factors that affect gas and electricity prices began to have an immediate impact on inflation and the volatility of inflation, which increased, whereas the previous recording method made their impact more gradual and smoothed out temporary shocks. It seems clear that this change in methodology pushed inflation upwards in 2008 and downwards in 2009. This explains the difference between past and present conditions in Belgium, but not necessarily the differences observed relative to other countries, because in principle, the methods used to record prices in those countries are not known. As a result, this explanation is worth verifying, but it still does not rule out the second possible explanation, which has more to do with the intrinsic characteristics of price formation in Belgium. The next two sections deal with each of these two factors respectively.

2. Impact of the method of recording prices

To begin with, the change in the method of recording prices raises the question of what is the most appropriate recording practice from a strictly methodological standpoint. On the one hand, consumers do not pay bills on a

(1) These are the 11 countries for which data are available for the entire period 1996-2006; these countries were also the euro area's first 11 members.

(2) During the period following 2007, the trend in electricity prices in the Netherlands exhibited even greater volatility, but in that country prices first fell substantially in early 2008 and then rose significantly from mid-2008 and early 2009.

monthly basis and cannot establish a direct link between the amount they are billed and the distinct monthly tariffs because, apart from interim bills that are usually of a set amount, they only receive one yearly statement showing both the quantities consumed and tariffs applied over the past year. Thus using annual invoices to record prices for the CPI follows a "payments" approach. On the other hand, it is clear that price changes must be recorded when the consumer is confronted with them, i.e. at the time the product is purchased, a principle established in European statistics legislation[1]. Applying this principle justifies the recording of prices using monthly tariffs (the "acquisition" approach) even though it may be somewhat removed from the consumer's perception of price trends. In Belgium, the transition from the former to the latter approach should be connected with the liberalisation of the residential gas and electricity market, which took place in stages. This market was liberalised in July 2003 in Flanders, then in January 2007 in Wallonia and Brussels. Since liberalisation, there has not been an official source for the amounts corresponding to annual invoices. Now, only monthly tariffs are published by the regional regulators.

It remains to be established whether this methodology change is a source of divergence relative to the other euro area countries. To do so, it would help to have detailed information on the actual methods used to record prices in each of those countries, and for each type of product. Unfortunately, this sort of information is not easy to obtain. Nevertheless, it is possible to draw indirect conclusions regarding these practices in the case of gas and electricity by using a data source separate from the HICP.

In effect, in its Energy Statistics database – which includes a section on prices – Eurostat also publishes half-yearly prices for electricity and gas in level (in euro by unit consumed) for different types of consumer. The information is available either including or excluding taxes. Up to 2006, the prices published are the prices on 1 January and 1 July of each year, and thus correspond to a method of recording prices using monthly tariffs, similar to the new method applied for the Belgian HICP since 2007. As a result, by comparing price trends taken from this alternative source with those generated by the HICP, we can verify which recording method is used to calculate this index. That said, this alternative database underwent its own

methodology change in July 2007 due to changes in the definitions of consumer types and the reference period for recording prices. Consumer types are now defined as a consumption band rather than a fixed quantity, and the reference period is now the average of the half-year rather than the first month of the half-year. The analysis that follows thus focuses on the data recorded between 1996 and 2006.

With respect to gas prices in Belgium, a fairly strong connection between these two sources can be observed, clearly marked by a certain lag in the HICP behind Eurostat's Energy Statistics. This is fully consistent with what we would expect to see from a comparison of annual tariffs (HICP) with monthly tariffs (Energy Statistics) over the period 1996-2006. Annual invoices do actually correspond to an average of the monthly prices over the past 12 months. And a moving average always lags behind the underlying data somewhat, which explains the delay seen here. By contrast, in the case of the euro area, trends in gas prices according to the two databases prove to be strongly correlated and there is no lag[2]. A similar analysis (not illustrated here) indicates the same holds true in the three main neighbouring countries. Thus, we may conclude indirectly that, for the HICP, the dominant method of recording prices in the three main neighbouring countries and in the whole of the euro area is the same as that used for the Energy Statistics database, and that it is thus based on monthly tariffs.

As regards the rate of price change, correlation between the two sources is weaker for electricity than for gas, both at the national level and for the whole euro area. As in the case of gas, however, a stronger correlation can be observed for the three neighbouring countries and for the euro area than for Belgium. Here again, as expected, there is a lag in Belgium due to the differences in methodology cited earlier, as the HICP calculated using annual invoices lags the Energy Statistics based on monthly tariffs. Here again, the lack of a lag in the euro area and the three main neighbouring countries is a sign that the dominant method of recording prices in these countries' HICPs is based on monthly tariffs.

Since 2005, there is some indication that the lag between the two sources in Belgium has tended to narrow in the case of electricity. Whereas the change in methodology was not fully implemented until January 2007, electricity prices in Flanders were actually already recorded according to the new method in 2005 because electricity market liberalisation in Flanders started earlier than in Wallonia or Brussels, in July 2003. In the case of gas, the new method was applied to prices recorded in Flanders during the course of 2006.

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(1) As set out in Directive No. 2601/2000 of 17 November 2000 establishing the detailed rules for the implementation of Council Regulation (EC) No. 2494/95 on the timing for entering purchaser prices into the Harmonised Index of Consumer Prices, "Prices used in the HICP shall be the prices paid by households to purchase individual goods or services in monetary transactions. Prices for goods shall be entered in the HICP for the month in which they are observed. Prices for services shall be entered into the HCIP for the month in which the consumption of the service at the observed price can commence."

(2) While this is also the case for numerous individual euro area countries (including each of the three main neighbours), it is not systematically the case.

CHART 2   GAS AND ELECTRICITY PRICES ACCORDING TO THE HICP AND THE EUROSTAT "ENERGY STATISTICS" DATABASE [1]

(half-yearly data, percentage change compared to the corresponding period of the previous year

GAZ

Belgium

Euro area

ELECTRICITY

Belgium

Euro area

— According to the HICP

— According to Eurostat's "Energy statistics" database
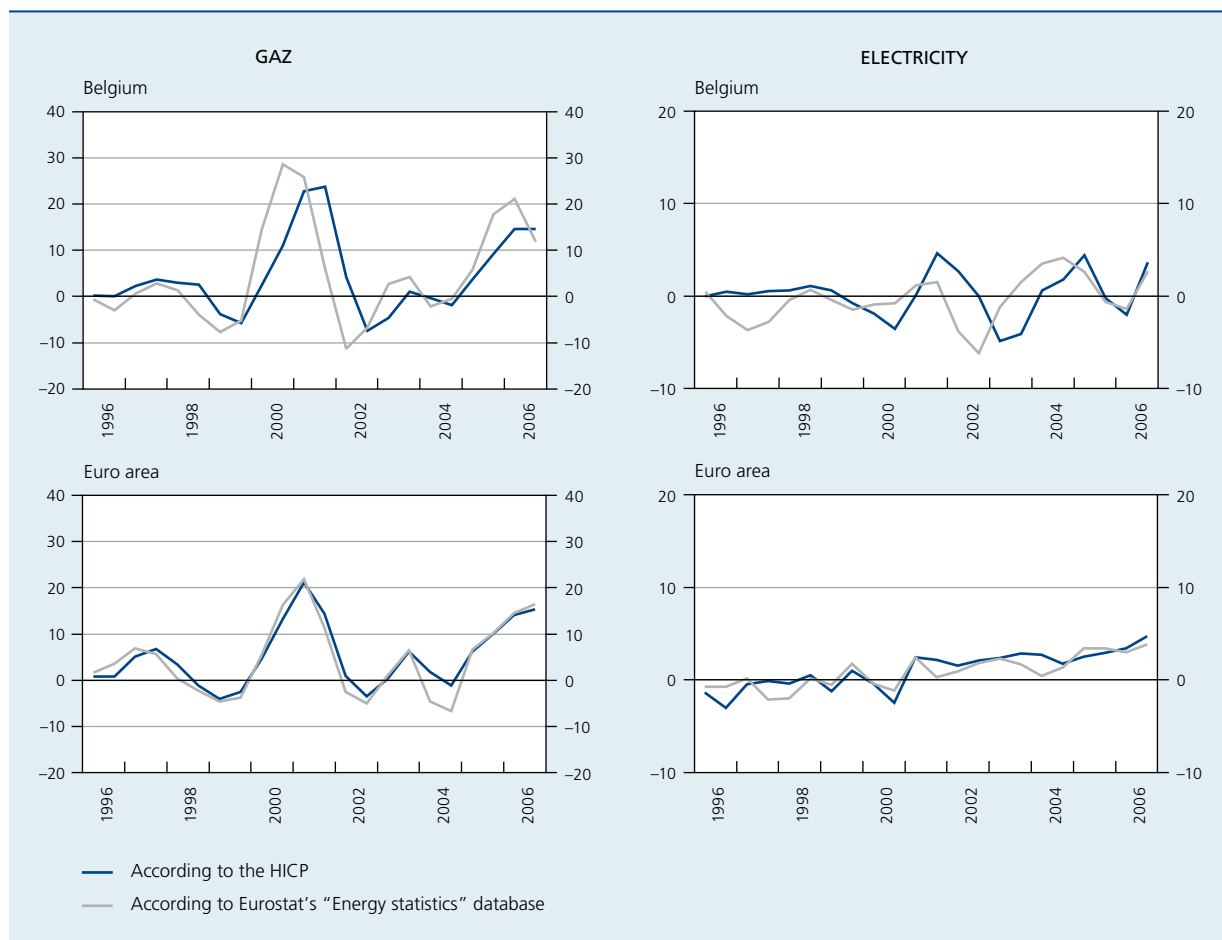
Sources : EC, NBB.
(1) The HICP reflects trends in the prices of a basket of typical consumer products. The series given in the "Energy Statistics" database represent the consumption of an average household and correspond to those used for Eurostat's structural indicators. For gas, this means a D3 consumer (annual consumption of 83.70 GJ), and for electricity, this means a Dc consumer (annual consumption of 3,500 kWh, of which 1,300 at night).

The fact that the correlation between the two sources is weaker in the case of electricity and that there is substantially less correlation between countries than in the case of gas – regardless of which database is used – indicates that the structure of consumption, and especially the structure of national electricity production – which differs considerably from one country to the next – play a significant role in determining the price of electricity. The effect of the structure of production should have lessened recently due to the liberalisation of the electricity market and the fact that the market is increasingly integrated due to the expansion of interconnections, in particular when looking at the three main neighbouring countries.

Based on the preceding observations, it can be concluded that the method used to record gas and electricity prices in euro area countries and in the three main neighbouring

countries is based on monthly tariffs and has been for several years. In other words, the change in methodology in Belgium brought it into line with the price-recording methods used in other countries. Therefore, the change cannot be an explanatory factor for the divergences observed since 2007 with respect to fluctuations and volatility. Consequently, the fact that fluctuations in gas and electricity prices have grown much more pronounced in Belgium since 2007 reflects greater intrinsic volatility, which in all likelihood is attributable to the characteristics of gas and electricity price-setting. This conclusion is corroborated by the observation that even if the payments approach is applied to the period following 2006, Belgian gas and electricity price trends still differ considerably from those in the three main neighbouring countries and the euro area.

3. Gas and electricity price-setting in Belgium

Since January 2007, the residential segment of the Belgian gas and electricity market has been entirely liberalised, which means that consumers are free to choose their electricity and gas suppliers. Several suppliers are present on both the gas and electricity markets, and they can set their prices as they wish. This liberalisation has had little impact on the main principles governing pricing: taking their cue primarily from the pricing methods applied when the market was regulated, most suppliers use pricing formulas that automatically adapt prices every month using, on the one hand, an index designed to cover changes in the prices of the energy component of natural gas and electricity and, on the other hand, an index designed to reflect changes in the non-energy costs of producing and delivering natural gas and electricity. That said, suppliers are free to choose their own benchmark indices and to define the parameters used in their pricing formulas. With respect to the energy component of consumer natural gas reference prices, all the pricing formulas provide for an adjustment of prices based on the trend, smoothed and with somewhat of a lag, in fuel oil prices and, since 2007, in the trend of natural gas spot prices, i.e. the Zeebrugge natural gas reference price. As for the energy component of consumer electricity prices, pricing formulas are still largely based on the Nc parameter published by the CREG (Commission for Electricity and Gas Regulation, the industry regulator), which reflects trends in the prices of oil, coal and gas, and nuclear plant capacity utilisation.

In principle, these formulas are set for a long period, but suppliers may adapt them as they see fit. For example, the main gas supplier made a change in October 2007 to one of the parameters of its benchmark energy cost index. It decided to increase the constant term in the corresponding indexing formula, a decision that is likely not unrelated to the plunge in natural gas prices observed in early 2007. This pricing formula revision was followed by similar adaptations at the other suppliers, although to a lesser extent. More recently, in their electricity price-indexing formulas, certain suppliers have dropped Nc in favour of indices that reflect prices on the electricity (Belpex), gas and petroleum product markets, although this has not significantly affected the consumer price index. Similarly, certain natural gas and electricity suppliers have recently begun to offer fixed-price contracts for a set period of time, regardless of fluctuations in underlying cost factors. This practice, however, appears to be less widespread than the practice of offering prices that adjust automatically.

On top of the prices set by gas and electricity suppliers, there are transport costs and distribution tariffs. Because this segment of the market is still subject to a monopoly, billing items related to transport and distribution fall within the competence of the CREG. Transport costs and distribution tariffs rose significantly at the start of 2008. These increases followed on the heels of earlier reductions imposed by the CREG. Those decreases were motivated by the CREG's view that tariffs at the time were inappropriate. Its justification was challenged in court, which ruled against the CREG in late 2007. As a result, tariffs were raised significantly in early 2008, effectively undoing the earlier cuts. Distribution tariffs were raised still further in 2009. Initially announced for the start of the year, their effective application was delayed by the actions of the CREG, which also limited the size of the adjustments relative to distributors' initial demands. The new distribution tariffs were finally applied in July in Flanders and October in Wallonia and Brussels.

Lastly, consumer gas and electricity prices include VAT and a series of specific taxes and withholdings. With the exception of VAT, most of these taxes are fixed sums. Their set amounts, determined by public authorities, do not necessarily follow movements in the prices of the other components of consumer gas and electricity prices.

It is therefore possible to identify three changes in gas and electricity consumer price-fixing in Belgium since January 2007 – increases in transport and distribution tariffs in 2008 and 2009, the change of a parameter in gas pricing formulas in October 2007, and the introduction of a spot price into these formulas in January 2007 – and to evaluate their impact on price trends and price volatility. The impact of first two factors in terms of inflation is temporary but significant. The effect of increasing the constant term in gas pricing formulas may be estimated to be around 14 p.c. on average over the 12 months from end-2007 to end-2008. The impact of the increase in transport and distribution tariffs on electricity prices may be estimated to be 8 p.c. between the start of 2008 and the start of 2009. In the case of gas, the increase in transport and distribution tariffs had a lesser impact. These effects, moreover, are permanent with respect to price levels and thus a source of asymmetry because they will not return to their previous levels, even if energy prices decline on international markets, as has been the case since summer 2008. As for the inclusion of natural gas spot prices, this speeds up the transmission of energy commodity price fluctuations to consumer gas prices and makes them permanently more volatile. In effect, this factor led to bigger reductions in consumer prices in 2007 and 2009 and higher increases in 2008. However, the impact of this factor has remained limited by comparison

CHART 3   ESTIMATED IMPACT OF CHANGES IN THE PRICE-SETTING IN BELGIUM SINCE JANUARY 2007

(monthly HICP data, percentage change compared to the corresponding month of the previous year)

GAS

ELECTRICITY

- HICP
- HICP excluding the impact of changes in transport and distribution tariffs
- Ibid, excluding the impact of the change in a parameter in gas pricing formulas
- Ibid, offsetting the impact of the introduction of a gas spot price into indexing formulas
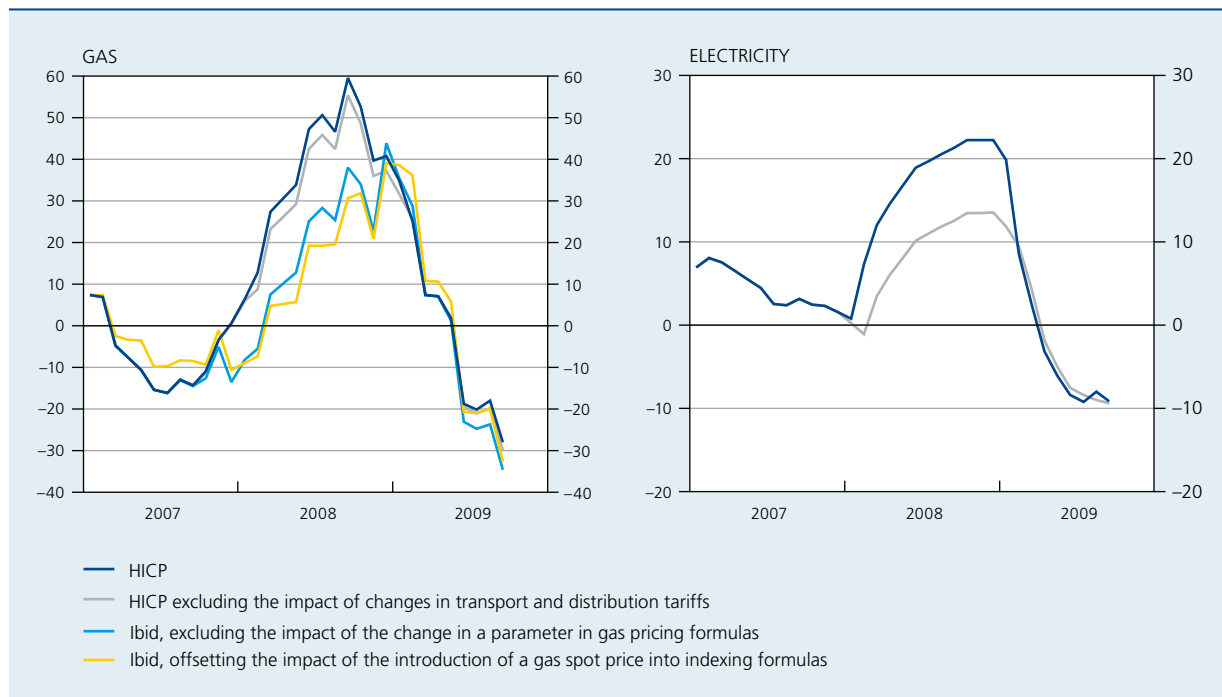
Sources : EC, NBB.

with the very pronounced movements in consumer natural gas prices during the period 2007-09.

Overall, these three factors clearly contributed to the increase in price volatility over the recent period. However, even taking them into account, price movements remain much more volatile in Belgium than in the euro area. Furthermore, the excessive volatility was already present before 2007. This much is clear when Belgium is compared with the euro area using data constructed according to a homogeneous methodology. Given the methodology changes that have affected the two most relevant databases (see above), such a comparison requires the creation of a series that combines the two sources cited earlier : prices are based on Eurostat's Energy Statistics – which reflect monthly tariffs – up to 2006 and then on changes in the HICP – which, as seen earlier, reflects monthly tariffs from that date forward in Belgium, while this was already the case in the other countries. At the HICP level, this excessive volatility was offset in the past by the recording method used in Belgium, which as shown earlier was atypical and tended to smooth out price movements.

A key determinant of consumer price volatility is the price of energy as a raw material, i.e. the price in euro of a barrel of Brent crude oil. There are indeed indications

that the price of gas follows that of the Brent benchmark crude with a lag, and that Belgium tends to react both more rapidly and more strongly than the euro area, even prior to 2007. After 2007, Belgian prices, even adjusted to take into account the changes in pricing that occurred in the interval, appear to fluctuate to a much greater extent than what may have been expected given the movements in Brent crude prices. In this respect, it is important to bear in mind the fact that the transmission of a change in Brent crude prices to natural gas prices depends on the oil price level. The transmission is more pronounced when oil prices are high (as in 2008) because the energy component's contribution to consumer prices increases automatically with the price of Brent. However, this factor should also play a role in the euro area, although undoubtedly to a lesser extent, because the weaker volatility observed for the region prior to 2007 appears to indicate that the initial proportion of the energy component there is weaker than in Belgium.

The connection between the price of electricity and the price of crude oil is much less apparent than in the case of natural gas because numerous energy products can be used to generate electricity. However, electricity price changes were still more volatile in Belgium than in the euro area throughout the period in question. This was

certainly the case between 2007 and 2009, even dis-regarding the spike in transport and distribution tariffs. Here again, it appears that the share of the more volatile energy components in consumer electricity prices is more significant in Belgium than in the euro area. This could indicate differences in the structure of production, but the impact of any differences on pricing should have diminished in recent years due to the liberalisation of the electricity market and, in particular, to the growing inter-connection among previously basically national networks.

However, the greater volatility of consumer gas and electricity prices in Belgium appears to be symmetrical throughout the period 1996-2009. Whereas prices in Belgium tend to rise more quickly during certain periods, they also fall more quickly during other periods, such that the differential between price trends in Belgium and the euro area is roughly the same during periods of rising and falling prices. This observation is not surprising, given that indexing formulas in Belgium, in principle, function completely symmetrically. The only sources of asymmetry are periodic interventions, such as the revision of natural gas pricing formulas in October 2007 or the increase in transport and distribution tariffs in 2008 and 2009.

At this point, the available data do not allow us to explain satisfactorily the greater price volatility in Belgium. One explanatory factor that is relatively easy to verify, may be the significance of fixed or set components of gas and electricity prices. The volatility of these prices is, in effect, inversely proportional to the size of these components. A particularly low level in Belgium, if confirmed, would help explain the particularly high volatility it has experienced[1]. There are two types of fixed component, fixed taxes and network tariffs (transport and distribution). However, information on the latter is not easy to obtain and there is no series that allows a comparison of trends in transport and distribution tariffs in different countries over time. For gas, information is only available for 2007, and for electricity the most complete information available concerns 2008. In the case of gas – 2007, in other words – the sum of the fixed taxes and network tariffs is relatively low in Belgium compared with the rest of the countries surveyed. However, if we limit the comparison to the three neighbouring countries, it emerges that the level is only low compared with the Netherlands. It is comparable to that of Germany and significantly higher than in France. Thus, this factor does not satisfactorily explain the higher degree of volatility relative to Germany and France. In the case of electricity, the data relate to 2008, but for Belgium they are adjusted to offset the effect that the steep increase in transport and distribution tariffs in early 2008 had on the country's relative position. While it is true that this increase will reduce the volatility of Belgian
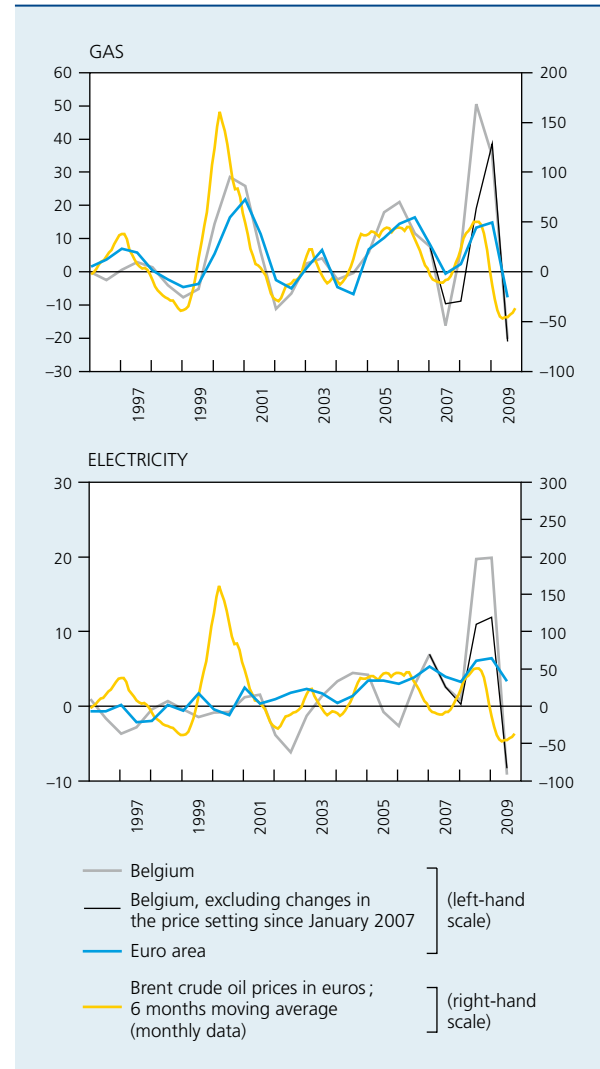
Sources : EC, NBB.
(1) Series constructed to reflect monthly tariffs for the entire period : Eurostat Energy Statistics up to 2006, HICP from 2006 onwards.

prices somewhat in the future (after having a temporarily upward impact), it would be incorrect to include this increase in the factors that would have reduced volatility in the past. Even after this type of correction, the sum of fixed or set components is not particularly low in Belgium, although it is lower than in Germany. However, it is worth noting that with respect to electricity, information on network tariffs is lacking for France and the Netherlands. Overall, it does not appear that the level of fixed pricing

(1) For example, in the case of diesel and heating oil, fixed taxes (excise duties) in Belgium are on average lower than in the euro area. The result is that the CPI for petroleum products reacts more strongly to fluctuations in international Brent crude oil prices.

CHART 5   NETWORK COSTS AND FIXED TAXES

GAS (EURO/GJ) ESTIMATE FOR 2007

ELECTRICITY (CENTS/KWH) ESTIMATE FOR 2008

Increase in distribution tariffs in 200

n.a. (GAS: PT)
n.a. (GAS: IE)

n.a. (ELECTRICITY: MT, NL, FR, CY, IE)

Fixed taxes [1]
Network costs
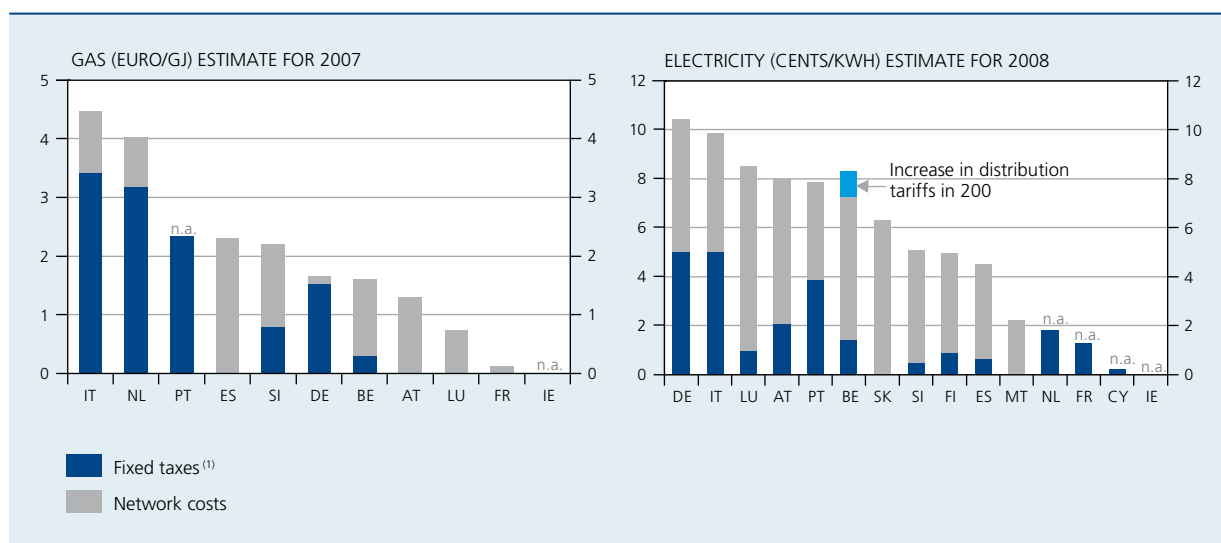
Sources : EC, NBB.
(1) Difference between prices excluding tax and prices excluding VAT in Eurostat "Energy Statistics".

components is particularly low in Belgium, meaning that this does not constitute a significant factor in explaining Belgium's higher volatility.

The question remains, thus, of what economic factor explains the greater fluctuation in consumer gas and electricity prices. This would require a more in-depth study, focusing notably on the pertinence of indexing formulas. In the absence of a clear and transparent motivation for the formulas used, it is difficult to determine if the indexing formulas being applied are entirely consistent with real trends in underlying cost factors.

4. Implications in terms of price levels

This section presents an international comparison of the prices paid by consumers for gas and electricity. Such a comparison constitutes an additional viewpoint on volatility, because the analysis presented until this point has focused solely on price movements, and not price levels. The fact that consumer gas and electricity prices are more volatile does not necessarily imply that they are also higher, especially since we have seen that in Belgium, the additional volatility was generally symmetrical. To analyse prices, data are taken from the Eurostat Energy Statistics database – even though they are affected by a methodology change starting in 2007 (see above). Furthermore, as a general rule, data are not yet available for 2009. And yet, ending the comparison in 2008

– at the energy price peak – would excessively penalise Belgium because since then gas and electricity prices have fallen there more than elsewhere. As a result, price levels for 2009 have been estimated based on the levels observed in 2008 and price changes between 2008 and 2009 as reported in the HICP. Furthermore, due to the lack of data for the final quarter of the year, only an estimate based on third quarter figures is available. Given that gas and electricity prices undoubtedly reached their low point during that quarter, this approach tends to favour Belgium's relative position.

With respect to gas, prices including all taxes in Belgium had been lower than in the euro area since the start of 1996 and lower than in the three main neighbouring countries since 2001. This price gap widened in 2007 before disappearing completely in 2008, to the point that prices in Belgium exceeded those of the reference areas. In the second half of 2009, prices dropped back below the average of the other countries. The situation with respect to electricity prices, including all taxes, is fairly similar. Since 2002 prices in Belgium have been lower than in the two reference areas, but from 2008, Belgian prices clearly exceeded those of the other countries before apparently dropping back to a level close to those of the two reference areas in the second half of 2009.

By neutralising the impact of taxation, the international comparison of prices excluding tax helps discern the characteristics of price-setting methods and market

CHART 6   COMPARISON OF GAS AND ELECTRICITY PRICE LEVELS [1]

GAS PRICE, ALL TAXES INCLUDED
(euros/Gj)

ELECTRICITY PRICE, ALL TAXES INCLUDED
(euros/kWh)

GAS PRICE EXCLUDING TAXES
(euros/Gj)

ELECTRICITY PRICES EXCLUDING TAXES
(euros/kWh)

— Euro area
— Belgium
— Three main neighbouring countries
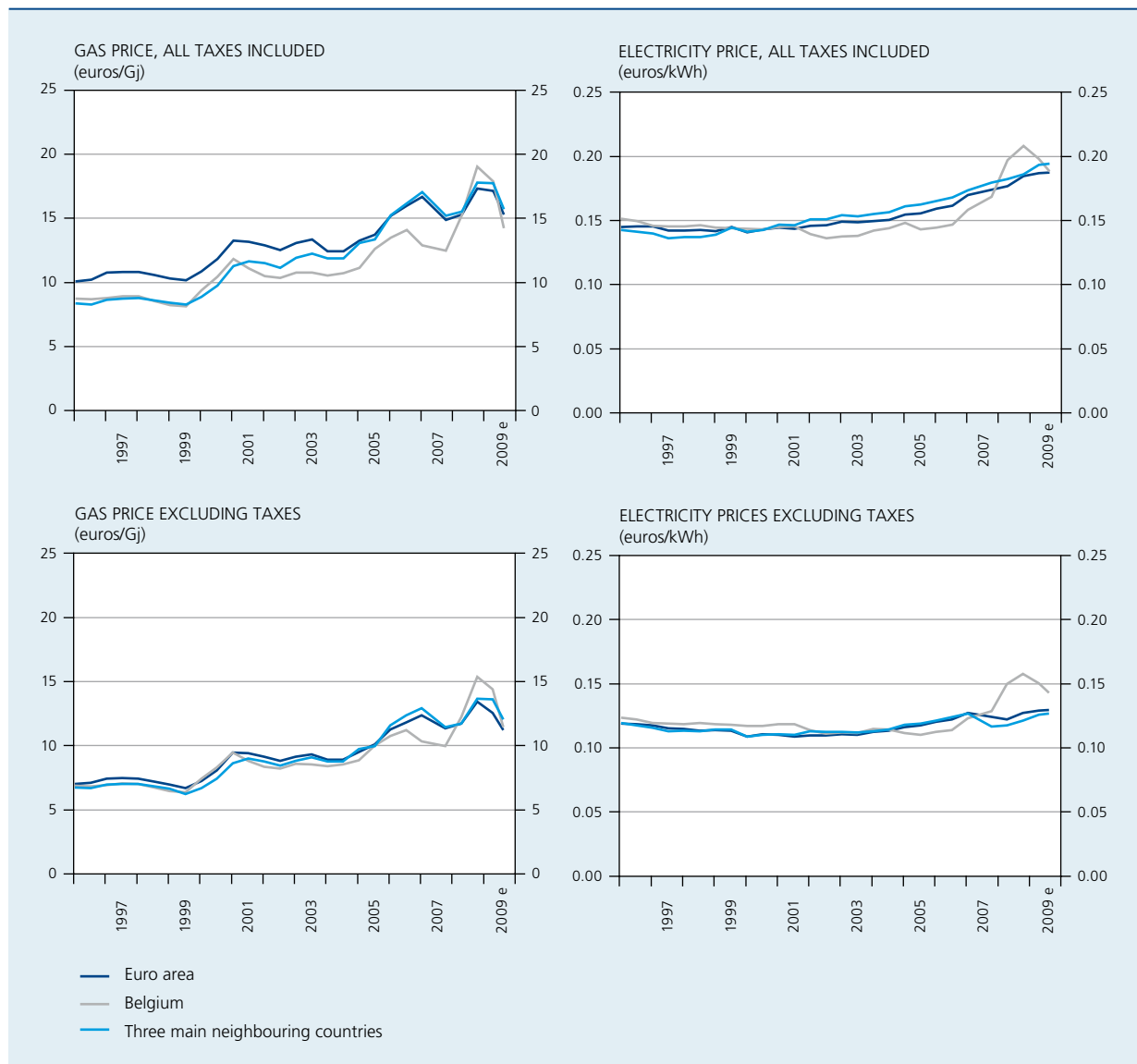
Sources : EC, NBB.
(1) Price levels per 2009 were estimated using the 2008 levels and the price change between 2008 and 2009 according to the HICP. In addition, due to a lack of data for the
fourth quarter of 2009, only an estimate based on third-quarter figures was available.

functioning. In this respect, the level of prices excluding
tax was in the past fairly similar in Belgium, the three main
neighbouring countries, and the euro area. Belgium's
relatively favourable ranking in terms of prices including
all taxes was thus principally the result of lower taxes on
gas and electricity consumption. Over the recent period,
however, prices excluding tax in Belgium have risen sig-
nificantly to a level well above average, before dropping
back down in line with the average in 2009, although the
drop did not entirely erase the previous increase. For elec-
tricity, pre-tax prices are estimated to remain significantly
higher than in the two reference areas, by around 10 p.c.

