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Economic projections for Belgium – Autumn 2007

Introduction

Maintaining the momentum from the previous year, activity and employment had continued to expand strongly in the first half of 2007. That expansion was supported by two factors: a favourable external environment, both in Europe and in most other economic regions, and the dynamic domestic demand generated by both consumption and investment. Inflation was contained at less than 2 p.c.

Since the summer a number of exogenous factors have tended to cast a shadow over this picture. The cyclical slowdown which began in the United States in 2006 continued, owing to the effects of the residential construction sector. Although that slowdown did not in itself spread to the rest of the world, where the emerging economies continue to make a major contribution to growth, from August onwards the problems on the US mortgage markets triggered turbulence which particularly affected financial institutions on both sides of the Atlantic. In addition, prices of energy and agricultural commodities accelerated. Finally, the dollar depreciated significantly, primarily against the euro.

These events could affect the economic outlook for the euro area. According to the Eurosystem projections published in the December 2007 ECB Monthly Bulletin, activity growth is expected to remain robust in 2008 whereas inflation will rise more than previously expected. But the uncertainty inherent in any forecasting exercise is particularly great at this juncture, with the risks tending towards a sharper slowdown in activity.

(1) The previous version of the economic projections for 2007 and 2008 was presented in more detail in the spring, in the June issue of the Bank's Economic Review.

Coinciding with the publication of new projections for the euro area, this article presents a brief update of the results for the Belgian economy[1]. Compiled via the joint Eurosystem exercise, these results incorporate the information available up to 23 November 2007. As usual in the case of public finances, these projections take account only of the measures which have been formally approved by the government. That is particularly the case this year, in the absence of a federal budget for 2008.

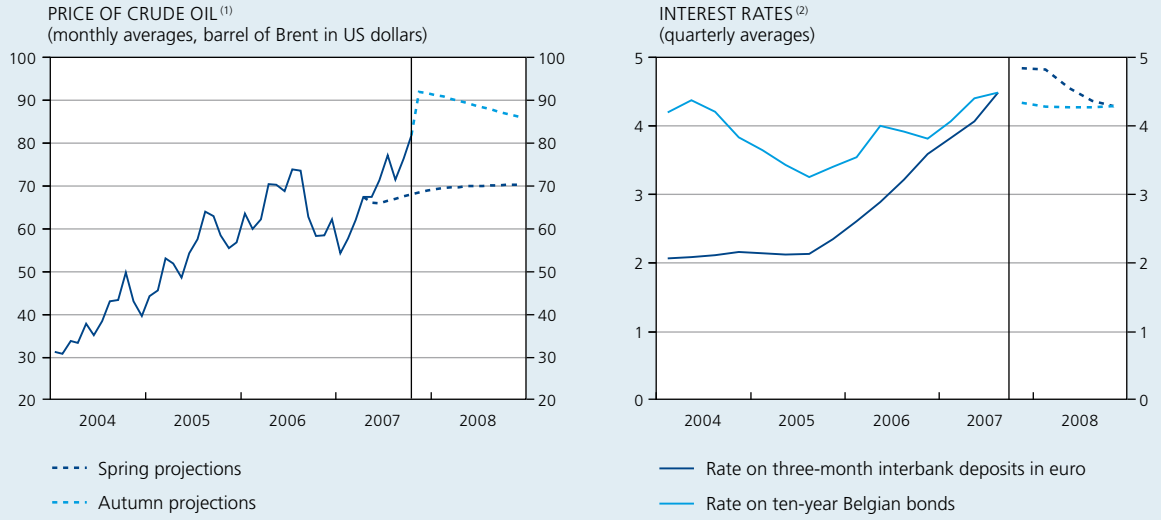
1. International environment and assumptions

With increasingly broadly-based support from the emerging economies and commodity-producing countries, world economic growth should remain robust in 2007 and 2008. However, it is likely to dip below the peak recorded in 2006, owing to the slower pace of activity in the United States, though that is due mainly to developments in the residential construction sector, so that the effects of contagion on other economies will be limited.

The financial market volatility is likely to cast only a slight shadow over this picture. The resulting reappraisal of loan risk premiums occurred after a period in which those premiums had been abnormally low. The financial institutions, which are currently facing a strain on their balance sheet position and their profits, could tighten up access to credit, but on a scale which is unlikely to put more than slight pressure on the financing of productive investments, at least in the immediate future.

In that context, global demand for commodities is rising rapidly, while the scope for expanding output is limited. Prices in dollars on the international markets therefore

CHART 1 ASSUMPTIONS RELATING TO THE MOVEMENT IN OIL PRICES AND INTEREST RATES



Source : ECB.
(1) Actual movement up to October 2007, assumption from November 2007.
(2) Actual movement up to the third quarter of 2007, assumption from the fourth quarter of 2007.

increased sharply, with a 65 p.c. rise in oil prices between January and November 2007, and a year-on-year rise averaging around 20 p.c. for food. Since these increases were largely determined by structural factors, the assumptions adopted in order to prepare these projections are based on commodity prices persisting at a high level in 2008.

For the euro area, the currency's appreciation against the dollar partially cushioned this price rise. However, where exports are concerned, it should temporarily impair the benefit of the vigorous foreign market growth. Domestic demand is predicted to remain robust, bolstered on the investment side by relatively high corporate profitability, and on the consumption side by rising employment.

According to the new Eurosystem projections, after reaching 2.9 p.c. in 2006, GDP growth is expected to be between 2.4 and 2.8 p.c. in 2007, and between 1.5 and 2.5 p.c. in 2008. Inflation, measured by the HICP at 2.2 p.c. in 2006, is forecast at between 2 and 2.2 p.c. in 2007, before reaching a level between 2 and 3 p.c. in 2008. In 2007 it was affected by the increase in the VAT rate in Germany. In 2008, it is likely to be propelled by the rising prices of energy and food.

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 :

– Interest rates are based on market expectations. As an annual average, short-term rates in euro are predicted to rise from 4.3 p.c. in 2007 to 4.5 p.c. in 2008. This assumes a normalisation of the spreads which appeared from August 2007 between three-month interbank rates and the ECB's key rate. Long-term interest rates are projected at 4.3 p.c. for the two years. In view of the recent reappraisal of risk premiums, the assumptions also incorporate an additional 20 basis point increase in the cost of financing business and household investment ;
– The bilateral euro exchange rates are kept constant at their value as at mid November 2007, namely 1.46 US dollars to the euro ;

▶

– In accordance with the movement in implicit prices reflected in forward contracts, oil prices on the international markets are expected to average 88.6 dollars per barrel of Brent in 2008, compared to 72.6 dollars in 2007;
– The real growth of Belgium's export markets, measured as the weighted sum of imports by volume from the trading partners, including those in the euro area, is expected to rise from 5.2 p.c. in 2007 to 5.7 p.c. in 2008;
– The export prices of competitors in the euro area are forecast to increase by 1.3 p.c. in 2007 and 1.4 p.c. in 2008;
– As usual, the results for public finances are calculated taking account of the macroeconomic environment and the budget measures which have already been announced and are specified in sufficient detail. That is particularly true this year, in the absence of a federal budget for 2008;

EUROSYSTEM PROJECTIONS: RESULTS AND ASSUMPTIONS

	2006	2007	2008
Projections for the euro area		(annual averages)	
GDP in volume	2.9	2.4 – 2.8	1.5 – 2.5
Inflation (HICP)	2.2	2.0 – 2.2	2.0 – 3.0
Eurosystem assumptions			
Three-month interbank rates in euro	3.1	4.3	4.5
Ten-year bond yields in Belgium	3.8	4.3	4.3
Euro exchange rate against the US dollar	1.26	1.37	1.46
Oil price (US dollar per barrel)	65.4	72.6	88.6
		(percentage changes)	
Export markets relevant to Belgium	8.8	5.2	5.7
Competitors' export prices	2.6	0.3	0.6
of which: competitors on the euro area markets	2.4	1.3	1.4

Source: ECB.

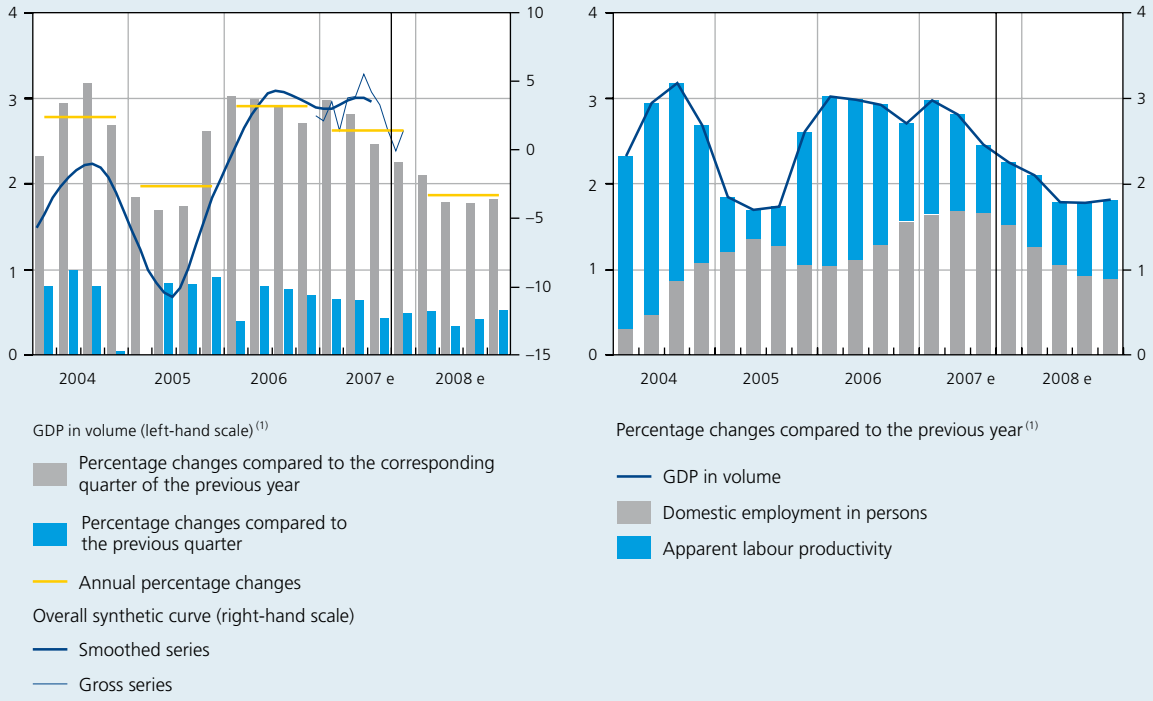
2. Activity, employment and demand

In Belgium, the dynamism of activity seen in 2006 was maintained in the first half of 2007. Measured against the corresponding quarter of the previous year, the volume of GDP continued to expand at close on 3 p.c. Compared to the preceding episodes when growth soon ran out of steam, the period of buoyant economic activity was therefore relatively long-lasting, continuing slightly longer than predicted in the spring projections.

However, the Bank's synthetic business survey indicator has recorded a slowdown since the summer, confirmed by the NAI's first estimate for the third quarter of 2007. Having averaged 0.7 p.c. for the past eighteen months, quarter-on-quarter GDP growth is expected to drop to around 0.4 p.c., reducing the year-on-year rate to 2.5 p.c. The slower quarterly expansion rate is likely to continue in the fourth quarter and in the first part of 2008, until the recent effects of the rising oil price, euro appreciation and financial market turmoil gradually fade away. In all, the

CHART 2 GDP, BUSINESS SURVEY INDICATOR AND EMPLOYMENT

(seasonally adjusted data)



Sources : NAI, NBB.

(1) Calendar adjusted data.

average annual growth rate is forecast to fall from 2.9 p.c. of GDP in 2006 to 2.6 p.c. in 2007 and 1.9 pc. in 2008.

As the period of robust growth of activity continued, net job creations increased in the first half of 2007 ; they were also underpinned by the success of the service vouchers which finance jobs providing domestic help. Overall, following annual expansion of 1.2 p.c. in the two previous years, employment is projected to grow by 1.6 p.c. in 2007 and 1 p.c. in 2008, representing net cumulative growth of around 115,000 jobs in the two years, 17,000 of them resulting from the forecast expansion of the service voucher scheme. Thus, taking account of the expected movement in the labour force, the decline in the unemployment rate which began in April 2006 should continue, bringing the rate down from an average of 8.3 p.c. in 2006 to 7.7 p.c. in 2007 and 7.3 p.c. in 2008.

The buoyancy of the Belgian economy at the beginning of 2007 was due mainly to the impetus of domestic demand. In fact, at that time businesses and households were still resolutely increasing their fixed capital investments, as they had in the preceding years, while private consumption rose significantly. These two factors are likely to diminish at the end of the year and in 2008. Consequently, the contribution to GDP growth generated by domestic spending – excluding the change in stocks – is forecast to fall from around 3 percentage points in 2007 to about 2 percentage points in 2008.

In 2007, mirroring the previous year's picture, private consumption will have been stimulated by the increase in purchasing power. Having stagnated from 2002 to 2005, the real disposable income of households increased by 2.6 p.c. in 2006 and an estimated 2.4 p.c. in 2007. However, the reasons for this surge differ between the two years. For 2006, it was due mainly to the implementation of the final component of the tax reform initiated in 2001 ; for 2007 the rise in net job creation was the major factor. In 2008, the declining dynamism of employment accompanied by a sharper rise in inflation will probably cut the increase in real disposable income to 1.5 p.c. These marked variations in the rate of change in disposable income, with a large rise in 2006 and 2007 and a smaller one in 2008, seems to be partly smoothed out in the pattern of consumption. The consumption

TABLE 1 GDP, EMPLOYMENT AND MAIN CATEGORIES OF EXPENDITURE

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

	2005	2006	2007 e	2008 e
GDP[1]	2.0	2.9	2.6	1.9
Total domestic employment in persons	1.2	1.2	1.6	1.0
Real disposable income	–0.1	2.6	2.4	1.5
Components of expenditure[1]				
Final consumption expenditure of individuals	1.4	2.1	2.2	1.8
Final consumption expenditure of general government	–0.2	0.0	2.2	2.3
Gross fixed capital formation	6.7	4.2	6.6	2.6
Housing	10.1	7.4	4.9	1.2
Government	13.0	–3.2	5.1	0.1
Business	4.6	3.9	7.6	3.4
p.m. Total domestic demand excluding change in stocks[2]	*2.0*	*2.0*	*3.0*	*2.0*
Change in stocks[2]	0.4	0.8	–0.1	–0.3
Net exports of goods and services[2]	–0.4	0.2	–0.3	0.2
Exports of goods and services	4.1	2.6	5.2	4.3
Imports of goods and services	4.9	2.5	5.8	4.2

Sources: NAI, NBB.
(1) In volume.
(2) Contribution to the change in GDP.

growth rate is forecast at 2.2 p.c. in 2007, close to the previous year's figure, before dropping to 1.8 p.c. in 2008. Measured at 12.5 p.c. of disposable income in 2006, the savings ratio is expected to rise by 0.2 percentage point in 2007, and then to subside to 12.2 p.c. in 2008.

The slackening pace of gross fixed capital formation in 2008 is likely to be evident in both household and business investments. It began to emerge by the first half of 2007 in the case of expenditure on housing construction and renovation, coinciding with the cooling of prices on the secondary market. After averaging over 9 p.c. per annum from 2004 to 2006, in a context of low interest rates, the volume growth of housing investment is expected to drop to 4.9 p.c. in 2007 and 1.2 p.c. in 2008.

According to the national accounts figures, business investment was still very substantial in the second quarter of 2007, bringing the average rise to an estimated 7.6 p.c. for the year as a whole. Generally speaking, the outlook here is for slower expansion as from the second half of the year, moderating growth to 3.4 p.c. in 2008. The cyclical slowdown is projected to be the main factor in this development. A tightening of external financing conditions could also depress investment, but that effect should be weak since firms still have ample internal financial resources, generated by the sustained rise in their operating revenues.

Exports, which had lagged behind the strengthening of the foreign markets at the beginning of 2006, staged a revival. The growth rate is forecast at 5.2 p.c. in 2007, comparable to the rate of market expansion. However, this movement may be curbed during the period covered by the projections owing to deteriorating price competitiveness, in relation to competitors located in third countries benefiting from the euro's appreciation against their currency. Export growth is thus projected at 4.3 p.c. in 2008. However, it should slightly outpace the growth of imports, so that net exports will contribute 0.2 percentage point to GDP growth. In 2007, their contribution is estimated to be negative at 0.3 percentage point, since imports are being stimulated by the vigour of domestic demand.

3. Prices and costs

Estimated on the basis of the HICP, overall inflation is expected to fall from an average of 2.3 p.c. in 2006 to 1.8 p.c. in 2007. However, there was a marked acceleration in October, and that is expected to continue in early 2008, pushing the average price rise to 2.9 p.c. for that year.

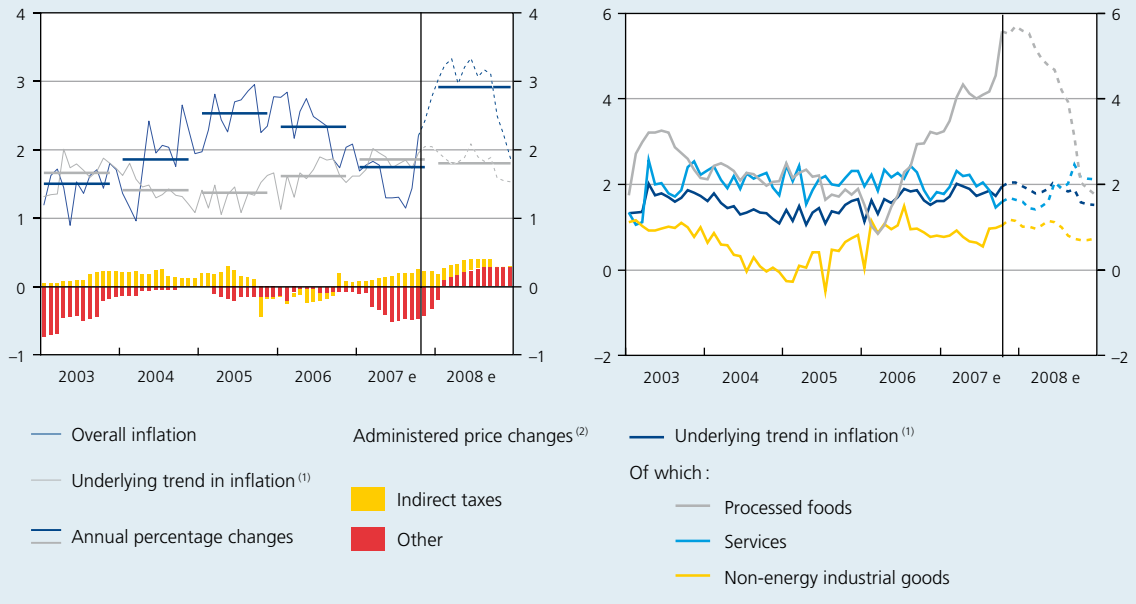
This "V-shaped" pattern mainly reflects the movement in energy product prices. For these products, which have a weight of around 10 p.c. in the consumer price index, inflation was practically zero in 2007 whereas it reached 7.3 p.c. in 2006 and is projected at 12.9 p.c. in 2008. Following a temporary dip during the last four months of 2006, the level of oil prices quoted on the international markets up to mid 2007 remained below those seen a year earlier. Since then, prices have once again far surpassed their previous peak and are assumed to remain at a high level in 2008. Furthermore, the liberalisation of the gas and electricity markets in Brussels and Wallonia and the new method of recording these prices in the consumer price index both acted as a brake at the beginning of 2007. However, that effect was negated by the strong rise in the rates charged from October by the main gas and electricity supplier. The impact of that rise will be fully incorporated in the HICP at the end of 2007; moreover, the intermunicipal associations are likely to put up their distribution charges at the beginning of 2008.

Underlying inflation – which excludes the energy component and prices of unprocessed foods – is forecast to edge upwards from 1.6 p.c. in 2006 to 1.9 p.c. in 2007. It should remain steady at that level in 2008. The 2007 increase was due solely to the rise in food prices caused by the higher cost of agricultural commodities. Thus, in October 2007 the prices of certain products, such as eggs, dairy produce and pasta, had risen by over 15 p.c. in one year. Conversely, inflation is likely to be restrained in the case of non-energy industrial goods and services, benefiting from the euro's appreciation, global competition, and the widespread wage moderation of recent years.

However, unit labour costs are projected to accelerate in 2007 and 2008, rising by 2.2 p.c. in 2007 and 2.1 p.c. in 2008, compared to 1.4 p.c. in 2006 and only 0.4 p.c. per annum in the four preceding years. This movement is due to a decline in productivity gains, net job creations being particularly sustained in 2007, while the slower employment growth is expected to lag behind the slackening pace of activity in 2008, as is usual in a cyclical downturn.

CHART 3 INFLATION

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



Sources : EC, NBB.

(1) Measured by the HICP excluding unprocessed food and energy.

(2) Impact on overall inflation, in percentage points, of changes in prices associated with measures concerning the radio and television licence fee, changes in the rates charged in network industries, and adjustments to indirect taxation.

TABLE 2 PRICE AND COST INDICATORS

(percentage changes compared to the previous year)

	2005	2006	2007 e	2008 e
Total HICP	2.5	2.3	1.8	2.9
of which: energy products	12.7	7.3	0.0	12.9
GDP deflator	2.4	2.0	2.0	2.6
Labour costs in the private sector:				
Unit costs	0.8	1.4	2.2	2.1
Hourly costs	2.3	2.9	2.8	3.0

Sources: EC, NAI, NBB.

Hourly labour costs are projected to rise by 2.8 p.c. in 2007 and 3 p.c. in 2008, an increase comparable to that in 2006 but exceeding the 5 p.c. indicative norm set in the central agreement for 2007-2008, taking account of the trend in wages predicted for the three main neighbouring countries. Temporary exceptional effects, due to the redundancy payments made in connection with a major restructuring, and amendments to the law on the declaration to the NSSO of holiday pay for persons changing their employment contract, accounted for 0.4 point of this rise in 2007. Since the rise in the health index is estimated at 1.7 p.c. in 2007 and 2.6 p.c. in 2008, wage indexation should also exceed the figure taken into account in the negotiations. However, in a growing number of sectoral joint committees, all-in clauses should limit the impact of such an overrun on the movement in labour costs. Although neighbouring countries do not have a mechanism which automatically links wages to prices, it is possible that the gathering pace of inflation there may also result in a bigger increase in labour costs than predicted at the end of 2006, when the norm was set.

4. Public finances

According to the commitments given in the stability programme submitted in December 2006, Belgium's public finances should achieve a surplus of 0.3 p.c. of GDP in 2007 and 0.5 p.c. in 2008.

Taking account of the latest information, public finances are projected to end the year 2007 with a deficit of 0.1 p.c. of GDP. In the macroeconomic context described above, that deficit is expected to increase to 0.3 p.c. of GDP in 2008.

Compared to the Bank's spring estimate, the deficit projected for 2007 is generally unchanged, whereas that for 2008 is slightly higher. However, it should be noted that the current forecasts do not yet take account of the impact of the measures presented in connection with the formation of the federal government, since – in accordance with the ESCB directives on public finance projections – measures which have been announced cannot be taken into account unless they are specified in sufficient detail and are very likely to be implemented.

Although the budget deficit projected for 2007 is very small, the general government financing balance is expected to deteriorate compared to the previous year when a surplus had been recorded, though public finances did benefit from the cyclical movement and the persistent decline in interest charges. That decline is due solely to the further reduction in the public debt ratio, since the implicit interest rate on the debt has remained unchanged. However, the positive influence of these factors was more than offset by the decline in the structural primary surplus, amounting to 0.3 point of GDP, and to an even greater extent by the disappearance of the non-recurring measures.

The contraction of the structural primary balance seems to be attributable exclusively to the movement in revenues. Structural measures exerted downward pressure of around 0.1 p.c. of GDP on revenues, one factor being the reductions in employers' contributions for the youngest and oldest workers, agreed under the Generation Pact. Moreover, the increase in revenues generated by corporate income tax was less than the rise in corporate operating profits. Conversely, the movement in primary expenditure will probably be neutral overall for the structural primary balance. While expenditure was driven up by the strong increase in subsidies granted under the service voucher system and by the effects of a series of measures

TABLE 3 GENERAL GOVERNMENT ACCOUNTS[1]

(percentages of GDP; Eurostat point of view, unless otherwise stated)

	2005	2006	2007 e	2008 e
Revenues	49.4	48.8	48.2	47.9
of which: fiscal and parafiscal revenues	44.3	44.0	43.5	43.2
Primary expenditure	47.5	44.5	44.6	44.6
Primary balance	1.9	4.3	3.7	3.3
Interest charges	4.2	4.0	3.8	3.6
Financing requirement (–) or capacity	–2.3	0.4	–0.1	–0.3
Financing requirement (–) or capacity (NAI)[2]	0.1	0.3	–0.2	–0.4
p.m. Effects of non-recurring factors	*–2.0*	*0.7*	*–0.1*	*–0.1*
Effects of non-recurring factors (NAI)[2]	*0.5*	*0.7*	*–0.1*	*–0.1*
Consolidated gross debt	92.2	88.2	85.0	82.1
Consolidated gross debt (NAI)[2]	90.4	86.6	83.5	80.8

Sources: EC, NAI, NBB.

(1) According to the methodology used in the excessive deficit procedure (EDP), which includes net interest gains generated by certain financial transactions such as swaps and forward rate agreements (FRAs).

(2) According to the view taken by the NAI, the Railway Infrastructure Fund, created in the context of the BNRC restructuring on 1 January 2005, comes under the non-financial corporations sector. According to the view taken by Eurostat, that Fund is classified in the general government sector and the assumption of the BNRC debt has to be recorded as a capital transfer from that sector to the non-financial corporations sector.

aimed at raising the value of pensions and other welfare benefits, measures introduced in particular in the context of the Generation Pact, the investment expenditure of local authorities declined as is usual in a year following the local elections.

In 2006, non-recurring factors had increased the budget balance by 0.7 p.c. of GDP, essentially as a result of the sale of property and the structural acceleration in the assessment of corporate income tax. In 2007, however, these factors are expected to exert a slightly negative influence on the general government budget balance. In particular, it should be mentioned that – according to the projections – the transactions relating to public buildings and pension funds, planned in the 2007 federal budget, will not be carried out. Consequently, the target set for this year in the December 2006 stability programme will not be met.

In 2008, the budget deficit is expected to increase, despite a further decline in interest charges. The impact of the non-recurring measures will remain slightly negative owing to the effect on revenues of the securitisation operations conducted in the past. The economic environment is likely to exert slight pressure on the movement in budget balances. The deterioration in the general government budget balance will also be due to a further fall in the structural primary surplus, notably as a result of the measures aimed at raising the value of welfare benefits.

However, in 2007 and 2008 the public debt should continue falling by around 3 p.c. of GDP per annum.

5. Assessment of the uncertainty of the projections

Since the summer, the combined effects of the financial market volatility, rising prices of energy commodities and agricultural products, and the appreciation of the euro have posed a serious challenge for the economy's resilience. Fortunately, in this regard Belgium's situation – like that of the euro area as a whole – is fundamentally sound, as is evident from corporate profitability and the vigour of investment, job creation and private consumption. Nonetheless, it is apparent in the present projections that these shocks will dampen growth and fuel inflation in 2008.

In the current circumstances, these results are decidedly uncertain, with the main risks concerning the growth prospects. In particular, it is still difficult to assess the scale and duration of the financial market tension and the problems of the financial institutions, and even more so to gauge the potential effects on corporate investment and consumer confidence. In addition, disorderly and unevenly distributed exchange rate movements would damage growth.

TABLE 4 COMPARISON OF THE FORECASTS FOR BELGIUM

(percentage changes compared to the previous year)

	GDP in volume		Inflation[1]		Budget balance[2]		Date of publication
	2007	2008	2007	2008	2007	2008	
NBB – Autumn 2007	2.6	1.9	1.8	2.9	–0.1	–0.3	December 2007
p.m. Spring 2007	*2.5*	*2.2*	*1.6*	*1.8*	*–0.1*	*–0.2*	*June 2007*
NAI	2.7	2.1	1.7	2.2	n.	n.	October 2007
IMF	2.6	1.9	1.8	1.8	–0.2	–0.2	October 2007
EC	2.7	2.1	1.7	2.1	–0.3	–0.4	November 2007
OECD	2.6	1.9	1.7	2.3	–0.2	–0.4	December 2007
Belgian Prime News	2.6	2.0	1.7	1.9	–0.1	–0.2	September 2007

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

If these risks materialise, they would reduce the cyclical inflationary pressure by slowing the pace of activity. Conversely, a continuing rise in commodity prices would tend to heighten inflation. On the domestic scene, the tension emerging on the employment market could lead to wage increases.

Prepared on the basis of the Eurosystem's updated common assumptions and information specific to Belgium concerning the rates charged by gas and electricity producers and distributors, the Bank's new inflation forecast for 2008 is higher than the ones currently available from other institutions. The growth forecast is at the lower end of the projection range.

Annex

PROJECTIONS FOR THE BELGIAN ECONOMY: SUMMARY OF THE MAIN RESULTS

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

	2004	2005	2006	2007 e	2008 e
Growth (calendar adjusted data)					
GDP in volume	2.8	2.0	2.9	2.6	1.9
Contributions to growth:					
Domestic expenditure, excluding change in stocks	2.6	2.0	2.0	3.0	2.0
Net exports of goods and services	0.2	–0.4	0.2	–0.3	0.2
Change in stocks	0.1	0.4	0.8	–0.1	–0.3
Prices and costs					
Harmonised index of consumer prices	1.9	2.5	2.3	1.8	2.9
Health index	1.6	2.2	1.8	1.7	2.6
GDP deflator	2.4	2.5	2.0	2.0	2.6
Terms of trade	–0.4	–0.3	–0.5	1.1	–0.2
Unit labour costs in the private sector	–0.5	0.8	1.4	2.2	2.1
Hourly labour costs in the private sector	2.1	2.3	2.9	2.8	3.0
Hourly productivity in the private sector	2.6	1.5	1.5	0.7	0.9
Labour market					
Domestic employment (annual average change in thousands of units)	28.1	51.1	52.7	69.5	44.8
Harmonised unemployment rate[1] (p.c. of the labour force)	8.4	8.4	8.3	7.7	7.3
Incomes					
Real disposable income of individuals	–0.2	–0.1	2.6	2.4	1.5
Savings ratio of individuals (p.c. of disposable income)	13.3	12.2	12.5	12.7	12.2
Public finances[2]					
Overall balance (p.c. of GDP)	0.0	–2.3	0.4	–0.1	–0.3
Primary balance (p.c. of GDP)	4.7	1.9	4.3	3.7	3.3
Public debt (p.c. of GDP)	94.2	92.2	88.2	85.0	82.1
Current account (according to the balance of payments, p.c. of GDP)	**3.5**	**2.6**	**2.7**	**2.9**	**2.9**

Sources: EC, NAI, NSI, NBB.