By contrast, gas prices excluding tax would appear to be
on a par with the euro area average at the end of the
period, and could actually be slightly lower than those of
the three main neighbouring countries.

Overall, the increased volatility of price fluctuations
observed recently has gone hand in hand with a dete-
rioration in the price differential relative to neighbouring
countries and to the euro area average. This deteriora-
tion tended to taper off late in the period, but prices did
not return to a level at which the differential relative to
the euro area would be comparable with the previous

period. The analysis presented in section 3 showed that certain price increases – the change of a parameter in gas pricing formulas and the increase in transport and distribution tariffs – are permanent in nature and completely independent of energy price trends on the international market. Furthermore, since spring 2009, energy commodity prices have risen again and this trend will be reflected with a certain lag in consumer gas and electricity prices. It is likely that the transmission of this new upward impetus will again be more pronounced in Belgium, such that its positioning in the international comparison could weaken still further in the near future. The deterioration will be even more marked in the event of a sustained upward trend in energy commodity prices.

5. Conclusion

Over the past three years, it has gradually become clear that consumer gas and electricity prices in Belgium are much more volatile than in the three main neighbouring countries or in the euro area as a whole. Initially, it could not be established on the basis of recorded price movements whether this higher volatility just pointed to a more rapid (but not necessarily more intensive) transmission of trends in energy commodity prices on international markets, or whether it also reflected a greater total extent of such transmission. Answering that question was further complicated by the fact that the method for recording gas and electricity prices in the Belgian consumer price index was changed at the beginning of 2007 from a registration on the basis of annual invoices to one based on monthly tariffs. Such a change incontestably speeds up the transmission of the recorded price movements compared with the previous method and could also be a source of difference compared with the three main neighbouring countries or the euro area.

This article first looks at whether this methodology change is an explanatory factor for the differing movements in gas and electricity prices. The analysis demonstrates clearly that this is not the case. On the contrary, the methodology change brought Belgium into line with what has long been the prevailing practice in the reference countries. Previous research in this area, both by the Bank and by other research institutes, was unable to arrive at an unequivocal conclusion regarding the role of the methodology change. This is an important outcome because it implies that the price movements recorded in the CPI and deviations in these movements from those in the reference areas may be attributed to the pricing itself. Furthermore, the availability of additional data – more specifically the fact that gas and electricity prices fell in 2009 following a sharp increase in 2008 – clearly shows

that it is not so much that price changes are passed on more rapidly in Belgium, but that movements in gas and electricity prices are actually characterised by a greater volatility.

From the second part of the analysis, it emerges that several changes in price-setting since the full liberalisation of the residential gas and electricity market on 1 January 2007 (changes that cannot necessarily be related directly to that liberalisation) caused higher volatility over the period 2007-09. In this respect, the October 2007 change in the pricing formula of the principal gas supplier – followed by changes at most of the other suppliers – and the January 2008 increase in network tariffs played the most decisive roles. These two factors also explain why the gas and electricity prices recorded in the third quarter of 2009 did not return to exactly the same level as before the sharp increase in the second half of 2007, even though they declined considerably. Nevertheless, it would be difficult to say that these are factors in a structural increase in the volatility of gas and electricity prices. Conversely, this could be said of the introduction of a spot price into the pricing formulas for gas. However, it appears that the spot price has not had a substantial impact during the period under review. Based on the elements presented in this article, it can also be shown that applying the pricing formulas in force before liberalisation would have also resulted in greater gas and electricity price volatility in Belgium. In the past, the impact of this volatility on the CPI was lessened by the methodology used at the time, and it was in any case more limited given that, with a structurally lower level of commodity prices, their relative importance in consumer gas and electricity prices was smaller.

Furthermore, an international comparison of gas and electricity prices excluding tax – the most pertinent measure when assessing the consequences of pricing and market functioning – reveals that the prices applied in Belgium in 2008 were significantly higher than those observed in the euro area, which had not previously been the case. For gas, this handicap likely disappeared again in the third quarter of 2009, whereas the available indicators show that the gap remains substantial in the case of electricity, despite some narrowing. It should also be noted that gas and electricity prices may have bottomed out in the third quarter of 2009 and were not yet being affected by the rise in energy commodity prices since spring 2009. Due to the transmission (more substantial in Belgium) of the new upward momentum, the country's relative position could well deteriorate in the near future. Assuming pricing remains unchanged, the deterioration would be aggravated if energy commodity price movements resume their sustained upward trend in the coming years.

The conclusions of this article have two important implications for containing price and cost movements in Belgium and, by extension, for safeguarding the country's competitive position.

In the first place, with respect to gas and electricity pricing, it needs to be established to what extent the pricing formulas used are an accurate reflection of the actual cost movements. It is still open to question which economic factor explains why fluctuations in energy commodity prices have a greater impact on consumer gas and electricity prices in Belgium than in the euro area or in the three main neighbouring countries. Recorded price movements appear to indicate that the weight of energy commodities in consumer gas and electricity prices is notably higher in Belgium than in the reference areas, but this needs to be verified. The contribution of energy commodities may be more important in Belgium if fixed taxes and network tariffs, for example, were considerably lower but, based on the information presented in this article, that does not exactly appear to be the case. Further investigation into this subject is therefore advisable, but will not be easy to carry out given the quite technical nature of the issue and the fact that not all of the relevant data pertaining to cost structures are published. In addition, the higher volatility of gas and electricity prices is also a factor that has to be taken into account when containing general price and cost movements, especially in a situation with energy prices on a structural upward trend.

Trends in the financial structure and results of firms in 2008

David Vivet *

Introduction

In the December issue of the Economic Review each year, the National Bank describes developments reflected in the annual accounts of non-financial corporations. By the Autumn, the Central Balance Sheet Office in fact already has a representative sample of the annual accounts for the previous year. The conclusions drawn on the basis of this sample can therefore be extrapolated relatively reliably to the population as a whole.

This article is composed of three sections. The first one briefly describes the methodology and sample used. The second section presents an extrapolation of the main profit and loss account items for the 2008 financial year. Finally, section 3 assesses the financial situation of companies as regards profitability, solvency and liquidity. In order to gain a better understanding of the different strata of the population, the perspective of the analysis has been widened this year to cover the entire range: apart from the medians, the first and third quartiles as well as the tenth and ninetieth percentiles are studied too.

Since the accounting year used by the vast majority of firms coincides with the calendar year, the data presented here mainly sum up the financial situation of enterprises for the whole period running from 1 January to 31 December 2008. Owing to the particularly contrasting cyclical pattern of the economy over that period, the analysis is somewhat blurred (cf. point 2). Nonetheless, the information gathered for this study gives some indication of firms' resistance capacity as they went into the recession.

1. Methodology and constant sample

The Central Balance Sheet Office has collected data on the account of non-financial corporations since the end of the 1970s. For that purpose, firms are required to submit their annual accounts using a standard form no later than seven months after the end of the financial year. The data are then adjusted if necessary in order to meet the required quality standards. So, by September, it is possible to carry out an initial analysis. However, each year, the nature of the data available for the latest financial year examined, in this case 2008, raises questions of methodology.

Owing to the fact that some firms are late in filing their annual accounts, the population relating to 2008 is incomplete. Moreover, those same firms generally tend to be in a structurally less favourable financial position than firms which file their accounts within the time allowed. Previous editions of this article have pointed up significant differences, notably in terms of profitability, solvency and liquidity, between firms according to the deadline for filing their annual accounts. In all probability, the data currently available for 2008 give an overly optimistic view of reality.

Because of these problems, the 2008 data are not directly comparable with those for previous years. In order to ensure comparability, the constant sample method has to be used. The sample for 2007-2008 is made up of firms

that filed annual accounts for both the 2007 and the 2008 financial year [(1)]. The method involves extrapolating the 2008 results on the basis of developments observed in the constant sample; so the 2008 figures are obtained by applying the rate of change of the sample statistics on the final figures for 2007. It is therefore assumed that the trends seen in the sample are representative of those affecting the population as a whole. As verified previously, this assumption is largely borne out since, in the vast majority of cases, the estimates give a good indication of the direction and scale of actual movements.

Table 1 compares, for the main profit and loss account balances, the growth figures obtained on the basis of the sample and the final outcomes noted for the whole population. Deviations of estimates are not very wide at all, especially when compared with the average changes in items. Furthermore, there is no systematic under-estimation or over-estimation of actual developments. Finally, the quality of the estimate declines as one "scales down" the profit and loss account, because the financial and exceptional results are harder to predict.

(1) In order to be included in the sample, firms must also meet the following conditions:
– both sets of annual accounts relate to a financial year lasting 12 months;
– both sets of annual accounts met the quality requirements of the Central Balance Sheet Office;
– the annual accounts relating to 2007 were filed before 31 August 2008;
– the annual accounts relating to 2008 were filed before 31 August 2008.

TABLE 1 GROWTH RATE ESTIMATED ON THE BASIS OF THE CONSTANT SAMPLE AND ACTUAL GROWTH RATE, MAIN PROFIT AND LOSS ACCOUNT BALANCES

(percentages)

	2003	2004	2005	2006	2007	Deviation from estimate	
						Average	Standard deviation
Value added							
Constant sample	+3.4	+6.3	+3.9	+6.3	+4.8	+4.9	–
Actual	+4.3	+6.6	+4.6	+6.1	+4.1	+5.1	–
Difference	*−0.9*	*−0.3*	*−0.7*	*+0.2*	*+0.7*	*−0.2*	*0.6*
Net operating result							
Constant sample	+22.6	+24.3	+8.4	+9.2	+8.0	+14.5	–
Actual	+25.5	+26.5	+9.2	+9.3	+8.4	+15.8	–
Difference	*−2.9*	*−2.2*	*−0.8*	*−0.1*	*−0.4*	*−1.3*	*1.1*
Ordinary result							
Constant sample	+27.2	+26.2	+13.0	+11.7	+10.5	+17.7	–
Actual	+26.7	+24.9	+14.1	+9.1	+12.9	+17.5	–
Difference	*+0.5*	*+1.3*	*−1.1*	*+2.6*	*−2.4*	*+0.2*	*1.8*
Net result before tax							
Constant sample	+66.3	+2.2	+45.8	+5.1	+13.1	+26.5	–
Actual	+77.0	+2.3	+47.4	+3.8	+16.3	+29.4	–
Difference	*−10.7*	*−0.1*	*−1.6*	*+1.3*	*−3.2*	*−2.9*	*4.2*
Net result after tax							
Constant sample	+95.8	+0.5	+56.3	+5.1	+14.1	+34.4	–
Actual	+112.0	−0.1	+57.7	+3.6	+17.9	+38.2	–
Difference	*−16.2*	*+0.6*	*−1.4*	*+1.5*	*−3.8*	*−3.9*	*6.4*

Source: NBB.

TABLE 2   COMPOSITION AND REPRESENTATIVENESS OF THE CONSTANT SAMPLE 2007-2008

	Firms in the 2007-2008 sample	All non-financial corporations in 2007	Representativeness of the sample, in p.c.
Number of firms	**167,892**	**286,498**	**58.6**
Large firms	12,507	16,750	74.7
SMEs	155,385	269,748	57.6
Manufacturing industry	13,334	21,584	61.8
Non-manufacturing branches	154,558	264,914	58.3
Balance sheet total (millions of euro)[1]	**1,051,580**	**1,179,508**	**89.2**
Large firms	941,485	1,007,186	93.5
SMEs	110,094	172,322	63.9
Manufacturing industry	246,835	272,382	90.6
Non-manufacturing branches	804,744	907,125	88.7

Source : NBB.
(1) For firms in the constant sample, the balance sheet total taken into account is the figure for 2007.

Table 2 describes the composition of the constant sample for 2007-2008, which covers 167,892 enterprises, or almost 58.6 p.c. of all annual accounts filed in 2007. The representativeness measured in terms of the balance sheet is much higher, reaching 89.2 p.c. This difference can be attributed to the fact that it is mainly small (or very small) firms that are missing from the sample. Industry is also better represented in terms of the balance sheet total (90.6 p.c.) since large firms are predominant in this sector.

As regards the distinction between firms according to their branch of activity, a new version of the European nomenclature was introduced on 1 January 2008[1], which gave rise to the Belgian version NACE-BEL 2008. It is this one which is used in this article, instead of the NACE-BEL 2003 nomenclature. Since the data below are published at high levels of aggregation, this change does not alter the statistics in any great depth. Some of the figures are nevertheless no longer comparable with past data. Consequently, the new "information and communication" grouping contains activities that were not included before, such as telecommunications, publishing or computer activities. The groupings used and the corresponding NACE-BEL 2008 divisions are shown in Annex 2[2].

(1) See Regulation (EC) N°1893/2006 of the European Parliament and Council of 20 December 2006.
(2) For more detailed information on the NACE-BEL 2008 classification, go to http://statbel.fgov.be.
(3) See, for instance, the 2008 Annual Report or the June 2009 Economic Review.

2. Movement in the main components of the profit and loss account

2.1 General trends and cyclical context

The slowdown in economic activity that gradually took hold in 2007 continued at an even faster pace in the first half of 2008. In line with the escalation of financial tension and the weakening of international trade, this deceleration then led to a pronounced cyclical downturn at the end of 2008 and beginning of 2009 (chart 1). So, Belgium's annual GDP growth rate in 2008 (+0.8 p.c., table 3) conceals very contrasting cyclical trends. Detailed analyses of the economic background in 2008 can be found in various publications issued by the Bank[3].

Since the vast majority of annual accounts relate to periods that coincide with normal calendar years, the data presented in this article sum up the financial situation of enterprises for the whole period running from 1 January to 31 December 2008. In view of the rather varying state of the economy over this period, the analysis is blurred by offsetting effects between the first and the second part of the year. The information gathered nevertheless gives some indication of the firms' financial position, and thus their resistance capacity, as they went into the recession.

Against this backdrop, the value added of Belgian non-financial companies, i.e. the difference between sales revenues and the cost of goods and services supplied by

CHART 1 GDP AND THE BUSINESS SURVEY INDICATOR

firms, depreciation costs also grew at a faster pace than value added.

Mainly influenced by staff costs and depreciation, total growth in operating expenses thus increased at a faster pace than in 2007, rising by 6.0 p.c. Combined with the marked slowdown in value added, this trend turned into a 13.0 p.c. contraction in the net operating result, which came to nearly 31 billion euro. So, in 2008, non-financial corporations found it harder to generate profits from carrying out their normal business activity. Such a decline in operating profits has not been seen since 2001, but it should not be forgotten that it had doubled in the space of the previous five years, rising gradually from 17 billion euro in 2002 to more than 35 billion in 2007.

Putting these recent trends into a long-term perspective, chart 2 gives a detailed breakdown of value added between staff costs, depreciation and operating result. In contrast to the previous years, the share of value added allocated to staff costs rallied in 2008, gaining 1.7 percentage points. Depreciation costs gained half a percentage point, continuing the recovery begun in 2007. These increases were to the detriment of the net operating result, which fell back by 3.2 p.c. of value added.

CHART 1 GDP AND THE BUSINESS SURVEY INDICATOR

Quarterly accounts, year-on-year percentage change in GDP, data adjusted for calendar effects (left-hand scale)

NBB synthetic business curve, smoothed data (right-hand scale)

NBB synthetic business curve, seasonally adjusted data (right-hand scale)

Sources: NAI, NBB.

third parties, rose by 1.8 p.c. in 2008, thus reaching nearly 164 billion euro at current prices (table 4). This is a marked slowdown on the five previous years, during which value added had grown at an average annual rate of 5.1 p.c. More than just a slackening of firms' sales volume, this slowdown can be explained by the sharp rise in the price of imported raw materials. Owing to the weakening of final demand, firms have not been able to pass the whole increase onto their sales prices.

The value added generated by a firm enables it to cover its operating expenses, with any surplus recorded as a net operating profit. This reflects the firm's current commercial efficiency, regardless of its financing policy and any exceptional items. Staff costs, which traditionally account for the lion's share of the operating expenses, came to nearly 94 billion euro in 2008, up by 4.9 p.c. The rise in staff costs thus clearly exceeded that of value added, something that had not been seen since 2002. On the one hand, the number of workers employed by non-financial companies expanded over the year 2008 as a whole. On the other hand, wage indexation impacted on wage costs owing to the acceleration of inflation. After staff costs, allocations to depreciation are the highest operating expenses. In 2008, for the second year in a row and as a result of strong gross fixed capital formation by

TABLE 3 GDP AND MAIN CATEGORIES OF EXPENDITURE

(calendar adjusted data, by volume;
percentage changes compared to the previous year,
unless otherwise stated)

	2006	2007	2008
Household consumption expenditure[1]	1.8	1.6	1.0
Final consumption expenditure of general government	1.0	2.6	3.3
Gross fixed capital formation ...	2.7	5.7	3.8
Enterprises	4.5	8.7	6.1
Housing	3.4	−0.8	−1.6
General government	−12.4	3.6	3.4
p.m. Total final domestic expenditure	*1.8*	*2.7*	*2.2*
Change in inventories[2]	0.6	0.1	−0.2
Exports of goods and services ..	5.0	4.4	1.4
Imports of goods and services ..	4.7	4.4	2.7
p.m. Net exports of goods and services[2]	*0.4*	*0.2*	*−1.0*
GDP	2.8	2.8	0.8

Sources: NAI.
(1) Including non-profit institutions serving households.
(2) Contribution to the annual change in GDP, in percentage points.

TABLE 4   MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

(current prices)

	Percentage changes compared to the previous year					Millions of euro	Percentages of value added
	2004	2005	2006	2007	2008 e	2008 e	2008 e
Value added	6.6	4.6	6.1	4.1	1.8	163,974	100.0
Staff costs .... (–)	3.4	3.0	4.3	4.1	4.9	93,809	57.2
Depreciation and downward value adjustments[1] .... (–)	0.7	3.7	5.3	5.2	4.9	27,737	16.9
Other operating expenses .... (–)	1.4	6.5	12.8	–10.8	18.9	11,440	7.1
Total operating expenses	*2.7*	*3.4*	*5.2*	*3.0*	*6.0*	*133,117*	*81.2*
Net operating result	26.5	9.2	9.3	8.4	–13.0	30,857	18.8
Financial income .... (+)	–12.4	–4.4	–9.1	18.5	38.3	62,408	38.1
Financial charges .... (–)	–15.9	–10.9	–13.3	15.2	31.5	44,213	27.0
Financial result	*18.0*	*36.5*	*8.3*	*29.5*	*58.5*	*18,195*	*11.1*
Ordinary result	24.9	14.1	9.1	12.9	4.5	49,052	29.9
Exceptional result[2] .... (+)						2,896	1.8
Net result before tax	2.3	47.4	3.8	16.3	–12.6	51,948	31.7
Taxes on profits .... (–)	11.5	10.9	4.7	8.2	–2.2	9,020	5.5
Net result after tax	–0.1	57.7	3.6	17.9	–14.6	42,928	26.2
p.m. Net result after tax excluding the exceptional result	*29.2*	*15.0*	*10.3*	*14.1*	*6.1*	*40,032*	*24.4*

Source : NBB.

(1) On tangible and intangible fixed assets and formation costs (item 630).

(2) There is very little point in calculating a percentage change for this aggregate, which may be either positive or negative and, besides, is not easy to estimate reliably. The figure for 2008 corresponds to the sum of the exceptional results known at the time of writing this article.

The movements in value added and operating results can also be compared with the Bank's business survey indicator, which measures business confidence (chart 3). Until August 2008, the indicator remained at a higher level than its long-term average. From September onwards, it fell back markedly, and in December reached its lowest level since 1980[1] – the start of the period in which the indicators have been calculated in their current form. These movements are reflected in the overall trends in value added and operating results, for which the 2008 figures feature among the worst for the last twenty-five years.

In line with the trend of the last few years, the financial result picked up once again in 2008 (+58.5 p.c.), to reach more than 18 billion euro. Financial income was once again boosted by income from financial fixed assets and current assets, including loans granted to subsidiaries.

In gross terms, the major increase in financial income and financial charges can be mainly attributed to a concomitant rise in income and charges from foreign currency transactions. Despite being significant in absolute value terms, movements in these transactions largely offset each other. The exceptional result was sharply down in 2008, after having been inflated by large capital gains on realisation of fixed assets. Lastly, influenced by developments in net operating results, taxes on profits were down in 2008 (–2.2 p.c.), for the first time since 2003.

Once all these components are aggregated, the net result of non-financial corporations totalled some 43 billion euro in 2008, which was 14.6 p.c. down on 2007. Owing to the increasingly volatile impact of the exceptional result,

(1) The indicator continued its downward trend in the early months of 2009, before picking up again.

table 4 also gives details of the net result after removing exceptional items, variations in which tend to be more representative of companies' regular performance. In 2008, this totalled more than 40 billion euro, up 6.1 p.c. on its 2007 record.

2.2 Results by branch of activity

It was in the manufacturing industry that the cyclical downturn was the most marked. Value added in the manufacturing branches declined by 5.1 p.c. in 2008, accelerating the decline started in 2007. Most branches contributed to this development, caused mainly by the weakening of demand and the rise in the price of raw materials. The drop in manufacturing value added was particularly sharp in the iron and steel industry, base chemicals, car manufacturing and refining. In line with this lower generation of wealth, staff costs and industrial depreciation expenses rose slightly. Consequently, operating results suffered a very sharp correction (–26.5 p.c.), totalling 7.7 billion euro.

- Staff costs (left-hand scale)
- Depreciation [1]
- Net operating result
  (right-hand scale)

Source : NBB.
(1) On tangible and intangible fixed assets and formation costs (item 630).

- Percentage change in value added (left-hand scale)
- Overall synthetic business curve (right-hand scale)

- Percentage change in the net operating result (left-hand scale)
- Overall synthetic business curve (right-hand scale)

Source : NBB.

In the non-manufacturing branches, which generate slightly over three-quarters of the value added of non-financial companies, the decline in activity was more moderate over the whole of 2008, with a growth rate of 4.7 p.c., compared with 6.4 p.c. the year before. For example, while the construction industry contributed heavily to the economic downturn in other euro area countries, like Spain and Ireland, there was only a very slight weakening of activity in this sector in Belgium over the year 2008 as a whole. In the trade sector, on the other hand, value added stagnated, while the operating result dropped considerably, with wholesale trade weighing heavily on this trend. Overall, the operating result of the

TABLE 5   VALUE ADDED AND NET OPERATING RESULT BY BRANCH OF ACTIVITY

(current prices, percentage changes compared to the previous year)

	Value added		Net operating result		*p.m. Percentage share of the branches in total value added in 2008 e*
	2007	2008 e	2007	2008 e	
Manufacturing industry	**−1.0**	**−5.1**	**0.5**	**−26.5**	*27.7*
of which :					
Agricultural and food industries	−0.1	6.1	−3.7	6.6	4.1
Textiles, clothing and footwear	−0.4	−11.3	4.1	−58.6	1.0
Wood, paper products and printing	2.5	0.8	8.9	−25.1	2.1
Chemicals and pharmaceuticals	−9.8	−11.9	−23.6	−51.3	5.7
Metallurgy and metalworking	13.6	−18.4	47.5	−65.7	4.1
Metal manufactures	−5.8	−1.0	−4.1	22.3	5.6
Non-manufacturing branches	**6.4**	**4.7**	**12.1**	**−7.3**	*72.3*
of which :					
Wholesale and retail trade	8.9	0.3	−1.7	−16.5	21.6
Transportation and storage	2.8	6.5	22.0	10.0	9.2
Accommodation and food service activities	5.7	2.9	14.8	−13.7	1.7
Information and communication	1.6	1.7	29.0	12.8	7.0
Real estate activities	1.4	2.6	28.3	11.7	2.5
Other service activities	9.1	11.5	2.0	−2.2	14.6
Energy, water supply and waste	2.2	5.9	−0.5	−6.5	5.1
Construction	9.6	9.1	18.8	7.7	7.6

Source : NBB.

non-manufacturing branches contracted by 7.3 p.c. in 2008. But it should be pointed out that it had more than doubled over the five previous years.

Chart 4 maps out movements in the components of the operating result over the last few years, for the manufacturing industry and the non-manufacturing branches. The profit and loss account figures are broken down by size and by sector in Annex 1.

3. Changes in the financial situation of firms

The financial analysis that follows is based on the theory of interpretation of the annual accounts, from which several ratios have been taken. The financial ratios are presented in global form and as medians. The globalised ratios are obtained by taking the sum of the numerators

for all firms and dividing it by the sum of their denominators. The median is the central value in an ordered distribution : for a given ratio, 50 p.c. of firms have a ratio above the median and 50 p.c. have a ratio below it. The two measures, which respond to different concerns, are complementary. Since it takes account of each firm according to its real weight in the numerator and the denominator, the globalised ratio primarily reflects the situation of the largest firms. In contrast, by indicating the situation of the central firm, the median reflects the movement in the population in general : as the median is influenced equally by each of the firms, regardless of size.

This year, in order to get a better understanding of the different strata of the population, the perspective of the analysis has been widened to cover the entire distribution : the median data are supplemented by the first and third quartiles (Q1 and Q3) as well as by the tenth and ninetieth percentiles (P10 and P90).

CHANGES IN THE COMPONENTS OF THE NET OPERATING RESULT

(current prices, indices 1999 = 100)

MANUFACTURING INDUSTRY

NON-MANUFACTURING BRANCHES

— Value added

— Staff costs

— Depreciation and write-downs [1]

— Net operating result
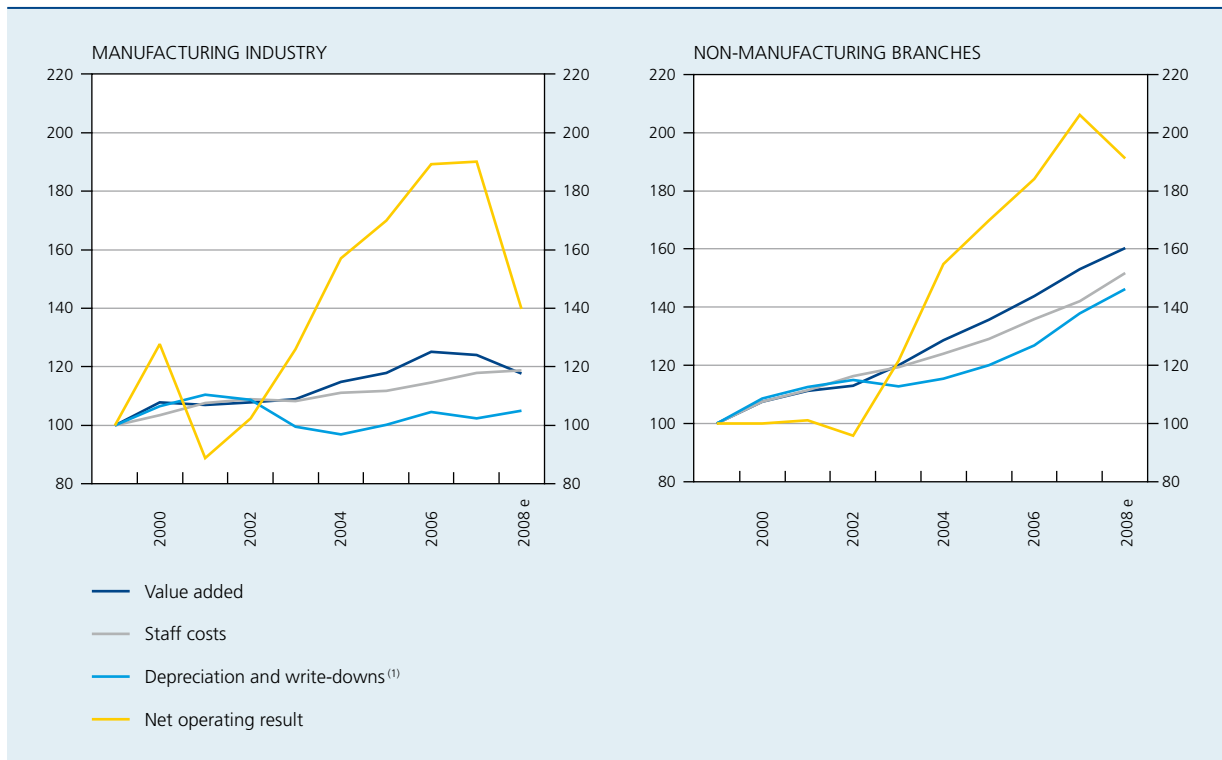
Source : NBB.
(1) On tangible and intangible fixed assets and formation costs (item 630).

3.1 Profitability

Profitability concerns firms' ability to generate profits. It can be assessed by using the net return on own funds. The latter, also referred to as the return on equity (ROE), is the net profit after tax divided by equity capital. This ratio expresses the return obtained by shareholders, after deduction of all expenses and taxes. Over a sufficiently long period, the return on equity has to exceed the return on a risk-free investment in order to provide shareholders with a risk premium.

The year 2008 brought a sharp correction in the return on equity (chart 5). The globalised ratio came to 6.3 p.c. for large enterprises (compared with 9.7 p.c. in 2007) and 9.3 p.c. for SMEs (compared with 12.5 p.c.). This decline is above all attributable to the deterioration of company profits in an unfavourable economic climate. For some years now, the ratio has also been curbed by a sharp growth in equity capital, mainly reflecting the introduction of the tax allowance for risk capital ("notional interest"). Moreover, as table 6 shows, the cyclical downturn weighed heavily on the profitability of

all branches of activity. In 2008, the most profitable big firms were to be found in the agri-food industry, transport, storage and construction. The best-performing SMEs were active in the chemicals industry, metal manufactures, business services and construction, among others.

The spread between the yield on government bonds and firms' profitability is an interesting yardstick for assessing the risk premium passed onto shareholders. While this spread had tended to widen in favour of shareholders between 2003 and 2007, it narrowed sharply in 2008, as a result of the falling performance of firms and, secondarily, the slight rise in the linear bond benchmark rate (rising from 4.35 p.c. in 2007 to 4.44 p.c. in 2008). As far as the globalised ratios are concerned, the risk premium worked out at 1.8 p.c. in 2008 (compared with 5.2 p.c. in 2007) for large firms and 4.8 p.c. (compared with 8.0 p.c.) for SMEs. From the investor's point of view, investing in shares lost its attraction compared with risk-free investments. This comparison should of course be weighed up carefully since, on the one hand, shares and government bonds are different financial instruments and, on the

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TABLE 6 RETURN ON EQUITY, BY BRANCH OF ACTIVITY[1]

(percentages)

	Large firms			SMEs		
	2006	2007	2008 e	2006	2007	2008 e
Manufacturing industry	**13.6**	**15.2**	**9.9**	**10.4**	**11.8**	**9.4**
of which :						
Agricultural and food industries	8.7	14.8	9.3	7.5	7.5	5.1
Textiles, clothing and footwear	11.5	8.1	1.4	2.6	5.5	2.2
Wood, paper products and printing	3.3	6.0	3.7	8.8	11.1	7.5
Chemicals and pharmaceuticals	12.6	8.7	4.8	205.8	78.4	62.2
Metallurgy and metalworking	12.1	21.2	2.0	14.4	15.6	13.1
Metal manufactures	14.6	12.6	7.3	14.4	12.4	11.2
Non-manufacturing branches	**7.7**	**7.9**	**5.3**	**11.2**	**12.5**	**9.3**
of which :						
Wholesale and retail trade	15.6	11.9	6.1	11.8	12.2	10.3
Transportation and storage	5.0	7.7	8.3	10.8	14.2	9.2
Accommodation and food service activities . .	14.5	5.8	2.6	1.7	3.5	2.0
Information and communication	12.3	20.4	3.5	14.8	12.4	11.1
Real estate activities	9.3	11.6	2.8	7.4	8.8	5.9
Other service activities	4.1	4.8	4.7	15.2	16.5	11.4
Energy, water supply and waste	10.9	8.4	4.5	10.2	8.2	5.8
Construction	16.3	16.0	12.7	12.5	13.9	11.9

Source : NBB.
(1) Globalised ratios.

other hand, the vast majority of firms examined here are not listed on the stock exchange.

The drop in median profitability in 2008 underlines the fact that the deterioration in the economic climate affected all Belgian firms. Table 7 widens the angle of the analysis by presenting the detailed distribution of the net profit ratio of total assets before tax and debt servicing. This ratio has the advantage of being independent of firms' financing structure, and is therefore also referred to as the "return on assets". It is better for analysing the extreme ranges of the distribution because it is available for all firms, unlike the return on equity which can only be calculated in the case of positive equity capital.

The values for the tenth percentiles and the first quartiles show that, every year, many firms actually incur losses. In 2008, more than one quarter of all SMEs had a negative ratio, and 10 p.c. had a ratio below −13.8 p.c. These firms

are relatively small-sized : in 2007, the 24 p.c. of companies (SMEs and large firms alike) showing a negative return on assets accounted for 11 p.c. of employment in all non-financial corporations and 7 p.c. of their balance sheet total. Moreover, as one moves down to the low-profitability strata of the population, the ratio increases less over time, and even declines. As a result, the inter-quartile ranges (i.e. the difference between Q3 and Q1) have widened since 1999.

TABLE 7 DISTRIBUTION OF THE NET RETURN ON TOTAL ASSETS BEFORE TAX AND DEBT SERVICING

(percentages)

	1999	2004	2005	2006	2007	2008 e	Difference 1999-2008 e
Large firms							
P90	20.0	22.6	23.2	23.9	24.3	23.2	+3.2
Q3	9.9	11.5	11.9	12.6	13.0	12.2	+2.3
Q2	4.0	4.5	4.7	5.1	5.5	4.9	+0.9
Q1	0.7	0.8	1.0	1.3	1.5	1.2	+0.5
P10	−6.1	−6.6	−5.6	−4.6	−4.4	−6.8	−0.6
Interquartile range	*9.2*	*10.7*	*10.9*	*11.3*	*11.4*	*11.0*	*+1.8*
SMEs							
P90	24.0	25.5	25.8	26.4	27.8	27.0	+3.0
Q3	12.2	12.9	12.9	13.3	14.1	13.3	+1.1
Q2	5.2	5.1	5.1	5.3	5.7	5.3	+0.1
Q1	0.0	−0.4	−0.4	−0.2	0.0	−0.3	−0.3
P10	−10.3	−12.9	−13.0	−12.5	−11.6	−13.8	−3.5
Interquartile range	*12.2*	*13.3*	*13.3*	*13.5*	*14.1*	*13.6*	*+1.4*

Source : NBB.

3.2 Solvency

Solvency concerns the ability of firms to honour their commitments, whether short- or long-term. This article analyses it on the basis of two concepts : the degree of financial independence and the extent to which borrowings are covered by the cash flow.