(1) Adjusted series (Eurostat).

(2) According to the methodology used in the excessive deficit procedure (EDP) and according to the Eurostat point of view (see table 3).

Interest rate policy or monetary base policy : implications for a central bank's balance sheet

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Jef Boeckx
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Introduction

The primary objective of the euro area's monetary policy is price stability. That is why the Eurosystem bases its monetary policy strategy primarily on a quantitative definition of price stability. The ECB Governing Council defines price stability as a year-on-year increase in the HICP for the euro area of less than – but close to – 2 p.c. in the medium term. There can therefore be no doubt about the ultimate objective of monetary policy, even if the medium-term orientation of this definition provides the necessary scope for a gradual approach to avoid undesirable volatility in economic activity and interest rates.

Furthermore, the monetary policy strategy is based on an analytical framework comprising two pillars, namely the economic analysis and the monetary analysis. The former assesses the economic and financial developments and the inherent risks to price stability. The latter examines developments in the money supply, lending and their components, and looks for signals of relevance for longer-term inflationary trends. Although the Eurosystem's monetary policy strategy accords an important role to the movement in the money supply, it does not react mechanically to monetary developments. In other words, movements in the money supply do not constitute an intermediate target. Nor does the economic analysis provide an intermediate objective. For example, the Eurosystem does not react mechanically to the inflation projections. In contrast, the Governing Council's decision-making process is very broad, and is based more specifically on the signals which appear relevant once both types of information have been cross-checked.

In the very short term, the Eurosystem uses its open market operations to steer the money market interest rate. This implies that, in practice, the Eurosystem conducts an interest rate policy, which means influencing the term structure of interest rates by steering the short-term interest rate, and thus also influencing the real economy, the money supply and inflation. For that purpose, at the beginning of each month the Governing Council determines the key rates which indicate the monetary policy stance. The minimum bid rate of the main refinancing operations is particularly important here. The operational framework for conducting monetary policy is designed to stabilise the overnight interest rate at the level of the minimum bid rate set by the Governing Council. Another article in this Economic Review gives a detailed description of how this mechanism works. (1) In theory, however, other options are also possible. For instance, the central bank could actively manage the monetary base, also known as central bank money (see the definition below for more details) instead of the money market interest rate, which in principle should make it possible to influence money creation on the part of credit institutions, and hence the real economy and inflation. Since the monetary base concept is closely linked to the money

(*) The authors would like to thank Serge Bertholomé, Hugues Famerée and Vincent Périlleux for helpful comments.

(1) Aucremanne, L., J. Boeckx and O. Vergote (2007): "The liquidity management of the Eurosystem during the period of financial market turmoil", *National Bank of Belgium Economic Review*, 27-41.

supply concept, and given the primary role of the money supply in the monetary policy strategy, one might even think that the monetary base is perhaps a better target. This article reviews the advantages and disadvantages of these two options and clearly explains the reasons why central banks of countries with well-developed financial markets nowadays prefer to steer short-term interest rates rather than the monetary base. Finally, the article also demonstrates that the pursuit of either of these objectives has specific consequences for the dynamics of a central bank's balance sheet and for its interpretation. More particularly, the article shows that a policy of steering interest rates implies that the central bank's balance sheet is endogenous and therefore no longer supplies information on the monetary policy stance. The sometimes abundant provision of liquidity during the period of financial turmoil that began in the summer of 2007 – and which forms the subject of another article in this Economic Review – therefore performs no function in signalling the monetary policy stance.

The article is arranged as follows. The first section briefly examines the link between the central bank balance sheet, the monetary base, the total money supply and lending. The second section focuses on the choice of either the interest rate or the monetary base as the operational target, and identifies the factors which determine the choice made by central banks. Finally, the article examines how a policy of steering interest rates affects the interpretation of a central bank's balance sheet.

1. A central bank's balance sheet and the money supply

The Eurosystem's balance sheet is closely linked to the money market. The liabilities side of the balance sheet records the monetary base, which stands for the most liquid forms of money, and central banks have a monopoly on its creation. That explains why it is also called central bank money. The monetary base comprises the fiduciary issue (banknotes and coins in circulation), the reserves (largely compulsory) held by the counterparties of the Eurosystem, and recourse to the deposit facility. The monetary base can be regarded as the basic component of the total money supply which, apart from banknotes in circulation, comprises book-entry money issued by credit institutions. The box explains the precise operation of this principle whereby "loans make deposits".

Regarding the creation of book-entry money, it should be noted that there are various forms of deposits and that it is their degree of liquidity (i.e. convertibility to means of payment) that distinguishes them from one another. Given that the nature and characteristics of financial assets, transactions and means of payment vary over time, it is not always easy, *a priori*, to define money. The movement in a number of monetary aggregates is therefore analysed, taking account of the fact that a narrow aggregate may omit movements in substitutes similar to money, while a broad aggregate may overestimate the function of money as a means of payment. These monetary aggregates differ in the degree of liquidity of the component assets.

The narrow monetary aggregate M1 comprises fiduciary money (banknotes and coins) and sight deposits. The latter can be converted into cash immediately or used for book-entry payments. The intermediate monetary aggregate M2 comprises M1 plus time deposits at up to two years and deposits redeemable at up to three months' notice. These deposits can be converted into M1 components, but in some cases there may be restrictions, such as a period of notice, penalties or fees. The difference between the intermediate monetary aggregate and the narrow aggregate (M2-M1) can be described as other short-term deposits. The broad monetary aggregate M3 comprises M2 plus certain tradable instruments issued by monetary financial institutions (MFIs), which also include credit institutions. These tradable instruments are repurchase agreements, money market fund shares/units and debt instruments with a maturity of up to two years (including money market paper). Owing to their high degree of liquidity, these instruments are close substitutes for deposits. Since they are included in M3, this aggregate is less affected by transfers between the various liquid asset categories than the narrower monetary aggregates, and is therefore more stable. The difference between the broad and intermediate aggregates (M3-M2) can be described as tradable instruments.

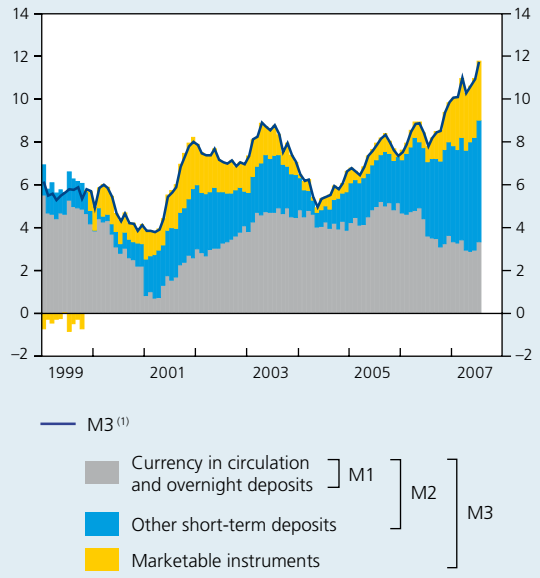
Since the creation of the European monetary union, there has been a great deal of substitution between the various M3 components, so that this broad aggregate has proved to be more stable than the narrower aggregates. In particular, since the end of 2005, the strong expansion of M3 has been less and less influenced by the narrow monetary aggregate and is increasingly affected by other short-term deposits and tradable instruments. The period of rising interest rates which began in December 2005 in fact makes cash and sight deposits less attractive than other short-term deposits or tradable debt instruments on which the remuneration stays more closely in line with money market interest rates.

So far, the interest rate hikes have only triggered substitution effects between the various components of M3, without modifying the general dynamic, as is evident from

the M3 growth which came to 11.3 p.c. in September 2007. That dynamic is driven to a considerable extent by portfolio reallocation, essentially because the relatively flat yield curve enhances the attraction of short-term investments, some of which are included in M3. Moreover, less risky assets have probably tempted more investors recently, in view of the financial market volatility. There had already been substantial portfolio reallocations previously, after the bursting of the technology bubble between 2001 and 2003, when residents had liquidated foreign assets and then invested the money in less risky assets included in M3. It is also possible that the substantial growth of the money supply is due to a structural change in behaviour causing a break in the demand for money in response to the new environment of stable prices and low interest rates. It is precisely because of the difficulty in determining in real time the extent to which demand for money is generated by a transaction motive – as that is the main type of demand affecting price stability – that the monetary analysis, important though it is, is only one of the factors influencing the Governing Council's monetary policy decisions. Moreover, it is assumed that the monetary analysis essentially signals the risks to price stability in the medium and long term. At those horizons, portfolio reallocations have a less marked effect on monetary dynamics.

CHART 1 M3 AND ITS COMPONENTS

(data adjusted for seasonal and calendar effects; contribution to the change in M3 compared to the corresponding month of the previous year, percentage points unless otherwise stated)



Source : ECB.
(1) Percentage changes compared to the corresponding month of the previous year.

Box – Money multipliers and their behaviour since 1999

The use of the term "monetary base" originates from the fact that it can be regarded as the basic component of the total money supply. Apart from banknotes and coins, it also includes the short-term deposits held with MFIs and generated in accordance with the principle that "loans make deposits". Credit institutions are able to lend to the public the reserves at their disposal. After use, these funds are re-deposited – not necessarily with the same bank, but that aspect is irrelevant since the analysis concerns the banking sector as a whole – before being lent again and re-deposited by the public. However, the monetary expansion which this process creates is limited by the reserve requirements which credit institutions have to respect and by the public's preference for banknotes.

Thus, supposing the central bank sets a 10 p.c. ratio for the reserve requirements and, via an open market operation, buys a security worth 100 from a bank. The money is paid into the reserve account, which the credit institution holds with the central bank, causing an increase in the excess reserves and hence in the monetary base of 100 (t=1). The credit institution can convert its excess reserves into a loan, so that the associated formation of a deposit will initially lead to an increase in the money supply (M) of 100 (t=2). The banks have to hold 10 p.c. of this sum in the form of required reserves. The required reserves therefore increase by 10 and the excess reserves are reduced by 10. If the public always wants to retain 10 p.c. in the form of banknotes, then the notes in circulation and the money supply increase by 10. Conversely, the excess reserves are again reduced by 10, bringing them down to 80. 80 is therefore the maximum that can be lent (t=3), which causes another increase in the required reserves and banknotes amounting to 8, while the excess reserves are reduced by the same amount each time.

If this process continues, the deposits will ultimately increase by 500 and banknotes by 50, so that the total money supply will expand by 550 while the original amount injected was 100. The ratio between the monetary base and the money supply is represented by the money multiplier $\Delta M/\Delta MB$, which in this example is 5.5.

MONEY CREATION AND THE MONEY MULTIPLIER

(consequences of the reserve requirements and the preference for banknotes)

	t = 1	t = 2		t = 3			Cumulative effect
Monetary base	+100					...	100
Reserves:							
Excess	+100	–10	–10	–8	–8	...	0
Compulsory		+10		+8		...	50
Banknotes			+10		+8	...	50
Deposits		+100		+80		...	500
Money supply		+100	+10	+80	+8	...	550

Taking account of the factors cited, it is possible to formulate a money multiplier. For this purpose, the preference for banknotes (c) and the reserve requirement ratio (r) are defined respectively as the banknotes in circulation and the required reserves as ratios of the total volume of deposits held with the MFIs. The total money supply can then be expressed as a multiple of the monetary base:

$M = (1+c)/(c+r)MB$.

This formula clearly reveals that the money multiplier declines in the event of an increase in the reserve requirement ratio or the preference for banknotes.

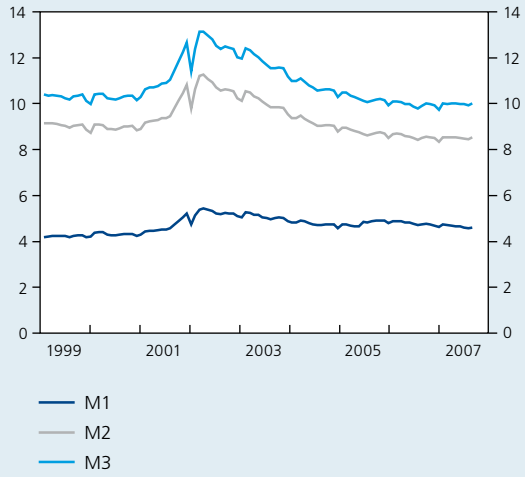
This mechanism implies that the major part of money creation takes place outside the central bank and is reflected in the consolidated balance sheet of the MFIs in the form of deposits. The banknotes and coins are also recorded on the consolidated balance sheet of the MFI sector, since the latter also comprises the central bank. The reserves which credit institutions hold with the central bank do not appear on the consolidated balance sheet, since they constitute both credit institution assets and central bank liabilities. They are therefore not included in the total money supply.

By calculating the ratio between the various monetary aggregates and the monetary base, it is possible to obtain a money multiplier for each aggregate. In this context, what matters is not so much the level of the multiplier but rather its movement over time. A stable multiplier would mean that the central bank could manage the aggregate money supply by controlling the monetary base. As will be explained later, a stable multiplier is therefore one of the conditions for steering the monetary base rather than interest rates.

Since the move to monetary union, the money multipliers initially increased before gradually reverting to their original level. That movement is attributable to the introduction of euro banknotes and coins, which briefly exerted a negative effect on the use of fiduciary money, and hence on the monetary base. This event had very little influence on the aggregate M3, since it involved substitution between two components of the broad money supply, thereby driving up the money multiplier. Although this was a single instance illustrating a very unstable multiplier, it is evident that the money multiplier is generally unstable. That instability is due to financial innovations

MONEY MULTIPLIERS

(ratios base on monthly data [1])



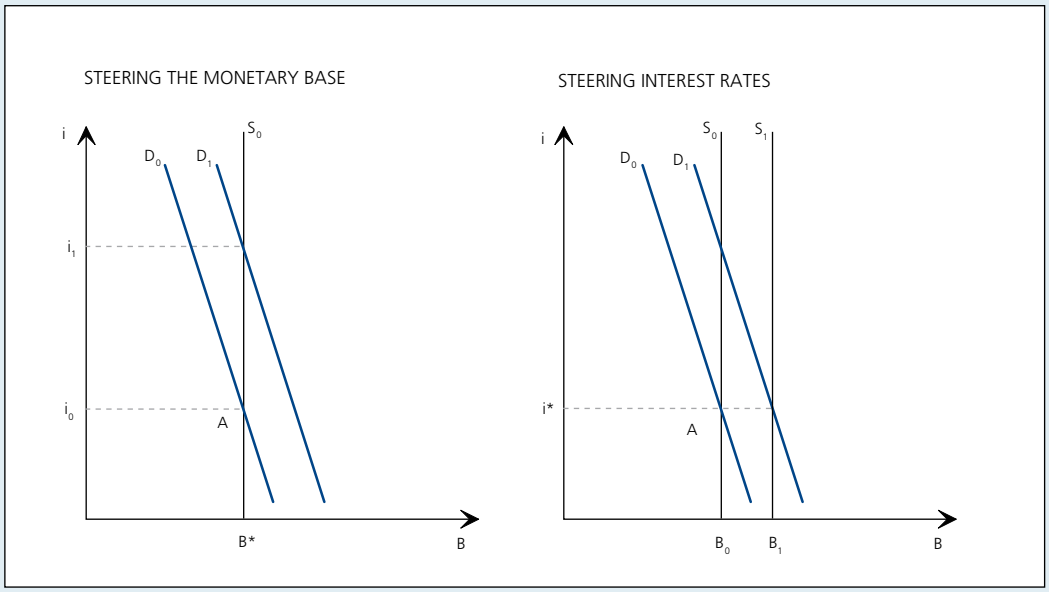
Sources : ECB, NBB.
(1) Ratio between monetary aggregates and monetary base.

and structural adjustments that are difficult for the central bank to predict. Modest fluctuations in the multipliers generate large fluctuations in the aggregates, hampering the conduct of a monetary base policy. Moreover, such a policy should be conducted from day to day, so that in this context it would be necessary to calculate the relevant variability of the money multipliers on the basis of daily data (which are not available) on the monetary aggregates, rather than monthly data. On a daily basis the multipliers are most probably even more volatile. Thus, it is rather unlikely that the granting of sometimes abundant liquidity, as occurred in the period of financial turmoil, forming the subject of a separate article in this Economic Review, will have exerted a proportionate effect on the total money supply. It therefore points instead to a sudden fall in the money multiplier (see also Bini Smaghi (2007) on this subject).