The degree of financial independence is equal to the ratio between equity capital and total liabilities. If the ratio is high, the firm is independent of borrowings, which has two beneficial effects : on the one hand, financial expenses are low and therefore do not weigh heavily on profits ; on the other hand, if necessary, the firm can easily contract new debts on favourable terms. The degree of financial independence can also be interpreted as a measure of the firm's financial risk, since the remuneration of third parties is fixed, unlike the firm's results which fluctuate over time.

In 2008, the globalised financial independence ratio reached 47.6 p.c. for large firms and 36.6 p.c. in the case of SMEs (chart 6). In the space of ten years, the ratio for large firms has gained almost 9 points, and that for SMEs 4.6 points. In the last few years, this upward trend has continued as a result of the new tax allowance

for risk capital (as mentioned above), which has helped push up the ratio since the 2005 reporting year. As the medians indicate, improvements in solvency were seen across the whole spectrum of non-financial corporations. The analysis of the whole distribution (table 8) nevertheless suggests that, over the last decade, the gains have been greater in the most solvent strata of the population. Consequently, as in the case of profitability, the interquartile ranges have gradually widened (+7.3 points for large firms, +5.9 points for SMEs). Moreover, in the case of small firms, the stagnation of Q1 and the marked deterioration of P10 show that a large fraction of the population has not benefited from the upward trend.

The degree of financial independence and its reciprocal, the debt level, provide a picture of the general balance of the assets and liabilities. This yardstick is necessary to diagnose solvency, but it has to be backed up by other variables, particularly those concerning firms' ability to repay their debts. The degree to which borrowings are covered by cash flow, which measures the proportion of debts that the firm could repay by allocating the whole of the year's cash flow to paying them back, indicates the firm's repayment capability. The converse of that ratio indicates the number of years which it would take to repay all the debts at a constant cash flow. The information supplied by this

CHART 5 RETURN ON EQUITY AND BENCHMARK
BOND YIELD[1]

(percentages)

- Large firms (globalised ratio)
- SMEs (globalised ratio)
- Large firms (median)
- SMEs (median)
- Benchmark bond yield[1]
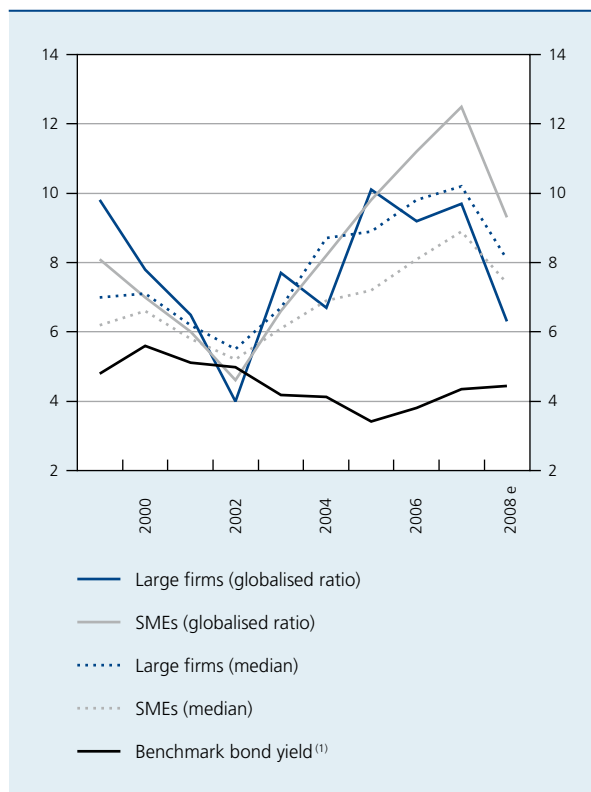
Source : NBB.
(1) Gross rate for the benchmark bond (ten-year government linear bonds).

ratio supplements that provided by the ratio of financial independence, as a high level of indebtedness may very well be mitigated by a substantial repayment capability, and vice versa.

In 2008, the globalised cover rate of borrowings was eroded across the board, under the combined effect of the contraction in cash flow and the rise in debts (chart 7). In globalised terms, the ratio came to 10 p.c. for large firms and 13.4 p.c. for SMEs. The branches which had the strongest influence on this development were chemicals, telecommunications, the agri-food industry and real estate. Moreover, this weakening of the cover rate affected the whole population (see the medians).

Combining financial independence and the degree to which borrowings are covered, chart 8 points up some slight sectoral differences in solvency. It also shows to what extent the choice of measure (the median or globalised ratio) can influence the outcome. In globalised terms, while industry tends to have a heavier debt

burden than the services branches, at the same time it is in a better position to repay its debts. Cash flow cover of borrowings nevertheless declined across the board in 2008. The solvency ratio tends to be relatively more stable over time, since it is made up of stock variables, which are by nature less volatile. If the two criteria are taken into account, the branches with the best solvency ratios in 2008 were the chemicals and pharmaceuticals industries, metal manufactures, transport and storage, as well as other service-related activities. The low globalised level of indebtedness in these branches is largely due to the so-called "activities of head office", which have benefited from significant capital injections in recent years.

The image presented by the medians varies considerably. In most of the branches surveyed, median financial independence ratios are below their globalised equivalent. The cash flow coverage ratio, on the other hand, is generally higher, and especially in 2008 following the drop in globalised ratios. Generally speaking, the median firms therefore compensate for their debt through a higher repayment capability.

CHART 6 DEGREE OF FINANCIAL INDEPENDENCE

(percentages)

- Large firms (globalised ratio)
- SMEs (globalised ratio)
- Large firms (median)
- SMEs (median)
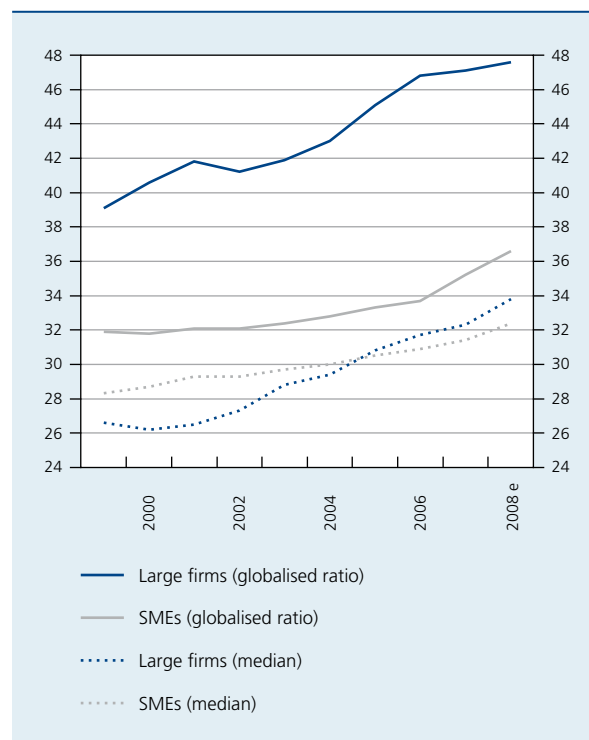
Source : NBB.

DISTRIBUTION OF THE DEGREE OF FINANCIAL INDEPENDENCE

(percentages)

	1999	2004	2005	2006	2007	2008 e	Difference 1999-2008 e
Large firms							
P90	78.4	82.3	83.3	84.5	85.8	87.4	+9.0
Q3	51.4	55.9	57.0	58.4	59.8	62.4	+11.0
Q2	26.6	29.4	30.8	31.7	32.3	33.8	+7.2
Q1	10.6	11.7	12.4	13.5	13.8	14.3	+3.7
P10	0.4	0.0	0.1	0.5	0.7	0.6	+0.2
Interquartile range	*40.8*	*44.2*	*44.6*	*44.8*	*46.1*	*48.1*	*+7.3*
SMEs							
P90	83.3	84.5	84.6	85.1	85.7	87.0	+3.7
Q3	56.7	59.1	59.7	60.0	61.0	62.9	+6.2
Q2	28.3	30.0	30.5	30.9	31.4	32.4	+4.1
Q1	8.9	8.6	8.8	8.7	9.1	9.2	+0.3
P10	−15.4	−20.1	−20.7	−20.9	−19.8	−23.8	−8.4
Interquartile range	*47.9*	*50.4*	*50.9*	*51.3*	*52.0*	*53.8*	*+5.9*

Source : NBB.

CHART 7   DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW

(percentages)

Large firms (median)

SMEs (median)

SMEs (globalised ratio)

Large firms (globalised ratio)
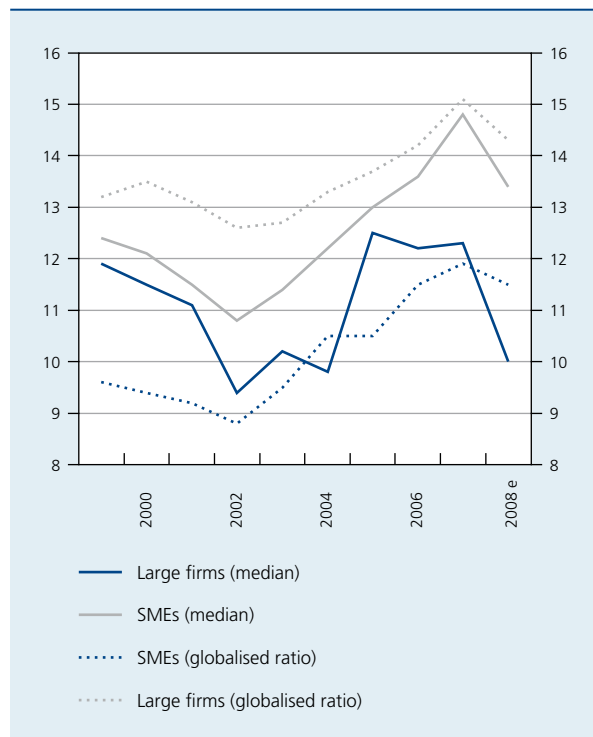
Source : NBB.

3.3 Liquidity

Liquidity means the capacity of firms to mobilise the cash resources needed to meet their short-term commitments. It is traditionally assessed as the liquidity ratio in the broad sense. This ratio, derived from the concept of the net working capital, compares the total assets realisable and available (stocks, claims at up to one year, cash investments, liquid resources and accruals and deferrals) with the short-term liabilities (debts at up to one year and accruals and deferrals). The higher the liquidity in the broad sense, the more capable the firm of meeting its short-term financial commitments. In addition, when the ratio is higher than 1, the net working capital is positive.

In 2008, the globalised ratio came to 1.25 for large firms and 1.24 for SMEs (chart 9). While the ratio for SMEs remained virtually unchanged, that for large firms saw a sharp correction, on account of financial flows between subsidiaries of the same group. These transfers took the shape of write-downs or debt increases in respect of affiliated companies. The medians follow the same continuity seen in previous years, namely on an upward path, bearing witness to the fact that globalised variations are not necessarily representative of the majority of firms.

CHART 8 DEGREE OF FINANCIAL INDEPENDENCE AND CASH FLOW COVERAGE OF BORROWINGS, PER BRANCH OF ACTIVITY
(percentages)

◇ ☐ 2007 ◆ ■ 2008

A. Manufacturing industry

   1. Agricultural and food industries

   2. Textiles, clothing and footwear

   3. Wood, paper products and printing

   4. Chemicals and pharmaceuticals

   5. Metallurgy and metalworking

   6. Metal manufactures

B. Non-manufacturing branches

   7. Energy, water supply and waste

   8. Construction

   9. Wholesale and retail trade

   10. Transportation and storage

   11. Information and communication

   12. Real estate activities

   13. Other service activities

Source : NBB.

Lastly, as with profitability and solvency, the dispersion in ratios has widened over the last ten years : the ratio has increased in the most liquid strata of the corporate population while stagnating or contracting in the least liquid layers (table 9).

There are occasionally objections to the fact that the accounting ratios do not necessarily represent corporate financial reality. Likewise, the interpretation of some of these ratios is sometimes called into question because of the way in which they are calculated. This is the case of the liquidity ratio in the broad sense, which leaves itself wide open to criticism because it takes account of the balance of assets and liabilities on the closing day of the accounting year. Because of this, it may

not give a true and fair view of the liquidity position over the whole financial year. These criticisms need to be put into perspective. The observation actually shows that a ratio such as liquidity in the broad sense is greatly influenced by the likelihood of default. This, at least, emerges from an analysis based on the annual accounts for the financial years 1996, 1997 and 1998, among which corporate bankruptcies over the following years have been detected. A firm is considered to be in default if it is facing bankruptcy or legal settlement. From one accounting year to the next, defaulting firms thus defined account for less than 2 p.c. of the annual accounts filed, and the vast majority (more than 98 p.c.) of them are SMEs.

Take, for example, the annual accounts for reporting year N. Each annual account is given a code depending on how close in time a default is:
– D1: annual accounts of a company defaulting in N+1;
– D2: annual accounts of a company defaulting in N+2;
– ...
– D7: annual accounts of a company defaulting in N+7;
– ND: annual accounts of a non-defaulting company[1].

By using this typology, it can be seen that the medians deteriorate as the likelihood of default approaches, the same observation also applying to the entire distribution, including the first and third quartiles (chart 10). To sum up, although the ratios do not enable a perfect assessment of companies' accounting position, they are statistically significant as regards financial risk-taking.

(1) Over the seven following calendar years.

CHART 9   LIQUIDITY IN THE BROAD SENSE

Large firms (globalised ratio)
SMEs (globalised ratio)
Large firms (median)
SMEs (median)

Source: NBB.

TABLE 9   DISTRIBUTION OF LIQUIDITY IN THE BROAD SENSE

	1999	2004	2005	2006	2007	2008 e	Difference 1999-2008 e
Large firms							
P90	3.84	4.51	4.74	5.40	5.73	6.54	+2.70
Q3	1.80	1.99	2.05	2.14	2.19	2.34	+0.54
Q2	1.20	1.24	1.25	1.29	1.31	1.34	+0.14
Q1	0.94	0.92	0.94	0.96	0.96	0.96	+0.02
P10	0.48	0.42	0.43	0.45	0.44	0.42	−0.06
Interquartile range	*0.87*	*1.07*	*1.11*	*1.18*	*1.23*	*1.38*	*+0.51*
SMEs							
P90	4.99	5.77	5.90	6.07	6.42	7.18	+2.19
Q3	2.10	2.29	2.35	2.38	2.46	2.61	+0.51
Q2	1.19	1.21	1.23	1.24	1.26	1.28	+0.09
Q1	0.69	0.64	0.65	0.67	0.68	0.67	−0.02
P10	0.22	0.19	0.19	0.20	0.20	0.19	−0.03
Interquartile range	*1.41*	*1.65*	*1.69*	*1.72*	*1.78*	*1.94*	*+0.53*

Source: NBB.

CHART 10   MEDIAN PROFITABILITY, SOLVENCY AND LIQUIDITY ACCORDING TO PROXIMITY OF DEFAULT
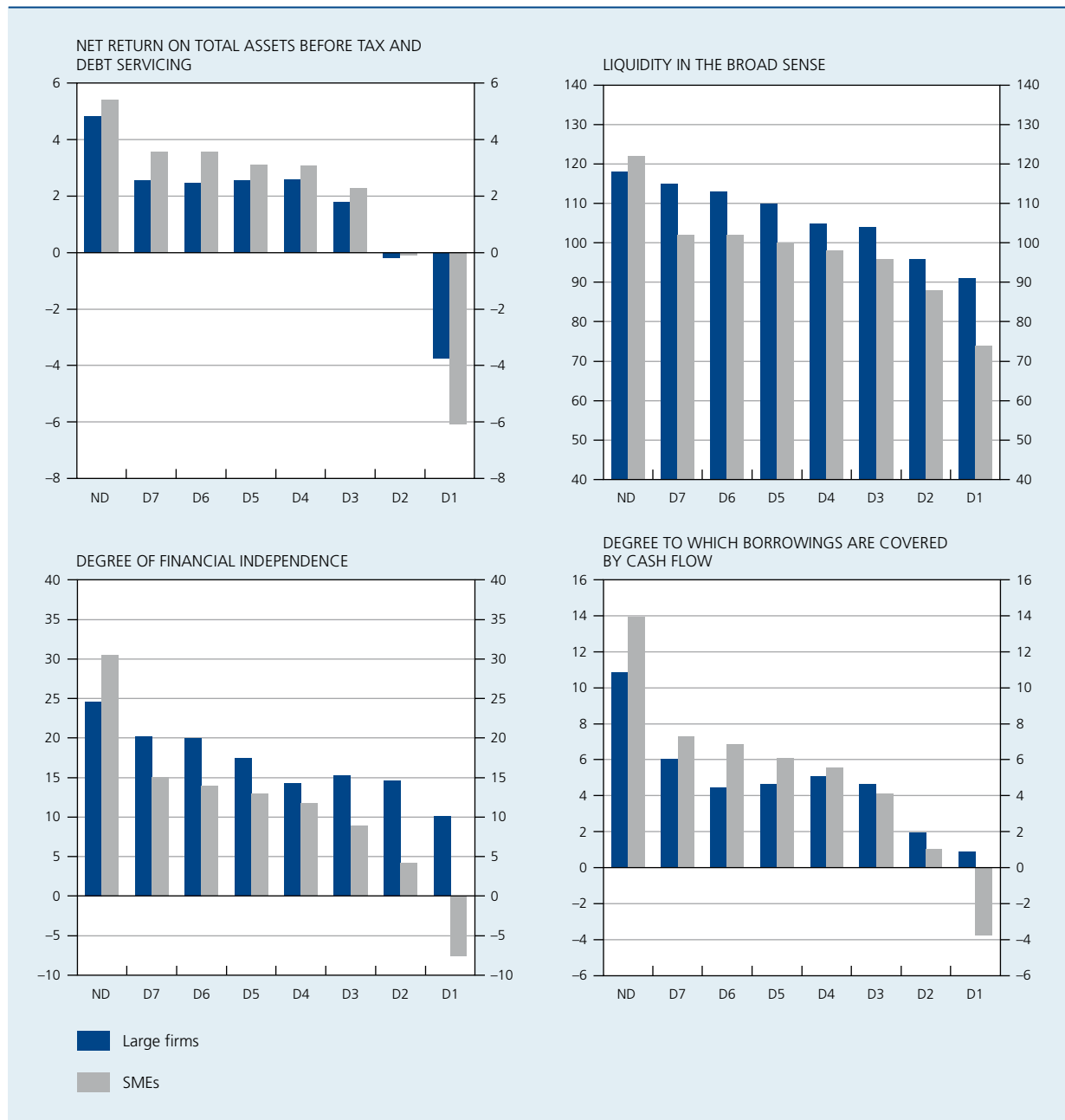
Source : NBB.

Conclusion

This article describes the financial situation of Belgian enterprises over the period running from 1 January to 31 December 2008 as a whole. Because of the particularly contrasting economic trends over that period, the analysis is somewhat blurred. The information gathered nevertheless gives some indication of the resistance capacity of firms as they went into the recession.

For the year 2008 as a whole, the value added generated by Belgian non-financial corporations grew by 1.8 p.c., to reach almost 164 billion euro at current prices. This is a marked slowdown from the five previous years, during which value added had expanded at an annual average rhythm of 5.1 p.c. More than just a slackening of firms' sales volume, this slowdown can be explained first and foremost by the sharp rise in the price of imported raw

materials. Owing to the weakening of final demand, firms have not been able to pass the whole increase onto their sales prices.

Driven by staff costs and depreciation, growth in total operating expenses picked up, rising by 6.0 p.c. compared with 2007. Combined with the slowdown in value added, this trend turned into a 13.0 p.c. contraction in the net operating result. Such a decline in operating profits has not been seen since 2001 but it should not be forgotten that it had doubled in the space of the previous five years, rising gradually from 17 billion euro in 2002 to more than 35 billion in 2007.

Taking account of the other components making up the profit and loss account (namely, financial results and extraordinary items as well as taxes), the net operating result of non-financial corporations amounted to some 43 billion euro in 2008, which works out at a 14.6 p.c. drop on 2007.

The financial position of firms showed a contrasting picture as at 31 December 2008. As a result of the deterioration of the economic climate, profitability and coverage of borrowings by cash flow dropped across the board. On the other hand, the degree of financial independence followed the upward trend of the last few years, after new equity capital injections. And lastly, liquidity positions generally continued to improve although they actually worsened in very large enterprises, reflecting financial transfers between affiliated companies.

Finally, an analysis of the ratio distribution showed that a large proportion of firms are in an unfavourable financial situation. For instance, each year, almost one quarter of all the firms surveyed incur losses. These firms are mostly SMEs. It also emerges from the analysis that the ratio distribution has widened over time: overall, the ratios are improving in the best-off segments of the corporate population, while they are stagnating or even worsening in the lower levels.

Annex 1

TABLE 1   ALL NON-FINANCIAL CORPORATIONS: MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

(millions of euro)

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 e
Value added		112,544	121,043	123,530	125,294	130,827	139,503	145,871	154,722	161,074	163,974
Staff costs	(–)	66,960	70,985	73,734	76,113	77,326	79,973	82,367	85,944	89,438	93,809
Depreciation	(–)	21,193	22,862	23,678	23,892	22,858	23,023	23,882	25,143	26,442	27,737
Other operating expenses	(–)	6,763	8,028	8,974	8,020	8,963	9,088	9,678	10,913	9,735	11,571
Total operating expenses		*94,917*	*101,875*	*106,385*	*108,025*	*109,147*	*112,084*	*115,927*	*122,000*	*125,615*	*133,117*
Net operating result		**17,628**	**19,168**	**17,145**	**17,269**	**21,680**	**27,419**	**29,944**	**32,722**	**35,459**	**30,857**
Financial income	(+)	25,772	35,724	37,655	46,874	50,060	43,829	41,888	38,072	45,114	62,408
Financial charges	(–)	22,257	29,620	30,978	43,015	44,975	37,829	33,699	29,205	33,632	44,213
Financial result		*3,515*	*6,104*	*6,677*	*3,859*	*5,085*	*5,999*	*8,189*	*8,868*	*11,481*	*18,195*
Ordinary result		**21,143**	**25,272**	**23,821**	**21,128**	**26,765**	**33,419**	**38,133**	**41,589**	**46,940**	**49,052**
Exceptional result	(+)	5,797	2,825	1,439	–2,665	5,921	7	11,145	9,562	12,525	2,896
Net result before tax		**26,940**	**28,096**	**25,260**	**18,464**	**32,686**	**33,425**	**49,278**	**51,152**	**59,465**	**51,948**
Taxes on profits	(–)	5,822	6,491	6,478	6,156	6,587	7,347	8,145	8,527	9,225	9,020
Net result after tax		**21,118**	**21,606**	**18,782**	**12,308**	**26,099**	**26,078**	**41,133**	**42,625**	**50,241**	**42,928**
p.m. Net result after tax excluding the exceptional result		*15,321*	*18,781*	*17,343*	*14,972*	*20,178*	*26,071*	*29,988*	*33,062*	*37,716*	*40,032*

Source: NBB.

TABLE 2   LARGE FIRMS: MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

(millions of euro)

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 e
Value added		**87,246**	**93,840**	**95,281**	**96,425**	**100,653**	**107,082**	**111,521**	**117,617**	**121,731**	**122,668**
Staff costs	(–)	52,865	56,007	58,142	59,935	60,809	62,558	64,228	66,645	69,423	72,392
Depreciation	(–)	15,704	16,919	17,465	17,494	16,388	16,152	16,581	17,310	18,158	19,045
Other operating expenses	(–)	5,317	6,483	7,345	6,389	7,262	7,236	7,800	8,979	7,668	9,355
Total operating expenses		*73,886*	*79,409*	*82,951*	*83,818*	*84,459*	*85,945*	*88,610*	*92,934*	*95,249*	*100,792*
Net operating result		**13,360**	**14,431**	**12,330**	**12,607**	**16,194**	**21,137**	**22,911**	**24,683**	**26,482**	**21,876**
Financial income	(+)	24,291	34,035	35,850	45,112	48,175	41,826	39,736	35,646	41,710	58,621
Financial charges	(–)	19,697	26,677	27,828	39,678	41,517	34,382	30,291	25,543	29,580	39,325
Financial result		*4,594*	*7,358*	*8,022*	*5,435*	*6,658*	*7,444*	*9,445*	*10,103*	*12,129*	*19,296*
Ordinary result		**17,954**	**21,789**	**20,352**	**18,041**	**22,852**	**28,582**	**32,356**	**34,785**	**38,611**	**41,172**
Exceptional result	(+)	4,875	2,035	873	–3,185	5,345	–852	9,865	7,852	10,293	869
Net result before tax		**22,829**	**23,823**	**21,225**	**14,856**	**28,198**	**27,730**	**42,221**	**42,637**	**48,904**	**42,041**
Taxes on profits	(–)	4,274	4,724	4,615	4,353	4,793	5,368	5,968	6,092	6,511	6,249
Net result after tax		**18,555**	**19,099**	**16,609**	**10,503**	**23,405**	**22,362**	**36,253**	**36,545**	**42,393**	**35,792**
p.m. Net result after tax excluding the exceptional result		*13,680*	*17,064*	*15,737*	*13,689*	*18,059*	*23,214*	*26,388*	*28,694*	*32,100*	*34,923*

Source: NBB.

TABLE 3   SMES: MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT
(millions of euro)

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 e
Value added		25,299	27,203	28,249	28,870	30,174	32,421	34,350	37,105	39,344	41,306
Staff costs	(–)	14,095	14,979	15,592	16,179	16,517	17,415	18,139	19,300	20,015	21,418
Depreciation	(–)	5,489	5,943	6,213	6,398	6,471	6,872	7,301	7,833	8,284	8,692
Other operating expenses	(–)	1,446	1,544	1,629	1,631	1,701	1,852	1,878	1,933	2,067	2,215
Total operating expenses		*21,031*	*22,466*	*23,434*	*24,207*	*24,688*	*26,139*	*27,318*	*29,066*	*30,366*	*32,325*
Net operating result		4,268	4,737	4,815	4,662	5,486	6,282	7,033	8,039	8,977	8,981
Financial income	(+)	1,481	1,688	1,805	1,762	1,884	2,003	2,152	2,427	3,404	3,786
Financial charges	(–)	2,560	2,942	3,150	3,337	3,457	3,448	3,408	3,662	4,052	4,887
Financial result		*–1,079*	*–1,254*	*–1,346*	*–1,575*	*–1,573*	*–1,445*	*–1,256*	*–1,235*	*–648*	*–1,101*
Ordinary result		3,189	3,483	3,469	3,087	3,913	4,837	5,777	6,804	8,330	7,880
Exceptional result	(+)	922	790	566	521	576	859	1,279	1,711	2,232	2,027
Net result before tax		4,111	4,273	4,035	3,608	4,488	5,696	7,056	8,515	10,562	9,907
Taxes on profits	(–)	1,548	1,766	1,863	1,803	1,794	1,979	2,177	2,436	2,714	2,771
Net result after tax		2,563	2,507	2,172	1,804	2,694	3,716	4,879	6,079	7,848	7,136
p.m. Net result after tax excluding the exceptional result		*1,641*	*1,717*	*1,606*	*1,284*	*2,119*	*2,858*	*3,600*	*4,368*	*5,615*	*5,109*

Source: NBB.

TABLE 4 MANUFACTURING INDUSTRY: MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

(millions of euro)

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 e
Value added		**38,549**	**41,559**	**41,240**	**41,615**	**41,970**	**44,300**	**45,456**	**48,278**	**47,808**	**45,393**
Staff costs	(−)	23,678	24,481	25,474	25,798	25,644	26,313	26,462	27,144	27,924	28,111
Depreciation	(−)	7,838	8,346	8,651	8,530	7,798	7,593	7,846	8,198	8,019	8,235
Other operating expenses	(−)	1,498	1,658	2,203	1,621	1,555	1,695	1,744	2,464	1,343	1,313
Total operating expenses		*33,014*	*34,485*	*36,328*	*35,948*	*34,997*	*35,602*	*36,053*	*37,806*	*37,285*	*37,659*
Net operating result		**5,535**	**7,074**	**4,912**	**5,667**	**6,974**	**8,698**	**9,404**	**10,471**	**10,522**	**7,734**
Financial income	(+)	3,266	4,480	4,198	5,114	5,954	6,747	6,456	8,423	10,662	14,514
Financial charges	(−)	3,465	4,740	5,075	5,259	5,337	5,536	5,444	5,660	6,675	8,384
Financial result		*−199*	*−259*	*−876*	*−145*	*617*	*1,210*	*1,013*	*2,763*	*3,986*	*6,130*
Ordinary result		**5,335**	**6,815**	**4,036**	**5,522**	**7,591**	**9,908**	**10,417**	**13,234**	**14,509**	**13,864**
Exceptional result	(+)	730	1,024	85	−187	743	330	7,034	2,250	3,979	1,163
Net result before tax		**6,065**	**7,839**	**4,121**	**5,334**	**8,334**	**10,238**	**17,450**	**15,484**	**18,488**	**15,027**
Taxes on profits	(−)	1,824	2,226	1,846	1,766	1,851	2,095	2,266	2,269	2,289	2,302
Net result after tax		4,242	5,613	2,275	3,568	6,483	8,144	15,185	13,215	16,199	12,725
p.m. Net result after tax excluding the exceptional result		*3,512*	*4,589*	*2,190*	*3,756*	*5,740*	*7,814*	*8,151*	*10,965*	*12,220*	*11,562*

Source: NBB.

TABLE 5   NON-MANUFACTURING BRANCHES: MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

(millions of euro)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 e
Value added	73,996	79,484	82,290	83,679	88,857	95,203	100,415	106,444	113,266	118,581
Staff costs (–)	43,282	46,505	48,260	50,316	51,682	53,659	55,905	58,800	61,514	65,699
Depreciation (–)	13,356	14,516	15,027	15,362	15,061	15,430	16,036	16,945	18,423	19,542
Other operating expenses (–)	5,265	6,370	6,770	6,399	7,408	7,393	7,934	8,448	8,392	10,218
Total operating expenses	61,903	67,390	70,057	72,077	74,150	76,482	79,875	84,193	88,330	95,458
Net operating result	12,093	12,093	12,233	11,602	14,707	18,721	20,540	22,250	24,937	23,123
Financial income (+)	22,506	31,243	33,456	41,760	44,105	37,082	35,432	29,650	34,452	47,893
Financial charges (–)	18,792	24,880	25,903	37,756	39,638	32,293	28,256	23,545	26,957	35,828
Financial result	3,714	6,363	7,553	4,004	4,468	4,789	7,176	6,105	7,495	12,065
Ordinary result	15,808	18,457	19,786	15,607	19,174	23,510	27,716	28,355	32,432	35,188
Exceptional result (+)	5,067	1,800	1,353	–2,477	5,178	–323	4,111	7,313	8,546	1,733
Net result before tax	20,875	20,257	21,139	13,130	24,352	23,187	31,827	35,668	40,978	36,921
Taxes on profits (–)	3,998	4,265	4,632	4,390	4,736	5,253	5,879	6,259	6,936	6,718
Net result after tax	16,877	15,992	16,507	8,739	19,616	17,934	25,948	29,410	34,041	30,204
p.m. Net result after tax excluding the exceptional result	11,809	14,192	15,154	11,217	14,438	18,257	21,837	22,097	25,495	28,470

Source: NBB.

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Annex 2

	NACE-BEL 2008 divisions
Manufacturing industry	**10-33**
of which :	
Agricultural and food industries	10-12
Textiles, clothing and footwear	13-15
Wood, paper products and printing	16-18
Chemicals and pharmaceuticals	20-21
Metallurgy and metalworking	24-25
Metal manufactures	26-30
Non-manufacturing branches	**01-09, 35-82, 85.5 and 9**[1]
of which :	
Wholesale and retail trade	45-47
Transportation and storage	49-53
Accommodation and food service activities	55-56
Information and communication	58-63
Real estate activities	68
Other service activities	69-82
Energy, water supply and waste	35-39
Construction	41-43

(1) Except 64, 65, 75, 94, 98 and 99.

Annex 3

DEFINITION OF THE RATIOS

	Item numbers allocated	
	full format	abbreviated format
1. Return on equity		
Numerator (N)	9904	9904
Denominator (D)	10/15	10/15
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
10/15 > 0[1]		
2. Net return on total assets before tax and debt servicing		
Numerator (N)	9904 + 650 + 653 − 9126 + 9134	9904 + 65 − 9126 + 67/77
Denominator (D)	20/58	20/58
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
3. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
4. Degree to which borrowings are covered by cash flow		
Numerator (N)	9904 + 630 + 631/4 + 6501 + 635/7 + 651 + 6560 − 6561 + 660 + 661 + 662 − 760 − 761 − 762 + 663 − 9125 − 780 + 680	9904 + 631/4 + 635/7 + 656 + 8079 + 8279 + 8475 − 8089 − 8289 − 8485 − 9125 − 780 + 680
Denominator (D)	16 + 17/49	16 + 17/49
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
5. Liquidity in the broad sense		
Numerator (N)	3 + 40/41 + 50/53 + 54/58 + 490/1	3 + 40/41 + 50/53 + 54/58 + 490/1
Denominator (D)	42/48 + 492/3	42/48 + 492/3
Ratio = N/D		

(1) Condition valid for the calculation of the median but not for the globalised ratio.

The social balance sheet 2008

Ph. Delhez
P. Heuse
Y. Saks

Introduction

Introduced in 1996, the social balance sheet contains a set of information concerning various aspects of employment in enterprises. That information can be used to analyse the trend in workforces, staff costs and working time, the structure of employment at the end of the financial year, staff movements and employee training.

Having already been modified twice since its introduction, the social balance sheet was revised thoroughly in December 2007. The new form, applicable to financial years ending on or after 1 December 2008, no longer contains a record of the use made by businesses of various employment promotion measures, since the NSSO is able to supply the information requested from the multi-purpose declaration that businesses have been required to file since 2003. Another important change concerns the tables relating to training, which have been modified in order to take better account of all corporate training efforts: formal training, informal training and initial training are captured in separate tables. In addition, the report on persons employed at the end of the financial year now includes a breakdown cross-referenced by type and standard of education in both the full-format and abbreviated balance sheets. On the other hand, the breakdown of staff recruitment and departures by type and standard of education that was available only in the full-format accounts no longer appears there.

Some enterprises which end their financial year on 31 December have mistakenly continued to use the old form. Since they scarcely represent more than 3 p.c. of the total and are mostly small in size (70 p.c. of them have 10 employees or less), these enterprises have not been removed from the analysis except where they could have skewed the results.

This article discusses the results of the social balance sheets filed for 2008. It is subdivided into five sections. The first section examines the trend in employment between 2007 and 2008. The second section analyses staff movements recorded in 2008. The third examines the structure of employment (working arrangements, levels of education, types of employment contracts and the use of outside workers). The fourth and fifth sections focus respectively on staff costs and training. This last section is more developed than in previous editions of this article to the extent that it incorporates newly available data.