2. Monetary base policy versus interest rate policy

A central bank chooses between a monetary base policy and an interest rate policy. In so far as it has a monopoly on the creation of the monetary base, it can fix either the price i or the quantity B. In other words, it can choose a point on the liquidity demand curve and arrive at that point either by fixing the level of the monetary base or by fixing the level of interest rates. Under stable market conditions, the choice between price and quantity is irrelevant. Thus, to arrive at point A on the demand curve D_0 , the central bank can either announce a monetary base level equal to B* , which implies an interest rate i_0, or announce an interest rate equal to i* and, to achieve that, adjust the monetary base to B_0. The two procedures lead to the same outcome. However, if liquidity demand becomes unstable as a result of shocks, the effect on interest rates and on the monetary base will depend on the chosen target. Thus, in the case of a policy of steering the monetary base, if demand shifts from D_0 to D_1, the monetary base will be unchanged so that the increased demand will not be met and the interest rate will increase from i_0 to i_1. The interest rate fluctuations will be larger the lower the elasticity of demand for liquidity, which corresponds to a steep demand curve. In the case of a policy of steering interest rates, demand for extra liquidity will prompt the central bank to provide additional liquidity in order to keep the interest rate unchanged, and the monetary base will increase from B_0 to B_1. That therefore

CHART 2 IMPLICATIONS OF CONDUCTING A MONETARY BASE POLICY AND AN INTEREST RATE POLICY



implies that the monetary base may vary in the case of a policy of steering interest rates, whereas it is the interest rate that may fluctuate in the case of a policy of steering the monetary base. That is why the two procedures are mutually exclusive. If the central bank chooses to steer the interest rate, the monetary base varies and the central bank cannot control it. Conversely, if the central bank chooses to steer the monetary base, the interest rate cannot be fixed.

The choice between steering the monetary base or the interest rate depends on the stability of their relationship with the final target. The link between the instrument and the operational target is normally strong, since the refinancing operations are an efficient monetary policy instrument. However, when market conditions are unstable, the central bank may experience more problems in attaining very precisely the operational target which it has set itself (see another article in this Economic Review for a discussion of liquidity management during the recent period of financial turmoil).

The ease of controlling a monetary aggregate such as M3 by means of the monetary base depends on the stability of the money multiplier. The stability of demand for money also plays a vital role in the link between the money supply and inflation. Conversely, the transmission of a policy of steering the interest rate depends more on the interest rate term structure than on the monetary aggregates. Since the level of interest rates influences investment and consumption decisions, the stability of aggregate demand is a key factor in this case. In short, the choice between one operational target or the other can only be made by viewing the relative stability of the money multiplier and money demand in the context of the stability of aggregate demand.

Generally speaking, an economy is affected by both aggregate demand and money demand shocks. The best choice of operational target therefore does not depend on the occurrence of specific shocks, but rather on their relative strength. Using a simple model, Poole (1970) demonstrated that the choice between steering the interest rate or steering the monetary base depends on the scale of the shocks affecting the money demand in relation to those affecting aggregate demand. (1)

The effect of these various shocks can be illustrated by a graph of the IS-LM model, in which the IS curve reflects equilibrium on the goods market and LM represents equilibrium on the money market. (2) Equilibrium on the goods market implies a negative relationship between the level of interest rates (i) and economic activity (Y), because a higher interest rate makes investment and consumption less attractive. Equilibrium on the money market implies a positive relationship between interest rates and economic activity, since a higher level of activity generates increased

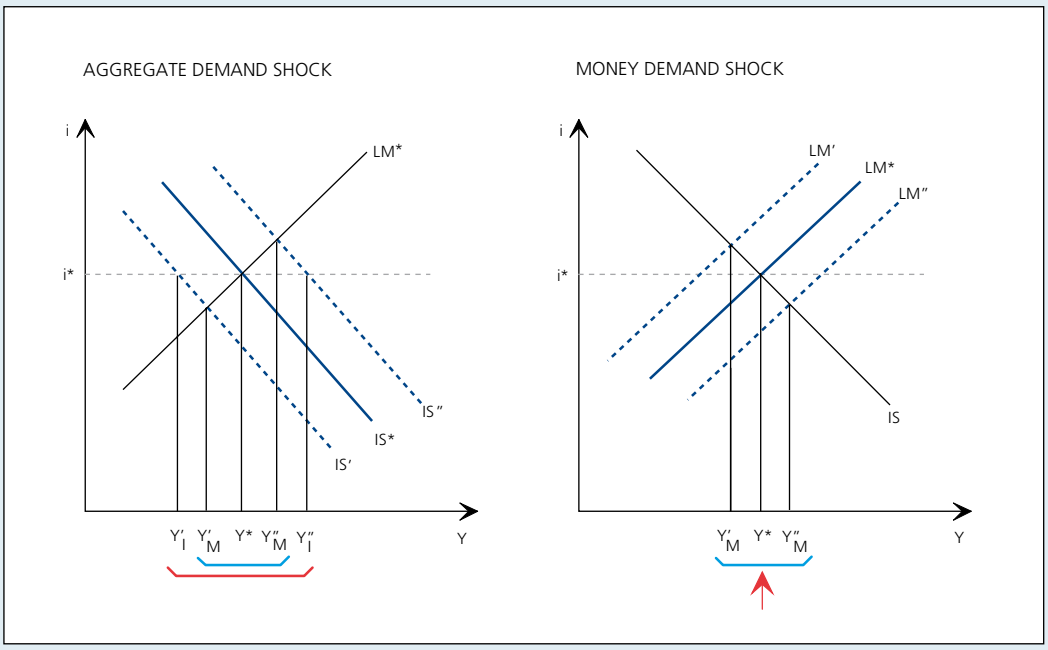
(1) Cf. Walsh (2003) for more details.
(2) Cf. e.g. Mishkin (2000).

demand for money. That in turn leads to an increase in the interest rate if the supply of money is unchanged. The two markets are simultaneously in equilibrium at the point where the two curves intersect: that is the case at interest rate i* and activity level Y*. This graph, which provides a clear illustration of the effect of the various shocks, is nevertheless based on a number of assumptions. First, for simplicity, the price level is disregarded so that inflation expectations are absent and it is only the nominal interest rate that matters (it then corresponds in fact to the expected real interest rate). Second, the ultimate aim of the central bank in this example is no longer the maintenance of price stability but stabilisation of the level of activity, which can be interpreted as the output gap. A more realistic representation of the economy should also consider the aggregate supply, which links the output gap and inflation, although that is not strictly necessary to illustrate the factors determining the choice of operational target. However, this simplified presentation is not unrealistic, since fluctuations in the output gap do in fact have an impact on inflation.

When an economy encounters shocks affecting aggregate demand, IS oscillates around its equilibrium position, IS*. In the example, the IS curve moves between IS' and IS''. If the central bank has opted for the interest rate as its operational target, it lets the money supply vary (causing a shift in the LM curve) in order to keep interest rates constant. Ultimately, output will therefore vary between Y_I' (if the shock is negative) and Y_I'' (if the shock is positive). If the operational target is the monetary base, the central bank does not intervene (LM remains unchanged), leading to variations in interest rates. These movements moderate the effect on output, which moves between Y_M' and Y_M''. In fact, a negative shock affecting demand causes interest rates to fall, curbing the contraction of activity. Conversely, a positive shock affecting demand causes interest rates to rise, slowing down the expansion of activity. Since the monetary base policy entails a smaller variation in economic activity, it is preferable in that case to opt for such a strategy rather than an interest rate policy, as to some extent it generates interest rate fluctuations which attenuate the impact on economic activity of the shocks affecting aggregate demand.

In the case of shocks affecting money demand, the LM curve becomes uncertain and unstable. The expected LM curve is LM*, but following these shocks LM oscillates between LM' (if the shock is positive) and LM'' (if the shock is negative). In the case of an interest rate policy, the money supply is adjusted to bring the LM curve back to its original level and keep interest rates unchanged.

CHART 3 CHOICE BETWEEN A MONETARY BASE POLICY AND AN INTEREST RATE POLICY



Fluctuation in economic activity in the case of an interest rate policy

Fluctuation in economic activity in the case of a monetary base policy

A constant interest rate (and an unchanged IS curve) has no effect on output. In the case of a monetary base policy, the LM curve can shift, causing interest rates to change. A rise in demand for money pushes up the interest rate, causing output to fall to Y'_M, while a decline in demand for money causes interest rates to fall so that output increases to Y''_M. As the variations in interest rates induced by a monetary base policy are not desirable in the absence of shocks affecting aggregate demand, an interest rate policy is to be preferred. Unlike the monetary base policy, it does not cause inefficient fluctuations in output in the event of shocks affecting money demand.

An interest rate policy is preferred where money demand is relatively unstable and money demand shocks predominate. Conversely, a monetary base policy is preferred where aggregate demand is relatively unstable and hence where shocks affecting aggregate demand predominate. The impact also differs according to the economy's sensitivity to the various shocks, which is reflected in the slope of the IS and LM curves. In short, the more frequent the money demand shocks and the greater their impact on the real economy – reflected in a flat IS curve and a steep LM curve – the more an interest rate policy is to be preferred.

It is clear from the box above that the money multiplier is unstable. The link between the movement in M3 and prices is also rather unstable in the short term, as portfolio adjustments may play a dominant role in determining demand for money. Moreover, the instability of money demand on a daily basis, like the money multiplier, is probably greater than suggested by the monthly data used to examine the movement in M3. The finding that instability increases in the event of a switch to a daily frequency (relevant for the operational conduct of monetary policy) is also valid for the IS curve, but probably more so for the LM curve. Consequently, that switch reinforces the comparative advantage of an interest rate policy. Applied to the sometimes large increase in demand for liquidity during the period of financial market tension which began in August 2007 – concerning money demand shocks rather than shifts in aggregate demand – this framework implies that it is desirable to stabilise interest rates in such an environment (see also Noyer (2007) on this subject).

Like the Eurosystem, many central banks of industrialised countries with well-developed financial markets display a preference for an interest rate policy. Interest rates also make it possible to give a clear signal, probably better than a monetary base policy where opposing movements in the different aggregates could cause confusion. Moreover, money market interest rates can be constantly monitored, making this policy more transparent, whereas the aggregates can only be examined less frequently and after a time lag. Lower interest rate volatility also makes it easier for banks to manage their liquidity.

The fact that the Eurosystem's operational framework gives priority to interest rates does not, however, imply that monetary developments are of no importance in the attainment of the ultimate objective, namely price stability. The growth of the money supply is not steered, but it is examined as an element in the monetary analysis which, like the economic analysis, forms a separate pillar of the Eurosystem's monetary policy strategy. That key role is based in particular on the close link apparent in the past between fundamental movements in the growth of the money supply and fundamental movements in inflation. These fundamental movements are based on medium- and long-term developments, i.e. horizons relevant for the monetary analysis. At those horizons, the instability problems mentioned above, which could seriously disrupt the operational conduct of monetary policy, are in principle less acute. However, as already stated, a detailed analysis of monetary developments is still needed in order to arrive at an accurate assessment of their impact on price stability.

3. Implications of an interest rate policy for a central bank's balance sheet

The choice of the operational target has implications for the movement in, and interpretation of, the items on a central bank's balance sheet and short-term interest rates. If a central bank opts for an interest rate policy, the rate signals the monetary policy stance. Money market liquidity is managed in order to align money market interest rates with the key interest rate. Even under tense market conditions such as those experienced since August 2007, appropriate liquidity management enabled the Eurosystem to preserve the signalling function of the monetary policy stance performed by money market interest rates. The supply of liquidity is therefore adjusted to demand, so that fluctuations in demand for liquidity cause changes in the balance sheet items of the central bank, making that balance sheet endogenous. Thus, the amount of banknotes recorded on the consolidated balance sheet of the Eurosystem reflects demand at the prevailing interest rate, so that the banknotes can be regarded as an autonomous factor in an analytical presentation of the Eurosystem's consolidated balance sheet. The amount of the current account assets held with the Eurosystem reflects the banking system's demand for central bank reserves. That also means that the sometimes substantial injections of liquidity, implying a strong increase in current account assets held with the Eurosystem, do not give any signal

regarding the monetary policy stance, and in particular do not herald any easing of policy.

Furthermore, the reserve requirements are not an active monetary policy instrument. Although in theory they make it possible to curb money creation, this is not an efficient instrument. In particular, it would be necessary to make tiny adjustments to the reserve ratio in order to adjust the money supply, while the effect of those adjustments would be difficult to estimate in view of the instability of the money multiplier. Moreover, frequent changes to the reserve ratio would make it singularly complicated for credit institutions to manage their liquidity. Conversely, the reserves do perform two other more technical functions in the Eurosystem's operational framework. First, the reserve requirements generate automatic demand for central bank reserves, thus boosting the structural demand for liquidity. Credit institutions therefore depend on the Eurosystem to satisfy this refinancing requirement, which facilitates liquidity management. Second, they act as a liquidity buffer, facilitating the banks' liquidity management. It is precisely because the reserve requirement applies to the average assets held on current accounts with the Eurosystem over the reserve maintenance period that credit institutions can easily smooth the effects of unexpected variations in liquidity. This mechanism is also intended to stabilise money market interest rates during the reserve maintenance period, an effect which obviously disappears at the end of that period. In the case of the Eurosystem, the reserve requirements therefore have an operational function independent of the monetary policy stance which the Governing Council wishes to signal.

Conclusion

This article looked at the link between the balance sheet of a central bank, the monetary base, the monetary aggregates and lending in the euro area. It also considered how these elements influence the Eurosystem's ultimate objective, namely price stability. In addition, it paid special attention to the choice of the operational target. It emerged that conditions are more favourable to the conduct of an interest rate policy than the conduct of a monetary base policy, as the uncertainty generated by money demand shocks and money multiplier instability is more apparent than that generated by aggregate demand shocks, particularly in the very short term which is the relevant horizon for the operational conduct of monetary policy. That is why the central banks of countries with well-developed financial markets currently conduct an interest rate policy.

The pursuit of an interest rate policy implies that the central bank's balance sheet is endogenous. Demand for liquidity is satisfied by the central bank in order to stabilise the interest rate at the desired level. Fluctuations in demand for liquidity therefore lead to changes in the balance sheet items. That also indicates that it is not the monetary base but rather interest rates that signal the monetary policy stance. The choice of an interest rate policy is not at odds with the important role of money in the Eurosystem's monetary policy strategy. Attainment of the ultimate objective in fact concerns a different horizon – the medium term, according to the definition of price stability – as opposed to the operational conduct of monetary policy where it is the very short term that matters. The comparative advantage of monetary analysis as an indicator of risks to price stability applies primarily in the medium and long term.

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The liquidity management of the Eurosystem during the period of financial turmoil

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Jef Boeckx
Olivier Vergote *

Introduction

The Eurosystem has regularly faced very strong demand for liquidity from the euro area banking sector since 9 August 2007, after the tension on the American sub-prime mortgage market spread to other market segments and other economic regions. This article describes the way in which the Eurosystem responded to this increased demand for liquidity via its open market operations. In so doing, it discusses the liquidity management during the period between 8 August and 13 November – the last day of the tenth reserve maintenance period in 2007, which is also the cut-off date for the information used in this article – thus raising the question whether the supply of additional liquidity during that period plays any role in signalling the monetary policy stance. Supplying extra liquidity for the market could in fact be seen as a factor encouraging money creation and therefore indicating an easing of monetary policy.

Nevertheless, the Eurosystem's monetary policy stance is clearly determined by the level of the key interest rates, and more specifically the minimum bid rate applied to the main refinancing operations: these are weekly open market operations which, as will become apparent, generally cover most of the liquidity needs of the resident banking sector. Since that rate remained unchanged during the period considered, the monetary policy stance also remained the same. The operational framework used to implement monetary policy is designed to adjust the liquidity supply to demand, so that the very short-term interest rates on the money market settle down at levels close to the minimum bid rate. That therefore maximises the signalling function on the monetary policy stance. This implies that the Eurosystem conducts an interest rate policy in which both the liquidity supply and the structure of its balance sheet become endogenous, and therefore cease to provide information on the monetary policy stance. The central banks of other industrialised countries with well-developed financial markets have also opted to conduct an interest rate policy. Another article in this Economic Review explains why it is usual to adopt an interest rate policy, and how that choice affects the interpretation of central bank balance sheets(1).

The article is structured as follows. The first section deals with the Eurosystem's key intrest rates. The second section discusses the Eurosystem's liquidity management under normal circumstances. The third section explains how the Eurosystem managed the liquidity situation during the period from the beginning of August to mid November 2007, in the context of the turbulence on the money market. The final section summarises the main conclusions.

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(1) Aucremanne L., J. Boeckx and O. Vergote (2007), Interest rate policy or monetary base policy: implications for a central bank's balance sheet, Economic Review of the National Bank of Belgium, III, 17-26.

1. The Eurosystem's key rates

At the start of each month, the ECB Governing Council discusses the monetary policy stance to be adopted. For that purpose, it conducts a structured analysis of all the relevant economic information at its disposal. On the basis of that economic and monetary analysis, it systematically considers the risks to price stability and consequently determines the key interest rates of the Eurosystem[1].

The ECB Governing Council indicates the monetary policy stance by setting the minimum bid rate for the main refinancing operations. In 2007, that rate was raised from 3.5 to 3.75 p.c. in March, before being increased again to 4 p.c. in June. While a further tightening of monetary policy was widely expected in the early summer – as the Governing Council had hinted at that in its communication –, this expectation faded during August. Subsequently, the Governing Council effectively kept the minimum bid rate unchanged after each of its monthly discussions. On each occasion it stated that, in view of the increased uncertainty, it would need to obtain additional information before drawing further conclusions for monetary policy.

The other two key rates of the Eurosystem form a symmetrical corridor of 100 basis points on either side of the minimum bid rate. The rate of the marginal lending facility, which enables banks facing unexpected liquidity needs to obtain overnight credit backed by eligible assets, has stood at 5 p.c. since June 2007, whereas the rate of the deposit facility, which offers banks the opportunity to deposit surplus liquidity overnight, has been 3 p.c. since then. The overnight interest rates fluctuate within those margins, because if the interbank interest rates were higher or lower, that would imply that banks could borrow or deposit funds on more advantageous terms with the Eurosystem than on the interbank market. Furthermore, the rates applicable to these standing facilities are so punitive compared to the minimum bid rate that banks are strongly encouraged to deposit their surpluses and cover their deficits on the interbank market before resorting to the Eurosystem's standing facilities.

By active liquidity management – i.e. by adjusting the supply of liquidity in line with demand from the banking system – the Eurosystem is able to influence short-term interest rates on the interbank market to bring them into line with the minimum bid rate. It thus tries to safeguard the signal reflecting the monetary policy stance. To that end, an operational framework was developed: the way in which it functions is explained below, both under normal market conditions and during the last three reserve maintenance periods when demand for liquidity was sometimes very strong. These broadly correspond to the period from the beginning of August to mid November 2007.

2. Steering money market interest rates under normal conditions: liquidity management by the Eurosystem in the first seven reserve maintenance periods in 2007

The Eurosystem's consolidated balance sheet offers an overview of the liquidity supply and demand. The assets side of the balance sheet shows liquidity-providing items, while the liabilities side records items which are liquidity-absorbing. To understand the essence of the operational framework of monetary policy, it is sufficient to refer to a simplified presentation of the Eurosystem balance sheet in which all items are divided into three main categories: autonomous liquidity factors, current account holdings of credit institutions – known as the reserves – and monetary policy instruments.

Three factors explain the banks' liquidity needs: autonomous liquidity factors, reserve requirements and any excess reserves. The autonomous factors are determined either by the public's behaviour or by institutional arrangements, so that the Eurosystem generally has no influence over them[2]. Examples are the banknotes in circulation and government deposits on the accounts of certain central banks. Since the sum of these factors is higher on the liabilities side than on the assets side, the banking sector faces a structural liquidity deficit vis-à-vis the Eurosystem.

A second important component of the liquidiity needs consists of the minimum reserve requirements imposed on credit institutions. The amount of the reserves to be maintained is determined for each credit institution according to the reserve basis, which includes the majority of its short-term liabilities. It is calculated by multiplying the reserve basis by the 2 p.c. reserve ratio. Credit institutions can deduct a lump-sum allowance from their minimum reserve requirements in order to reduce the administrative expense of managing very small reserve requirements. The minimum reserves must be maintained on average over the reserve maintenance period, so that the current account holdings of credit institutions may – subject to that constraint – fluctuate freely in relation to the amount of the reserves to be maintained. Since March 2004, the

(1) Chapter 4 of the ECB publication entitled "The monetary policy of the ECB" gives a more detailed account of the ECB's monetary policy strategy.

(2) The movements in the autonomous liquidity factors resulting from possible intervention by the Eurosystem on the foreign exchange markets are an exception to this rule. However, there is no direct link between these and the implementation of monetary policy.

length of the reserve maintenance periods has been about one month, since they start on the settlement date of the first main refinancing operation following the Governing Council meeting at which the monetary policy decision was taken, and end the day before the corresponding settlement day in the next month. The current account holdings maintained by credit institutions are remunerated up to the level of the reserve requirement, so that the system of minimum reserve requirements does not impose any additional costs on the banking sector. The remuneration corresponds to the average, over the reserve maintenance period, of the marginal rate of allotment on the main refinancing operations.

Any unremunerated excess reserves, i.e. the (usually small) amount which credit institutions hold on their current accounts with the Eurosystem in excess of the minimum reserve requirements, constitute the third component of the banks' liquidity requirements.

It is precisely because credit institutions face structural liquidity needs which can only be met by the central bank that the latter is able to steer the overnight interest rate by adjusting the liquidity which it provides. In this connection it should be mentioned that credit institutions can obtain liquidity from the Eurosystem only on presentation of adequate collateral (ECB, 2006). The Eurosystem accepts a broad range of assets as collateral, from government bonds to asset-backed securities. This is intended to prevent credit institutions from being unable to obtain liquidity purely because they do not have adequate collateral.

A substantial part of the liquidity needs of credit institutions is covered by the longer-term refinancing operations. These operations, conducted monthly with a three-month maturity, offer credit institutions a stable source of financing. The Governing Council decided to allot an amount of 50 billion euro in each operation from 1 February 2007, so that the outstanding total of the longer-term refinancing operations has stood at 150 billion euro since the end of March. However, as will become apparent later in this article, that amount increased further during the period of money market turmoil. As the longer-term refinancing operations are not intended to signal the monetary policy stance, they are usually executed by variable rate tenders with a pre-announced volume. That means that the bids offering the highest interest rates are allotted first, followed by the lower rate bids until the total liquidity available for allotment has been exhausted. At the lowest interest rate accepted, called the marginal rate, bids are allotted pro rata. For each individual allotment, the interest rate applied is the rate offered by the counterparty, so that it is possible to calculate a weighted average rate.

The Eurosystem generally covers the bulk of the credit institutions' liquidity needs via the weekly main refinancing operations. These operations with a maturity of one week are conducted via variable rate tenders. The lowest interest rate which credit institutions can bid, known as the minimum bid rate, is fixed each month by the Governing Council and is intended to signal the monetary policy stance. In order to provide the counterparties with sufficient information on the total liquidity needs of the

TABLE 1 CONSOLIDATED AND SIMPLIFIED BALANCE SHEET OF THE EUROSYSTEM

(average daily outstanding totals during the first seven reserve maintenance periods in 2007, billions of euro)

Assets		Liabilities	
Autonomous liquidity factors		**Autonomous liquidity factors**	
Net foreign assets	322.78	Banknotes in circulation	620.11
Other autonomous factors (net)	98.13	Government deposits	49.87
		Current account holdings including the minimum reserve requirements	**184.35**
Monetary policy instruments		**Monetary policy instruments**	
Main refinancing operations	290.35		
Longer-term refinancing operations	143.65	Fine-tuning operations (net)	0.49
Marginal lending facility	0.23	Deposit facility	0.32
Total	**855.13**	**Total**	**855.13**

Source: ECB.

banking sector, the ECB publishes forecasts of the consolidated liquidity needs, and these are used as the basis for calculating the benchmark allotment (ECB, 2004b). This benchmark allotment is calculated in such a way that the amount, if allotted, would enable the credit institutions to meet their reserve requirements smoothly, up to the day before the settlement of the next main refinancing operation. For that purpose, account is taken of the liquidity already allotted via the longer-term refinancing operations and other open market operations, the liquidity imbalance which has already accumulated since the start of the reserve maintenance period, and an estimate of future movements in both the autonomous factors and the excess reserves. This benchmark allotment enables credit institutions to decide the amount of their bid. Moreover, since March 2004 the Eurosystem has published, on the day of allotment of the main refinancing operation, an update of the benchmark allotment published the day before when the main refinancing operation was announced. Since 1 January 2005, in an effort to reduce the positive, though – under normal market conditions – small, difference between the minimum bid rate and the overnight rate, the Eurosystem has regularly opted to conduct a generous allotment policy consisting in allocating a volume of liquidity slightly greater than the benchmark allotment announced prior to each weekly tender. The (positive) difference between the amount actually allotted and the benchmark allotment thus always came to 1.00 billion euro in the first seven reserve maintenance periods of 2007. For 2006, the average difference came to 1.37 billion euro. A larger positive difference increases the probability of excess provision of liquidity at the end of the reserve maintenance period, exerting downward pressure on short-term interest rates. Conversely, allotting a smaller amount would exert upward pressure on short-term interest rates.

The Eurosystem may also conduct fine-tuning operations. These may take the form of liquidity-providing or liquidity-absorbing operations. This instrument enables the Eurosystem to attenuate abnormal fluctuations in the overnight interest rate in relation to the minimum bid rate on the main refinancing operations. Fine-tuning operations are conducted mainly at the end of the reserve maintenance periods. Credit institutions have to meet their reserve requirements on average over the reserve maintenance period, so that they can allow their current account holdings to fluctuate freely at the start of the period. However, since the reserve requirements become binding towards the end of the period, there can be significant movements in money market rates, which the Eurosystem will try to attenuate by adjusting the liquidity which it provides via the fine-tuning operations. Thus, in the first seven reserve maintenance periods in 2007, six fine-tuning operations were conducted, each of them taking place on the last day of the reserve maintenance period. On 13 February and 10 July, additional liquidity was provided totalling 2 and 2.5 billion euro respectively. Excess liquidity was absorbed on the following occasions : 2.3 billion euro on 13 March, 22.5 billion on 17 April, 2.46 billion on 14 May and 6 billion on 12 June.[1] In 2006, the Eurosystem had used fine-tuning operations on eleven occasions, each time on the last day of the reserve maintenance period. In absolute terms, the amounts of these operations averaged 9.9 billion euro.

In order to absorb residual liquidity imbalances (deficits or surpluses) of individual credit institutions, the Eurosystem set up standing facilities. Any surplus liquidity can be deposited on the deposit facility, while the marginal lending facility can be used to obtain liquidity until the next morning. It is mainly at the end of the reserve maintenance period that banks use the standing facilities. In the first seven reserve maintenance periods of 2007, an average of 231 million euro was borrowed each day via the marginal lending facility, while an average of 321 million euro a day was placed in the deposit facility. Use of the standing facilities on the last day of the reserve maintenance period has a considerable influence on these average amounts.

As usual, the credit institutions' recourse to the standing facilities has been marginal overall, notably because of the punitive level of the associated interest rates. Moreover, the open market operations cover more or less all the banks' liquidity needs, in accordance with the principle of neutrality adopted by the Eurosystem in regard to its liquidity management, the aim being to avoid any systematic bias in the use of the standing facilities.

The Eurosystem's operational framework made it possible to stabilise the overnight rate around the desired level in the first seven reserve maintenance periods of 2007. Thus, the average daily spread, in absolute terms, between the Eonia[2] and the minimum bid rate of the main refinancing operations was 7 basis points, and only rarely did it exceed 20 basis points. Also in 2006, the Eurosystem succeeded in keeping the overnight rate at a level very close to the minimum bid rate, even on the last day of the reserve maintenance period, when unexpected fluctuations in liquidity are more likely (NBB, 2007).

(1) The total of liquidity-absorbing fine-tuning operations was constantly higher between 1 January and 30 April 2007 owing to accounting reasons related to Slovenia's accession to the monetary union. Those amounts are disregarded here.

(2) The Eonia is an effective overnight rate, calculated as the weighted average of the rates charged on unsecured loans by a panel of 49 banks on the interbank overnight market in the euro area.

3. Facing strong demand for liquidity: liquidity management by the Eurosystem between 8 August and 13 November 2007

As described above, the Eurosystem's operational framework had already proved its soundness under normal market conditions. In the last three reserve maintenance periods, it has also proved capable of coping successfully with episodes of very strong demand for liquidity, and – even when market conditions were strained – satisfactorily stabilising the interest rates of the shortest segment of the money market around the minimum bid rate. As will become apparent in the chronological account of liquidity management below, during this period of tension on the financial markets, the practical implementation of the operational framework – which remained unchanged – differed in three respects from what happens under normal market conditions. First, at the start of the reserve maintenance period, there was less reliance on the benchmark amounts as a guide for determining the amounts actually allotted in the main refinancing operations, in an attempt to keep the marginal rate on those operations close to the minimum bid rate. This policy responded to demand for frontloading from the banking sector, i.e. the banks wanted to be able to meet the reserve requirements more than proportionately at the start of the reserve maintenance period. In this way, it was the timing of the provision of liquidity during the reserve maintenance period that was altered, while the total amount allotted over the same period was unaffected. Second, greater use was made of fine-tuning operations, initially for the purpose of injecting liquidity and then, at the end of the reserve maintenance period, in order to absorb liquidity when it became apparent that the additional supply was beginning to exert downward pressure on the overnight interest rate. Consequently, both the number of fine-tuning operations – which in fact no longer took place solely on the last day of the reserve maintenance period – and their volume was stepped up. Third, the amount allotted in the longer-term refinancing operations was increased considerably on two occasions, to ensure that the credit institutions had a larger volume of liquidity available over three months.