The results presented in this article are obtained, for each financial year, from uniform populations[1] of firms which have filed a social balance sheet meeting a range of quality criteria. Annex 1 summarises the methodological principles governing the construction of these populations and the regional distribution of the firms. The breakdown by branch of activity is based on the sections and divisions of the NACE-Bel nomenclature (2003 version) reproduced in Annex 2. Annexes 3 to 10 contain a series of detailed indicators per branch of activity. Annexes 9 and 10

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[1] It should be noted that the obligation on large and very large NPIs to file standardised accounts, imposed from the 2006 financial year, causes a break in the historical data series. Even though all NPIs employing more than 20 persons have been required to complete a social balance sheet since 1998, some of them still do not comply. Nonetheless, since 2006, the standard models for the annual accounts of large NPIs include a social balance sheet, which encourages the largest of them to fulfil their legal obligations. NPIs are considered to be large if they meet or exceed more than one of the following criteria: average annual number of workers (in full-time equivalents) equal to 5; total annual income other than extraordinary income (excl. VAT), equal to 250,000 euro; balance sheet total equal to 1,000,000 euro. NPIs are considered to be very large if their average annual number of workers employed (in full-time equivalents) exceeds 100 persons or if one of the following criteria is exceeded: average annual number of workers employed (in full-time equivalents) equal to 50; total annual income other than extraordinary income (excl. VAT), equal to 6,250,000 euro; balance sheet total equal to 3,125,000 euro.

relating to training make use of the new data available in the social balance sheets. Annexes 11 to 13 break down a range of indicators according to the region to which the firms belong. Annex 14 contains the social balance sheet form applicable to firms filing full-format accounts for years ending on or after 1 December 2008[1].

Most of the results of this analysis are obtained from a constant reduced population[2] of firms, which permits analysis of the movement in a range of variables between the 2007 and 2008 financial years, whereas comparison with the data relating to the complete population for 2007 would introduce a bias which would distort the conclusions. Nonetheless, the use of a constant population does impose constraints. By definition, the firms which are included in that population must have filed social balance sheets for two successive years. This automatically excludes new businesses and companies which have disappeared (e.g. because they have gone bankrupt or been taken over), possibly causing some discrepancies between the changes observed in the constant population (referred to as the reduced population in the rest of this article) and those recorded for the total population.

However, adherence to this approach is justified in view of the considerable length of time required to obtain information for all firms, and the safeguards offered by the representativeness of the reduced population.

The reduced population retained for analysis of the social balance sheets relating to 2008 comprises 43,387 firms, making up 53 p.c. of the firms in the total population in 2007. The companies in the reduced population employed 1,383,394 workers in 2007, corresponding to 73 p.c. of the workers employed by the firms in the total population.

The breakdown of firms by branch of activity is based on the NACE-Bel codes. Altogether, workers employed in the trade, transport and communication branch represent around 30 p.c. of the staff in the reduced population, and those working in industry 26 p.c. The other branches are

(1) This form is also available on the National Bank's website (www.nbb.be/DOC/BA/SocialBalance/Models/Bilan%20social_C_17032008.pdf), as is that applicable to firms filing accounts in the abbreviated format (www.nbb.be/DOC/BA/SocialBalance/Models/Bilan%20social_A_17032008.pdf).

(2) Firms have seven months from the end of the financial year to file their social balance sheets at the Central Balance Sheet Office. In view of the time needed to check the data, the full set of social balance sheets was not available on 16 September 2009, the date on which the 2008 figures were extracted.

TABLE 1   CHARACTERISTICS OF THE TOTAL AND REDUCED POPULATIONS IN 2007

(percentages of the total, unless otherwise stated)

	Total population		Reduced population	
	Number of firms	Number of employees[1]	Number of firms	Number of employees[1]
p.m. Units	**82,045**	**1,902,531**	**43,387**	**1,383,394**
(in percentage of the corresponding data for the total population)			*(52.9)*	*(72.7)*
Breakdown by branch of activity				
Agriculture	1.7	0.5	1.6	0.4
Industry	12.8	24.2	14.5	26.3
Construction	14.8	7.4	14.1	6.5
Trade, transport and communication	42.0	30.5	40.9	29.8
Financial, real estate and business services	20.4	17.3	20.8	17.8
Other services[2]	8.4	20.0	8.2	19.8
Breakdown by size of firm[3]				
Small firms (up to 50 FTEs)	94.8	34.8	92.3	27.5
Medium-sized firms (over 50 to 250 FTEs)	4.2	20.4	6.2	22.0
Large firms (over 250 FTEs)	1.0	44.9	1.5	50.5

Source: NBB (social balance sheets).
(1) Sum of items 1001 (full-time workers) and 1002 (part-time workers).
(2) Health and social work; community, social and personal services.
(3) Determined according to the value of item 1003 (FTEs) in 2007.

less important in relative terms, namely 20 p.c. for other services (which include hospitals), 18 p.c. for the financial, real estate and business services sector, and 7 p.c. for construction. Agriculture remains decidedly marginal, which is why it does not appear universally in the tables and charts in this article.

The classification by size of firm is based on the average number of workers expressed as full-time equivalents (FTEs)[1] observed in 2007. Small firms with no more than 50 FTEs, or 92 p.c. of firms in the reduced population, employed around 27 p.c. of that population's workforce, well below the figure of 35 p.c. recorded for the total population. Medium-sized firms, employing 50 to 250 FTEs, account for 22 p.c. of the workforce in the reduced population, a proportion broadly similar to that for the total population. Large firms, with over 250 FTEs, employ just over half of the workforce in firms in the reduced population on the other hand, compared to 45 p.c. in those belonging to the total population. The trends outlined using the reduced population are therefore influenced by the over-representation of large firms.

1. General characteristics of employment developments

As an annual average, employment increased in 2008 by 1.7 p.c. in the 43,387 firms in the reduced population. This growth, which remains vigorous, nonetheless signals

a slowdown compared to the previous year. The situation at the end of the year in itself bears witness to a marked deterioration in employment in these firms during 2008. Compared to 31 December 2007, the rise in the workforce was in fact no more than 0.8 p.c., less than half the average annual growth.

This sort of shift is observed in all branches of activity except those of health and social work. The group of firms affected most includes, unsurprisingly, those in industry and the financial and insurance services, which recorded net job losses at the end of the year. On the other hand, the workforce continued to expand at a steady pace in real estate and business services, health and social work and in community, social and personal services.

The growth in the workforce expressed in FTEs was somewhat less dynamic than that for the workforce expressed in individual persons, due to faster growth in part-time workers than full-time. Moreover, this gap widened during the year since, on 31 December 2008, the number of persons employed on a full-time basis showed only marginal improvement −0.1 p.c. as against 1.1 p.c. for the annual average.

This slowdown was felt more particularly among male workers. From one year-end to the next, there is a decline of 0.3 p.c. in men working full-time, while corresponding

(1) Item 1003 of the social balance sheet.

TABLE 2   EMPLOYMENT DEVELOPMENT BETWEEN 2007 AND 2008
(reduced population)

	Persons employed			FTEs
	Full-time	Part-time	Total	
Annual average				
Percentages	1.1	3.4	1.7	1.6
Units	10,730	12,544	23,274	19,693
As at 31 December				
Percentages	0.1	2.8	0.8	0.7
Men	−0.3	4.3	0.2	0.1
Women	1.2	2.4	1.8	1.8
Units	1,298	10,385	11,683	8,727
Small firms	2,692	3,759	6,451	5,580
Medium-sized firms	1,977	3,496	5,473	4,253
Large firms	−3,371	3,130	−241	−1,106

Source : NBB (social balance sheets).

female employment still grew by 1.2 p.c. This development can be explained as a branch-specific effect, men working primarily in industry, which saw net job losses, and women in the services sector which, in 2008, were the least affected by the economic downturn. At the same time, part-time employment continued to increase at a solid rate. Although the growth still relates, proportionately, more to women than men, it is among the latter that it was most vigorous, namely 4.3 p.c. as against 2.4 p.c. This difference arises mainly from a base-population effect, even if the unfavourable economic climate may also have magnified, to a greater extent for men than for women, the slippage between full-time and part-time working arrangements, in the context of measures adopted by firms to reduce the volume of hours worked while still preserving employment.

This sort of process may explain the trend in employment within the large enterprises in the analysis population. This group in fact shows a slight fall in the workforce at the end of the year, which is even more evident if the latter is expressed in FTEs, to the extent that full-time workers opted for a part-time working arrangement. In small and medium-sized enterprises, it is also part-time employment which developed most widely even though full-time employment also showed growth.

CHART 1   CHANGE IN EMPLOYMENT BETWEEN 2007 AND 2008: BREAKDOWN BY BRANCH OF ACTIVITY

(percentages, reduced population)
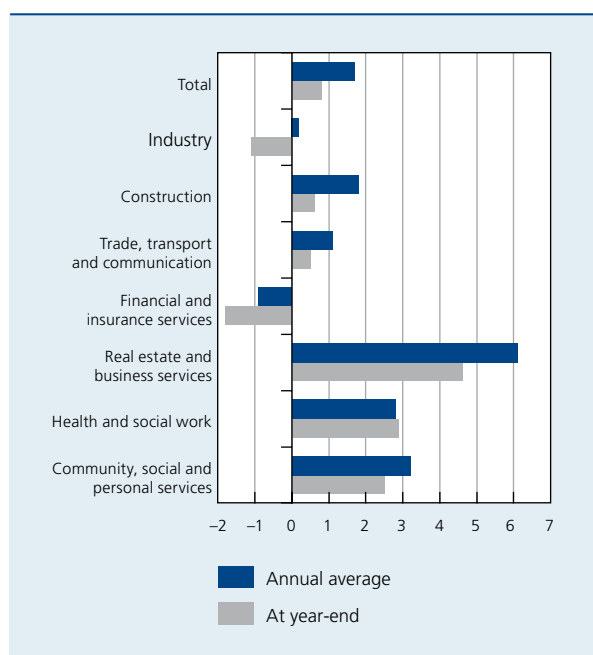
Source: NBB (social balance sheets).

2. Staff movements

2.1 Staff recruitment and departures

The social balance sheet provides data both on the workforce and on staff movements. It contains, on the one hand, recruitment of workers at the time of their entry in the firm's staff register and, on the other hand, staff departures corresponding to the termination of their employment contract during the year. These movements are on a considerable scale. In 2008, they involved around 40 p.c. of the workforce in firms in the reduced population and close to 30 p.c. of the staff in those filing full-format accounts, indicating a greater mobility of staff in the smaller firms. These high recruitment and departure levels partly reflect substitutions – renewals of temporary-contract workers, which can arise several times a year for the same job. All these movements mean costs for the firms in the area of human resources management and training for newly recruited staff.

As a consequence of economic developments, recruitment only rose by 0.6 p.c. in the group of firms in the reduced population, while departures increased by 5.2 p.c. Total net recruitment came to 13,399 persons in 2008[1], which is a net fall compared to the 37,463 recorded a year earlier. In firms filing full-format accounts, appointments of staff decreased by 1.8 p.c., while departures grew by 3.3 p.c.

2.2 Trends in working arrangements

The proportion of workers employed on a part-time basis is growing from year to year. According to the labour force surveys (LFS) carried out by the DGSIE, nearly one employee in four did not work full-time in 2008. The growing importance of part-time working arrangements is also apparent from the analysis of the social balance sheets, which also show how they have contributed to the growth in employment expressed in individual persons.

In fact, part-time work meets the needs of both employers and workers. It enables the former to adapt the service offering to demand, notably in the context of activities requiring non-typical or offset working hours and when surges in activity require additional staff for a limited duration. This working arrangement also enables a given volume of activity to be spread over a wider workforce, and therefore the effects of restructuring to be eased in

TABLE 3 STAFF RECRUITMENT AND DEPARTURES

(reduced population)

	Units		Percentages	
	2007	2008	Changes between 2007 and 2008	Movements in 2008[1]
Recruitment	559,177	562,435	0.6	40.6
of which : full-format accounts	323,866	318,060	−1.8	29.0
Departures	521,714	549,036	5.2	39.6
of which : full-format accounts	300,430	310,342	3.3	28.3
Net recruitment	37,463	13,399	−64.2	1.0
of which : full-format accounts	23,436	7,718	−67.1	0.7

Source : NBB (social balance sheets).
(1) Ratio between staff movements and the workforce at the end of the previous year.

some firms. Where it is adopted willingly (according to the labour force surveys, less than 15 p.c. of part-time workers had accepted employment of this type due to not finding full-time employment in 2008), part-time work allows a better work-life balance to be achieved. In this respect, the proportions of men and women employed part-time are symptomatic of the workings of a society that is still largely dominated by the traditional role of the woman, who bears the responsibility for household and family duties. In the context of managing the approach to retirement, working a reduced number of hours represents an alternative to the premature ending of all professional activity.

Moreover, the individual reduction of working hours is encouraged by various means. Thus, the time credit scheme – applicable in the private sector – enables people to reduce their working hours for a set period, while still receiving an allowance paid by the NEO. In 2008, no fewer than 108,526 workers took advantage of this measure, nearly 70 p.c. of them for a one-fifth reduction in their working time and the balance to cut their hours by half. The distribution by gender and age of those benefiting shows that it is women who make the most use of this in the under-50 age group (84 p.c. as against 16 p.c. for men), but this difference is completely cancelled out for those aged 50 or more, men and women being represented equally. Finally, 617 persons were in early retirement and working half the full-time hours, a status which does not arise from the choice of the worker, unlike that of the time credit.

The expansion of part-time working was not on the same scale in all three firm classes, and did not always originate from the same source. In fact, the social balance sheets make it possible to identify the contribution made by staff recruitment and departures and by changes in working arrangement to the development of the relative shares of full-time and part-time workers. The scale of internal movements can be ascertained by comparing the change in the workforce between two year-end dates and external staff movements during the year.

Net recruitment of part-time workers is not enough to explain the increase in employees working reduced hours in any of the classes of firm, indicating a shift during the year of some of the staff previously employed on a full-time basis to a part-time working arrangement. This phenomenon is particularly marked in large enterprises, where part-time workers grew by 3,130 units between the end of 2007 and the end of 2008, while net departures of 3,068 part-time workers were recorded for the whole of the year. These differing trends can be reconciled by considering the movements in the opposite direction among full-time workers, where net recruitment rose by more than 3,000 units but the number of workers at 31 December 2008 had dropped by 3,371 persons compared to the previous year. All these developments bear witness to large-scale changes in working arrangements within these firms, which are notably registered within the framework of restructuring programmes in manufacturing industry.

With the exception of financial and insurance services and, more marginally, mining and quarrying and the energy and water industries, where firms showed a fall both in their part-time and full-time workforce between the end of 2007 and the end of 2008, part-time employment expanded in all branches of activity. Part-time

CHART 2

STAFF MOVEMENTS IN 2008 : BREAKDOWN BY WORKING ARRANGEMENTS AND FIRM SIZE

(persons, reduced population)

CHANGES IN WORKFORCE BETWEEN 31 DECEMBER 2007 AND 31 DECEMBER 2008

NET RECRUITMENT OF STAFF DURING 2008

Full-time Part-time Total

Full-time Part-time Total

Small

Medium-sized

Large
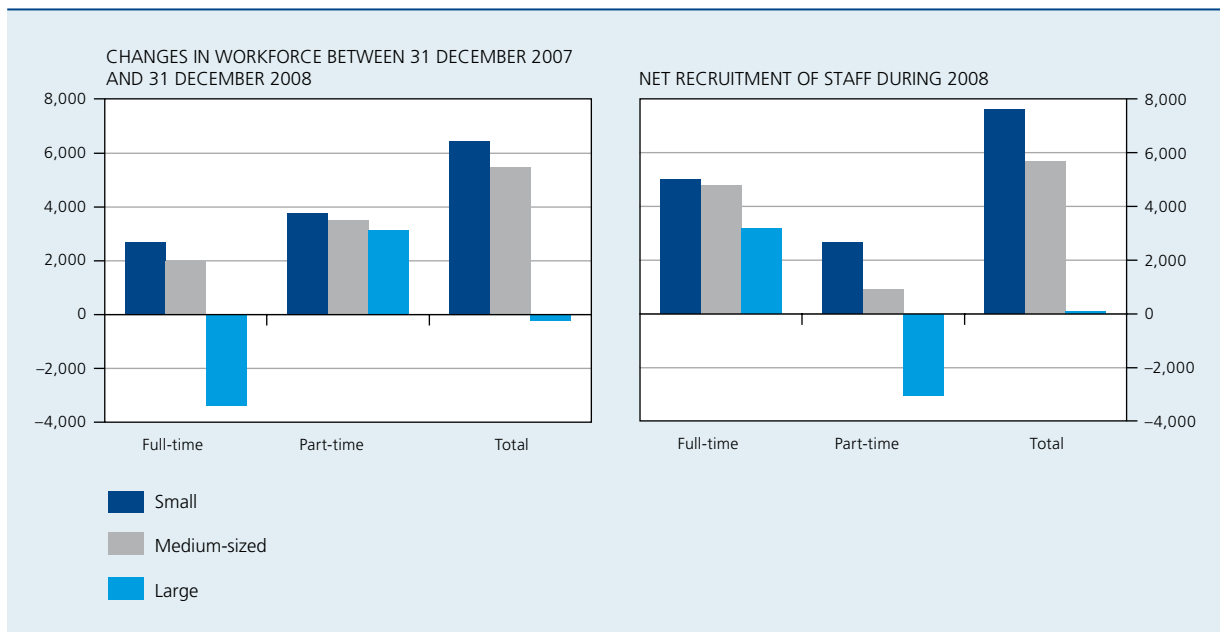
Source : NBB (social balance sheets).

workers continued to increase in manufacturing industry and in transport and communication, while the number of full-time workers dropped. Construction, trade, community services and especially real estate and business services, along with the health and social work sector, on the other hand, recorded a rise in staff in both working arrangements, the growth in the number of part-time workers being higher than in the number of full-time workers in firms coming under trade and health.

2.3 Type of employment contract

Firms in the reduced population filing full-format accounts stated that 46.7 p.c. of staff recruitment and 49.3 p.c. of departures recorded in 2008 concerned workers on permanent contracts, while the respective figures for staff on fixed-term contracts were 48.5 and 46.3 p.c. Substitution contracts or those concluded with a view to the execution of a specific project represented 4.4 p.c. of recruitment and 4.8 p.c. of departures. In spite of the higher turnover among employees on temporary contracts, movements relating to staff on permanent contracts made up nearly half of gross recruitment and departures, indicating the very clear predominance of permanent contracts on staffing registers, equal to 94 p.c. of the total.

A permanent contract does not signify non-mobility or inviolability by any means. Staff working on this basis also exhibit some mobility due to natural wastage or the desire of either party to terminate the contract. The staff turnover rate provides an indication of this external mobility: it is calculated by comparing the staff departures recorded during any given year with the number of staff observed at the beginning of the year. In 2008, this rate was 14.6 p.c. – a slight fall compared to the previous year. This means that in 2008, more than one permanent worker in seven was replaced in the firms in the reduced population. This percentage is relatively stable over time but it varies considerably according to the firms' size and branch of activity.

The rate of turnover is highest in small firms, with more than one worker in four per year, as against less than one in five among medium-sized firms and slightly more than one in ten in large firms. These differences, exhibited every year, may be due notably to greater opportunities for internal mobility in large firms which also tend to have a more structured approach to pay progression.

Differences in turnover rates can also be seen between branches of activity, and the ranking that can be drawn up in this respect varies little over time. To understand this phenomenon, it is necessary to bear in mind that some sectors tend to bring together a greater proportion of

CHART 3   GROSS STAFF RECRUITMENT AND DEPARTURES IN 2008 : BREAKDOWN BY TYPE OF CONTRACT

(percentages of the total, reduced population, full-format accounts)

RECRUITMENT

1.3   3.5

46.7

48.5

DEPARTURES

1.3   3.1

49.3

46.3

- ■ Permanent contracts
- ■ Fixed-term contracts
- ■ Contracts for a specific project
- ■ Substitution contracts
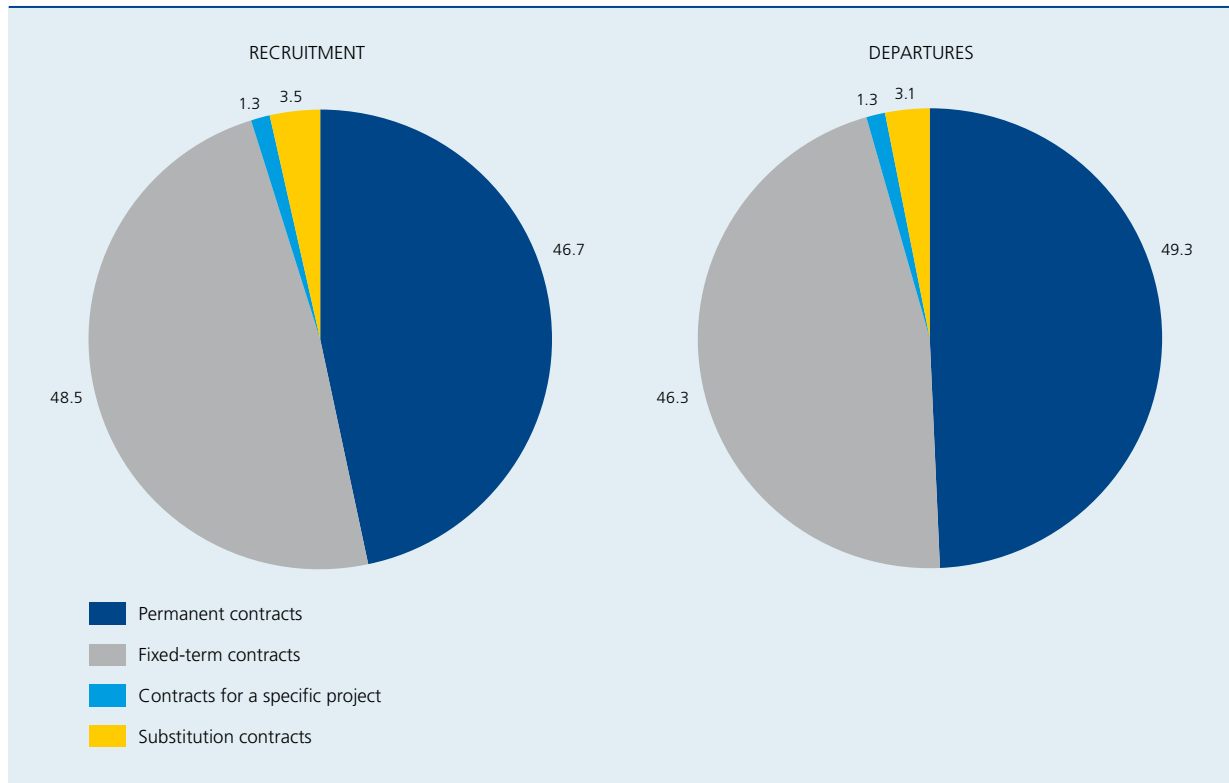
Source : NBB (social balance sheets)

large firms. This applies to health and social work, financial and insurance services, industry and transport and communication, where the staff turnover rate is substantially lower than the average. Conversely, the hotel and restaurant trade, with its annual replacement rate of three workers in five and, to a lesser extent, real estate and business services with one in three, and community, social and personal services and construction with around one in five, are set apart by the difficulty they have in generating loyalty among their workers. Admittedly, these are sectors comprising firms of more varied size but less favourable working conditions and pay also help to explain the scale of staff turnover.

2.4 Reasons for leaving

When recording staff departures, firms filing full-format accounts are required to specify the reason for contract termination. Following the picture seen in previous years, around half of departures are due to the termination of a temporary contract. Furthermore, 29 p.c. of contract terminations occurring in 2008 were due to voluntary

departure, a proportion virtually equivalent to the previous year, again reflecting the relative dynamism of the labour market. In fact, the ratio of voluntary departures tends to be higher in years of cyclical upswing, as workers have more chance of finding employment elsewhere. Among the other causes, 14.4 p.c. of departures were due to redundancies. Staff taking early retirement or normal retirement amounted to 3.0 and 2.6 p.c. respectively of those leaving, these proportions also being entirely comparable with those observed in 2007.

The relative importance of the reasons for terminating contracts vary according to firm size and, first and foremost, the branch of activity to which they belong. There are few differences to be seen in 2008 regarding the proportion of redundancies, which is of the order of 15 p.c. in small and large firms and 12.5 p.c. in those of medium size. Conversely, while the termination of a temporary contract only accounts for 32 p.c. of departures in small firms, it is the cause of more than half of all departures in medium-sized and large firms. Departures due to people taking early or normal retirement are proportionately most common in the latter: they represent 8.1 p.c. of

CHART 4 RATE OF TURNOVER[1] FOR WORKERS UNDER
PERMANENT CONTRACTS IN 2007 AND IN 2008

(percentages, reduced population, full-format accounts)

2007

2008
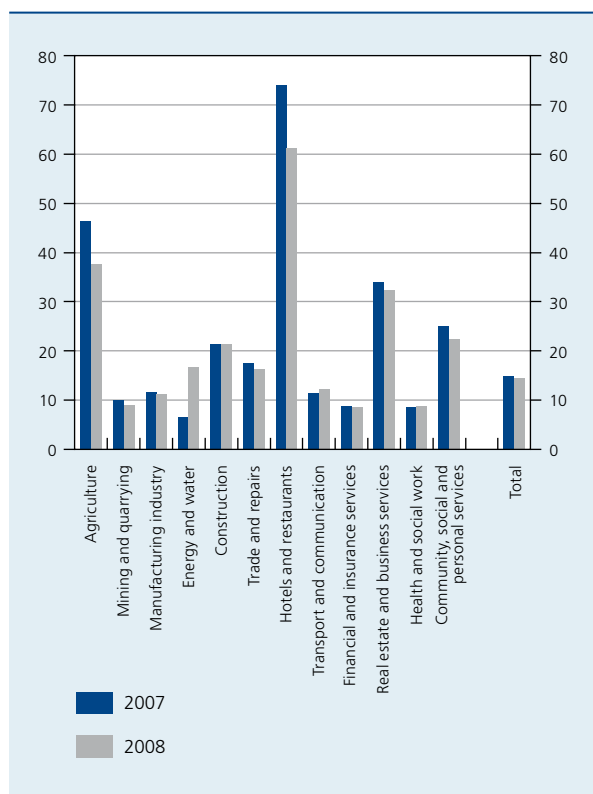
Source : NBB (social balance sheets).
(1) Ratio between the departures recorded in *t* and the workforce at the end of *t*
minus recruitment and plus departures recorded in *t*.

departures, as against less than 4 p.c. in SMEs. Without doubt, the age structure of the workforce and the fact that a considerable proportion of large firms belong to the industrial sectors contribute to this difference. Voluntary departures are most widespread in the small firms: they lie at the root of half of staff departures, as against one-third and one-fifth respectively in the medium and large firms.

In terms of branch of activity, termination of a temporary contract was the reason for almost 75 p.c. of departures recorded in firms operating in the other services sector which, as already mentioned, is made up of health and community, social and personal services. It is also a major reason for leaving in the trade, transport and communication sector. With respect to firms in the construction sector, 55 p.c. of departures were due to people leaving voluntarily. Similarly, the proportion of voluntary departures in industry is also greater than the average. Financial, real estate and business services also deviate from the norm in that just over a quarter of departures are due to redundancy. Finally, it is the industrial sector where early retirement is most widespread, with almost 10 p.c. of departures.

3. Structure of employment

The new form for the social balance sheet not only provides for a breakdown of full-time and part-time workers registered at the end of the year by type of contract of employment, professional category and gender, as was already the case previously, but also a distribution of male and female workers by level of education (primary,

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TABLE 4 REASONS FOR GROSS DEPARTURES OF STAFF IN 2007 AND IN 2008

(reduced population, full-format accounts)

	Percentages of the total					Units
	2007	2008				2008
		Total	Small firms	Medium-sized firms	Large firms	
Retirement	2.3	2.6	2.2	1.1	3.7	8,027
Early retirement	3.0	3.0	0.9	1.6	4.4	9,162
Redundancy	16.4	14.4	15.1	12.5	15.5	44,712
Termination of temporary contract	49.5	50.7	31.9	53.0	54.2	157,266
Other reasons[1]	28.8	29.4	49.9	31.8	22.2	91,175
Total	100.0	100.0	100.0	100.0	100.0	310,342

Source : NBB (social balance sheets).
(1) Essentially voluntary departures resulting from agreement between the parties, and deaths in service.

90
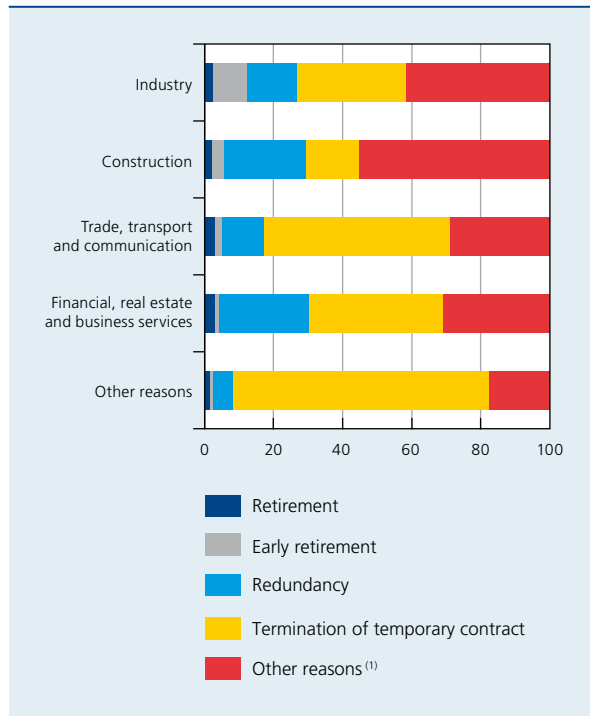
Source : NBB (social balance sheets).
(1) Essentially voluntary departures resulting from agreement between the parties, and deaths in service.

secondary, higher non-university or university). This new information allows new lines of analysis, enabling the picture of employment structure within firms to be filled in.

This section examines in turn (developments in) staff structure by way of working arrangement, standard of education and contract of employment.

3.1 Full-time and part-time work

Part-time work has spread steadily in firms required to file a social balance sheet. While it is primarily an instrument for adjusting the volume of employment in line with activity, part-time work also makes it possible to respond to the expectations of employees concerned about achieving a work-life balance or wishing to manage their approach to retirement.

While one in five workers was employed part-time in 1998, that proportion had risen to one in four by 2004. It continued to increase significantly thereafter, particularly between 2005 and 2006, a development which is

doubtless not unrelated to the inclusion of a larger number of NPIs – which often employ a higher proportion of part-time staff – in the total population with effect from 2006, following the obligation imposed on the larger ones to submit accounts to the Central Balance Sheet Office. In 2007, part-time workers represented 27.9 p.c. of the workforce: 10.9 p.c. of men and 52 p.c. of women were employed under this work arrangement. Since 1998, the rate of part-time work has shown a greater increase among men than among women, even if this work arrangement still remains largely a female preserve: in 2007, 77 p.c. of part-time workers were women.

In the reduced population, new growth of 2 p.c. in the rate of part-time work was observed between 2007 and 2008. This situation is due in part to the success of schemes for managing working time backed by financial assistance from the NEO; the number of people benefiting from these increased again in 2008, especially in the context of managing the approach to retirement among workers over 50 years of age.

While modest in scale among women (0.6 p.c.), the increase in part-time working was clearly more substantial among men (4.1 p.c.), admittedly starting from a much lower level. If these developments are applied to the figures for the total population in 2007, it seems that 52.3 p.c. of women and 11.4 p.c. of men were working part-time in 2008.

The rise in part-time work is a very widespread phenomenon: the three categories of firm as classified by size and all branches of activity are affected. Nevertheless, this work arrangement is unevenly distributed. Part-time work is less widespread in medium-sized firms (23.8 p.c. of workers in 2008) than in small firms (28 p.c.) or large firms (31 p.c.). Compared to 1998, it is among the latter that the rise has been most pronounced: here, the rate of part-time working increased by nearly 10 percentage points, as against 8 in medium-sized firms and barely 7 in small firms.

The relative importance of part-time work is closely connected with the percentage of women in the workforce of the various branches of activity. Construction – a sector where less than 7 p.c. of workers are women – is where this working arrangement is least common (5.7 p.c.). In industry, where women account for 22 p.c. of the workforce, part-time working involves 11.1 p.c. of workers. It is in this sector that the proportional rise was greatest: the percentage of part-time workers has almost doubled since 1998. In trade, transport and communication and the financial, real estate and business services sector, a little under 30 p.c. of employees are working part-time.

In the other services sector, where more than three-quarters of the workers are women, part-time workers make up 52 p.c. of the workforce, a proportion which has increased by 7 percentage points in the space of ten years. The rate of part-time working is considerably above average in this sector – which includes hospitals – especially among male staff: more than three-fifths of women and one-fifth of men are working reduced hours.

If part-time working is unevenly placed within firms, the picture is the same among workers, as shown by the results obtained for the reduced population in 2008. As emphasised above, women are affected to a greater degree. The rate of part-time working does not vary much according to standard of education, except with regard to workers holding a university qualification. On average, slightly under 30 p.c. of those having received primary, secondary and higher non-university education work part-time as against only 15 p.c. of university graduates. Moreover, part-time working is not very widespread among workers exercising supervisory roles, a large number of whom have completed university-level studies by all appearances: less than 7 p.c. of them are working reduced hours. On the other hand, 30 p.c. of clerical workers and 23 p.c. of manual workers are in this position. Among other workers – a heading which includes trainees and apprentices among other categories – one person in four is employed on a part-time basis. An examination of

2008 e (left-hand scale)
1998
Proportion of women workers in the reduced population, 2008 (right-hand scale)

Source: NBB (social balance sheets).
(1) The results for 2008 were obtained by applying the change recorded between 2007 and 2008 for the reduced population to the value observed in 2007 for the total population.

the data in terms of type of contract furthermore reveals that part-time working is more common among workers on a temporary contract (at a level of 40 p.c.) than among workers on a permanent contract (at 26 p.c.).

3.2. Standard of education

Among the 43,387 firms in the reduced population, 1,462 continued to use the old form to fulfil their obligations with regard to social information. These are small firms for the most part, so that the loss of information is not substantial. Of the 41,925 firms which filled in the new form, a small number furthermore omitted to provide the additional breakdown of female and male workers according to level of education. This information is nevertheless available for 99 p.c. of men and for 98 p.c. of women employed in the firms which completed the new form.

A breakdown of staff in terms of the highest qualification obtained measures at most those workers' level of education, which differs from the actual level of qualification which is based notably on the expertise acquired after the

TABLE 5   DEVELOPMENTS IN PART-TIME WORKING BETWEEN 1998 AND 2008

(percentages of corresponding employment, data as at 31 December)

	Men	Women	Total
Total population			
1998	6.2	43.0	20.0
1999	6.7	43.7	20.8
2000	7.0	44.0	20.7
2001	7.3	45.4	21.9
2002	8.2	47.0	23.3
2003	9.2	48.5	24.6
2004	9.8	49.2	25.4
2005	10.3	50.6	26.1
2006	10.8	51.7	27.5
2007	10.9	52.0	27.9
2008 e	11.4	52.3	28.5
Reduced population			
Percentage changes between 2007 and 2008	4.1	0.6	2.0

Source: NBB (social balance sheets).

PART-TIME WORKING IN 2008 : BREAKDOWN BY CHARACTERISTICS OF WORKERS[1]

(percentages of corresponding employment, data as at 31 December, reduced population)
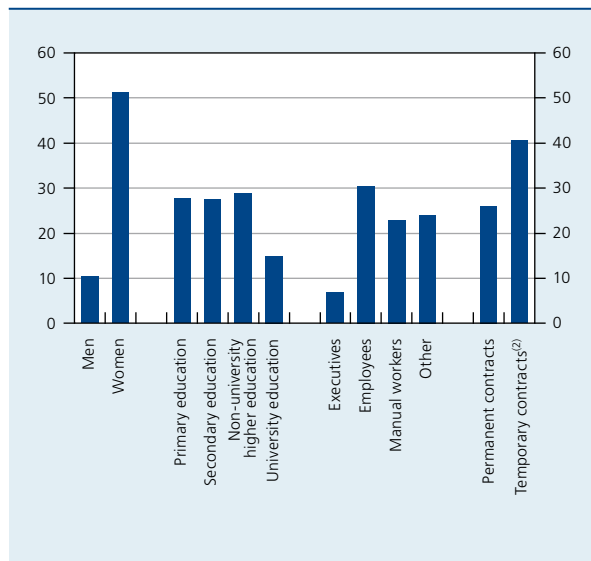
Source : NBB (social balance sheets).
(1) The breakdown by standard of education was obtained on the basis of those social balance sheets for which this distribution is available.
(2) Fixed-term contracts, substitution contracts or contracts concluded for a specific project.

academic course by way of experience or continuing training. This is especially true for the oldest workers whose expertise, accumulated over the course of their careers, compensates for a generally lower standard of education than that of the younger generations, educational models having developed considerably over a number of decades, notably following the raising of school-leaving ages and the establishment of equal access to higher education.

In total, 18 p.c. of workers registered as at 31 December 2008 in those firms for which information is available obtained a certificate of primary education at best, 54 p.c. additionally completed their secondary education, 20 p.c. hold a qualification from a higher non-university educational institution and 8 p.c. have a university qualification.

On average, women have a higher standard of education than men. The proportion of university graduates is virtually identical for both sexes (8 p.c.), but a greater number of women have obtained a qualification from a higher educational institution (27 p.c. as against 16 p.c.). 20 p.c. and 56 p.c. of men respectively still have at best a certificate of primary or secondary education, as against 14 p.c. and 52 p.c. of women. This situation doubtless stems in part from the later arrival of women on the labour market, the younger generations having a higher

level of education on average than the older generations. Nevertheless, according to the results of the labour force survey relating to 2008, women between 25 and 29 years of age are more educated on average than men of the same age group, the latter being more inclined to interrupt their studies early and displaying lower levels of academic achievement on average than women (High Council for Employment, 2009).

Part-time workers have, on average, a lower level of education than full-time workers. Among women, the proportion of university graduates is more than two and a half times higher among full-time workers than among those working part-time, at 11.3 p.c. compared to 4.4 p.c. Holders of a qualification from non-university higher education are also proportionately more numerous within the female population employed full-time. As a corollary, more women with little or average education are seen among part-time workers. This also applies to men: 82 p.c. of part-time workers have a certificate of primary or secondary education compared to 75 p.c. of full-time workers. It is worth pointing out that the proportion of university graduates among part-time workers is virtually identical in men and women, at slightly under 5 p.c.

The structure of the workforce in terms of standard of education is fairly different from one category of firm to the next. The average level of education rises as the size of firm increases. In small firms, the proportion of workers having a certificate of primary education at most is still around 21 p.c. compared to 17 p.c. in medium-sized and large firms. Small firms report 59 p.c. of workers having completed secondary education at best compared to 57 p.c. and 50 p.c. respectively for medium-sized and large firms. Within the latter, one-third of staff have completed higher education, 23 p.c. in an institution of higher education and 10 p.c. at university. In small firms, the proportion of university graduates is half this level, and workers holding a qualification from non-university higher education only represent 15 p.c. of the workforce. Medium-sized firms fall between the two.

More than the size of the firm, it is the type of activity that determines the level of education that workers must have when they take up their jobs, even if their expertise is likely to be enhanced by internal or external training and/or by the accumulation of professional experience. In fact, the demands on taking up a position are very different in construction or the hotel and restaurant trade, where part of the know-how is acquired on the job (notably by means of apprenticeship), and in banks or insurance companies. Nine-tenths of workers in construction have not exceeded the level of secondary education and 28 p.c. have a certificate of primary education at most (it is worth

CHART 8   EDUCATIONAL STANDARD OF WORKERS IN 2008 [1]

(corresponding percentages, data as at 31 December, total population)
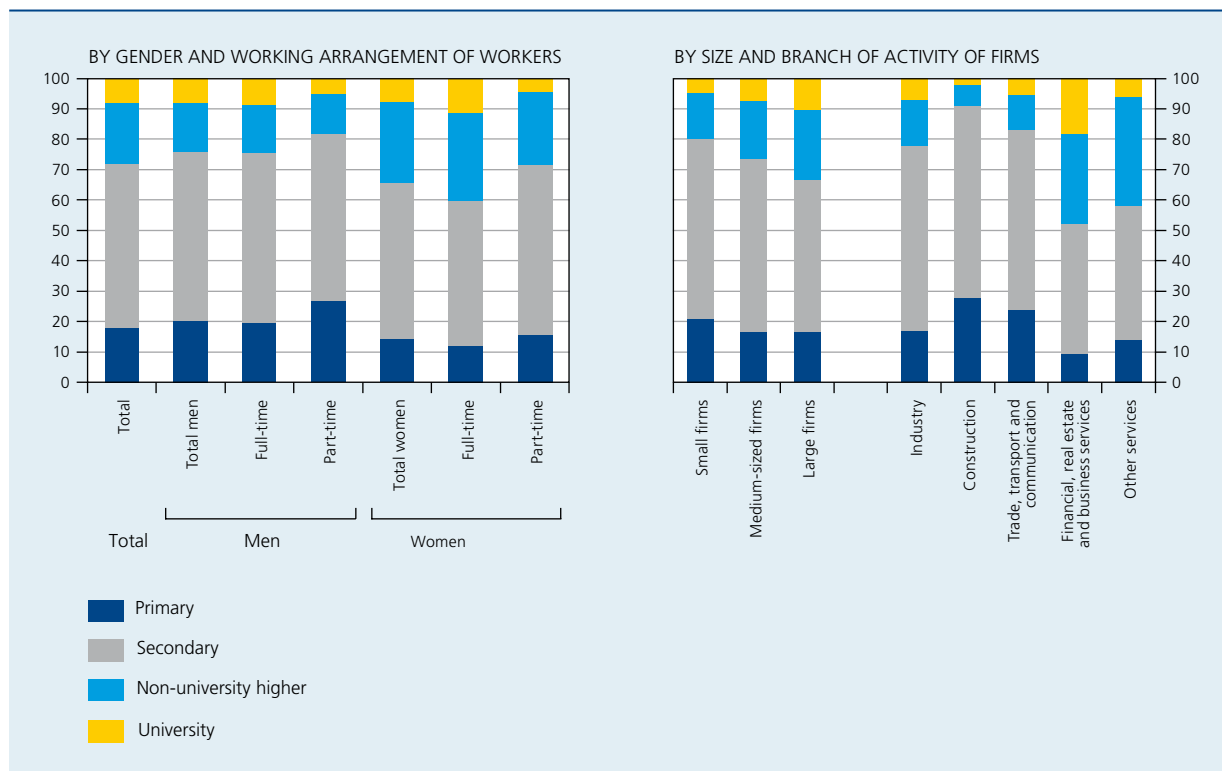
BY GENDER AND WORKING ARRANGEMENT OF WORKERS

BY SIZE AND BRANCH OF ACTIVITY OF FIRMS

- Primary
- Secondary
- Non-university higher
- University

Source : NBB (social balance sheets).
(1) The breakdown by standard of education was obtained on the basis of those social balance sheets for which this distribution is available.

pointing out that some of the latter are doubtless undergoing work-based training). The proportion of workers with this standard of education is similarly high (24 p.c.) in the trade, transport and communication sector. Conversely, it is less than 10 p.c. in financial, real estate and business services. The average level of education is highest in this latter sector: 18 p.c. of staff hold a university qualification and 30 p.c. a qualification from non-university higher education, representing nearly half of the workforce in total. Moreover, a considerable proportion of workers who have completed higher education can be found in the other services sector (42 p.c.), and in particular in the health and social work sector. This proportion is twice as high as that seen in industry (22 p.c.) and in the trade, transport and communication sector (17 p.c.).

If the analysis is refined by using the NACE-Bel two-digit divisions – a level of breakdown by activity that nevertheless displays a fair amount of aggregation – even clearer differences can be seen, whether this is because the needs of the firms diverge or because they have a large minority of older workers, whose level of education is lower on average.

Most branches of activity have between 10 p.c. and 35 p.c. of workers with a certificate of primary education at most and between 40 p.c. and 70 p.c. of workers having completed their secondary education at most. However, some of them display particular combinations: the collection, purification and distribution of water sector and the post and telecommunications sector record a proportion of workers completing primary education that is clearly higher than the average. Other sectors show less than 5 p.c. of workers completing primary education. Thus, the energy production and distribution sector and the air transport sector combine a low proportion of workers completing primary education with almost 80 p.c. of the workforce in possession of a qualification of secondary education. For their part, banks and insurance companies have around one-third of their workers completing secondary education, and the research and development sector barely 13 p.c. The latter branch of activity therefore brings together a large number of highly educated workers, specifically 24 p.c. of graduates from an institution of higher education and 63 p.c. from a university. It diverges from the other sectors in the very marked over-representation of university-level workers.

CHART 9   EDUCATIONAL STANDARD OF WORKERS IN 2008 [1] : BREAKDOWN BY NACE-BEL [2] AREA OF ACTIVITY

(percentages of total employment, data as at 31 December, reduced population)
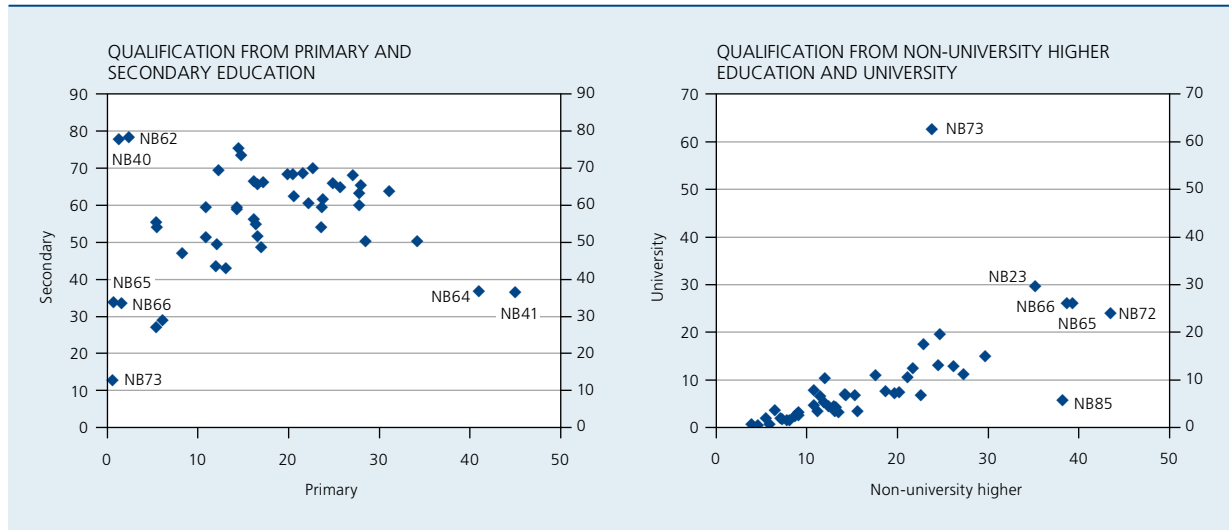
Source : NBB (social balance sheets).

(1) The breakdown by standard of education was obtained on the basis of those social balance sheets for which this distribution is available.

(2) Sectors employing fewer than 1,000 workers are not included. The NACE-Bel codes are linked to the following sectors : NB23: Manufacture of coke, refined petroleum products and nuclear fuel ; NB40: Electricity, gas, steam and hot water supply ; NB41: Collection, purification and distribution of water; NB62 : Air transport ; NB64 : Post and telecommunications ; NB65 : Financial intermediation ; NB66 : Insurance; NB72 : Computer and related activities ; NB73 : Research and development ; NB85 : Health and social work.

In fact, a clear correlation (0.65) can be seen between the proportion of workers holding a qualification from an institution of higher education and that of workers holding a university qualification.

3.3 Type of employment contract

Temporary employment contracts – i.e. fixed-term contracts, substitution contracts or contracts concluded for the execution of a specific project – and contracts employing agency workers are instruments for adjusting the volume of labour according to production and/ or staff selection requirements. Furthermore, with the prior authorisation – or in some cases notification – of the Social Inspectorate, secondment of staff enables a firm to make use of additional workers, usually from an associated company.

Information on agency workers and staff on secondment is only available for firms filing full-format accounts. For firms as a whole, the only available item is the breakdown by contract for workers entered in the staff register at the end of the year, which already offers a good idea of the extent of recourse to certain instruments permitting flexible employment.

3.3.1 All firms

Following a decline recorded between 1999 and 2002, the share of temporary contracts (fixed-term, substitution or for a specific project) stabilised around 6 p.c. between 2002 and 2005, before climbing to 6.6 p.c. in 2007. If the development recorded for the reduced population between 2007 and 2008 is applied to the figure for the total population in 2007, the proportion of temporary contracts would have decreased slightly, coming to 6.5 p.c. in 2008.

There can be no doubt that the fall in relative share of temporary contracts reflects the slowdown in economic activity. Temporary staff are in fact in the front line when it comes to reducing the volume of work, with employers being less inclined to renew these contracts. Although the number of workers employed on a fixed-term contract (which accounts for eight-tenths of temporary workers) only declined slightly – by 0.1 p.c. – between 2007 and 2008, this downturn puts an end to the rising trend observed since 2005. The number of workers employed by way of substitution of other employees was reduced by 2.7 p.c. and the number of workers employed for the execution of a specific project decreased by 3.2 p.c. Conversely, staff employed on a permanent contract continued to increase between 2007 and 2008, by 0.9 p.c.

A contraction in temporary working was recorded in medium-sized firms and even more so in large firms. Conversely, in small firms, the rise observed since the beginning of the decade continued. In these companies, temporary workers represented 6.9 p.c. of the workforce in 2008, compared to 4.3 p.c. in 2001. In medium-sized firms, the proportion of temporary working remained relatively stable over the same period, at a level close to 6 p.c., but a very weak downward trend showed itself in 2007 and 2008. While temporary staff represented almost 9 p.c. of the workforce of large firms at the end of the 1990s, there was a substantial decrease at the beginning of the decade resulting in the fact that this proportion only reached 6.6 p.c. in 2003. The slight recovery which appeared subsequently was completely cancelled out by the decline recorded in 2008: if the growth seen for the reduced population between 2007 and 2008 is applied to the figure for the total population in 2007, the proportion of temporary working would have come to 6.2 p.c. in 2008.

The movements observed in the three categories of firm seem to some extent to transcend those occurring in the classification by branch of activity. In fact, a rise or a stabilisation was reported in all branches of activity for small firms and a moderate fall in all branches for medium-sized firms (except in the other services

sector where a modest rise appears). The situation is less homogeneous for large firms: a considerable downturn was recorded in industry (–0.8 percentage points), in the financial, real estate and business services and other services sectors (–0.5 p.c. each), while the proportion of temporary workers remained stable in construction and increased by 0.5 p.c. in the trade, transport and communication sector.

3.3.2 Firms filing full-format accounts

The decline in the share of temporary work recorded in medium-sized and large firms is also found in the population of companies filing full-format accounts – these furthermore report a contraction in agency workers[1] and staff on secondment. In fact, companies filing full-format accounts are required to provide additional information[2] on the external workers brought in, whether these comprise agency staff or staff on secondment from another company. It is thus possible to break down the workforce as a whole by contract of employment.

(1) In terms of hours worked, the volume of agency work stated in the social balance sheets for 2008 represented over 40 p.c. of that recorded by Federgon, the federation of firms supplying agency workers. The conclusions which may be drawn from the social balance sheet therefore appear to be representative.

(2) Average number of persons employed, in FTEs; actual number of hours worked; cost to the firm.

CHART 10 RELATIVE IMPORTANCE OF TEMPORARY[1] CONTRACTS AND PERMANENT CONTRACTS BETWEEN 1998 AND 2008[2]

(percentages of the total, data as at 31 December, total population)
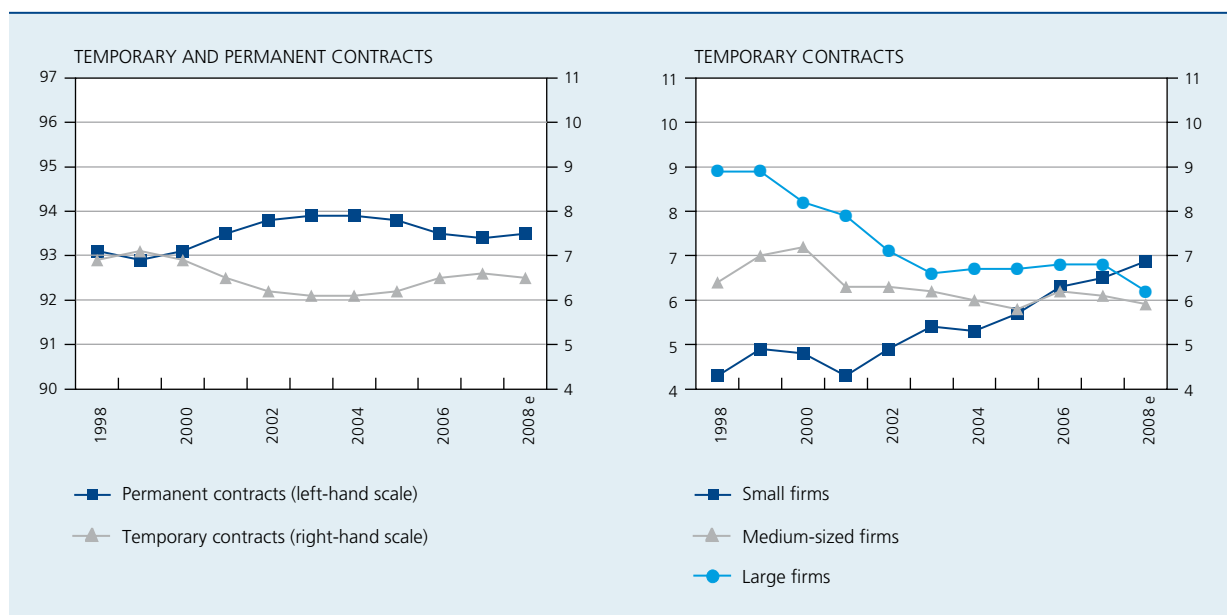
Source : NBB (social balance sheets).
(1) Fixed-term contracts, substitution contracts or contracts concluded for a specific project.
(2) The results for 2008 were obtained by applying the change recorded between 2007 and 2008 for the reduced population to the value observed in 2007 for the total population.

Staff expressed in FTEs increased by 0.3 p.c. between 2007 and 2008 in these firms, driven solely by the effect of growth in registered workers employed on a permanent contract, who represent almost nine-tenths of workers. The number of workers seconded by another firm decreased very slightly, while temporary and agency worker numbers fell back, by 3.7 p.c. and 3.6 p.c. respectively.

In total, the firms in the reduced population filing full-format accounts employed 40,744 FTE agency workers, equating to 3.8 p.c. of FTE employment compared to 4 p.c. a year earlier. This percentage varies considerably according to the branch of activity: in industry (5.4 p.c.) and in the trade, transport and communication sector (4.6 p.c.), the level of penetration is a good deal higher than the average. These sectors are also where the highest proportion of firms using this facility can be found – 85 p.c. and 61 p.c. respectively. In construction, almost 60 p.c. of firms bring in agency workers, but this staff only corresponds to less than 2 p.c. of employment. In the financial, real estate and business services and other services sectors, almost 50 p.c. and 40 p.c. respectively of firms make use of this option. In 2008, agency workers accounted for 2.7 p.c. and 1.2 p.c. of employment in these firms respectively.

The contraction in agency worker numbers reflects a lack of momentum in the business activity and the crisis which hit the financial sector in autumn 2008 before spreading

out into the real economy, both of which evidently led many firms to reduce or suspend their use of external workers, with the twin aims of limiting the volume of work and cutting costs. In this context, those sectors most exposed to competition were the first to be affected. The industry sector, which is the main user of this type of labour, thus reduced its agency workforce by 10 p.c. The financial, real estate and business services and construction sectors also reduced their use of such external workers, the former by 5 p.c. and the latter by 12 p.c. Conversely, the less vulnerable sectors of trade, transport and communication and other services continued to boost their agency workforces, although at a more moderate rate than that observed in 2006 and 2007.

As with employment, the volume of hours worked by agency workers declined, by 3.6 p.c., with the result that the average annual duration of work per agency worker remained stable at 1,877 hours. Since this is slightly higher than the hours worked by a worker entered on the firm's register, the volume of hours worked by agency workers accounted for 4.6 p.c. of the total volume of work. The average hourly cost of an agency worker went up from 23.8 euro to 25 euro, representing a rise of 4.9 p.c. This increase is greater than that observed for workers entered in the staff registers of firms filing full-format accounts, whose hourly pay increased by 3.7 p.c. Overall, 3.1 p.c. of staff costs in 2008 were made up of costs associated with employing agency workers.

4. Staff costs

The staff costs included in the social balance sheets comprise only payments by employers to workers entered in the staff register. They differ from the labour cost concept used in the national accounts in that they do not include either the payments made to pensioners – who are no longer recorded in the staff register – or certain costs associated with any restructuring – which firms may record on their balance sheets as exceptional expenses. Furthermore, the picture indicated by the social balance sheets relates to a reduced population of firms, constant for 2007 and 2008, with the associated omission of workers and companies implied by this methodology. Consequently, the changes in staff costs shown in the social balance sheets are not directly comparable with those calculated on the basis of the national accounts.

Staff costs grew by 5.3 p.c. between 2007 and 2008 in the firms in the reduced population. Over the same period, the number of workers expressed as FTEs rose by 1.6 p.c. This pushed up the average annual labour cost per FTE by 3.7 p.c., from 51,700 euro to 53,618 euro.

TABLE 6 **AGENCY WORKERS IN FIRMS FILING FULL-FORMAT ACCOUNTS**
(reduced population)

	2007	2008
Percentages of the total		
Number of FTEs	4.0	3.8
Hours worked	4.9	4.6
Staff costs	3.2	3.1
Units		
Number of FTEs	42,273	40,744
Hours worked (thousands)	79,345	76,494
Hours worked per FTE	1,877	1,877
Staff costs per hour worked (in euro)	23.8	25.0
p.m. Percentages of agency employment recorded by Federgon		
Hours worked	*42.4*	*42.3*

Sources: Federgon, NBB (social balance sheets).

CHART 11

CHART 11   AGENCY WORKERS

(full-format accounts)

SITUATION IN 2008
(percentages of the total, reduced population)

TREND IN AGENCY WORKERS BETWEEN 1998 AND 2008
(number of FTE workers, indices 1998 = 100,
total population)

Share of agency workers in total FTE employment
(left-hand scale)

Share of firms using agency workers in total firms
(right-hand scale)

Industry

Construction

Trade, transport and communication

Financial, real estate and business services

Other services

Total

Source : NBB (social balance sheets).

(1) The results for 2008 were calculated by applying the change recorded between 2007 and 2008 for the reduced population to the value observed for the total population in 2007.

Since the volume of labour expressed in hours developed at the same rate as employment expressed in FTEs, the costs per hour worked also rose by 3.7 p.c., reaching an average of 35.1 euro in 2008. The rise was a little slower – 3.5 p.c. – for full-time workers than for part-time workers, for whom hourly costs grew by 4.8 p.c. In 2008,

hourly pay rose on average to 35.8 euro for a full-time worker and 32 euro for a person employed part-time.

The trend in hourly costs is often more volatile for part-timers than for full-timers: the changes in the structure of the workforce implied by the development of part-time

TABLE 7   STAFF COSTS FOR WORKERS ENTERED IN THE STAFF REGISTER

(euro, unless otherwise stated; annual averages; reduced population)

	2007	2008	Percentages change between 2007 and 2008
Per FTE	51,700	53,618	3.7
Per hour worked	33.8	35.1	3.7
Full-time workers	34.5	35.8	3.5
Part-time workers	30.5	32.0	4.8

Source : NBB (social balance sheets).

working can be substantial where a relatively reduced population is involved. Gender, level of education, seniority, branch of activity and working arrangement are all factors which influence the level and development of the overall wage bill. It is also worth noting that the breakdown of volume of labour and costs between full-time and part-time workers is often a complicated matter for firms and that the resulting errors have more of an effect on part-time work than full-time work, which is much greater in volume.

It is mainly in large firms that the rise in hourly costs associated with part-time workers has diverged from that seen for full-time workers: growth remained fairly moderate, at 3.6 p.c., for the latter while the average hourly pay of part-time workers increased by 5.4 p.c. In total, hourly costs grew by nearly 4 p.c. within this category of firm, while the rise was limited to 3.4 p.c. in medium-sized companies and was homogeneous for both classes of worker. It is in small firms that the rise in hourly costs was most vigorous: they show average growth of 4.3 p.c., and 5 p.c. for part-time workers alone.

The trend was fairly uniform between the different branches of activity, the rise being within a range extending from 3.5 p.c. in industry and the financial, real estate and business services sector to around 4 p.c. in the trade, transport and communication and other services sectors. A finer breakdown shows that the rise remained markedly more restrained in real estate and business services (2.6 p.c.) and in mining and quarrying (3 p.c.). Conversely, the rise in hourly costs was considerably greater than the average in financial and insurance services (6.2 p.c.), transport and communication (4.8 p.c.), energy and water (4.7 p.c.) and community, social and personal services (4.5 p.c.).

The relative development in labour costs in Belgium and the principal neighbouring countries serves as an important indicator of firms' competitive position in terms of costs. Since the entry into effect of the Law of 1996 relating to the promotion of employment and the preventive safeguarding of competitiveness, the development of labour costs has been governed by a payroll standard which defines the margin of increase in hourly labour costs. The payroll standard is fixed for a period of two years by the social partners when they negotiate the central agreement (AIP) referring to that period, based on the anticipated average development in hourly labour costs in Germany, France and the Netherlands. The central agreement for 2006 had thus established a standard for growth in hourly labour costs of 5 p.c. for the period 2007-2008. At the time, the social partners were counting on an expected inflation rate of 3.9 p.c. However, the actual indexation ultimately proved markedly higher, at 4.6 p.c. over the two years. Such a hike in inflation tends to have repercussions for nominal wages, albeit at some remove – given the indexation mechanisms – and to a limited extent – taking account of the safeguarding clauses included in the joint agreements – so that the payroll standard may be exceeded ex post, even if the real pay rises agreed in joint committees comply with the payroll standard *ex ante*.

To evaluate observance of the standard among firms filing a social balance sheet, a constant population was constructed for the period 2006-2008. A total of 38,114 firms fulfilled the quality, consistency and uniformity criteria for the three successive years. Among these firms, there is a clear overrun on the payroll standard. In total, hourly costs increased in these firms by 6.8 p.c. during the period under review. As is traditionally the case, the rise was somewhat more moderate during the first year (2.9 p.c.) of the central agreement than during the second (3.8 p.c.), given that the collective agreements are generally signed in the course of the first half of the first year of the period covered by a central agreement and that they only make their effects felt after a certain time lag. Moreover, it is worth noting that the contribution made by the indexation was greater in 2008 due to the upturn in inflation.

Marked differences are found in the developments seen between 2006 and 2008 according to the branch of activity. The rise was smallest in the energy and water sector and in agriculture, where the standard was only exceeded to a limited extent. Conversely, the rise was close to or equal to 8 p.c. in transport and communication, financial and insurance services, the community, social and personal services sector and health and social work, where it reached as much as 8.5 p.c.

Among the 38,114 companies included in the population under consideration, the rise in hourly wage costs was greater than 5 p.c. in almost three-fifths of firms. The rise even exceeded 7.5 p.c. in nearly half of the firms. In those firms where the ex ante standard was exceeded, which employ around 70 p.c. of staff expressed as FTEs, the growth in hourly costs settled at 10.3 p.c. on average, the respective figures in 2007 and 2008 being 4.6 and 5.4 p.c. On the other hand, average hourly costs decreased in almost one-fifth of firms, these firms representing slightly over 10 p.c. of employment expressed as FTEs. The decline in hourly costs reached an average of 7.2 p.c. in these firms. Since employers do not generally reduce the basic pay of their workers and the flexible part of the remuneration is itself rarely revised downwards (Druant et al., 2008), the negative trends thus observed doubtless reflect modifications in the structure of the workforce in essence.

Between 2006 and 2007

Between 2007 and 2008

Average, between 2006 and 2008

Payroll standard *ex ante*
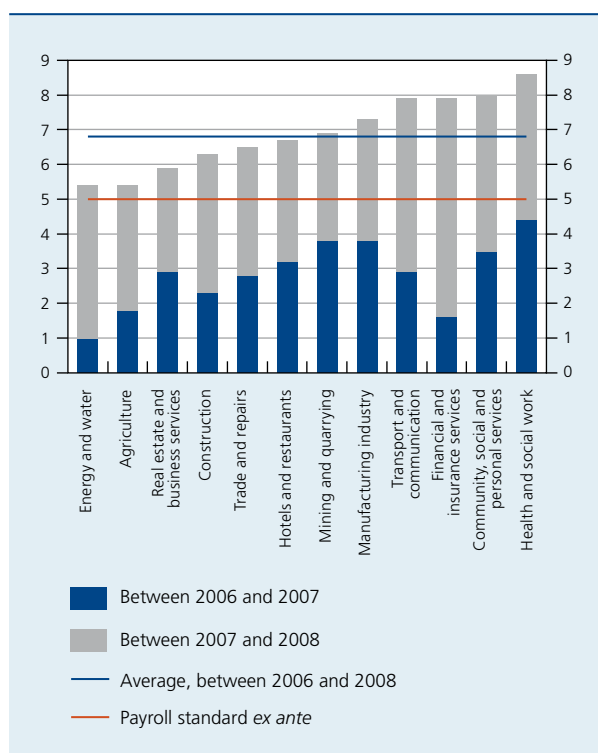
Source : NBB (social balance sheets).

5. Training

The social balance sheet makes it possible to measure the training efforts of firms on an annual basis. For years ending prior to 1 December 2008, it comprised two tables, one concerning formal training and the other dealing with training, guidance and mentoring activities under the Law of 5 September 2001 promoting the employment rate of workers. Since these last activities are relatively uncommon, this table no longer appears in the new version of the social balance sheet applicable to years ending on or after 1 December 2008. Moreover, the area of application of the new form has been expanded considerably. The training measures covered are currently divided into three elements. Two of these relate to continuing vocational training, which is broken down into formal training and informal or less formal training, and the third covers initial vocational training.

Measures for continuing vocational training cover training which is planned in advance and which aims to expand staff knowledge or improve staff expertise. These training courses are funded partly or entirely by the firm (including indirectly, for example by way of contributions to training funds). This category of training is subdivided into formal training and informal training.

Formal vocational training refers to courses and programmes designed by trainers. These training events are characterised by a high level of organisation by the trainer or the institute which runs them. They are held in a location clearly separate from the place of work, they are addressed to a group of learners and, where relevant, they form the subject of a certificate of attendance.

Less formal or informal vocational training covers learning activities other than those referred to above. This kind of training features a high degree of self-organisation (timetable, location and content) on the part of the learner or group of learners. The content is determined according to the learner's own needs. The training, which is linked directly to work or the place of work, also covers attending conferences or taking part in trade fairs, for learning purposes.

The social balance sheet devotes one table to each of these types of continuing training. In both cases, employers are required to state the number of workers involved, the hours spent on training and the net cost incurred by the firm, giving separate figures for men and women. The table relating to formal vocational training is more detailed as regards costs: employers must specify the calculation of the net cost for the firm, namely the gross costs linked directly to training (which include the inherent costs of training – enrolment fees and, where relevant, travel and accommodation costs, cost of supplies, remuneration of trainers and organisers and sundry operating costs – and the wages of the workers receiving training), plus the contributions made and the payments to collective funds intended for funding training and less the subsidies and other financial benefits received.

The third table is devoted to initial vocational training given to persons employed under systems which alternate the training with work within the firm. For training to be regarded as initial, it must fulfil the following criteria: the purpose of the training is to acquire a diploma or official certificate; the person's main activity is training, but the course includes, at least in part, a practical element within the firm; and the duration of the training is at least six months. With regard to initial-level training, employers must state separate figures for men and women indicating the total number of apprentices, trainees or workers receiving training in question, the hours worked within the firm (the time spent within the training institution not being counted) and the net cost to the firm. The initial training referred to here does not therefore relate in any way to the training programmes or courses that workers

newly employed by a firm are required to attend when taking up their posts.

Given the importance attaching to this information for the process of evaluating firms' training efforts, not only at the macroeconomic level but also at the sector or individual level, it was essential to be clear about what it involves. It is for this reason that the Central Balance Sheet Office, the Central Economic Council and the National Labour Council jointly compiled a note on methodology[1] and similarly organised a joint information session targeted at firms in April 2008.

The clarification of the definitions and methodological concepts to be used in distinguishing the various types of training caused many firms to start again in terms of their method of evaluating training efforts. Some training activities thus shifted from formal training to informal training, the latter type not having been listed previously. This means that any comparison between the results obtained for 2008 and those relating to preceding years is tentative at best, unless it is restricted to formal training alone, the definition of which has remained unchanged between the two versions of the social balance sheet, and is not relevant when looking at the new global measure of training efforts.

It therefore seemed preferable in this section not to measure the results obtained for 2008 by the yardstick of those recorded for the preceding years, even within the constant reduced population. Since the aim was limited to explaining the results obtained for 2008, it was decided to consider all firms which had filed, as at 16 September 2009, for this year, a social balance sheet meeting the quality, consistency and uniformity criteria which any firm must fulfil in order to be listed in the analysis (see Annex 1). The population constructed in this way, amounting to a total of 50,156 firms, nonetheless remains provisional given that the final year-end for the 2008 financial year will not arrive until the beginning of 2010. As a comparison, for the 2007 financial year, the final population closing at the beginning of 2009 comprised more than 82,000 firms.