3.1 Reserve maintenance period ending on 11 September 2007

The reserve maintenance period running from 8 August to 11 September started under normal market conditions: as usual, the volume allotted in the first main refinancing operation slightly exceeded the benchmark amount (by one billion euro). On the second day of the reserve maintenance period, however, the Eurosystem was forced to conduct additional open market operations. On the morning of 9 August, the money market was unsettled by a sudden rise in the overnight rate (from 4.1 to 4.7 p.c.) following a surge in demand from credit institutions for current account holdings with the Eurosystem. This was caused by the growing tension on the American money market and the European banks' fear that they would get into difficulty following the turmoil on the American sub-prime mortgage market (cf. box 1). Having expressed its concern during the morning, the Eurosystem injected liquidity via an overnight fine-tuning operation in order to stabilise the overnight interest rate. This operation took the form of a fixed-rate tender at 4 p.c. (corresponding to the minimum bid rate), with the prior announcement that all the bids would be fulfilled. Forty-nine credit institutions submitted bids for a total of 94.8 billion euro with an overnight maturity. The overnight interest rate thus subsided to a level close to the minimum bid rate, so that the Eonia – which is an average daily rate – came to 4.22 p.c. on that day.

On the morning of 10 August, the ECB decided to conduct another overnight fine-tuning operation as the liquidity injected by the previous day's fine-tuning operation would disappear from the market, being an overnight operation. This was conducted as a variable rate tender without prior announcement of the amount of the allotment. This would enable the Eurosystem to gain a clearer idea of the demand for liquidity from the banking sector. Sixty-two credit institutions submitted bids for a total of 110 billion euro at interest rates ranging between 4.00 and 4.15 p.c. The ECB decided to allot liquidity for all bids at a rate equal to or exceeding the marginal rate of 4.05 p.c., so that 61.1 billion euro was allotted until the next working day at a weighted average rate of 4.08 p.c. This brought the Eonia down to 4.14 p.c. on that date.

On Monday, 13 August, in a context of very subdued activity on the money market, the ECB conducted another fine-tuning operation with a specification similar to that of 10 August. Fifty-nine counterparties submitted bids for a total of 84.4 billion euro at interest rates ranging between 4.00 and 4.10 p.c. The Eurosystem decided to allot liquidity to all bids at or above 4.06 p.c., so that 47.4 billion euro was allotted at a weighted average rate of 4.07 p.c. The Eonia stood at 4.10 p.c. on 13 August.

On the morning of 14 August, the Eurosystem decided to conduct another overnight fine-tuning operation in addition to the weekly main refinancing operation, in order to meet the additional need for liquidity which might arise from the fact that the main refinancing operation allotted on that day would not be settled until the next day.

Once again, the fine-tuning operation was conducted by means of a variable rate tender without a pre-announced allotment amount. Bids were submitted for a total of 46 billion euro, and the rates offered ranged between 4.00 and 4.09 p.c. All bids at rates equal to or exceeding 4.07 p.c. were fulfilled, so that 7.7 billion euro was allotted at a weighted average rate of 4.07 p.c. Apart from this fine-tuning operation, the ECB decided to allot 73.5 billion euro more than the benchmark amount in the main refinancing operation on 14 August. This operation aimed to prevent the outflows in the current account holdings of credit institutions which would have resulted from the "mechanical" allotment of the benchmark volume, because that amount takes account of the past current account holdings in estimating the liquidity needs arising from the reserve requirements which have to be met on average during the period in question. As a result of the ample supply of liquidity which, under normal circumstances, would have caused demand to moderate during the rest of the reserve maintenance period, those holdings had increased sharply in the initial weeks of the reserve maintenance period. However, that automatic neutralisation was at odds with the tension on the money market, since demand for liquidity remained high. The marginal rate and the average rate of the main refinancing operation mentioned above stood at 4.08 and 4.10 p.c. respectively. After this allotment in excess of the benchmark volume, the Eonia stabilised over the next few days in the region of 4 p.c.

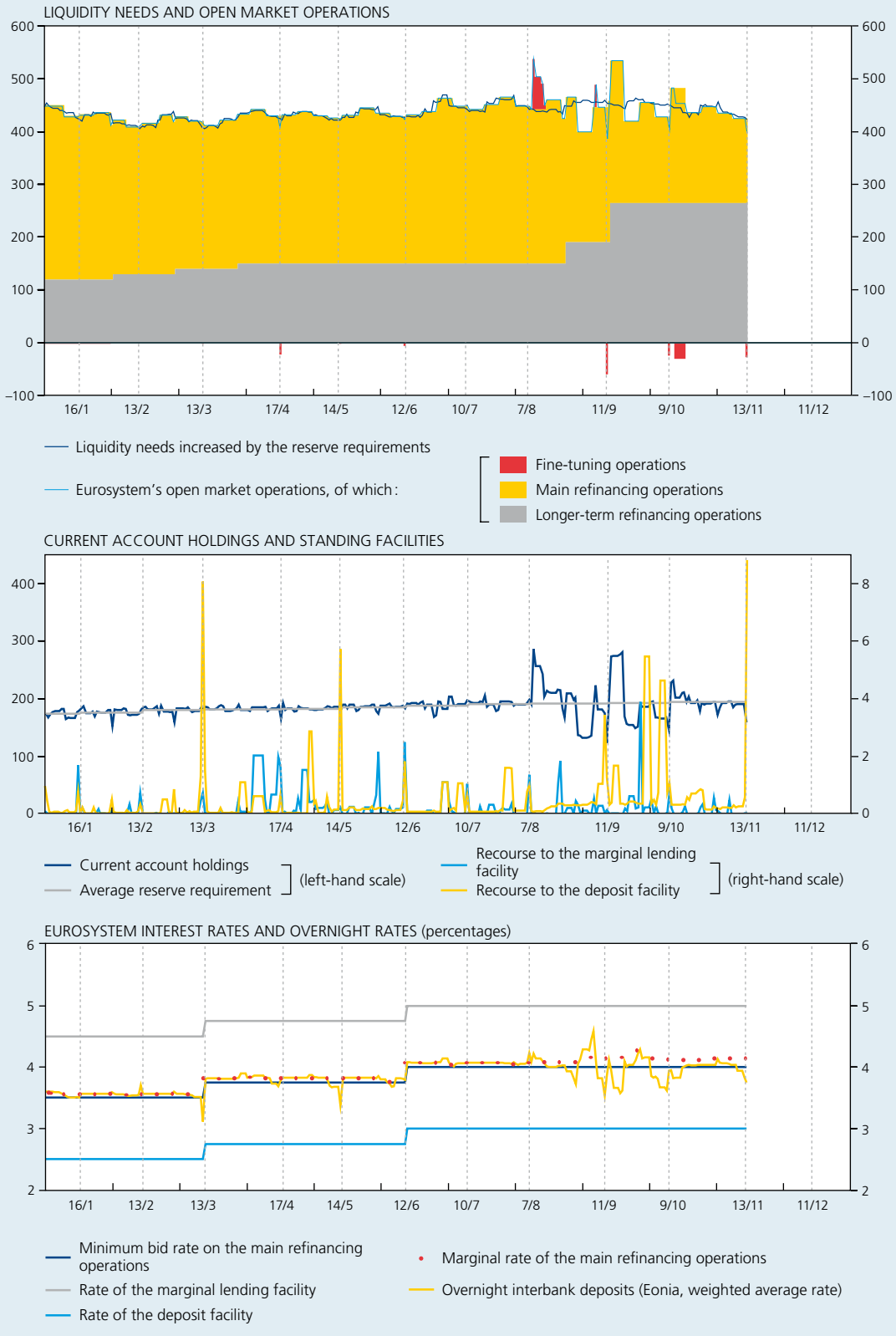
Since substantial excess reserves had accumulated in the initial weeks of the reserve maintenance period, the ECB decided to set the allotment volume of the main refinancing operations on 21 August, 28 August and 4 September at a level which would permit a gradual reduction in the current account holdings. On 22 August, the ECB Governing Council also decided to conduct an additional longer-term refinancing operation, as financing needs were particularly acute on this money market segment given the sharp rise in the three-month interbank rate. This operation injected 40 billion euro into the market on 24 August, for a three-month period, at a marginal rate of 4.49 p.c. and a weighted average rate of 4.61 p.c. The Eurosystem announced that this operation would not affect the regular monthly longer-term refinancing operations, but that the amount allotted in the main refinancing operations would compensate for this supply of liquidity. In the main refinancing operation on 21 August, 46 billion euro more than the benchmark amount was allotted at a marginal rate of 4.08 p.c. and a weighted average rate of 4.09 p.c. Following this relatively substantial injection of liquidity, the Eonia declined significantly to around 3.7 p.c. in the week following the operation. In the main refinancing operation on 28 August, the amount allotted was 14.5 billion greater than the benchmark volume at a marginal rate of 4.08 p.c. and a weighted average rate of 4.09 p.c. From 28 August onwards the Eonia began rising steadily again. On 29 August one of the regular longer-term refinancing operations reached maturity. In line with normal practice it was renewed and 50 billion euro was allotted, though without increasing the overall outstanding amount. The marginal rate and the weighted average rate of this operation came to 4.56 and 4.62 p.c. respectively.

On 4 September, the ECB allotted 5 billion euro more than the benchmark amount in the last main refinancing operation, despite the approaching end of the reserve maintenance period, a time when the ECB normally tries to achieve balanced liquidity conditions in order to avoid large fluctuations in the overnight rate. However, this operation proved to be less generous than the credit institutions expected, as the marginal rate and the weighted average rate came to 4.15 and 4.19 p.c. respectively. There was therefore renewed tension on the short-term segment of the money market, and the overnight interest rate climbed to 4.70 p.c. in the morning of 5 September, whereupon the Eurosystem announced that it was monitoring the situation closely and was standing by to intervene if necessary. On 6 September it therefore conducted a variable rate fine-tuning operation with an overnight maturity, which injected 42.2 billion euro into the market. The marginal rate on this operation came to 4.06 p.c., well below the level of the marginal rate on the last main refinancing operation. The weighted average rate on this operation came to 4.13 p.c. The Eonia therefore declined on that date, falling to 4.05 p.c. The Governing Council decided on that same day not to adjust the key interest rates and to conduct another three-month longer term refinancing operation with no pre-announced allotment volume on 12 September, in order to help the money market to return to normal.

Given the abundant liquidity, the current account holdings were well in excess of the level needed to meet the reserve requirements. At the end of the reserve maintenance period, this inevitably depresses the overnight interest rate so that the Eonia declined to 3.54 p.c. on 10 September, its lowest level in that reserve maintenance period. In order to halt this downward pressure, on 11 September – the last day of the reserve maintenance period in question – the Eurosystem conducted a liquidity-absorbing fine-tuning operation. This operation withdrew 60 billion euro from the market at a rate of 4.00 p.c. so that the Eonia climbed back up to 3.87 p.c.

CHART 1 THE LIQUIDITY MANAGEMENT OF THE EUROSYSTEM [1]

(daily outstanding amounts, billions of euro unless otherwise stated)



Source: ECB.

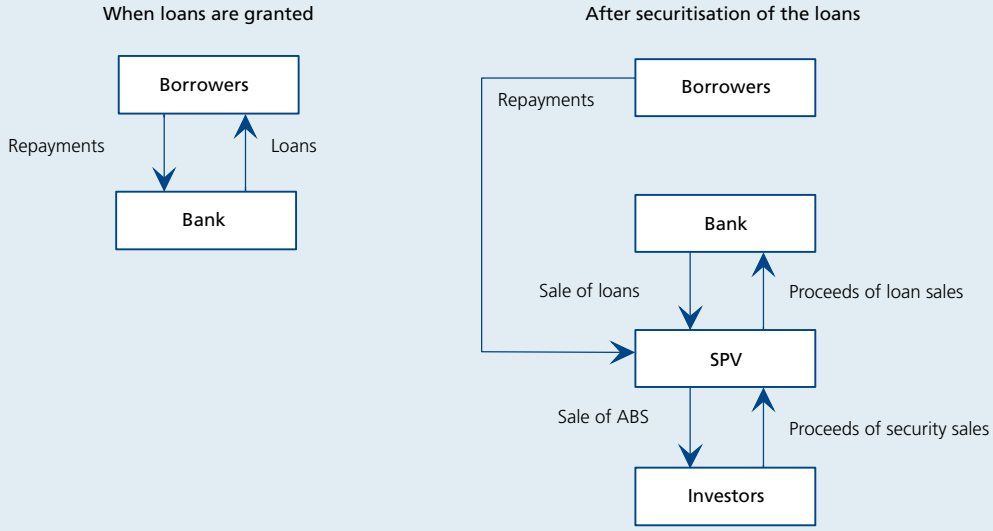
(1) The vertical grey lines indicate the last day of the reserve maintenance periods.

Box 1 – Causes of the liquidity shortage

This box examines how the problems affecting a relatively small market such as the United States sub-prime mortgage market (a market in mortgage loans to borrowers with a particularly poor credit rating) had global repercussions on other segments of the financial markets, eventually creating a liquidity shortage on the money markets necessitating central bank intervention. Securitisation played a key role in these events.

Loans granted by a credit institution are traditionally recorded on its balance sheet until maturity. However, securitisation enables the bank to remove these illiquid assets from its balance sheet and convert them into liquid assets via an entity set up specifically for that purpose (also known as a Special Purpose Vehicle, SPV). An SPV has its own legal personality and is therefore separate from the bank which set it up (bankruptcy remote). Nevertheless, it may have a back-up credit line with that bank.

THE CREATION OF STRUCTURED FINANCING INSTRUMENTS VIA SECURITISATION



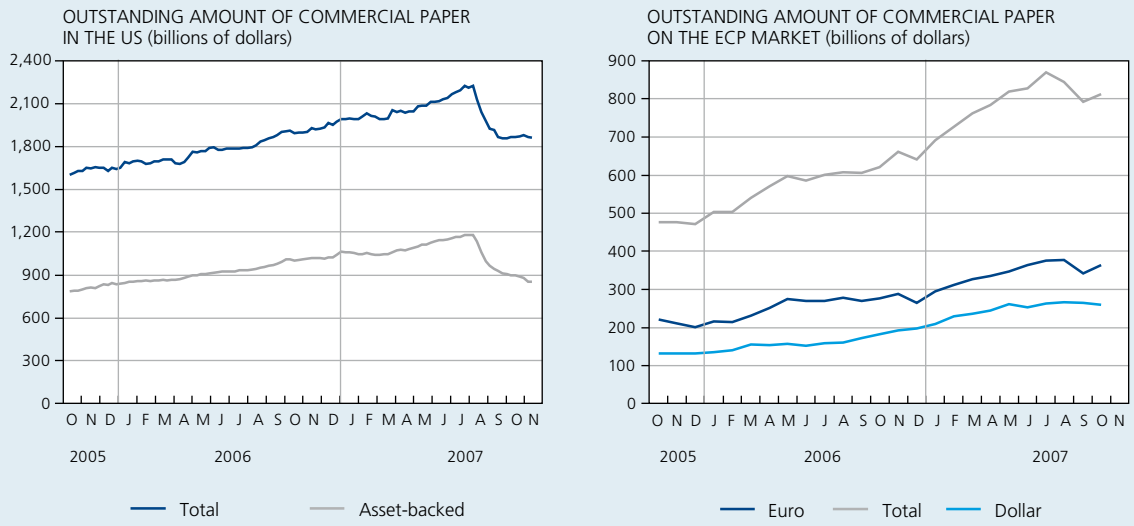
In the case of conventional securitisation, the loans of a credit institution are pooled and sold to the SPV (this is called true sale securitisation). Afterwards, the loans are repaid to the SPV, enabling the SPV in turn to repay its investors. In contrast, in the case of synthetic securitisation, only the credit risk is transferred, and not the loans. This form of securitisation is effected via derivatives (credit default swaps) which enable a bank to hedge against the risk of default.