5.1 Firms providing training

Media coverage of the changes taking place in that part of the social balance sheet devoted to training and also the mobilisation of (inter)professional federations and social partners in favour of better accounting with regard to training efforts have borne fruit. The number of firms providing information on their training policy has substantially increased, in particular among the smallest firms.

TABLE 8   FIRMS PROVIDING VARIOUS TRAINING[1] OR NO TRAINING IN 2008

(provisional population)

	Units	Percentage of the total
Provisional population	**50,156**	**100.0**
Firms providing training	9,344	18.6
of which:		
Firms which organise activities for:		
formal training	7,626	15.2
informal training	3,299	6.6
initial training	1,678	3.3
Firms combining different types of training	2,890	5.8
Firms not providing training	40,812	81.4

Source: NBB (social balance sheets).
(1) A firm is counted as providing training if the net cost of training is not zero. A firm may therefore be regarded as providing training even if the workers it employs have not taken part in any training activity during the year. This definition contrasts with that used in Section 5.5, where a firm is considered to provide training if it has at least one worker receiving training.

The provisional population relating to the 2008 financial year established as at 16 September 2009 included 9,344 firms providing training (combining all types of training), more than 7,600 of which had filled in the table relating to formal training; for 2007, the total population included only slightly over 5,700 companies providing training (formal training).

The table relating to informal training was completed by 3,299 firms, and the part devoted to initial training by 1,678 companies. However, a quick survey of the largest firms claiming to have organised initial training efforts showed that mistakes had been made in interpreting the content of these activities. While the note on methodology specifies that this training must occur in the context of a long-term academic course (at least six months) alternating training at the academic institution and practical experience within the firm, some companies recorded training intended for their newly appointed workers under this heading. So, in this scenario, what is involved comprises continuing vocational training (formal or informal) upon entering the firm and not initial training. Given that these training activities were actually supported by the firms in 2008 and that it was impossible to correct these errors of classification in the timescale allowed, it

(1) See explanatory notes, only available in French or Dutch, on the information on training activities included in the social balance sheets at: www.nbb.be/DOC/BA/SocialBalance/Notice_Formations_FR_4%20avril%202008.pdf.

was decided to keep these activities under this heading even if it is known that at least part of them do not involve initial training.

Among the 9,344 firms providing training, 2,890 or 5.8 p.c. of the total organise several types of training aimed at their workers, by far the most common combination bringing together formal and informal training activities.

5.2 Participation in training activities

Lifelong learning has become one of the guiding principles of the European employment strategy. Training activities, which are costly expenses in the short term, need to be regarded as a long-term investment in human capital. In fact, training enables people to add to their know-how and acquire new skills that are indispensable, not only to ensuring the longevity and growth of the firm but also to maintaining employability and developing adaptability among workers.

In this context, a target in terms of worker participation in training was adopted at the 2003 employment conference: in Belgium, in 2010, half of all workers must have access to training. The statistics that can be compiled on this subject from the social balance sheets do not allow a calculation of the overall level of participation. In fact, one worker who attends several training events of the same type (formal, informal or initial) is only included in the accounts once in the corresponding table of the social balance sheet, whereas if he or she takes part in relevant training activities of different types, he or she will be recorded in each of the tables. Adding together the participants in these training activities therefore generates double, or even triple, entries in the accounts.

In 2008, 580,000 workers in the provisional population took part in one or more formal training activities, representing 37 p.c. of the total workforce. Informal training extended to one-fifth of workers, while the level of participation in initial training did not exceed 1 p.c. Breaking the data down by gender shows that on average, women attend formal training activities slightly less than men (36 p.c. compared to 38 p.c.), whereas the situation is reversed for informal training (22 p.c. compared to 20 p.c.). With regard to formal training, the women's level of participation is lower than men for all branches of activity, with the exception of health and social work and the hotel and restaurant sector. The situation is more mixed for informal training, but markedly greater participation by women is recorded in several branches, including health and social work and trade, where women are

TABLE 9 PARTICIPATION IN TRAINING ACTIVITIES IN 2008

(percentages of total employment, provisional population)

	Formal	Informal	Initial
Total	**37.0**	**20.6**	**1.1**
of which:			
Men	37.8	19.6	1.3
Women	35.9	22.1	0.9
Breakdown of firms by size:			
Small firms	8.3	4.3	0.9
Medium-sized firms	32.2	16.8	1.6
Large firms	54.9	31.3	1.0
Breakdown of firms by branch of activity:			
Agriculture	3.9	4.8	0.7
Mining and quarrying	30.0	17.9	1.5
Manufacturing industry	41.1	21.8	0.9
Energy and water	69.0	14.4	0.2
Construction	20.5	6.8	1.9
Trade and repairs	22.7	15.0	1.2
Hotels and restaurants	14.0	2.3	1.9
Transport and communication	49.6	29.1	1.9
Financial and insurance services	57.4	34.3	0.1
Real estate and business services	26.4	16.8	0.7
Health and social work	43.1	24.8	1.0
Community, social and personal services	23.7	11.9	1.9

Source: NBB (social balance sheets).

represented to an above-average degree in proportional terms.

In large firms, more than half of all workers had access to formal training in 2008, whereas this only applied to around one-third of employees in medium-sized firms and less than one-tenth of workers in small firms, where interrupting production activities in order to allow staff to attend training away from the workplace is a more complex matter. Nonetheless, the level of participation in informal training activities also increases considerably with the size of the firm. However, these involve measures that are reckoned to be less costly, easier to split up and which are conducted for the most part in the work situation. This does not lessen the fact that putting procedures in place to allow the importance of this type of measure to be quantified is difficult, and that such action demands resources that small firms may find more difficult to release.

5.3 Training costs

While the existence of three separate tables for listing training activities has doubtless caused a break in methodological continuity between 2007 and 2008 for some firms, the introduction, for formal training, of an explicit breakdown of net training costs between different elements is similarly likely to distort comparisons between these two years.

In terms of informal continuing training and initial training, firms are only required to report the net costs incurred. For formal continuing training, on the other hand, the new form provides for a breakdown of these net costs, under separate headings, between gross training costs, contributions and payments to collective funds and subsidies and other financial benefits received.

Firms are thus supposed to take better account of the different elements of training costs. Even if they do not organise formal training activities for the benefit of their workers, companies are in principle required to fill in the section "contributions and payments to collective funds", which are compulsory sums payable under social legislation or joint agreements entered into at the inter-sector, sector or firm level. In spite of the compulsory nature of these expenses, only around 3,700 firms specify a positive sum in this section. Among these, some 500 companies

made compulsory payments when their workers had not taken part in any training activity.

In 1998, under the central agreement entered into for the period 1999-2000, the social partners quantified the financial outlay to be made with regard to training for the six years to come: in 2004, training costs were to represent 1.9 p.c. of the labour costs borne by firms in the private sector as a whole. This percentage was fixed on the basis of the results of the CVTS[1] survey as recorded for formal training in the three main neighbouring countries. Interim targets were defined for the years 2000 (1.4 p.c.) and 2002 (1.6 p.c.). This target was confirmed at the conference on employment in 2003, at the same time as a target was added with regard to participation in training (see above). At the end of 2005, under the Generation Pact, the government asked the social partners to ensure that these commitments were fulfilled. In particular, it asked the various sectors to define new growth paths. In this connection, provision was made for assessing training efforts at the sector level, which would go hand in hand with a penalty system in the form of a specific contribution from sectors making insufficient effort. The pact also stipulated that the target of devoting 1.9 p.c. of the wage bill in the private sector to training was now to be achieved by 2006, or two years later than the social partners originally planned.

Focussing down on formal training, the objective of the central agreement is far from being achieved: in 2008, the firms in the provisional population put together a budget equivalent to 1.2 p.c. of staff costs, and furthermore this percentage is likely to be revised downwards when the

(1) The survey referred to here (Continuing Vocational Training Survey, abbreviated to CVTS) forms part of a European project aimed at taking stock of the training efforts of European firms employing at least 10 workers and operating in most branches of the private sector. This survey was organised for the first time in 1993, and then again in 1999. Since 2005, it has been organised every five years.

TABLE 10   TRAINING COSTS IN 2008
(provisional population)

	Formal	Informal	Initial	Total
As a percentage of staff costs				
Net training costs[1]	1.24	0.41	0.06	1.71
Gross training costs	1.26	–	–	–
Contributions made and payments to collective funds	0.06	–	–	–
Subsidies and other financial benefits received (–)	0.07	–	–	–
p.m. Subsidies, as a percentage of gross costs	*5.96*	–	–	–
In euro				
Net cost per hour of training	55	37	13	45
Net cost per participant	1,623	966	2,511	–

Source: NBB (social balance sheets).
(1) The net training costs are obtained by adding to the gross costs any contributions made and payments to collective funds, and deducting subsidies and other financial benefits received.

total population is available. In fact, the provisional population contains a greater proportion of large companies, whose training budgets are bigger in relative terms.

The gross costs associated with formal training activities represent 1.26 p.c. of staff costs. To these costs must be added compulsory payments by way of social contributions (training leave, employment and training of vulnerable groups) or payments to training funds for the various sectors. These payments correspond to 0.06 p.c. of staff costs for the firms in the provisional population. This sum is evidently underestimated, since in principle all firms would have to record such expenses in their accounts, which is far from being the case. It is among the large firms that these expenses are recorded best: in this case, they represent 0.09 p.c. of staff costs, compared to 0.05 p.c. in medium-sized firms and 0.02 p.c. in small firms. According to the social balance sheets, the total payments made amount to some 48 million euro, while the Central Economic Council estimates that a sum of around 220 million euro was paid to social security bodies or sector funds.

The subsidies received (notably in the form of training cheques or allowances paid to firms or workers by the sector funds), which have to be deducted from the gross costs, amount in themselves to 0.07 p.c. of staff costs. They finance a total of 6 p.c. of the gross costs incurred for formal training. While regional measures relating to supporting training policy are primarily aimed at providing financial support for the SMEs in their training efforts, it is among the large firms that the subsidies cover the biggest share of training expenses, representing 6.2 p.c. of gross costs compared to 5.3 p.c. in medium-sized firms and 3.6 p.c. in small firms. This leaves no room for doubt that measures to provide information have to be implemented among SMEs, and more particularly the very small firms, with a view to improving the gathering of information.

If the expenditure stemming from informal and initial training activities are added to those for formal training, the budget generated corresponds to 1.7 p.c. of staff costs. This global measurement, which includes additional elements with respect to the indicator used up to now for measuring progress towards meeting the target of 1.9 p.c. set under the central agreement, therefore nonetheless still remains lower.

Training expenses are known to be unevenly distributed among firms. Small companies mobilise an overall budget equivalent to 0.41 p.c. of their staff costs on average. Adding the elements relating to informal and initial training allows a virtual doubling of their performance compared to what it would be if only formal training

were taken into account (0.24 p.c. of staff costs). Among medium-sized companies, the total effort is quantified at 1.1 p.c. of staff costs, comprising 0.69 p.c. for formal training and 0.35 p.c. and 0.06 p.c. respectively for informal and initial training. Expenditure on formal training in large firms accounts for 1.88 p.c. of staff costs on their own. Adding informal training (0.56 p.c.) and initial training (0.05 p.c.) brings the total effort to 2.5 p.c. of staff costs.

The sectors where large firms are strongly represented mobilise proportionately greater resources with regard to training. In the energy and water sector, training costs amount to 4 p.c. of staff costs, more than 90 p.c. of these being expenses for formal training. In transport and communication, the latter type of training also absorbs nine-tenths of the budget, which reaches a total of 2.7 p.c. of staff costs. Conversely, financial and insurance services and manufacturing industry devote 3.1 and 1.8 p.c. of staff costs respectively to training, of which 25 p.c. and 35 p.c. respectively are expenses for informal training. At the other end of the scale, agriculture and the hotel and restaurant sector and construction are the branches of activity where training efforts are weakest. Accounting for informal training and initial training (the latter being very widespread in these activities by virtue of apprenticeship contracts) allows a considerable boost to the performance of these three sectors where, in total, training costs amount to 0.4 p.c., 0.5 p.c. and 0.7 p.c. of staff costs respectively, while the costs associated with formal training on its own represent 0.1 p.c., 0.3 p.c. and 0.4 p.c. of these costs respectively.

Firms providing training spend an average of 45 euro for one hour of training. The hourly cost is considerably higher for formal training (55 euro) than for informal training (37 euro), which is associated with much lower fixed costs. One hour of initial training costs 13 euro on average. The difference can be partly explained by accounting for the remuneration level of the persons receiving training in the indicator; that of trainee workers or apprentices is markedly lower than the average.

Firms providing training spend 1,623 euro for each worker benefiting from formal training activities, compared to 966 euro for informal training activities. The costs per trained worker are very high in the case of initial training (more than 2,500 euro). It must be borne in mind, however, that the bulk of the time spent by apprentices and trainees within the firm is devoted to training, so that the indicator relating costs to training participants is less significant than that relating costs to training hours.

CHART 13 NET COSTS ASSOCIATED WITH TRAINING
ACTIVITIES AS A WHOLE IN 2008 [1]

(percentages of staff costs, provisional population)

Legend:
- Formal
- Informal
- Initial
- Average for all training
- Central agreement target: 1.9 p.c.
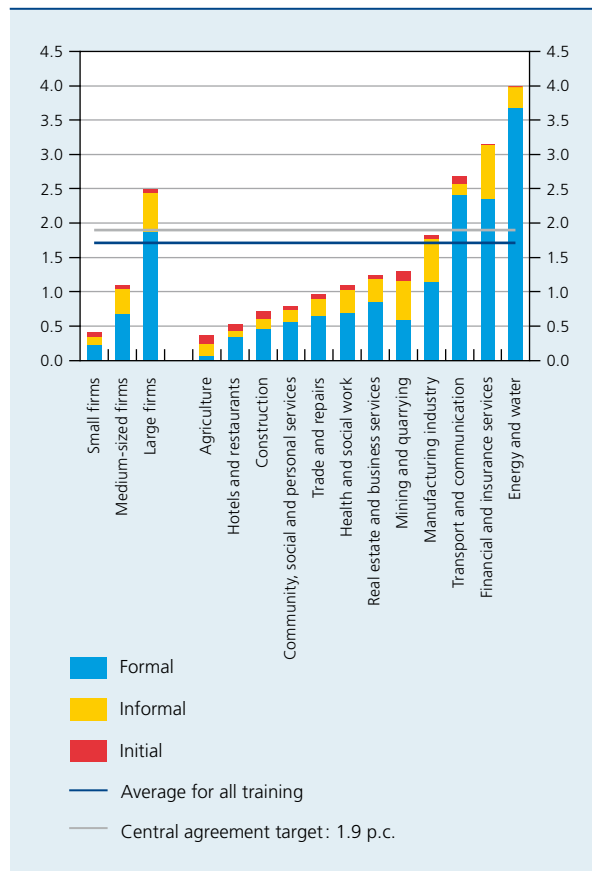
Source: NBB (social balance sheets).
(1) Gross costs, added to which are contributions paid and payments made to collective funds and substracted from which are subsidies and other financial advantages received.

Initial training is proportionately most important in the branches of activity where apprenticeship is most widespread – agriculture, construction, hotels and restaurants: it represents half of training time in the latter two sectors and even more in agriculture. Formal training predominates in the other sectors. In the energy and water sector, it accounts for close to 90 p.c. of training hours. Conversely, in manufacturing industry, a not inconsiderable proportion of training is carried out through informal channels: over 40 p.c. of training hours are devoted to this.

Participants in formal training measures enjoy an average of 30 hours of training per year. This average is slightly lower – 26 hours – in the case of informal training. Conversely, workers receiving initial training receive an average of nearly 200 hours of training per year. It is highly likely that if only those receiving work-based training were counted under this heading, this duration would be further extended by a considerable amount. In agriculture and construction, for example, the average duration is markedly higher.

The average duration of training for male workers is considerably higher than for female workers. In terms of formal training, it amounts to 33 hours for men and 24 hours for women. The differences are relatively similar for informal training (31 hours compared to 20). Various explanations can be put forward, notably the fact that part-time working is more widespread among women and that this may make organising training more complicated in the context of reduced working hours. Moreover, it can be seen that women are represented at a higher level in some activities where training is of shorter duration on average (this applies, for example, in health and social work).

5.4 Duration of training

As a whole, the firms in the provisional population devote 1.34 p.c. of the volume of work to training measures. Formal training accounts for the lion's share, with nearly 60 p.c. of the total, while informal training represents 29 p.c. of training hours and initial training 12 p.c.

As the expenses show, the volume of work reserved for training increases considerably with the size of firm, but the distribution between the different types of measure is very variable. Small firms spend almost half the training hours on initial training activities, while the latter only account for 15 p.c. of the work time in medium-sized firms and 6 p.c. in large firms. Conversely, two-thirds of the time released for training in the latter relates to formal activities. This share amounts to 52 p.c. in medium-sized firms and 34 p.c. in small firms.

5.5 Characteristics of firms providing training

To paint a portrait of firms providing training, by comparing them with firms which do not offer their workers formal or informal training, this section is based on the population of firms completing the new form of the social balance sheet for 2008. Among the 50,156 firms fulfilling the usual checks, 1,765 (or 3.5 p.c. of the total) still filled in the old form and consequently have not been retained. The analysis population comprises a total of 48,391 firms.

The new form of the social balance sheet differentiates between three types of training within a firm: formal training, informal training and initial training. Since the data relating to initial training measures do not seem completely reliable, it was decided to restrict the analysis to formal and informal training activities.

TABLE 11   HOURS DEVOTED TO TRAINING ACTIVITIES IN 2008

(provisional population)

	Formal	Informal	Initial	Total
Hours devoted to training activities, as a percentage of hours worked, except where stated otherwise	0.80	0.39	0.16	1.34
		Percentages of the total		
Breakdown of firms by size				
Small firms	34	18	48	0.48
Medium-sized firms	52	33	15	1.05
Large firms	65	29	6	1.98
Breakdown of firms by branch of activity				
Agriculture	11	26	63	0.47
Mining and quarrying	34	43	23	1.26
Manufacturing industry	52	41	7	1.50
Energy and water	88	12	0	2.75
Construction	35	16	48	0.93
Trade and repairs	45	23	32	0.90
Hotels and restaurants	38	13	49	0.62
Transport et communication	83	11	6	1.89
Financial and insurance services	62	37	1	2.34
Real estate and business services	60	32	8	1.03
Health and social work	59	30	11	1.18
Community, social and personal services	45	26	29	0.92
Duration of training per participant, in hours	30	26	194	–
of which :				
Men	33	31	211	–
Women	24	20	159	–

Source : NBB (social balance sheets).

A simple empirical model is used, which makes it possible to estimate the probability of a firm providing training. A firm qualifies as providing training once it records a participant in the tables relating to formal or informal training. This model does not take account of differences in intensity of training, in terms of financial outlay or level of participation by workers.

Apart from the size of the enterprise, the branch of activity to which it belongs and whether or not it forms part of a group of firms with international scope (subsidiary or multinational), the model reflects the staff structure by gender (proportion of women), socio-professional category (percentage of staff with the status of manual worker), standard of education (proportion of those with a qualification from higher education), type of contract (proportion of permanent contracts) and working arrangement (percentage of part-time workers). A final

group of variables is linked to the location of the firm's registered office and place(s) of business. In line with the methodology for regional breakdowns used in the social balance sheets, firms are subdivided into four groups: the three classes of firm which are located in a single region and multi-regional firms which have bases in more than one region.

For the purposes of this analysis, the data from the social balance sheet are supplemented by information drawn from the direct investment survey. The latter records those companies which hold at least 10 p.c. of the capital of a non-resident enterprise or which are held in the same percentage terms by a foreign enterprise. This makes it possible to differentiate, on the one hand, between Belgian multinationals – that is to say those firms owning holdings in foreign companies without themselves being held by a foreign shareholding entity – and businesses of

foreign firms based in Belgium and, on the other hand, firms having no significant investment link with non-resident entities.

The training policy of a firm is dependent on many parameters. In fact, training needs differ according to the strategy as regards human resources management. The latter is partly dictated by resource constraints, notably associated with the size of the firm and the economic situation, but it also depends among other things on the branch of activity and the educational level and age of the workforce. An empirical model may therefore struggle to control the effect of all the parameters likely to explain the differences in training opportunities found between firms.

Not all firms have sufficient resources available to provide their workers with training activities. Compared to large firms, small firms are less capable of absorbing the temporary fall in productivity which could result from training periods. In other words, they are less likely to allow their employees to be absent or to replace them when they are receiving training. Moreover, when they offer training activities to their workers, small firms do not benefit from economies of scale to the same extent as large firms. Firms employing small workforces would therefore have less chance, other things being equal, of being able to offer training activities than larger firms. According to several Canadian studies (cf. Rabemananjara and Parsley, 2006, for a review of the literature), small firms give priority to informal training due to its more accessible nature, this type of training not involving the fixed costs associated with formal training (costs linked to premises, training materials, etc.). However, the data gathered in 2008 from Belgian firms do not allow a validation of this hypothesis.

By controlling for the effect of variables relating to the branch of activity, location, significant investment links with non-resident entities and the structure of the workforce, the size of firm is the explanatory variable with the greatest impact on the probability that a firm would provide training. Other things being equal, the smaller the firm, the less chance it has of providing training. Whereas the probability of providing training is less than 8 p.c. for firms with no more than 10 FTEs, it exceeds 30 p.c. for those employing 10 to 50 FTEs and reaches almost 65 p.c. for those with 50 to 100 FTEs and 80 p.c. for those employing 100 to 250 FTEs. Among the largest firms, there are no significant differences between firms with 250 to 500 FTEs and those where the workforce is greater than 500 FTEs since the probability is of the order of 90 p.c. in both cases. Consequently, it seems that the obstacles associated with organising training referred to above still exist, mainly for small firms, despite the public measures to support these efforts.

Even when the effect of firm size is neutralised, the proportion of firms providing training differs from one branch of activity to the next. It is primarily the firms operating in the hotels and restaurants sector which have a lower probability of providing training, followed by companies in agriculture, the trade and repairs sector and that of transport and communication. Mining and quarrying and also health and social work, on the other hand, display a greater probability than the others of offering their workers training activities.

These differences between branches of activity are notably associated with differences in mobility of staff. Where workers remain in the service of the same employer for a short time, there are few incentives to acquire knowledge specific to their job of work. Similarly, the employer has little to gain from investing in training these workers. So, firms operating in the hotels and restaurants sector and construction, where the labour force displays a high level of mobility (Heuse and Saks, 2008), have a lower probability of providing training on average than those operating in branches of activity where mobility is lower, notably manufacturing industry, health and social work and also energy and water.

Even in a well-defined branch of activity, a very great diversity can be observed between firms operating within it, notably in terms of productivity. This is why, in the analysis population, those companies having a significant investment link with non-resident entities, namely subsidiaries of a foreign enterprise and multinational enterprises, are considered in isolation. There are two reasons why it is important to take account of these variables in the model. In the first place, these variables may exert a direct effect on the training offered by the firm. Because of economies of scale, multinational enterprises and subsidiaries typically offer a more structured range of training, with a common core of training for all the firms in the group. These enterprises operating on an international level also have specific training needs, notably with regard to language courses. Secondly, firms with a link to non-resident enterprises or which are involved in international trade are generally more productive than firms not exhibiting these characteristics (see notably Andersson et al., 2008). Looked at another way, these variables can also be considered to be indicators of performance.

The existence of a significant investment link with non-resident entities seems relevant in determining the probability of a firm offering its workers training activities. In line with expectations, the fact that a firm is a multinational or a subsidiary of a foreign company has a favourable influence on the probability of it providing training. A model restricted to just the companies in manufacturing

industry showed that, on average, firms involved in export also display a higher probability of providing training.

Moreover, the structure of the workforce seems to play a role. The greater the proportion of persons holding a qualification from higher education, the greater the chance of the firm providing training. On the other hand, the more manual workers there are among the staff, the less the chance of the firm providing training. This much is known: there is something of a polarisation of training around the most qualified in spite of the institutional measures taken with a view to counteracting this.

TABLE 12 PROBABILITY OF A FIRM PROVIDING TRAINING IN 2008

(results of econometric estimation from the logit model, provisional population, firms completing the new form)

Variable	Coefficient of parameter	Standard deviation	Significance[1]	Probability[2]
Reference[3]	2.3052	0.2951	***	90.9
Up to 10 FTEs	−4.8553	0.2518	***	7.2
From 10 to 50 FTEs	−3.1080	0.2508	***	30.9
From 50 to 100 FTEs	−1.6979	0.2540	***	64.7
From 100 to 250 FTEs	−0.9642	0.2592	***	79.3
From 250 to 500 FTEs	−0.1397	0.3055	−	89.7
Agriculture	−0.4845	0.1607	***	86.1
Mining and quarrying	0.9711	0.3223	***	96.4
Energy and water	0.1295	0.3782	−	91.9
Construction	−0.2063	0.0578	***	89.1
Trade and repairs	−0.3804	0.0500	***	87.3
Hotels and restaurants	−0.8763	0.1198	***	80.7
Transport and communication	−0.3748	0.0682	***	87.3
Financial and insurance services	−0.1713	0.0947	*	89.4
Real estate and business services	−0.1030	0.0556	*	90.0
Health and social work	0.3606	0.0736	***	93.5
Community, personal and social services	0.0558	0.0840	−	91.4
Subsidiary	0.8194	0.0908	***	95.8
Multinational	0.8613	0.1226	***	96.0
Proportion of women in the workforce	−0.4449	0.0618	***	86.5
Proportion of manual workers in the workforce	−0.6861	0.0552	***	83.5
Proportion of workers holding a qualification from higher education in the workforce	0.7552	0.0491	***	95.5
Proportion of workers on a permanent contract in the workforce	0.5459	0.1415	***	94.5
Proportion of part-time workers in the workforce	−0.2529	0.0724	***	88.6
Single-region Brussels	−0.3820	0.1056	***	87.2
Single-region Flanders	−0.1506	0.0976	−	89.6
Singe-region Wallonia	−0.1975	0.1011	*	89.2

Source: NBB (social balance sheets).

(1) ***: significant at 1 p.c., **: significant at 5 p.c., *: significant at 10 p.c.

(2) The probabilities contained in the table are not additive. The presentation adopted assumes all other things are equal: only one characteristic at a time is modified with respect to the reference firm.

(3) The reference is a firm which has a workforce greater than 500 FTEs from manufacturing industry, which is neither a subsidiary nor a multinational, and is multiregional.

Interpretation:

On the basis of the coefficients, it is possible to calculate the probability for any linear combination of the characteristics included in the model.

Example: for a firm with a workforce between 11 and 50 FTEs, operating in construction which is neither a subsidiary nor a multinational, and where the workforce comprises 0 p.c. women, 90 p.c. manual workers, 15 p.c. holders of a qualification from higher education, 95 p.c. workers on a permanent contract and 20 p.c. part-time workers, in the single region of Flanders, the linear combination of the coefficients gives:

(1 × 2.3052) + (0 × −4.8553 + 1 × −3.1080 + 0 × −1.6979 + 0 × −0.9642 + 0 × −0.1397) + (0 × −0.4845 + 0 × 0.9711 + × 0.1295 + 1 × −0.2063 + 0 × −0.3804 + 0 × −0.8763 + 0 × −0.3748 + 0 × −0.1713 + 0 × −0.1030 + 0 × 0.3606 + 0 × 0.0558) + (0 × 0.8194 + 0 × 0.8613) + (0 × −0.4449 + 0.9 × −0.6861 + 0.15 × 0.7552 + 0.95 × 0.5459 + 0.2 × −0.2529) + (0 × −0.3820 + 1 × −0.1506 + 0 × −0.1975) = −1.33559.

Given the logit specification used, the probability of providing training is given by exp(−1.33559) / (1 + exp(−1.33559)) = 20.8 p.c.

There are various reasons for this empirical finding. In the first place, firms proceed on the basis that training efforts produce a better return on average for the most qualified workers, thus reducing the risk that they run by investing in such activities. Apart from this, the most qualified members of staff would demand training more than others on average. Secondly, firms where there is a large proportion of staff with a high standard of education could also stand out in other respects, and this effect would also be picked up by the variable reflecting the level of education. Thus, innovative enterprises and those producing goods and services with a high added value could also be characterised by these variables relating to qualification structure.

The proportion of workers on a permanent contract has a positive influence on the probability of a firm providing training. Where there is a greater likelihood of these workers remaining with the company, the investment in training made by the employer has all the more chance of proving profitable. Finally, the proportions of women and part-time workers have a significant negative, but smaller, impact on the probability of a firm providing training.

As for location, it does not seem to have a very great influence on the probability of providing training. The probability of a firm offering its workers training would be greater for multi-regional enterprises than for those operating in a single region. However, the difference between Flemish enterprises operating in either multiple regions or a single region is not significant.

5.6 Distribution of training efforts according to firm

Having examined the incidence of enterprises providing training, which corresponds to a firm's decision as to whether to support training activities or not, this section looks at the intensity of training within those firms providing training, that is to say the scope of the financial outlay that firms providing training devote to formal or informal training activities once it has been decided to offer them. It is measured by the relationship between expenditure on formal and informal training activities and staff costs. This ratio is only calculated for firms funding training activities, comprising a population of 8,445 enterprises[1].

(1) A simple rule was applied to suppress outliers in the sample: the firms retained had to report costs for formal and informal training greater than 10 euro for 2008, and the costs for formal training, and also those for informal training, were not to exceed 10 p.c. of total staff costs. The firms eliminated in this way represent some 0.7 p.c. of the sample and involve, moreover, firms generally employing few workers.

(2) In general, R², that is to say that part of the variance explained by the model, is less high if individual data are used rather than aggregated data. In fact, aggregated data partly mask the differences in behaviour between individual firms since low and high values cancel each other out. The result of this averaging effect is that there are fewer variations of the dependent variable to be explained by means of the independent variables, giving a higher R² than for the estimates carried out on the basis of individual data.

Representing the population of firms providing training in graph form, by taking the costs of formal training and the costs of informal training, expressed as a percentage of staff costs, as the respective axes, reveals a wide distribution in training efforts.

While it can be shown, on the basis of the entire set of data, that there is more chance of a firm carrying out a formal training activity if it already carries out an informal training activity, there is no statistically significant relationship between the financial efforts devoted to formal training and those devoted to informal training. A large number of enterprises state that they do not arrange any informal training at all, or only very rarely, while it seems likely that workers have taken part in such activities in most if not all firms, including the smallest of them. On-the-job training is an indispensable stage, even for holding posts that are *a priori* "non-qualified". What is more, numerous businesses organise "quality circles" or groups for resolving problems. These means provide an incentive for employees to share their knowledge, know-how and practical experience, even if this is not their direct objective. Firms appear to have insufficiently reported informal training measures in 2008, which is hardly surprising since this is the first year for which they have been asked to quantify these measures.

The financial outlay for training, defined as the total cost associated with formal and informal training activities expressed as a percentage of staff costs, varies considerably between the firms that provide training. The unit of analysis in this case is the individual firm, whatever its workforce, even if the effect of the size of the firm is controlled for among the explanatory factors. A model of this financial outlay, constructed on the basis of the same variables as those used for determining the probability of a firm providing training, scarcely explains 6 p.c. to 7 p.c. of the differences in training costs between firms[2]: 93 p.c. of the differences seen between firms providing training are not therefore due to the size of firm, the branch of activity, the circumstance of being attached to a group of international scope, the staff structure (gender, socio-professional category, educational level, type of contract and working arrangement) or even the location. This may be explained notably by the fact that training efforts fluctuate under the effect of other specific factors, such as a technical or organisational change within the firm. In fact, the introduction of new technologies gives rise to an increased need for training, and reorganisations bring with them job changes. Thus, the installation of a new machine, the launch of a new product, or even an increase in the R&D budget are all factors likely to reinforce training efforts. The latter may also develop if the firm sets up or modifies a mechanism for managing expertise. The data drawn from

CHART 14
COSTS ASSOCIATED WITH FORMAL AND
INFORMAL TRAINING ACTIVITIES [1] IN 2008
(percentages of staff costs)
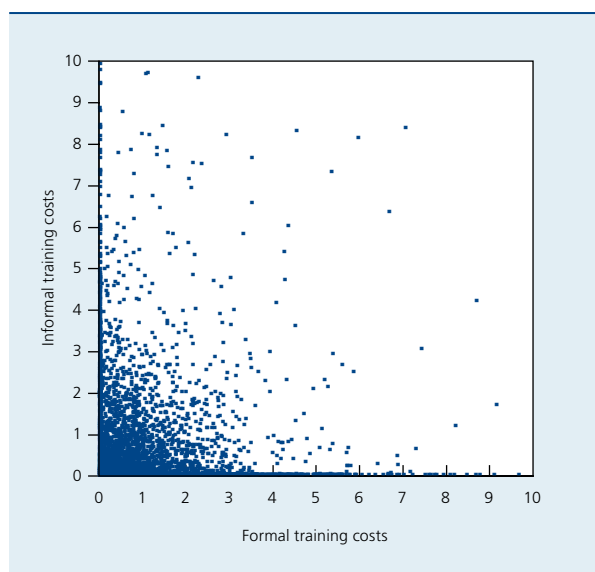
Source : NBB (social balance sheets).
(1) The scale of the axes has been limited to 10 p.c. Firms displaying extreme ratios of training costs are not taken into account.

the social balance sheets do not allow all these enterprise-specific factors to be measured.

Of the statistically significant variables explaining individual variations in financial outlay for training, the most important is the size of the firm. Even within those firms providing training, small companies devote a smaller proportion of their staff costs to training than medium-sized and large firms. In firms operating in manufacturing industry, the expected training cost ratio is 0.72 p.c. for firms employing from 10 to 50 FTEs, 1.16 p.c. for those employing from 100 to 250 FTEs and 1.94 p.c. for those employing more than 500 FTEs [1]. A simple frequency effect is therefore not sufficient to explain the fact that the financial effort of small firms is more limited: not only are firms providing training relatively fewer in number among small companies, but those small enterprises which do finance training activities deliver a more modest outlay than medium-sized and large firms.

The branch of activity is also a statistically significant variable explaining the training effort. Expenditure on training in health and social work, in the community, social and personal services sector and also in construction is,

(1) These values were obtained using the same structure of the workforce for these three theoretical enterprises, namely 23 p.c. women, 62 p.c. manual workers, 21 p.c. holders of qualifications from higher education, 97 p.c. workers on a permanent contract and 12 p.c. part-time workers, which are levels close to the averages seen in manufacturing industry.

all other things being equal, less than in manufacturing industry, which is used as a reference group. This also applies to firms operating in the transport and communication sector. The latter branch of activity is fairly atypical, in that it contains a number of very large players with very high training ratios and a multitude of small firms whose training efforts are much smaller. Conversely, the financial and insurance services sector, and likewise in marginal terms the mining and quarrying industry, show considerable training expenses.