In the case of "conventional" pass-through securitisation, the cash-flows are passed on without distinction to the investors as they come in, but securities issued via SPVs are currently often split up and divided into tranches, thus creating structured financing instruments. Each tranche has a risk profile which reflects the allocation of the losses and gains on the underlying assets among the various tranches (subordination), making it possible to issue a certain number of securities with a high rating such as AAA or AA (credit enhancement). The new instruments (known as asset-backed securities, ABS) are ultimately sold with different ratings. Some entities, such as asset-backed commercial paper conduits (ABCP conduits) and structured investment vehicles (SIVs), which invest in these

products, issue short-term paper to finance their longer-term assets. By investing long and lending short, they incur a liquidity risk in the same way as a traditional bank.

As a result of securitisation, the risks are no longer concentrated on the bank but spread through the financial system. In itself, that risk dispersion is welcome, but it now makes it very difficult to locate the risks. The lack of transparency regarding the effective exposure resulting from these complex structures has heightened the uncertainty. Since some of these products may be highly complex, it is a major challenge to value them at a time of tensions on the financial markets. These valuation problems were most acute in the case of products with a direct or indirect exposure to sub-prime mortgages, but they also emerged in the form of higher risk premiums for other structured financing instruments. The market in some debt instruments dried up owing to the information asymmetries, as demonstrated by Akerlof's analysis of the "market for lemons" (Akerlof, 1970, in which the *lemons* are defective second-hand cars). In the end, it was not only mortgage-backed securities that came under pressure, but the entire ABS market.

THE MARKET IN COMMERCIAL PAPER



Sources : Euroclear, Federal Reserve.

Owing to the increased risk aversion, it became difficult for the above-mentioned entities to raise finance by issuing short-term commercial paper (CP). The commercial paper market in the United States is huge. Before the crisis erupted, the outstanding amount of CP was around 2,225 billion dollars, which illustrates the market's success. However, by mid-October 2007, this figure had already fallen by 16 p.c. to 1,869 billion dollars and it has remained around that level since then. That decline was due to the massive fall in ABCP, which amounted to 27.5 p.c. mid-November. In the euro area, on the other hand, the market is still highly segmented, but the market in euro commercial paper (ECP), which transcends international borders, is gaining in importance. In July 2007 the outstanding total in commercial paper on this market reached the equivalent of 869 billion dollars before falling by 9 p.c. in September to 792 billion (owing to the depreciation of the dollar, the decline would be even greater if the amounts were stated in euro). This seems to indicate that the ABCP issuers were no longer able to refinance themselves and renew the securities which they had issued once they matured. Furthermore, there was a reduction in the average maturity of new paper issued.

This put the ball back in the banks' court, mainly via two mechanisms. They either had to provide liquidity for the ABCP conduits and SIV's via the back-up credit lines available to the latter from their associate bank, or they had to take some of the assets off the balance sheet of those entities in order to lighten it. In either case, the credit institutions were obliged to seek the necessary finance, so that they began to hoard up liquidity. In addition, banks refused to lend one another funds in the face of uncertainty regarding the potential exposure of the counterparties.

Under these conditions which threatened to paralyse the operation of the interbank market, the benchmark amounts on which the Eurosystem bases its allotments in the main refinancing operations become irrelevant, because the benchmark figures are based on parameters (mainly the autonomous factors and the minimum reserve requirements) for the consolidated banking system, in the knowledge that, under normal market conditions, credit institutions with surplus liquidity and those with a liquidity shortage soon find one another on the interbank market. However, in the event of a crisis of confidence, the individual credit institutions express additional demand for central bank reserves so that the total demand for liquidity at the level of the consolidated banking system far exceeds the normal benchmark amounts which are not influenced by the financial market turmoil. In other words, the demand for central bank money experiences a substantial upward shock. Under such conditions, it is desirable to provide additional liquidity to stabilise the overnight interest rate.

Providing appropriate liquidity ensures that credit institutions with a liquidity shortage have access to resources so that solvent institutions are protected against the risk of a simple liquidity shortage forcing them to sell assets or contract loans, which could lead them into solvency problems. However, that does not mean that credit institutions which face solvency problems as a result of excessive risk-taking will be bailed out, since the supply of liquidity via the open market operations is conditional upon the pledging of adequate collateral.

The substantial provision of liquidity during the initial weeks of the reserve maintenance period was reflected in the level of the credit institutions' current account holdings, which exceeded the levels recorded in other reserve maintenance periods. Recourse to the standing facilities was limited overall, although there was a slight increase in the average recourse to the deposit facility.

3.2 Reserve maintenance period ending on 9 October 2007

In the first main refinancing operation of the reserve maintenance period on 11 September (with settlement the next day), 10 billion euro more than the benchmark amount was allotted at a marginal rate of 4.14 p.c. and a weighted average rate of 4.17 p.c. The Eurosystem also announced that, in setting the benchmark allotment for this operation, it had taken no account of the amount of liquidity that would be allotted for three months on 12 September in the additional longer-term refinancing operation announced previously. Eventually, the ECB decided to allot 75 billion in that operation. The marginal rate and the average rate of this operation came to 4.35 and 4.52 p.c. respectively, or about ten basis points lower than in the two longer-term refinancing operations conducted since the start of the period of money market turmoil.

The settlement of the longer-term refinancing operation exerted downward pressure on the Eonia, which dropped from 4.11 p.c. on the first day of the reserve maintenance period to 3.96 p.c. on 13 September. This decline continued in the ensuing days, so that by 17 September the Eonia was down to 3.57 p.c. On Tuesday, 18 September, 36 billion euro more than the benchmark amount was allotted in the main refinancing operation. The marginal rate and the weighted average rate of this operation came to 4.15 and 4.16 p.c. respectively. In comparison with the very ample liquidity conditions prevailing in the first week of the reserve maintenance period – not only was 10 billion euro more than the benchmark volume allotted in the main refinancing operation, but an additional 75 billion euro was allotted in the longer-term refinancing operation – this tender can be seen as a first step towards normalisation. On Wednesday 19 September, the settlement date of the main refinancing operation, the Eonia therefore climbed to 4.1 p.c., and the overnight interest rate continued to hover around that level in the ensuing days.

In the main refinancing operation on 25 September, 33 billion euro more than the benchmark volume was allotted at a marginal rate of 4.27 p.c. and a weighted average rate of 4.29 p.c. Around that date, owing in particular to the tension normally seen at the end of a quarter, the Eonia rose to around 4.2 p.c. On 27 September, a regular longer-term refinancing operation comprising 50 billion euro was renewed without providing additional liquidity for the market. The marginal rate and the weighted average rate of this operation came to 4.50 and 4.63 p.c. respectively, exceeding the rates of the longer-term operation allotted on 12 September. On 1 October, once the end-of-quarter effects had faded, the Eonia stood at 3.86 p.c., bearing witness to a situation of abundant liquidity. On 2 October, in the last main refinancing operation of the reserve maintenance period, 7.5 billion euro more than the benchmark volume was allotted at a marginal rate of 4.14 p.c. and a weighted average rate of 4.16 p.c. On that date, the Eonia stood at 3.83 p.c. To prevent further downward pressure on the overnight interest rate, 24.5 billion euro was taken out of the market on 9 October, the last day of the reserve maintenance period, by means of a fine-tuning operation at a fixed rate of 4 p.c. The Eonia was 3.95 p.c. on that day. The day before, when announcing the first main refinancing operation of the next reserve maintenance period, the Eurosystem had issued a statement indicating that it would reinforce its policy of allocating more liquidity than the benchmark amount in main refinancing operations to accommodate the demand of counterparties to fulfil reserve requirements early within the maintenance period. Yet, it would aim for gradually more balanced liquidity conditions towards the end of the period, taking into account the prevailing market conditions. It also announced that it would steer liquidity towards more balanced conditions also during the maintenance period, in a way which is consistent with the objective to keep very short-term rates close to the minimum bid rate. The Eurosystem would follow this policy for as long as needed.

In the reserve maintenance period under review, credit institutions increased their recourse to the deposit facility. Thus, during the ninth reserve maintenance period daily recourse to this facility averaged 1.56 billion euro, whereas in the previous maintenance period it had averaged only 445 million euro. There was also greater recourse to the marginal lending facility – an average of 312 million euro was borrowed each day during the reserve maintenance period, compared to 178 million euro in the previous period. For instance, on 26 September, 3.9 billion euro was borrowed via the marginal lending facility. The Eurosystem's liquidity management places the banking system as a whole in a comfortable position by making it easy for credit institutions to obtain liquidity via the open market operations at the start of the reserve maintenance period, and to dispose of any surpluses at the end of that period without incurring serious penalties. However, that does not mean that credit institutions can systematically get such favourable conditions when they apply to the Eurosystem. Indeed, when credit institutions resort to the Eurosystem outside of the open market operations they have to use the standing facilities which are associated with punitive interest rates.

3.3 Reserve maintenance period ending on 13 November 2007

In the first main refinancing operation of the reserve maintenance period, which was allotted on 9 October with settlement the next day, 40 billion euro more than the benchmark volume was allotted at a marginal rate of 4.12 p.c. and a weighted average rate of 4.16 p.c. This ample allotment unexpectedly pushed the Eonia down to 3.82 p.c. on 11 October, so that the Eurosystem decided to conduct a fine-tuning operation to absorb liquidity on 12 October. This mopped up 30 billion euro at a fixed rate of 4 p.c. for five days, until settlement of the next main refinancing operation, thus keeping the Eonia steady around that level from 15 October.

In the next three main refinancing operations, 18, 14.5 and 9.5 billion euro above the benchmark allotment respectively were allotted at marginal and weighted average rates comparable to those of the first main refinancing operation. On 31 October, the Eonia climbed to 4.13 p.c. owing to the month-end effects, whereas it had remained stable in the two preceding weeks (at around 4 p.c.). On the same day, a regular longer-term refinancing operation which had matured was renewed at a marginal rate of 4.45 p.c. and a weighted average rate of 4.53 p.c.

Finally, in the last main refinancing operation of the reserve maintenance period, 3.5 billion euro more than the benchmark volume was allotted on 6 November at a marginal rate of 4.14 p.c. and a weighted average rate of 4.15 p.c. At the end of the reserve maintenance period, however, the Eonia dropped below 4 p.c., prompting the Eurosystem to conduct a fine-tuning operation on the last day of the reserve maintenance period, to withdraw liquidity at a fixed rate of 4 p.c. This operation only enabled the Eurosystem to take 27.75 billion euro out of the market, which was less than it had aimed for. On that day, the Eonia dropped to 3.76 p.c. as credit institutions tried to place their surplus liquidity in the interbank market, driving down the overnight rate. The residual liquidity surplus, equivalent to 8.8 billion euro, was ultimately

put in the deposit facility. This was therefore the greatest recourse to the deposit facility during the first ten reserve maintenance periods of 2007.

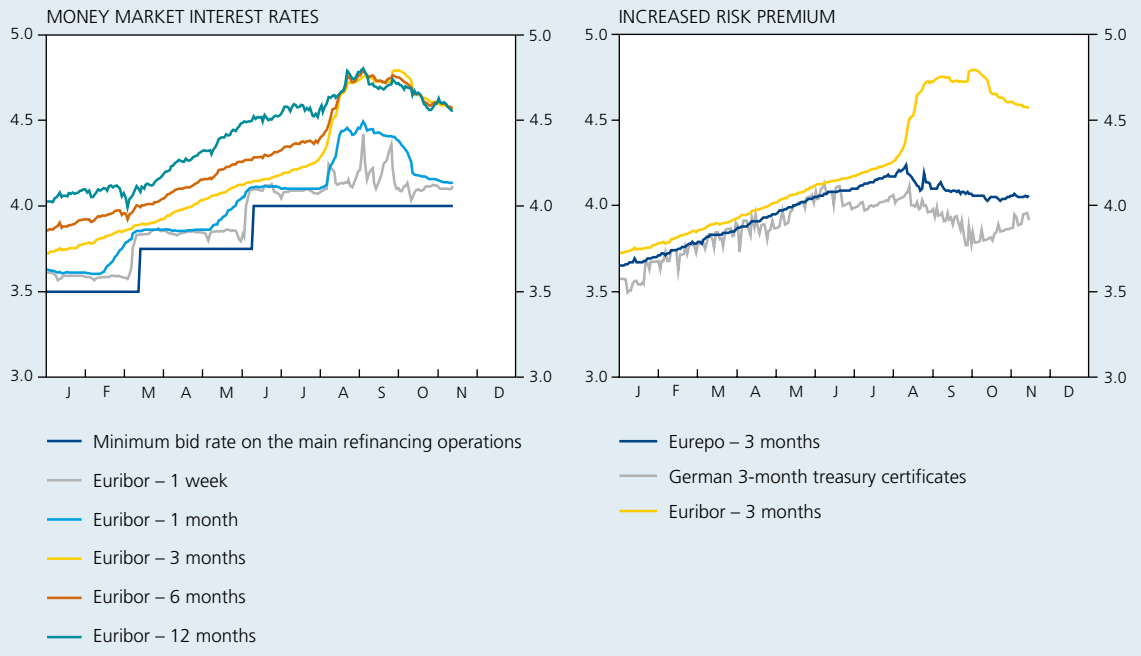
3.4 Interest rate structure on the money market

The foregoing demonstrates that, during the period of turmoil extending from early August to mid November, the Eurosystem succeeded in stabilising interest rates on the shortest segment of the money market – the marginal rate of the main refinancing operations and the Eonia – but it cannot be denied that those rates were more volatile than usual during that period. Thus, in absolute terms the average spread between the Eonia and the minimum bid rate on the main refinancing operations increased to 17 basis points during the three reserve maintenance periods which ran from 8 August to 13 November, whereas that spread had been only 7 basis points in the first seven reserve maintenance periods of 2007. However, in the longer-term segment of the money market, interest rates on interbank loans without collateral rose sharply at the beginning of August and remained at a high level for the rest of the period under review. This movement was particularly marked in the case of the three-month interbank rate, which went up from around 4.2 p.c. at the beginning of August to 4.75 p.c. on 5 September. It then dipped slightly before beginning to rise again in early October, as the due date would thenceforward come after the end of the year. Such calendar effects do also occur under normal market conditions, but are then less pronounced. Thereafter, the three-month Euribor fell to 4.57 p.c. on 13 November.

Interest rates in the longer-term segment of the interbank market are influenced by a number of factors. For instance, expectations regarding future monetary policy decisions have a major influence on longer-term interest rates. While expectations of further interest rate hikes explained the positive spread between longer-term interbank rates and the minimum bid rate of the main refinancing operations up to the beginning of August, that was not true subsequently, since expectations of a further tightening of monetary policy soon ebbed away following the turmoil on the financial markets. Moreover, longer-term interest rates include a term premium which compensates for the uncertainty over future interest rate movements and which, in the given circumstances, reflects a greater preference for longer-term funding in particular. Finally, these interest rates include a premium covering the possible risk of payment default – the Euribor is in fact the rate on interbank loans without collateral. This last

CHART 2 MONEY MARKET INTEREST RATES

(daily data)



Sources : ECB, Bloomberg.

premium currently seems to be a decisive factor driving up longer-term rates on the money market. The spread between the unsecured three-month Euribor (the rate at which banks lend one another funds without collateral) and the three-month Eurepo (the rate at which banks lend one another funds against collateral) suddenly increased at the beginning of August to 60 basis points, after hovering around 7 basis points during the first seven months of 2007. This spread then stabilised before widening again at the beginning of October as a result of calendar effects, reaching around 70 basis points. Thereafter, the spread decreased to around 50 basis points on 13 November. The Eurepo itself fell slightly during August and September, after expectations of subsequent interest rate hikes faded away. That factor also explains the decline in the yield on German three-month treasury certificates. Additional downward pressure on that yield also came from the safe haven status of government paper in periods of financial market turmoil, which may have a considerable impact on a relatively small market. The spread between the three-month Euribor and the yield on German three-month treasury certificates therefore climbed to around 100 basis points at the beginning of October after which it declined to around 60 basis points on 13 November. During July, it had already edged upwards to 20 basis points, after remaining around 10 basis points in the first half of 2007. It is therefore apparent that banks were demanding higher risk premiums in a context of uncertainty over credit institutions' degree of exposure to the troubled American sub-prime mortgage market. Moreover, a number of banks probably also hesitated to grant interbank loans pending clarification of their own liquidity situation, and that also drove up longer-term interbank interest rates.