Among the other variables explaining the individual intensity of training effort, attachment to a foreign group has a positive, and typically significant, impact on the training effort. Conversely, being a firm involved in exports, a parameter which was only tested for manufacturing industry, does not have a significant effect. The variable with the most marked positive impact on training costs, after the size of the firm, is the percentage of workers with qualifications from institutions of higher education among the staff. This is due to the fact, on the one hand, that access to training is all the easier if the employee has a higher-education qualification and, on the other hand, that training for the most qualified is more costly on average than training intended for members of staff who are less so, even if only because the net cost of training includes the participants' pay, the latter increasing on average in line with their educational level. The proportion of women in the workforce also has a negative influence, although limited, on the financial outlay for training.

Conclusions

On average, employment increased by 1.7 p.c. in 2008 in the 43,387 firms making up the reduced population. This growth, which is still solid, nonetheless signals a slowdown compared to the previous year and the results at the end of 2008 (+0.8 p.c.) bear witness to a marked deterioration in the situation during the year. The slowdown was seen in most branches of activity and especially affected industry and the financial and insurance services sector. The scale of net staff movements was reduced under the effect of the economic trend. In total, net recruitment settled at 13,399 persons in 2008, compared to 37,463 a year earlier.

Net recruitment of part-time workers is not enough to explain the increase in employees working reduced hours in any of the classes of firm, indicating a shift of some of the staff previously employed on a full-time basis to a part-time working arrangement. This movement was particularly marked in large enterprises, notably in the framework of restructuring programmes in manufacturing industry.

The turnover rate of staff on a permanent contract was 14.6 p.c. in 2008, falling slightly compared to the previous year. This percentage varies considerably according to the firms' characteristics: it is higher in small companies and in those branches which have the greatest difficulty in generating loyalty among their staff, given the pay and working conditions.

Following the picture seen in previous years, around half of departures recorded in 2008 can be accounted for by the termination of a temporary contract, while 29 p.c. were due to voluntary departure, and 14.4 p.c. to redundancies. In terms of staff departures, staff taking early retirement or normal retirement respectively amounted to 3.0 and 2.6 p.c., these proportions being comparable to those observed in 2007.

The rate of part-time work grew by 2 p.c. between 2007 and 2008, so it seems that 52.3 p.c. of women and 11.4 p.c. of men were working part-time in 2008. The use of this working arrangement is greater in small and large firms, and likewise in those branches of activity where women are most widely represented. If part-time working is unevenly placed within firms, the picture is the same among workers: women are affected more than men, clerical workers more than manual workers and executives and temporary workers more than workers on a permanent contract. Conversely, the rate of part-time working varies only a little according to standard of education, except for university graduates where the proportion of part-time workers is half that for holders of other qualifications.

Based on the new information available in the social balance sheets, it appears that in total, 18 p.c. of workers have a certificate of primary education at best, 54 p.c. have additionally completed their secondary education, 20 p.c. hold a qualification from a higher non-university educational institution and 8 p.c. have a university qualification. On average, women have a higher standard of education than men, a situation which doubtless stems in part from their later arrival on the labour market. The average level of education of employees rises as the size of firm increases. But more than size, it is without doubt the type of activity that determines the level of education that workers must have when they take up their jobs. In construction, for example, nine-tenths of workers have not exceeded the level of secondary education. On the other hand, in financial, real estate and business services, almost half of the workforce hold a qualification from university or non-university higher education.

The proportion of temporary contracts decreased slightly between 2007 and 2008, from 6.6 p.c. to 6.5 p.c. This fall

is due to the economic situation. In firms filing full-format accounts, agency staff and staff on secondment from another associated firm also declined. In total, agency workers only represented 3.8 p.c. of FTE employment in 2008 compared to 4 p.c. a year earlier. It is those sectors most exposed to international competition which were the first to be affected. The industry sector, which is the main user of agency workers, thus reduced its use of this type of labour by 10 p.c. The financial, real estate and business services and construction sectors also reduced their agency workforces, by 5 p.c. and 12 p.c. respectively.

Staff costs grew by 5.3 p.c. between 2007 and 2008 in the firms in the reduced population. Over the same period, the number of workers expressed in hours increased by 1.6 p.c. so that the average annual labour cost per FTE rose by 3.7 p.c.

Over the course of the period 2006-2008, hourly costs increased by 6.8 p.c. in firms filing a social balance sheet meeting the quality criteria for these three successive years, while a guideline payroll standard had been fixed at 5 p.c. for that period. It is the case that the indexation markedly exceeded the anticipated inflation. The rise was particularly vigorous in transport and communication, financial and insurance services, the community, social and personal services sector and health and social work. Moreover, it can be seen that close to 60 p.c. of firms recorded a rise in hourly labour costs greater than 5 p.c. between 2006 and 2008 and that the rise even exceeded 7.5 p.c. in almost half of firms.

For financial years ending with effect from 1 December 2008, the scope of the social balance sheet has been markedly expanded as regards training: the reporting now relates to formal continuing training, informal continuing training and initial training. Since a valid comparison could not be made between the results for 2007 and those for 2008 on this issue, the analysis population brings together all those firms which had filed a social balance sheet for the year 2008 as at 16 September 2009 (amounting to slightly over 50,000 companies), irrespective of their position for the year 2007.

Media coverage of the changes made to the social balance sheet seem to have borne fruit: the number of firms providing information on their training policy has substantially increased. In 2008, 37 p.c. of workers took part in one or more formal training activities. Informal training involved one worker in five, while the level of participation in initial training was only 1 p.c. It should not be forgotten that the target set under the central agreement is that, each year from 2010, half of workers benefit from training. In total, firms assigned 1.34 p.c. of the volume of

work to training measures. Formal training took the lion's share, with almost 60 p.c. of the total, while informal training represented 29 p.c. of training hours and initial training 12 p.c.

In terms of costs, the central agreement target of 1.9 p.c. for 2006 was still not met in 2008, the firms in the population under consideration having devoted a budget equivalent to 1.2 p.c. of staff costs to formal training. If the costs associated with informal and initial training activities are added to this expenditure, the budget allocated to training rose to a total of 1.7 p.c. of staff costs and therefore also remained below the target.

Small companies mobilise an overall budget equivalent to 0.41 p.c. of their staff costs on average. Adding the elements relating to informal and initial training allows a virtual doubling of their performance compared to the situation where only formal training is taken into account. Among medium-sized companies, the total effort is quantified at 1.1 p.c. of staff costs, of which 0.69 p.c. is for formal training. Expenditure on formal training in large firms accounts for 1.88 p.c. of staff costs on their own, out of a total effort amounting to 2.5 p.c. of these same costs. The sectors where large firms are strongly represented (energy and water, transport and communication) mobilise proportionately greater resources with regard to training. In agriculture, the hotel and restaurant sector and construction, formal training efforts are low, but accounting for informal training and initial training allows a considerable boost to their performance.

Using the individual data relating to training, an evaluation was carried out as to the probability of a firm providing training, as a function of its own characteristics relating to size, branch of activity, whether or not it is linked to a non-resident entity, the structure of its workforce and its location. The statistical analysis resulting from this highlights correlations, not causal links, and confirms the studies carried out previously. Among the various explanatory factors, size appears to be the most important element. Whereas nine-tenths of large firms support training activities, this applies to barely one-tenth of the smallest companies. Moreover, the proportion of firms providing training differs according to the branch of activity. The firms in the hotels and restaurants sector exhibit a below-average probability of providing training, while the probability is above average for companies operating in health and social work. The probability also seems to be linked to staff structure: the greater the proportion of persons holding a qualification from higher education and the higher the proportion of workers on a permanent contract, the greater the chance of the firm supporting training activities. On the other hand, the more manual workers there are among the members of staff and the greater the proportion of women, the less the chance of the firm providing training.

Among those firms providing training, a wide distribution can be seen in financial efforts with regard to training. A firm's training policy is dependent on many parameters, the majority of which are specific to the firm so that a general model can only explain a very small part of the distribution observed. The size of the enterprise remains a determining factor: small firms that provide training, which are less numerous in proportional terms, release training budgets that are relatively more modest than medium-sized and large firms. The scale of financial effort also varies according to the branch. Firms in the health and social work sector report, other things being equal, markedly lower training costs than those in the financial and insurance services sector. Among the other variables having a significant effect on intensity of training effort, the condition of being a subsidiary of a foreign group has a positive impact on the training effort, as does having a qualified workforce.

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Annex 1

Methodological annex

1. Methodological principles governing the composition of the populations of firms

The methodological principles that governed the composition of the populations of firms used in the analysis are described in detail in Annex 1 to the article "The social balance sheet 2005", which appeared in the December 2006 Economic Review and is available on the website of the National Bank of Belgium (www.nbb.be).

It should be remembered that only the social balance sheets of firms which meet certain criteria relating to homogeneity, consistency and quality are taken into account. In particular, the financial year must comprise 12 months and must end on 31 December; the firms must be in the private sector [1], they must employ at least one FTE worker, and their economic activity must be clearly identified [2]; the data reported in the social balance sheet must tally exactly with the data in the annual accounts [3]; firms submitting abnormal values for hourly staff costs or hours worked per FTE are eliminated, as are any anomalies found in regard to training and the use of agency workers.

The use of these methodological principles is justified by the desire for reliable, consistent data. However, it does mean that the number of social balance sheets used to carry out the analysis in this article is significantly smaller, for each year, than the total number of social balance sheets filed at the Central Balance Sheet Office.

In addition, the analysis of the results of the social balance sheets filed for 2008 is conducted on a constant reduced population [4], which further limits the coverage of the analysis population in relation to the balance sheets filed at the Central Balance Sheet Office. The results presented in this article therefore reflect the changes recorded in a population which remained stable between 2007 and 2008, and may differ from the changes which, following final closure, will be observed on the basis of the total population [5] of firms filing a social balance sheet.

Following the selection process, the total population for 2007 comprised 82,045 firms and 1,902,531 employees. For the same year, the constant reduced population comprised 43,387 companies which together employed 1,383,394 workers, corresponding to 72.7 p.c. of the persons active in all the firms submitting a social balance sheet for that year, although the number of firms included in the reduced population represents only 53 p.c. of the total population of firms. Workers employed in firms in the reduced population amount to 51 p.c. of the private sector employment recorded in the national accounts.

Representativeness according to the employment criterion varies from one branch of activity to another. Expressed as a percentage of the workers employed in firms in the total population relating to 2007, it is lowest in the branches dominated by small firms, whose annual accounts are filed and/or processed later. This applies, in particular to hotels and restaurants and to agriculture.

Furthermore, some firms or jobs are not represented in the analysis population. Examples include NPIs employing fewer than 20 persons, which are not required to submit a social balance sheet, and temporary employment agencies which were omitted for the sake of the consistency and quality of the analysis populations. Similarly, paid staff working for employers not incorporated as a company are excluded since only companies are required to file a social balance sheet. Consequently, representativeness expressed as a percentage of the employment recorded in the national accounts is

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(1) Private sector employment is defined as employment recorded in the total economy (S1), less employment in the public sector (S13) and in the household sector (S14). This concept also excludes firms in NACE-Bel branches 75 "public administration and defence; compulsory social security", 80 "education" and 95 "Activities of households as employers of domestic staff", which are not taken into account in full in the social balance sheets, as well as temporary employment agencies (NACE-Bel 74.502).

(2) Firms whose activity or address is unknown are excluded from the population.

(3) This amounts to excluding firms in which some of the employees work abroad or are not entered in the staff register (statutory staff).

(4) Firms have seven months starting from the date of the end of the financial year to file their social balance sheets at the Central Balance Sheet Office. In view of the time needed to check the data, the full set of social balance sheets relating to 2008 was not available on 16 September 2009 when the data were extracted.

(5) Firms which did not file a social balance sheet for one of the two years are in fact excluded from the reduced population. Moreover, since the Central Balance Sheet Office gives priority to processing the annual accounts of large firms, the results based on this reduced population lead to some distortion in favour of large firms.

TABLE 1   REPRESENTATIVENESS OF THE REDUCED POPULATION IN 2007

	Number of workers			Representativeness of the reduced population	
	In the national accounts[1]	In the social balance sheets		In p.c. of private sector employment[1]	In p.c. of the total population
		Total population[2]	Reduced population[2]		
	(1)	(2)	(3)	(4) = (3) / (1)	(5) = (3) / (2)
According to the employment criterion	2,704,699	1,902,531	1,383,394	51.1	72.7
Agriculture	17,840	10,126	5,202	29.2	51.4
Industry	584,379	459,594	363,922	62.3	79.2
Mining and quarrying industry	3,069	2,965	2,591	84.4	87.4
Manufacturing industry	555,615	433,077	341,924	61.5	79.0
Energy and water	25,695	23,553	19,407	75.5	82.4
Construction	191,474	141,719	89,980	47.0	63.5
Trade, transport and communication	803,487	581,058	412,771	51.4	71.0
Trade and repairs	477,565	319,577	217,746	45.6	68.1
Hotels and restaurants	90,379	57,510	23,762	26.3	41.3
Transport and communication	235,543	203,971	171,263	72.7	84.0
Financial services, real estate and business services	594,997	329,242	245,808	41.3	74.7
Financial and insurance services	128,298	111,877	93,482	72.9	83.6
Real estate and business services[3]	466,699	217,365	152,326	32.6	70.1
Other services	512,522	380,792	265,711	51.8	69.8
Health and social work	407,349	330,607	232,017	57.0	70.2
Community, social and personal services	105,173	50,185	33,693	32.0	67.1
According to the criterion concerning the number of firms	n.	82,045	43,387	n.	52.9

Sources: NAI, NBB (social balance sheets).
(1) The concept of employment used here corresponds to paid employment in the private sector, or employment in the total economy (S1) less employment in the public sector (S13) and the household sector (S14). Moreover, this concept excludes employees in NACE-BEL branches 75 (Public administration and defence; compulsory social security), 80 (Education) and 95 (Private households with employed persons), which are not taken into account in full in the social balance sheets.
(2) Sum of items 1001 (full-time workers) and 1002 (part-time workers).
(3) Excluding temporary recruitment agencies in the case of the social balance sheets.

particularly low in the branches containing a large proportion of such enterprises or workers, notably the community, social and personal services branch, the real estate and business services branch, hotels and restaurants, and agriculture.

2. Methodology governing the regional breakdown of the social balance sheets

The analysis of the social balance sheets is not conducted from a regional angle in this article. Nevertheless, Annexes 11 to 13 contain a series of regional indicators identical with those published in the December 2007 and December 2008 issues of the Economic Review.

The regional breakdown of firms applies only to the total populations obtained on the basis of the methodological principles described in section 1, for the years 1998 to 2007. The methodology governing the regional breakdown is similar to that used in 2004[1].

(1) See the article "The social balance sheet 2003", published in the Economic Review in the fourth quarter of 2004.

TABLE 2

TABLE 2 REGIONAL BREAKDOWN OF FIRMS FILING A SOCIAL BALANCE SHEET IN 2007

(total population)

	Number of firms		Number of workers	
	Units	Percentages of the total	Units	Percentages of the total
Single-region firms	80,914	98.6	1,413,234	74.3
Brussels	9,587	11.7	157,968	8.3
Flanders	49,566	60.4	894,409	47.0
Wallonia	21,761	26.5	360,858	19.0
Multi-region firms	1,131	1.4	489,297	25.7
Total	**82,045**	**100.0**	**1,902,531**	**100.0**

Source : NBB (social balance sheets).

Single-region firms are those whose registered office and place(s) of business are located in a single region. In 2007, these single-region firms numbered 80,914, or almost 99 p.c. of the total firms filing a social balance sheet which met the quality criteria for that year. These companies are generally fairly small : on average, they employ 17 workers.

The remaining 1,131 "multi-region" firms are established in more than one region. On average, they employ 433 people.

For firms established in more than one region, there are two ways of producing the regional breakdown. The first consists in attributing the whole of the amounts entered in the social balance sheet items of these firms to the region in which the firm records the largest number of jobs. In this "majority" approach, each firm is attached to a single region each year, but that region may differ from one year to the next according to the changes in employment at its places of business. This majority allocation method introduces distortions in the employment breakdown because some of the firms active throughout Belgium are attributed to Flanders, which covers 44 p.c. of the country but contained almost 58 p.c. of its residents as at 1 January 2008, while others are allocated to the Brussels Region owing to the location of their registered office, where many services and hence workers are concentrated.

The proportional allocation approach consists in allocating all the social balance sheet items of multi-region firms among the regions where their registered office and their places of business are located. Such a formula can be calculated for employment or wages on the basis of the data per establishment collected by the NOSS, as is done by the NAI for compiling the regional accounts. Conversely, it is not possible to define an allocation formula appropriate to all the variables in the social balance sheet. That is the case, for example, for further training and for agency work. On these subjects, corporate behaviour may vary according to the activity, organisation and location of the various places of business, and possibly the training or the agency work available.

Neither the majority breakdown (which attributes all the social balance sheet items of each firm to the region in which it employs the largest number of workers) nor the proportional allocation (which breaks down the social balance sheet items between the various regions where the enterprise is active according to the employment recorded there) was considered satisfactory. The group of multi-region firms was therefore not divided among the regions.

It must be pointed out that the breakdown by branch of activity differs considerably between multi-region and single region firms. Within each of these groups there are divergences in specialisation between firms based in Brussels and those established in Flanders or Wallonia. This heterogeneity is part of the reason for the differences in results recorded for the regional indicators in Annexes 11 to 13.

TABLE 3 REGIONAL STRUCTURE OF EMPLOYMENT IN 2007

(percentages of the total, total population)

	Single-region firms				Multi-region firms	Total
	Brussels	Flanders	Wallonia	Total		
Agriculture	0.1	0.8	0.7	0.7	0.0	0.5
Industry	8.9	28.5	25.3	25.5	20.3	24.2
Construction	4.7	9.4	11.5	9.4	1.7	7.4
Trade, transport and communication	28.6	27.4	24.0	26.7	41.6	30.5
Financial, real estate and business services	33.6	12.2	10.0	14.1	26.7	17.3
Other services	24.1	21.6	28.4	23.6	9.7	20.0

Source : NBB (social balance sheets)

Annex 2

The classification of the firms by branch of activity is based on the activity code given in the directory of firms prepared by the National Bank for the compilation of the national accounts, and containing a range of administrative data on firms active during any year. The 2006 directory was chosen as the reference to determine the sector and branch of activity to which firms should be allocated for the whole period from 1998 to 2008. It is based on the 2003 NACE-BEL nomenclature. (N.B. the new version of the nomenclature introduced on 1 January 2008 is used in the article on trends in the financial structure and results of firms in 2008, which is also published in this edition of the Economic Review). Firms not listed in the 2007 directory retain the activity code attributed in the 2005 directory, or failing that, the code allocated to them by the Central Balance Sheet Office.

The descriptions in the body of the text are based on a breakdown into six or twelve branches, according to requirements. These two breakdowns appear systematically in Annexes 3 to 10.

**CLASSIFICATION USED FOR THE ANALYSIS OF THE SOCIAL BALANCE SHEETS
AND LIST OF SECTIONS AND DIVISIONS IN THE NACE-BEL NOMENCLATURE OF ACTIVITIES**

Heading	Section	Division
Agriculture	A-B	01-05
Industry		
Mining and quarrying	C	10-14
Manufacturing	D	15-37
Energy and water	E	40-41
Construction	F	45
Trade, transport and communication		
Trade and repairs	G	50-52
Hotels and restaurants	H	55
Transport and communication	I	60-64
Financial, real estate and business services		
Financial and insurance services	J	65-67
Real estate and business services[1]	K	70-74
Other services		
Health and social work	N	85
Community, social and personal services	O	90-93

(1) Excluding temporary employment agencies (code NACE-Bel 74.502).

Annex 3

CHANGE IN THE NUMBER OF WORKERS RECORDED BETWEEN 2007 AND 2008 IN FIRMS IN THE REDUCED POPULATION

	Full-time equivalents			Number of persons						
	Average employment		Employment at year end	Average employment						Employment at year end
				Full-time		Part-time		Total		
	(units)	(p.c.)	(p.c.)	(units)	(p.c.)	(units)	(p.c.)	(units)	(p.c.)	(p.c.)
Agriculture	129	2.7	2.4	114	2.8	15	1.4	129	2.5	2.4
Industry	713	0.2	−1.1	−605	−0.2	1,485	3.7	881	0.2	−1.1
Mining and quarrying	−25	−1.0	−2.1	−5	−0.2	−25	−15.8	−29	−1.1	−2.1
Manufacturing	709	0.2	−0.7	−570	−0.2	1,430	3.7	859	0.3	−0.7
Energy and water	29	0.2	−7.6	−30	−0.2	81	4.9	51	0.3	−7.4
Construction	1,720	2.0	0.5	1,492	1.8	142	2.8	1,634	1.8	0.6
Trade, transport and communication	3,895	1.1	0.4	1,446	0.5	3,284	3.0	4,730	1.1	0.5
Trade and repairs	2,712	1.4	1.1	1,860	1.2	647	1.0	2,507	1.2	1.0
Hotels and restaurants	236	1.4	−0.4	−2	0.0	453	3.5	451	1.9	0.0
Transport and communication	947	0.6	−0.3	−412	−0.3	2,184	6.3	1,772	1.0	−0.2
Financial, real estate and business services	7,217	3.3	1.9	5,201	3.0	3,193	4.5	8,395	3.4	2.2
Financial and insurance services	−932	−1.1	−1.7	−709	−1.0	−116	−0.5	−825	−0.9	−1.8
Real estate and business services[1]	8,148	6.1	4.2	5,910	5.6	3,309	7.1	9,220	6.1	4.6
Other services	6,020	2.8	2.9	3,082	2.4	4,425	3.2	7,506	2.8	2.8
Health and social work	5,186	2.8	3.0	2,404	2.3	4,033	3.1	6,437	2.8	2.9
Community, social and personal services	833	2.8	2.4	678	2.8	392	4.3	1,069	3.2	2.5
Total	19,693	1.6	0.7	10,730	1.1	12,544	3.4	23,274	1.7	0.8

Source : NBB (social balance sheets).
(1) Excluding temporary employment agencies.

Annex 4

HOURS WORKED BY WORKERS RECORDED IN THE STAFF REGISTER

	Units, per year (total population)									Percentage change between 2007 and 2008 (reduced population)		
	2001	2002	2003	2004	2005	2006	2007					
	Per full-time equivalent						Per full-time equivalent	Per full-time worker	Per part-time worker	Per full-time equivalent	Per full-time worker	Per part-time worker
Agriculture	1,537	1,545	1,533	1,556	1,525	1,548	1,566	1,546	755	–0.1	0.2	–1.0
Industry	1,517	1,506	1,508	1,532	1,516	1,520	1,521	1,523	976	–0.6	–0.7	1.2
Mining and quarrying	1,479	1,487	1,497	1,490	1,463	1,479	1,501	1,501	994	0.4	0.2	2.2
Manufacturing	1,522	1,510	1,511	1,539	1,520	1,525	1,525	1,528	971	–0.7	–0.8	1.2
Energy and water	1,414	1,426	1,425	1,410	1,445	1,434	1,448	1,444	1,090	1.6	1.6	0.1
Construction	1,438	1,427	1,433	1,464	1,442	1,442	1,445	1,441	912	0.8	0.7	5.3
Trade, transport and communication	1,640	1,626	1,616	1,605	1,578	1,576	1,574	1,573	909	0.0	0.6	–1.7
Trade and repairs	1,628	1,609	1,599	1,609	1,597	1,589	1,589	1,593	951	0.2	0.3	0.7
Hotels and restaurants	1,580	1,589	1,567	1,562	1,561	1,564	1,557	1,531	660	–0.8	0.1	–2.0
Transport and communication	1,666	1,656	1,648	1,608	1,554	1,560	1,556	1,553	1,019	–0.1	0.9	–5.8
Financial, real estate and business services	1,588	1,551	1,541	1,551	1,536	1,540	1,543	1,566	881	0.6	0.4	1.4
Financial and insurance services	1,501	1,428	1,426	1,436	1,422	1,417	1,434	1,475	874	0.3	0.0	1.2
Real estate and business services[1]	1,653	1,645	1,624	1,630	1,608	1,610	1,603	1,616	884	0.4	0.4	1.2
Other services	1,537	1,531	1,538	1,533	1,511	1,496	1,506	1,492	909	0.1	–0.5	1.2
Health and social work	1,530	1,524	1,530	1,525	1,498	1,483	1,491	1,469	912	0.2	–0.4	1.3
Community, social and personal services	1,586	1,582	1,596	1,585	1,593	1,585	1,597	1,590	869	–0.7	–0.9	–0.7
Total	**1,562**	**1,547**	**1,545**	**1,552**	**1,532**	**1,530**	**1,532**	**1,534**	**910**	*0.0*	*0.0*	*0.4*

Source : NBB (social balance sheets).
(1) Excluding temporary employment agencies.

Annex 5

BREAKDOWN OF THE NUMBER OF WORKERS REGISTERED BY EMPLOYMENT CONTRACT AND BY GENDER

(percentages of the total workers recorded in the staff register at the end of the year)

	2001	2002	2003	2004	2005	2006	2007	2007	2008
					(total population)			*(reduced population)*	
By type of contract									
Permanent contract	93.5	93.8	93.9	93.9	93.8	93.5	93.4	*94.0*	*94.1*
Fixed-term contract	4.9	4.9	5.0	5.0	5.2	5.4	5.4	*4.9*	*4.9*
Agriculture	7.5	5.2	6.1	6.2	6.4	6.3	10.3	*6.3*	*6.6*
Industry	4.2	3.8	3.5	3.8	3.9	4.4	4.7	*4.8*	*4.4*
Mining and quarrying	5.6	5.8	6.0	6.1	6.3	8.2	6.9	*7.4*	*6.3*
Manufacturing	4.0	3.7	3.4	3.7	3.7	4.2	4.6	*4.7*	*4.3*
Energy and water	7.4	6.3	6.4	6.0	6.4	6.6	6.0	*6.5*	*5.4*
Construction	2.1	2.7	2.7	2.7	2.9	3.2	3.3	*2.4*	*2.4*
Trade, transport and communication	4.7	5.2	5.7	5.5	6.0	5.9	5.8	*4.9*	*5.2*
Trade and repairs	5.6	5.6	6.0	5.7	6.1	5.8	5.8	*5.5*	*5.9*
Hotels and restaurants	8.9	9.7	11.4	12.6	15.0	15.4	14.7	*12.4*	*13.3*
Transport and communication	2.5	3.7	3.7	3.2	3.3	3.3	3.4	*3.1*	*3.3*
Financial, real estate and business services ...	4.2	4.1	4.2	4.1	4.4	4.3	4.3	*3.5*	*3.2*
Financial and insurance services	4.4	3.5	2.9	3.0	2.9	2.9	2.6	*2.4*	*1.9*
Real estate and business services [(1)]	4.0	4.5	5.1	4.7	5.2	5.0	5.2	*4.1*	*3.9*
Other services	8.3	7.6	7.6	7.7	7.5	7.7	7.5	*7.4*	*7.4*
Health and social work	8.2	7.5	7.4	7.6	7.4	7.6	7.5	*7.6*	*7.5*
Community, social and personal services ...	8.7	8.8	8.6	7.9	8.4	8.4	7.3	*6.3*	*6.9*
Substitution contract	1.3	1.1	1.0	0.9	0.8	0.9	0.9	*0.9*	*0.9*
Contract for a specific project	0.3	0.2	0.2	0.2	0.2	0.2	0.2	*0.1*	*0.1*
By gender									
Men	61.7	61.0	60.7	60.6	60.8	59.1	58.7	*59.8*	*59.5*
Women	38.3	39.0	39.3	39.4	39.2	40.9	41.3	*40.2*	*40.5*

Source : NBB (social balance sheets).

(1) Excluding temporary employment agencies.

Annex 6

BREAKDOWN OF EMPLOYMENT ACCORDING TO THE STATUS OF WORKERS IN FIRMS FILING FULL-FORMAT ACCOUNTS

(percentages of average FTE employment)

	2001	2002	2003	2004	2005	2006	2007	2007	2008
				(total population)				(reduced population)	
Workers on the staff register	96.6	96.6	96.4	95.8	95.6	93.7	93.5	93.1	93.3
Agency workers	2.7	2.6	2.7	3.1	3.3	3.7	3.9	4.0	3.8
Agriculture	3.6	5.4	5.4	6.7	4.5	7.3	8.2	7.2	7.9
Industry	4.2	4.1	4.3	5.0	5.1	5.8	6.0	6.0	5.4
Mining and quarrying	3.3	3.7	3.1	2.3	2.6	2.8	3.1	3.0	3.3
Manufacturing	4.4	4.3	4.5	5.2	5.3	6.1	6.3	6.3	5.7
Energy and water	0.9	0.9	1.0	1.1	2.1	1.3	1.4	1.2	0.9
Construction	1.3	1.1	1.1	1.2	1.6	2.0	2.2	2.1	1.8
Trade, transport and communication	2.8	2.7	2.9	3.4	3.7	4.2	4.6	4.4	4.6
Trade and repairs	3.5	3.3	3.5	3.9	4.0	4.6	4.8	5.0	4.8
Hotels and restaurants	5.0	4.6	4.0	4.0	4.3	6.0	7.7	6.2	6.9
Transport and communication	1.9	2.0	2.3	2.9	3.4	3.8	4.3	3.8	4.3
Financial, real estate and business services	2.0	1.8	1.7	2.0	2.1	2.6	2.7	2.7	2.5
Financial and insurance services	1.2	0.8	0.7	0.6	0.7	0.8	0.9	0.9	0.8
Real estate and business services[(1)]	2.8	2.7	2.7	3.2	3.2	3.8	3.9	4.1	3.7
Other services	0.8	0.8	0.8	1.0	0.9	0.9	1.1	1.2	1.2
Health and social work	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5
Community, social and personal services	5.1	5.1	5.1	5.2	5.3	5.8	6.6	6.7	6.6
Persons seconded to the firm[(2)]	0.7	0.8	0.8	1.1	1.1	2.6	2.6	2.9	2.9

Source : NBB (social balance sheets).

(1) Excluding temporary employment agencies.

(2) Workers recorded in a firm's staff register and seconded to another firm which is obliged to file a social balance sheet are counted twice.

Annex 7

STAFF COSTS PER FTE[1]

	Euro, per year (total population)							*Percentage change between 2007 and 2008 (reduced population)*
	2001	2002	2003	2004	2005	2006	2007	
Agriculture	27,007	28,417	28,750	29,772	29,826	29,908	30,621	*3.1*
Industry	46,450	48,692	49,684	51,589	52,669	54,559	56,430	*2.9*
Mining and quarrying	41,812	43,941	45,628	46,147	46,671	47,957	50,575	*3.4*
Manufacturing	45,271	47,283	48,620	50,285	51,348	53,240	54,998	*2.6*
Energy and water	74,041	77,576	74,853	77,810	79,151	80,898	82,984	*6.3*
Construction	34,508	35,604	36,575	37,710	37,875	39,008	39,997	*4.6*
Trade, transport and communication	38,821	40,493	41,228	42,369	43,539	44,833	46,062	*4.0*
Trade and repairs	39,823	41,112	41,538	42,415	43,463	44,750	46,251	*3.6*
Hotels and restaurants	25,141	26,517	27,510	28,230	28,675	29,534	30,083	*2.4*
Transport and communication	39,748	41,975	43,215	44,919	46,461	47,926	48,953	*4.7*
Financial, real estate and business services	55,140	56,152	56,883	57,497	58,090	58,926	59,999	*4.0*
Financial and insurance services	63,909	64,293	65,667	67,277	68,907	70,837	72,804	*6.5*
Real estate and business services[2]	48,629	49,989	50,585	50,808	51,232	52,164	52,992	*3.0*
Other services	35,215	37,181	38,704	39,351	40,038	40,513	42,440	*4.2*
Health and social work	35,328	37,204	38,770	39,454	40,059	40,339	42,355	*4.3*
Community, social and personal services	34,397	37,008	38,209	38,638	39,913	41,671	42,946	*3.8*
Total	**42,736**	**44,435**	**45,299**	**46,489**	**47,498**	**48,513**	**49,945**	***3.7***

Source : NBB (social balance sheets).
(1) Item 1023 / item 1003.
(2) Excluding temporary employment agencies.

Annex 8

STAFF COSTS PER HOUR WORKED[1]

	Euro (total population)							Percentage change between 2007 and 2008 (reduced population)
	2001	2002	2003	2004	2005	2006	2007	
Agriculture	17.6	18.4	18.8	19.1	19.6	19.3	19.6	*3.3*
Industry	30.6	32.3	33.0	33.7	34.7	35.9	37.1	*3.5*
Mining and quarrying	28.3	29.6	30.5	31.0	31.9	32.4	33.7	*3.0*
Manufacturing	29.7	31.3	32.2	32.7	33.8	34.9	36.1	*3.3*
Energy and water	52.4	54.4	52.5	55.2	54.8	56.4	57.3	*4.7*
Construction	24.0	24.9	25.5	25.8	26.3	27.1	27.7	*3.8*
Trade, transport and communication	23.7	24.9	25.5	26.4	27.6	28.4	29.3	*4.0*
Trade and repairs	24.5	25.5	26.0	26.4	27.2	28.2	29.1	*3.4*
Hotels and restaurants	15.9	16.7	17.6	18.1	18.4	18.9	19.3	*3.2*
Transport and communication	23.9	25.4	26.2	27.9	29.9	30.7	31.5	*4.8*
Financial, real estate and business services	34.7	36.2	36.9	37.1	37.8	38.3	38.9	*3.5*
Financial and insurance services	42.6	45.0	46.1	46.8	48.5	50.0	50.8	*6.2*
Real estate and business services[2]	29.4	30.4	31.1	31.2	31.9	32.4	33.1	*2.6*
Other services	22.9	24.3	25.2	25.7	26.5	27.1	28.2	*4.1*
Health and social work	23.1	24.4	25.3	25.9	26.7	27.2	28.4	*4.1*
Community, social and personal services	21.7	23.4	23.9	24.4	25.1	26.3	26.9	*4.5*
Total	**27.4**	**28.7**	**29.3**	**29.9**	**31.0**	**31.7**	**32.6**	*3.7*

Source: NBB (social balance sheets).
(1) Item 1023 / item 1013.
(2) Excluding temporary employment agencies.

Annex 9

TRAINING IN 2008 IN FIRMS IN THE REDUCED POPULATION[1]

	Number of participants in training activities[2]			Hours devoted to training activities				Net training-related costs[3]			
	(as p.c. of average employment)			(as p.c. of hours worked)				(as p.c. of staff costs)			
	Formal[4]	Informal[5]	Initial[6]	Formal[4]	Informal[5]	Initial[6]	Total	Formal[4]	Informal[5]	Initial[6]	Total
Agriculture	4.0	4.8	0.7	0.0	0.1	0.3	0.5	0.07	0.17	0.11	0.35
Industry	42.5	21.2	0.9	0.9	0.6	0.1	1.6	1.37	0.62	0.04	2.04
Mining and quarrying	29.9	18.3	1.6	0.4	0.6	0.3	1.3	0.60	0.58	0.14	1.32
Manufacturing	40.7	21.5	0.9	0.8	0.6	0.1	1.5	1.15	0.65	0.05	1.84
Energy and water	75.1	15.3	0.3	2.7	0.3	0.0	3.0	3.96	0.32	0.01	4.29
Construction	19.9	7.0	2.0	0.3	0.2	0.4	0.9	0.43	0.17	0.11	0.71
Trade, transport and communication	33.5	20.3	1.5	0.9	0.2	0.2	1.3	1.43	0.19	0.09	1.70
Trade and repairs	22.6	15.0	1.2	0.4	0.2	0.3	0.9	0.65	0.22	0.06	0.93
Hotels and restaurants	13.2	2.0	1.8	0.2	0.1	0.3	0.6	0.35	0.10	0.11	0.55
Transport and communication	50.3	29.7	1.9	1.6	0.2	0.1	1.9	2.42	0.15	0.11	2.68
Financial, real estate and business services	37.4	23.0	0.5	0.9	0.5	0.1	1.5	1.53	0.56	0.03	2.12
Financial and insurance services	55.8	34.6	0.1	1.4	0.9	0.0	2.3	2.31	0.84	0.01	3.15
Real estate and business services[7]	26.9	16.3	0.7	0.6	0.3	0.1	1.1	0.87	0.33	0.06	1.26
Other services	42.6	24.6	1.1	0.7	0.4	0.2	1.2	0.69	0.33	0.07	1.09
Health and social work	45.1	26.3	1.0	0.7	0.4	0.1	1.2	0.70	0.36	0.07	1.13
Community, social and personal services	25.7	12.8	2.0	0.4	0.3	0.3	1.0	0.62	0.19	0.06	0.87
Total	**37.3**	**20.9**	**1.1**	**0.8**	**0.4**	**0.2**	**1.4**	**1.27**	**0.42**	**0.06**	**1.75**

Source : NBB (social balance sheets).

(1) The items concerning initial training are mentioned separately, even though for some firms it is actually found that the information given here also concerns formal or informal training.

(2) Owing to double counting linked to the fact that the same person may have followed more than one type of training, no total is calculated here

(3) Gross costs, added to which are contributions paid and payments made to collective funds and subtracted from which are subsidies and other financial advantages received.

(4) Courses and practical classes designed by training staff who are responsible for their organisation and content, intended for a group of trainees, in premises outside the workplace.

(5) Other apprenticeship activities, of which organisation and content are largely determined by the trainee according to his or her own needs, in direct relation to the work or workplace. These activities also involve participation in conferences or trade fairs as part of the learning process.

(6) Training of a minimum duration of six months given to employees in the framework of systems alternating between in-firm work and training, with a view to acquiring a diploma.

(7) Excluding temporary employment agencies.

Annex 10

TRAINING ACTIVITIES IN 2008 IN FIRMS FROM THE REDUCED POPULATION OFFERING TRAINING[1]

	Hours spent on training activities (average per participant, in hours)			Net training-related costs[2] (average per participant, in euro)		
	Formal[3]	Informal[4]	Initial[5]	Formal[3]	Informal[4]	Initial[5]
Agriculture	18	34	608	29.6	31.9	8.1
Industry	30	41	163	61.9	41.2	17.1
Mining and quarrying	21	45	284	49.5	37.4	16.6
Manufacturing	28	42	163	56.1	40.5	16.9
Energy and water	51	27	58	92.1	69.8	41.9
Construction	24	33	319	38.7	32.4	7.3
Trade, transport and communication	38	14	196	50.2	30.0	12.9
Trade and repairs	25	19	334	49.5	34.3	6.8
Hotels and restaurants	19	51	185	31.5	21.6	7.2
Transport and communication	45	10	82	50.8	25.0	35.3
Financial, real estate and business services	33	32	151	70.1	42.9	24.9
Financial and insurance services	33	35	186	89.7	49.5	22.3
Real estate and business services[6]	33	30	149	47.0	33.6	25.1
Other services	19	18	164	30.3	27.2	13.0
Health and social work	19	17	158	29.2	27.8	15.1
Community, social and personal services	24	29	187	40.9	22.0	6.6
Total	30	26	194	54.5	37.5	13.3

Source : NBB (social balance sheets).

(1) The items concerning initial training are mentioned separately, even though for some firms it is actually found that the information given here also concerns formal or informal training.

(2) Gross costs, added to which are contributions paid and payments made to collective funds and subtracted from which are subsidies and other financial advantages received.

(3) Courses and practical classes designed by training staff who are responsible for their organisation and content, intended for a group of trainees, in premises outside the workplace.

(4) Other apprenticeship activities, of which organisation and content are largely determined by the trainee according to his or her own needs, in direct relation to the work or workplace. These activities also involve participation in conferences or trade fairs as part of the learning process.

(5) Training of a minimum duration of six months given to employees in the framework of systems alternating between in-firm work and training, with a view to acquiring a diploma.

(6) Excluding temporary employment agencies.

Annex 11

TYPE AND STRUCTURE OF EMPLOYMENT CONTRACTS, ACCORDING TO REGIONS

(total population)

	2001	2002	2003	2004	2005	2006	2007
Part-time employment (percentages of employment as at 31 December)							
Single-region firms	22.1	23.5	24.4	25.0	25.4	26.7	27.2
Brussels	21.3	22.9	23.1	23.9	25.0	24.0	24.9
Flanders	21.7	23.3	24.5	25.3	25.6	27.3	27.6
Wallonia	23.4	24.3	24.7	24.9	25.1	26.6	27.3
Multi-region firms	21.7	23.0	25.4	26.3	28.2	29.7	29.9
Total	**21.9**	**23.3**	**24.6**	**25.4**	**26.1**	**27.5**	**27.9**
Temporary work[1] (percentages of employment as at 31 December)							
Single-region firms	6.4	6.2	6.2	6.2	6.4	6.8	6.9
Brussels	6.3	6.6	7.4	7.5	7.2	6.9	8.6
Flanders	5.4	4.9	4.9	4.8	5.1	5.7	5.5
Wallonia	9.1	9.5	9.1	9.0	9.1	9.7	9.7
Multi-region firms	6.6	6.4	5.9	5.7	5.7	5.7	5.5
Total	**6.5**	**6.2**	**6.1**	**6.1**	**6.2**	**6.5**	**6.6**
Agency work in firms filing full-format accounts (percentages of average FTE employment)							
Single-region firms	3.2	3.1	3.1	3.6	3.8	4.4	4.7
Brussels	2.3	2.4	2.3	2.5	2.6	2.6	3.2
Flanders	3.2	3.2	3.2	3.8	4.1	4.8	4.9
Wallonia	3.7	3.4	3.3	3.6	3.8	4.4	4.6
Multi-region firms	1.9	1.7	2.0	2.2	2.3	2.4	2.7
Total	**2.7**	**2.6**	**2.7**	**3.1**	**3.3**	**3.7**	**3.9**

Source : NBB (social balance sheets).

(1) Fixed-term contracts, substitution contracts or contracts concluded for a specific project.

Annex 12

(total population)

	2001	2002	2003	2004	2005	2006	2007
Hours worked per FTE (units, per year)							
Single-region firms	1,567	1,557	1,552	1,566	1,549	1,547	1,549
Brussels	1,625	1,604	1,586	1,598	1,579	1,578	1,596
Flanders	1,561	1,554	1,554	1,573	1,553	1,553	1,551
Wallonia	1,554	1,539	1,530	1,533	1,525	1,520	1,522
Multi-region firms	1,547	1,522	1,528	1,513	1,485	1,483	1,485
Total	**1,562**	**1,547**	**1,545**	**1,552**	**1,532**	**1,530**	**1,532**
Staff costs per FTE (euro, per year)							
Single-region firms	40,420	41,958	42,743	44,033	45,015	45,791	47,420
Brussels	48,844	51,133	50,864	52,509	53,420	53,647	55,984
Flanders	40,124	41,670	42,770	43,951	45,022	45,906	47,627
Wallonia	36,704	37,809	38,675	40,188	41,158	42,102	43,247
Multi-region firms	48,714	50,757	51,790	53,560	54,432	56,029	57,144
Total	**42,736**	**44,435**	**45,299**	**46,489**	**47,498**	**48,513**	**49,945**
Staff costs per hour worked (euro)							
Single-region firms	25.8	27.0	27.5	28.1	29.1	29.6	30.6
Brussels	30.1	31.9	32.1	32.9	33.8	34.0	35.1
Flanders	25.7	26.8	27.5	27.9	29.0	29.6	30.7
Wallonia	23.6	24.6	25.3	26.2	27.0	27.7	28.4
Multi-region firms	31.5	33.3	33.9	35.4	36.7	37.8	38.5
Total	**27.4**	**28.7**	**29.3**	**29.9**	**31.0**	**31.7**	**32.6**

Source : NBB (social balance sheets).

Annex 13

FORMAL TRAINING IN FIRMS, BROKEN DOWN BY REGION[1]

(total population)

	2001	2002	2003	2004	2005	2006	2007
Training participants (percentages of average employment)							
Single-region firms	25.6	27.0	26.5	27.1	27.4	27.1	27.2
Brussels	28.4	29.4	27.2	28.3	27.0	26.7	27.0
Flanders	27.4	29.1	29.0	29.2	29.5	28.8	29.4
Wallonia	19.2	19.8	19.7	21.0	22.1	22.8	22.1
Multi-region firms	61.1	55.6	56.8	61.7	61.0	61.8	61.9
Total	**35.4**	**34.9**	**35.0**	**35.9**	**36.2**	**36.2**	**36.1**
Hours of training (percentages of hours worked)							
Single-region firms	0.58	0.53	0.56	0.53	0.54	0.54	0.54
Brussels	0.60	0.59	0.59	0.49	0.54	0.56	0.51
Flanders	0.63	0.57	0.62	0.59	0.58	0.58	0.58
Wallonia	0.42	0.38	0.38	0.39	0.45	0.44	0.42
Multi-region firms	1.51	1.46	1.31	1.32	1.30	1.43	1.60
Total	**0.84**	**0.78**	**0.77**	**0.73**	**0.74**	**0.77**	**0.80**
Training related costs (percentages of staff costs)							
Single-region firms	0.82	0.76	0.76	0.73	0.73	0.71	0.70
Brussels	0.86	0.83	0.72	0.63	0.70	0.69	0.68
Flanders	0.90	0.82	0.85	0.82	0.77	0.75	0.75
Wallonia	0.58	0.52	0.48	0.56	0.61	0.62	0.60
Multi-region firms	2.47	2.31	2.09	2.07	2.07	2.28	2.42
Total	**1.35**	**1.26**	**1.19**	**1.13**	**1.13**	**1.19**	**1.21**
Training firms (percentages of total firms)							
Single-region firms	6.5	6.6	6.5	6.4	6.2	6.4	6.5
Brussels	6.7	7.1	6.7	6.9	6.8	7.1	7.1
Flanders	7.2	7.3	7.2	7.1	6.9	7.0	7.1
Wallonia	4.5	4.7	4.5	4.5	4.4	4.7	4.9
Multi-region firms	46.3	47.6	43.4	44.1	45.1	43.7	41.9
Total	**7.1**	**7.2**	**7.1**	**6.9**	**6.8**	**7.0**	**7.0**

Source : NBB (social balance sheets).

(1) The data shown in this table cannot be compared with those in Annex 9, which include information gathered on the basis of the new social balance sheet form applicable to the years ended as of 1 December 2008.

Annex 14

SOCIAL BALANCE SHEET

Numbers of joint committees applicable to the firm: ....

STATEMENT OF PERSONS EMPLOYED

WORKERS RECORDED IN THE STAFF REGISTER

This year and last year	Codes	1. Full-time *(this year)*	2. Part-time (this year)	3. Total (T) or total in full-time equivalents (FTEs) (this year)	3P. Total (T) or total in full-time equivalents (FTEs) *(last year)*
Average number of workers	100	....	....	.................(FTEs)	.................(FTEs)
Actual number of hours worked	101	....	....	.... (T)	.... (T)
Staff costs	102	....	....	.... (T)	.... (T)
Value of benefits additional to wages	103	xxxxxxxxxxxxxxx	xxxxxxxxxxxxxxx	.... (T)	.... (T)

On the balance sheet date	Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
Number of workers recorded in the staff register	105	....	....	....
By type of employment contract				
Permanent contract	110	....	....	....
Fixed-term contract	111	....	....	....
Contract for a specific project	112	....	....	....
Substitution contract	113	....	....	....
By gender and standard of education				
Men:	120	....	....	....
elementary	1200	....	....	....
secondary	1201	....	....	....
higher non university	1202	....	....	....
university	1203	....	....	....
Women:	121	....	....	....
elementary	1210	....	....	....
secondary	1211	....	....	....
higher non university	1212	....	....	....
university	1213	....	....	....
By occupational category				
Managerial and supervisory staff	130	....	....	....
Clerical workers	134	....	....	....
Manual workers...	132	....	....	....
Other	133	....	....	....

AGENCY STAFF AND PERSONS SECONDED TO THE FIRM

During the year	Codes	1. Agency staff	2. Persons seconded to the firm
Average number of persons employed	150	....	....
Actual number of hours worked	151	....	....
Costs to the firm	152	....	....

TABLE OF STAFF MOVEMENTS DURING THE YEAR

RECRUITMENT

	Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
Number of workers entered in the staff register during the year	205	....	....	....
By type of employment contract				
Permanent contract	210	....	....	....
Fixed-term contract	211	....	....	....
Contract for a specific project	212	....	....	....
Substitution contract	213	....	....	....

DEPARTURES

	Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
Number of workers whose contract expiry date was recorded in the staff register during the year	305	....	....	....
By type of employment contract				
Permanent contract	310	....	....	....
Fixed-term contract	311	....	....	....
Contract for a specific project	312	....	....	....
Substitution contract	313	....	....	....
By reason for contract termination				
Retirement	340	....	....	....
Early retirement	341	....	....	....
Redundancy	342	....	....	....
Other reason	343	....	....	....
Of which: number of persons continuing to work for the firm at least half time as self-employed workers	350	....	....	....

INFORMATION ON TRAINING FOR WORKERS DURING THE YEAR

Formal further vocational training at the employer's expense

	Codes	Men	Codes	Women
Number of workers concerned	5801	....	5811	....
Number of hours of training completed...	5802	....	5812	....
Net cost to the firm	5803	....	5813	....
of which gross cost directly relating to training	58031	....	58131	....
of which contributions and payments to communal funds	58032	....	58132	....
of which subsidies and other financial benefits received (to be deducted)	58033	....	58133	....

Semi-formal or informal further vocational training at the employer's expense

	Codes	Men	Codes	Women
Number of workers concerned	5821	....	5831	....
Number of hours of training completed...	5822	....	5832	....
Net cost to the firm	5823	....	5833	....

Basic vocational training at the employer's expense

	Codes	Men	Codes	Women
Number of workers concerned	5841	....	5851	....
Number of hours of training completed...	5842	....	5852	....
Net cost to the firm	5843	....	5853	....

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Summaries of articles

Economic projections for Belgium - Autumn 2009

Since the previous forecasts, there have been increasing signs of recovery, in the wake of the most severe recession suffered by the global economy in the last sixty years. Indicators show that confidence has returned since the spring, against a backdrop of easing financial tension, while industrial production and trade have both increased slightly worldwide. Doubts still remain, however, as to the sustainability of the recovery. This recovery has, in fact, largely been driven by budgetary and monetary policy stimulus, along with movements in inventories, the effects of which are temporary. In contrast, unemployment is likely to increase further in most of the advanced economies, with investment remaining low, and this will restrict growth in 2010.

In Belgium, the sheer scale of the GDP decline at the end of 2008 and the start of 2009 was historic. However, GDP did rise by 0.5 p.c. in the third quarter, and a revival in business cycle indicators suggests that the economy should continue to grow. The growth rate will remain low, however, given the absence of any vigorous recovery in foreign demand and the anticipated weakness of investment and private consumption, against the backdrop of a deteriorating labour market. GDP is thus set to contract by 3.1 p.c. on average in 2009, before growing by 1 p.c. in 2010.

The labour market initially showed a certain degree of resilience in the face of the severe contraction in activity. Job losses and increasing unemployment were contained by the massive use of temporary lay-offs and other methods of reducing working hours. They were also cushioned by a significant drop in company productivity. Employment is likely to fall by 118,000 units between the end of 2008 and the end of 2010. As an annual average, net job losses are forecast at 27,000 and 64,000 persons respectively in 2009 and 2010. The unemployment rate is set to rise from 7 p.c. in 2008 to 9 p.c. in 2010. The deterioration in labour market conditions is expected to result in wage growth moderation.

The combination of a severe financial crisis and a generalised decline in economic activity significantly affected both consumers and businesses in 2009. With the exception of public sector consumption and investment, all the main expenditure categories affected GDP negatively. Businesses had to face the synchronised collapse of most foreign markets, with exports contracting by more than 12 p.c. In addition, inventories were reduced significantly. Finally, businesses are likely to cut their investments, due to the unprecedented decline in their capacity utilisation rate in particular, along with modest demand prospects. Consumers are also likely to reign in their expenditure significantly in 2009, both in terms of consumption and investment in housing. This behaviour is largely an expression of great restraint in the face of uncertain prospects for jobs or future incomes. In 2010, the modest recovery in growth is likely to be based on a slight increase in private consumption and exports, and on a turnaround in inventory movements. Private investment adjustment is, however, likely to continue.

As in the euro area, inflation in Belgium eased rapidly over the course of 2009, even turning negative from May to November, as a consequence of the significant fall in energy prices in comparison with the previous year. Due to the recent increase in international oil quotations, inflation is expected to return to positive figures at the end of 2009, though remaining low, owing to the rapid attenuation of pressure from import prices and wages. In all, as an annual average, inflation is expected to be 0 p.c. in 2009 and 1.6 p.c. in 2010.

In the macroeconomic context depicted above, and in the light of the measures approved by the authorities, e.g. in the budgetary context, the public deficit is expected to reach 6.1 p.c. of GDP in 2009 and 5.4 p.c. in 2010, if there is no change in policy. In 2009 and 2010, the general government debt is expected to record a further sharp rise, though the increase should be slightly lower than the average for the euro area, rising from 89.8 p.c. of GDP in 2008 to 98.1 p.c. in 2009 and 102 p.c. in 2010.

JEL Codes : E17, E25, E37, E66

Key words : Belgium, macroeconomic projections, Eurosystem

Pension system reforms in the EU15 countries

The article gives an overview of pension system reforms that have been carried out in the EU15 since the beginning of the 1990s. It first of all briefly describes the main common features that the pension systems share and the basic differences that set them apart within this group of countries, all of which are confronted with the ageing problem and its social and fiscal implications. The paper then presents the main types of reform that have been implemented. Major structural reforms have only been made in a few countries, while the values of the parameters used for calculating pension rights have been revised and reforms made to public sector workers' pension schemes practically everywhere. The way in which the reforms have been carried out in the countries that seemed to offer interesting case studies – Germany, the Netherlands, France, Sweden, Italy and Austria – is also examined.

Following these reforms, several countries seem to have managed to contain the growth of their expenditure on pensions. In others, an explosion of pension costs may well be likely in the absence of any policy change. Lastly, a middle-range group seems to have already gone ahead with reform measures limiting the increase in pension costs, but not thoroughly enough to avoid a big rise in these costs.

Replacement rates have meanwhile converged, or will soon converge, within the EU15. So, countries where these rates were lowest have higher post-reform replacement rates than they had before, while the countries that had high replacement rates have conducted sometimes substantial reforms which have brought these ratios down.

JEL Code : H55

Key words : Pension system reforms, expenditure on pensions, replacement rates

Methodology or pricing: how can the greater volatility of consumer gas and electricity prices in Belgium be explained?

Over the past three years, it has gradually become clear that consumer gas and electricity prices in Belgium are much more volatile than elsewhere in the euro area or in the three main neighbouring countries. The article first of all examines whether recent methodological changes to the registration method in the consumer price index are an explanatory factor for the differing movements in gas and electricity prices. The analysis shows that this is not the case, implying that the deviations in price movements from those in the reference zones may be attributed to the pricing itself. It also indicates an increase in volatility during the period 2007-2009 in response to a number of changes in price-setting since the full-scale liberalisation of the gas and electricity market for residential consumption (changes that cannot necessarily be related directly to the liberalisation, however).

Moreover, an international comparison of gas and electricity prices excluding taxation reveals that, contrary to what was previously the case, prices in Belgium began to move considerably ahead of those in the euro area in the course of 2008. As far as gas is concerned, this handicap was to disappear again in the third quarter of 2009, whereas the available indicators show that the gap remains substantial in the case of electricity, despite some narrowing. It may also be noted that gas and electricity prices may have then bottomed out and that the transmission (more substantial in Belgium) of the new upward momentum in prices for energy raw materials could lead to a deterioration in the relative position in the near future.

It is then open to question which economic factor explains why price fluctuations for energy raw materials in Belgium are having a greater impact on consumer gas and electricity prices than elsewhere. In addition, the higher volatility of gas and electricity prices is also a factor that has to be taken into account when containing broader price and cost movements, especially in a situation where energy prices present a structural upward trend.

JEL Codes: E31, E64

Key words: consumer price index, Belgium, gas prices, electricity prices

Trends in the financial structure and results of firms in 2008

The article looks at the financial situation of non-financial corporations in Belgium over the period running from 1 January to 31 December 2008. Because of the contrasting economic trends during that period, the analysis is somewhat blurred. Nevertheless, the data collected still give a good idea of the resistance capacity of firms at the beginning of the recession.

For the year 2008 as a whole, growth of the total value added generated by Belgian non-financial corporations amounted to 1.8 p.c. (in current prices), well down on previous years. Meanwhile, operating costs grew more quickly than value added, resulting in a drop in operating profit for the first time since 2001. As far as the financial position of firms is concerned, there was a widespread decline in profitability and repayment ability in 2008, due to the economic downturn. On the other hand, solvency ratios continued to rise as a result of newly-invested capital. Finally, a distribution analysis shows that a large proportion of firms are in an unfavourable situation and that the dispersion of ratios has widened over the last ten years.

JEL Codes: D39, G30, L60, L80

Key words: firms' results, financial structure, sectoral analysis, distribution analysis

The 2008 social balance sheet

There was an average annual increase in employment of 1.7 p.c. in 2008, according to the statistics gleaned from a reduced population of enterprises that filed their social balance sheet by 16 September 2009 at the latest. End-of-year results (+0.8 p.c.) point to a significant slowdown in growth during the course of the year, reflecting the economic downturn which began at the end of 2007. Full-time staff numbers stabilised, but the number of part-time workers continued to grow. The expansion of this part-time working arrangement is not only attributable to the recruitment of workers on shorter hours; shifts between full-time and part-time working arrangements have also been observed, especially in large firms that have restructured. As a result of the economic downturn, the share of temporary work has fallen. In firms filing a full-format social balance sheet, a reduction in the use of temporary agency workers has also been noted.

The overall wage bill in the firms included in the reduced population grew by 5.3 p.c. in 2008. At the same time, the volume of labour expanded by 1.6 p.c., so that costs per hour worked increased by 3.7 p.c. on average. This article includes an assessment, by branch of activity, of how closely the indicative wage norm set for the period 2006-2008 has been followed. This survey was carried out on the basis of a population of firms that had filed a social balance sheet for the three consecutive years.

For the first time ever, thanks to the introduction of a new version of the social balance sheet, it has been possible to have a breakdown of staff numbers by educational level. On average, women tend to have a more intensive level of training than men. Workers' educational requirements vary considerably according to the branch of activity.

Since the year 2008, training activities have been broken down between formal and informal vocational training and initial training, whereas before only formal training and a very small proportion of informal training had been taken into account. Participation rates for these three types of training come to respectively 37, 21 and 1 p.c. of the workforce. Budgets for training accounted for a total of 1.7 p.c. of staff expenses, including 1.2 p.c. for formal training alone, which is still well below the target for the private sector that had been set at 1.9 p.c. for 2006.

Major differences in training policy can be observed in firms classified by size and branch of activity, whether it is a question of ranging from the volume of training activities, the size of budget, or type of training selected. An analysis of individual data shows that the probability for an enterprise to provide formal or informal training depends above all on its size, with the branch of activity ranking second. Whether it is linked to a non-resident firm and the composition of the workforce (notably the relative share of staff with higher education qualifications) also play a significant role. Within firms that do offer training, the dispersion of training costs depends very much on firm-specific factors, which cannot be taken into consideration by a general model.

JEL Codes : J20, J24, J30, M51, M53

Key words : employment, staff costs, training, working hours, employment contract, full-time, part-time, skills, temporary worker

Abstracts of the working papers series

175. Micro data on nominal rigidity, inflation persistence and optimal monetary policy, by E. Kara, September 2009

The popular Calvo models with indexation (Christiano, Eichenbaum and Evans, 2005) and sticky information (Mankiw and Reis, 2002) have guided much of the monetary policy discussion. The strength of these approaches is that they can explain the persistence of inflation. However, both of these theories are inconsistent with the micro-data on prices. In the paper, the author evaluates the consequences of implementing policies that are optimal from the perspective of models that overlook the micro-data. To do so, he uses a Generalized Taylor Economy (GTE) (Dixon and Kara, 2007). While there is no material difference between the GTE and its popular alternatives in terms of inflation persistence, a difference arises when it comes to the micro-data: the GTE is consistent with the micro-data. The findings reported in the paper suggest that policy conclusions are significantly affected by whether persistence arises in a manner consistent with the micro-data and that policies that are optimal from the perspective of the models that are inconsistent with the micro-data can lead to large welfare losses in the GTE.

176. On the origins of the BIS macro-prudential approach to financial stability: Alexandre Lamfalussy and financial fragility, by I. Maes, October 2009

Among the international policy institutions, the Bank for International Settlements (BIS) is known for its sensitivity to financial stability issues. Attention to the "macro-prudential" dimension of financial stability is very typical for the BIS. The BIS macro-prudential approach first came to the fore in the 1986 Cross Report. It defined the macro-prudential domain as "the safety and soundness of the broad financial system and payments mechanism". In the paper, it is argued that Alexandre Lamfalussy, who was at the BIS from 1976 to 1993, played a crucial role in shaping the BIS approach to financial stability. Lamfalussy is renowned for taking a broad macroeconomic view and for focusing on the systemically important financial institutions, as the failure of one of these individual institutions would threaten the whole financial system. In Lamfalussy's view, there is thus very much an overlap between the micro- and macro-prudential dimensions of financial stability. The paper traces Lamfalussy's analysis of financial fragility and goes into the reasons for his sensitivity to it. Among the main elements involved were: a "Keynesian" Weltanschauung (that a market economy is not sufficiently self-correcting); the emphasis of Dupriez (his teacher in Louvain) on cycles; Lamfalussy's own experience as a commercial banker; BIS involvement in financial stability issues, especially the Latin American debt crisis of 1982-83; and research in the central banking community on financial innovations in the early 1980s.

177. Incentives and tranche retention in securitisation : A screening model, by I. Fender, J. Mitchell, October 2009

The paper examines the power of different contractual mechanisms to influence an originator's choice of costly effort to screen borrowers when the originator plans to securitise its loans. The analysis focuses on three potential mechanisms : the originator holds a "vertical slice", or share of the portfolio ; the originator holds the equity tranche of a structured finance transaction ; the originator holds the mezzanine tranche, rather than the equity tranche. These mechanisms will result in differing levels of screening, and the differences arise from varying sensitivities to a systematic risk factor. Equity tranche retention is not always the most effective mechanism, and the equity tranche can be dominated by either a vertical slice or a mezzanine tranche if the probability of a downturn is likely and if the equity tranche is likely to be depleted in a downturn. If the choice of how much and what form to retain is left up to the originator, the retention mechanism may lead to low screening effort, suggesting a potential rationale for government intervention.

178. Optimal monetary policy and firm entry, by V. Lewis, October 2009

The paper describes optimal monetary policy in an economy with monopolistic competition, endogenous firm entry, a cash-in-advance constraint and pre-set wages. Firms must make profits in order to cover entry costs ; thus a mark-up on goods prices is necessary. Without this mark-up, profits would be zero and no firm would enter the market, resulting in zero production. Therefore, the mark-up should not be removed. In this economy with market entrants, goods are more expensive than in a competitive economy with marginal cost pricing. This leads to a misallocation of resources, because leisure is not sold at a mark-up. Goods and leisure are two sources of utility that households trade off against each other. Thus, they may buy too much leisure instead of consumption goods. The consequence is that labour supply and production are sub-optimally low. Due to the labour requirement at market entry stage, insufficient labour supply also implies too little entry and too few firms in equilibrium. In the absence of fiscal instruments such as labour income subsidies, the optimal monetary policy under sticky wages achieves higher welfare than under flexible wages. The policy-maker uses the money supply instrument to raise the real wage – the cost of leisure – above its flexible-wage level, in response to expansionary shocks. This induces a rise in labour supply, more production of goods and more new firms.

179. Staying, dropping, or switching : The impacts of bank mergers on small firms, by H. Degryse, N. Masschelein, J. Mitchell, October 2009

Assessing the impacts of bank mergers on small firms requires separating borrowers with single versus multiple banking relationships and distinguishing the three alternatives of "staying", "dropping", and "switching" of relationships. Single-relationship borrowers who "switch" to another bank following a merger will be less harmed than those whose relationship is "dropped" and not replaced. Using Belgian data, the authors find that single-relationship borrowers of target banks are more likely than other borrowers to be dropped. They track post-merger performance and show that many dropped target-bank borrowers are harmed by the merger. Multiple-relationship borrowers are less harmed, as they can better hedge against relationship discontinuations.

180. Inter-industry wage differentials : How much does rent sharing matter ?, by Ph. Du Caju, F. Rycx, I. Tojerow, October 2009

The paper investigates inter-industry wage differentials in Belgium, taking advantage of access to a unique matched employer-employee data set covering all the years from 1999 to 2005. Findings show the existence of large wage differentials among workers with the same observed

characteristics and working conditions, employed in different sectors. These differentials are persistent and no particular downward or upward trend is observed. Further results indicate that ceteris paribus, workers earn significantly higher wages when employed in more profitable firms. The time dimension of our matched employer-employee data allows us to instrument firms' profitability by its lagged value. The instrumented elasticity between wages and profits is found to be quite stable over time and varies between 0.034 and 0.043. It follows that Lester's range of pay due to rent sharing fluctuates between about 24 and 37 percent of the mean wage. This rent-sharing phenomenon accounts for a large fraction of the industry wage differentials. The authors find indeed that the magnitude, dispersion and significance of industry wage differentials decreases sharply when controlling for profits.

181. Empirical evidence on the aggregate effects of anticipated and unanticipated US tax policy shocks, by K. Mertens, M. O. Ravn, November 2009

The authors provide empirical evidence on the dynamic effects of tax liability changes in the United States. They distinguish between surprise and anticipated tax changes using a timing convention. They document that pre-announced but not yet implemented tax cuts give rise to contractions in output, investment and hours worked, while real wages increase. In contrast, there are no significant anticipation effects on aggregate consumption. Implemented tax cuts, regardless of their timing, have expansionary and persistent effects on output, consumption, investment, hours worked and real wages. The findings are shown to be very robust. It is argued that tax shocks are empirically important impulses to the US business cycle and that anticipation effects have been significant over several business cycle episodes.

182. Downward nominal and real wage rigidity : Survey evidence from European firms, by J. Babecký, Ph. Du Caju, T. Kosma, M. Lawless, J. Messina, T. Rõõm, November 2009

It has been well established that the wages of individual workers react little, especially downwards, to shocks that hit their employer. The paper presents new evidence from a unique survey of firms across Europe on the prevalence of downward wage rigidity in both real and nominal terms. The authors analyse which firm-level and institutional factors are associated with wage rigidity. Their results indicate that it is related to workforce composition at the establishment level in a manner that is consistent with related theoretical models (e.g. efficiency wage theory, insider-outsider theory). It is also found that wage rigidity depends on the labour market institutional environment. Collective bargaining coverage is positively related with downward real wage rigidity, measured on the basis of wage indexation. Downward nominal wage rigidity is positively associated with the extent of permanent contracts and this effect is stronger in countries with stricter employment protection regulations.

183. The margins of labour cost adjustment : Survey evidence from European firms, by J. Babecký, Ph. Du Caju, T. Kosma, M. Lawless, J. Messina, T. Rõõm, November 2009

Firms have multiple options at the time of adjusting their wage bills. However, previous literature has mainly focused on base wages. The authors broaden the analysis beyond downward rigidity in base wages by investigating the use of other margins of labour cost adjustment at the firm level. Using data from a unique survey, they find that firms make frequent use of other, more flexible, components of compensation to adjust the cost of labour. Changes in bonuses and non-pay benefits are some of the potential margins firms use to reduce costs. It is also shown how the margins of adjustment chosen are affected by firm and worker characteristics.

Conventional signs

_	the datum does not exist or is meaningless
e	estimate by the Bank
n.	not available
p.c.	per cent
p.m.	pro memoria

List of abbreviations

Countries

BE	Belgium
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LU	Luxembourg
MT	Malta
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
SK	Slovakia
FI	Finland

DK	Denmark
SE	Sweden
UK	United Kingdom

EU15	European Union excluding the countries which joined after 2003

US	United States

Others

AIP	Accord interprofessionnel (central agreement)
AOW	Algemeen Ouderdomswet, loi générale sur l'assurance-vieillesse
AWG	Ageing Working Group

CPB	Centraal Planbureau – The Netherlands
CPI	Consumer price index
CREG	Commission for Electricity and Gas Regulation
CVTS	Continuing Vocational Training Survey

DGSEI	Directorate-general Statistics and Economic Information Belgium
EC	European Commission
ECB	European Central Bank
EDP	Excessive deficit procedure
EU	European Union
Federgon	Federation of partners for employment
FTE	Full-time equivalents
GDP	Gross domestic product
Gj	Gigajoule
HICP	Harmonised Index of Consumer Prices
Horeca	Hotels and restaurants
HWWI	Hamburgisches Welt-Wirtschafts-Institut
IMF	International Monetary Fund
kWh	Kilowatt hour
LFS	Labour Force Survey
MSCI	Morgan Stanley Capital International
NACE-Bel	Nomenclature of economic activities in the European Community, Belgian version
NAI	National accounts institute
NBB	National Bank of Belgium
NEO	National Employment Office
NPI	Non-profit institution
NSSO	National Social Security Office
OECD	Organisation for Economic Co-operation and Development
OIS	Overnight Interest Swap
OLO	Linear bond
SME	Small and medium-sized enterprise
T&D	Transport and distribution
VAT	Value added tax