The fluctuations on the longer-term segment of the money market, resulting from the behaviour of credit institutions and their risk perception, are beyond the control of the central bank. In fact, by its liquidity management the Eurosystem can only exert direct control over very short-term interest rates. The consequences of the strong movements which occurred in the longer-term segment of the money market may, however, extend beyond the interbank market in that the three-month interbank rate, as measured by the Euribor, is used as a benchmark by many credit institutions for a wide range of interest rates applicable to loans granted to households and to non-financial corporations. If the increase in the three-month Euribor were to be passed on, that would imply a real tightening of financing conditions, even in the absence of any adjustment to the key interest rates of the Eurosystem. Although the central bank cannot remedy that by its liquidity management, such a potential tightening of financing conditions is certainly a factor which is taken into account in deciding the monetary policy stance. The possible, but hard to quantify, influence on the real economy of the financial market turmoil – not only following the rise in interest rates on the longer segment of the money market but also, for example, owing to the widening of the corporate bond spreads, the announcement of a tightening of credit conditions in the bank lending survey, the euro's appreciation and the possible repercussions on the confidence of the economic agents – in fact heightened the uncertainty over the growth and inflation outlook. This prompted the Governing Council, following the September, October and November meetings, to wait for more detailed information before drawing further conclusions for monetary policy, despite the confirmed existence of upside risks to price stability. The upshot was that the originally expected rise in interest rates did not materialise.

Conclusion

The effectiveness of the Eurosystem's operational framework (this set of instruments and procedures enables the Eurosystem to steer money market interest rates towards the level desired by the Governing Council) has been put to the test in recent months. This article described the implementation of monetary policy under normal market conditions. It then examined in detail the way in which the Eurosystem managed liquidity on the money market during the three reserve maintenance periods which extended from the beginning of August to mid November, a period characterized by financial market turmoil.

Despite the difficult conditions on the money market, the Eurosystem succeeded in bringing money market rates close to the minimum bid rate on the main refinancing operations set by the Governing Council, thus preserving the signal on the monetary policy stance given by short-term interest rates. Flexible use of the existing operational framework, which was therefore not modified in any way, was sufficient to achieve that. Thus, in order to enable credit institutions to meet the reserve requirement fairly early in the reserve maintenance period, the Eurosystem supplied, via its main refinancing operations, a volume of liquidity well in excess of the benchmark amounts calculated beforehand. The Eurosystem also made greater use of the fine-tuning operations which, in contrast to normal practice, were not confined to the last day of the reserve maintenance period and also involved larger amounts. Finally, it enabled the credit institutions to obtain longer-term liquidity by refinancing a larger part of the liquidity deficit via the longer-term three-month refinancing operations. An operational framework which gives priority to stabilising money market interest rates implies that the balance

sheet of the central bank, and more particularly the supply of base money, becomes endogenous, so that it does not signal the monetary policy stance (cf. seperate article on this subject in this edition of the Economic Review). The injections of liquidity which were sometimes very substantial therefore do not in any way point to an easing of the monetary policy stance, which remained unchanged as the key rates were not adjusted during the period under review.

Despite the relatively successful stabilisation of short-term money market interest rates, the longer-term rates increased sharply during the period under review. However, the central bank cannot remedy that by its liquidity management. The direct influence which the Eurosystem exerts on money market rates is in fact confined to the very short term. Conversely, it is the market itself that determines the interest rates for more distant horizons, according to expectations concerning monetary policy decisions and relevant risk premiums. The rise in longer-term money market rates in fact reflects the strong increase in the compensation demanded by credit institutions to cover the risk of default on the unsecured interbank loan market. Of course, that development may have some impact on the real economy, and hence on the future movements in inflation. Many credit institutions in fact use the three-month Euribor as the benchmark for a wide range of interest rates applicable to loans to households and to non-financial corporations. If the increase in the three-month Euribor were to be passed on, that would imply a real tightening of credit conditions, even in the absence of any adjustment to the key interest rates of the Eurosystem. Such a potential tightening of credit conditions is certainly a factor which is taken into account when deciding the monetary policy stance. The possible but hard to quantify influence on the real economy of the financial market turmoil prompted the Governing Council, following the September, October and November meetings, to wait for more detailed information before drawing further conclusions for monetary policy, despite the confirmed existence of upside risks to price stability. That is why the rise in interest rates initially expected did not materialise.

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Trend in the financial structure and results of firms in 2006

Fabienne Verduyn
David Vivet

Introduction

Every year, in the December Economic Review, the National Bank describes the developments taking place 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 relating to the previous year. The conclusions drawn on the basis of that sample can therefore be extrapolated relatively reliably to the population as a whole.

Historically, this article consisted essentially of a study of developments in the profit and loss accounts of firms. In recent years, that study has been gradually supplemented by a financial and microeconomic analysis, not only of the profit and loss accounts but also of the balance sheets and the annexes to the annual accounts. This year, the article includes in addition an analysis of the recent changes in corporate income tax.

This article comprises four sections. Section 1 briefly describes the methodology and sample used. Section 2 presents an extrapolation of the main profit and loss account items. Section 3 assesses the financial situation of companies, particularly their level of profitability, solvency and liquidity. Finally, the last section focuses on an analysis of the latest tax changes.

1. Methodology and constant sample

1.1 Characteristics of the data used and the constant sample

Since the late 1970s, the Central Balance Sheet Office has collected data on the accounts of non-financial corporations each year. For that purpose, the firms are required to submit their annual accounts using a standard form by no later than seven months after the end of the financial year. The data are then adjusted as necessary to meet the required quality standards; after that, an initial analysis can be conducted from September onwards. However, each year the nature of the data available for the latest financial year examined – in the present case 2006 – raises methodological questions.

The population of annual accounts relating to 2006 is incomplete, mainly because some firms are late in filing their annual accounts. Moreover, those same firms are often in a structurally less favourable financial position than firms which file their accounts in time to meet the deadline. Previous editions of this article have highlighted the significant differences between firms according to the date on which they file their annual accounts. In all probability, the data currently available for 2006 present an over-optimistic view of reality.

Owing to these problems, the 2006 data are not directly comparable with those for previous years. In order to ensure comparability, the constant sample method is used. The constant sample for 2005-2006 comprises firms which filed annual accounts for both 2005 and

TABLE 1 COMPOSITION AND REPRESENTATIVENESS OF THE CONSTANT SAMPLE 2005-2006

	Firms in the 2005-2006 sample	All non-financial corporations in 2005	Representativeness of the sample, in p.c.
Number of firms	**152,989**	**272,146**	**56.2**
Large firms	6,181	8,365	73.9
SMEs	146,808	263,781	55.7
Manufacturing industry	13,622	22,896	59.5
Non-manufacturing branches	139,367	249,520	55.9
Balance sheet total (millions of euro)(1)	**830,518**	**1,003,407**	**82.8**
Large firms	706,959	815,352	86.7
SMEs	123,559	188,055	65.7
Manufacturing industry	229,432	240,790	95.3
Non-manufacturing branches	601,086	762,618	78.8

Source: NBB.
(1) For firms in the constant sample, the balance sheet total taken into account is the 2005 figure.

2006.(1) The method consists in extrapolating the 2006 results on the basis of the trends found in the constant sample: the 2006 figures are obtained by taking the final figures for 2005 and applying the rates of change recorded in the sample. It is therefore assumed that the trends seen in the sample are representative of the trends occurring in the population as a whole. As verified in previous editions of this article, that assumption is largely borne out since, in the vast majority of cases, the estimates give an accurate representation of the direction and scale of the actual movements. Table 1 shows the constant sample for 2005-2006.

1.2 Classification of firms by size and branch of activity

Non-financial corporations form a heterogeneous population within which very divergent trends may be recorded. The tendencies detected by analysis of the overall results therefore have to be refined by analysis according to the size and branch of activity of the firms. For one thing, the corporate financing method and, more generally, the corporate financial position varies according to whether the firm is large or small. Also, firms are subject to cyclical movements specific to their own branch of activity, and these are generally reflected in the movement in their annual accounts.

The distinction in terms of size is based on the criteria set out by the Companies Code. According to the Companies Code, the following are classed as large:
- firms employing over 100 people, as an annual average, or
- firms which exceed at least two of the following limits:
  - annual average number of employees: 50;
  - annual turnover excluding VAT: 7,300,000 euro;
  - balance sheet total: 3,650,000 euro.(2)

Firms which do not meet these criteria, i.e. SMEs, can draw up their annual accounts in an abridged format, unlike large firms which are obliged to use the full format. However, not all SMEs make use of the option available to them. As a result, the population of sets of annual accounts filed in accordance with the full format contains not only the annual accounts of large firms, but also those of a significant number of SMEs. Every year, almost half of the sets of full-format accounts relate to SMEs. The firms therefore cannot be classified strictly by size according to the type of format used. For that reason, since 2001 the distinction has no longer been based on the type of format used but is based on strict compliance with the Companies Code criteria. SMEs filing full-format accounts

(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 2005 were filed before 31 August 2006;
- the annual accounts relating to 2006 were filed before 31 August 2007.

(2) Details of these criteria may be found in Article 15 of the Companies Code.

are thus no longer included in the population of large firms but are placed in the SME category.[1]

The distinction according to the branch of activity is based on the NACE-BEL nomenclature of activities, used in most of the statistics offering a breakdown by branch in Belgium. The composition of the branches of activity considered is shown in Annex 2.

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

2.1 General trends and cyclical context

After slowing down in 2005, GDP growth (at constant prices) came to 2.8 p.c. in 2006, almost equalling the 2004 figure (+ 3 p.c.). Overall, the economic environment was broadly favourable to businesses in 2006: expanding export markets, a stable currency, slowing of the rate of oil price rises, low long-term interest rates and rising stock markets. The economic expansion was in fact based on the main components of both domestic demand (private consumption, investment, change in stocks) and foreign demand (exports).

In that context, the value added of non-financial corporations followed the trend in GDP: its growth rate in fact accelerated in 2006, to reach 6.3 p.c. at current prices, a level comparable to that of 2004 (cf. table 2). Total value added, i.e. the difference between sales revenues and the cost of goods and services supplied by third parties, thus came to almost 155 billion euro (at current prices).

The value added created by a firm enables it to cover its operating expenses, with any surplus recorded as a net operating profit. That profit reflects the firm's current industrial and commercial efficiency, independently

(1) For more details on this reclassification, see the article published in the Economic Review for the 4th quarter of 2003.

TABLE 2 MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

	Percentage changes compared to the previous year					Millions of euro	Percentages of value added
	2002	2003	2004	2005	2006 e	2006 e	2006 e
Value added	**1.4**	**4.4**	**6.6**	**4.6**	**6.3**	**154,994**	**100.0**
Staff costs (–)	3.2	1.6	3.4	3.0	4.7	86,270	55.7
Depreciation, downward value adjustments and provisions (–)	–2.3	–2.9	–1.8	4.3	8.7	27,163	17.5
Other operating expenses (–)	–2.1	9.3	9.7	5.1	3.1	8,849	5.7
Total operating expenses	*1.5*	*1.0*	*2.7*	*3.4*	*5.5*	*122,282*	*78.9*
Net operating result	**0.7**	**25.5**	**26.5**	**9.2**	**9.2**	**32,712**	**21.1**
Financial income (+)	24.5	6.8	–12.4	–4.4	11.4	46,678	30.1
Financial charges (–)	38.9	4.6	–15.9	–10.9	9.2	36,785	23.7
Financial result	*42.2*	*31.8*	*18.0*	*36.5*	*20.8*	*9,893*	*6.4*
Ordinary result	**11.3**	**26.7**	**24.9**	**14.1**	**11.7**	**42,605**	**27.5**
Exceptional result[1] (+)	–	–	–	–	–	9,181	5.9
Net result before tax	**26.9**	**77.0**	**2.3**	**47.4**	**5.1**	**51,785**	**33.4**
Taxes on profits (–)	–5.0	7.0	11.5	10.9	4.9	8,546	5.5
Net result after tax	**34.5**	**112.1**	**–0.1**	**57.7**	**5.1**	**43,239**	**27.9**
p.m. Net result after tax excluding the exceptional result	*13.7*	*34.8*	*29.2*	*15.0*	*13.6*	*34,059*	*22.0*

Source: NBB.
(1) There is very little sense in calculating a percentage change for this aggregate, which may be either positive or negative and does not lend itself to reliable estimation.

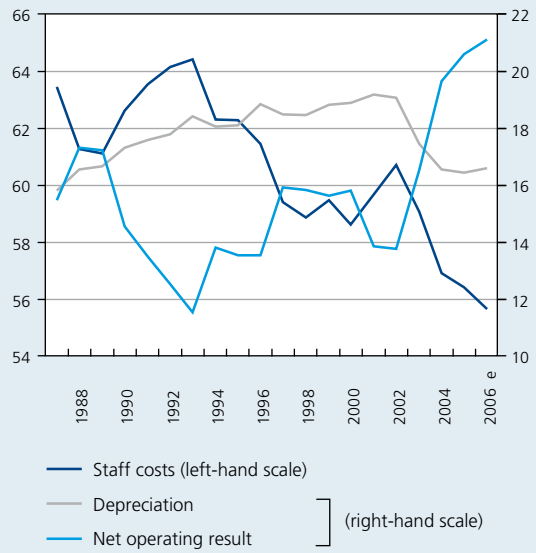
of its financing policy and any exceptional items. Staff costs traditionally account for by far the major part of the operating expenses: in 2006, they represented almost 56 p.c. of the value added of non-financial corporations. In parallel with the further strengthening of employment growth, staff costs increased by 4.7 p.c. in the year under review. While this was the largest increase since 2000, the rise in staff costs nevertheless lagged behind the growth of value added for the fourth consecutive year. After staff costs, depreciation is by far the most significant operating expense. In 2005, after shrinking for three successive years, depreciation allowances recorded a marked increase. This was amplified in 2006, reflecting the substantial investments recorded in 2005, particularly in the transport sector.

Driven mainly by the trend in staff costs and depreciation, the increase in total operating expenses accelerated again in 2006 to reach 5.5 p.c. While that was the steepest rise since 2000, the growth of value added nevertheless continued to outpace the rise in operating expenses. Consequently, the net operating result, which had already increased dramatically in the preceding three years, recorded a further significant rise (+9.2 p.c.). In the space of four years, the net operating result thus virtually doubled, rising from 17 billion in 2002 to almost 33 billion euro in 2006. (1) That achievement – which is exceptional in historical terms – is broadly due to cost control in a generally favourable economic context. Belgian companies as a whole are displaying hitherto unprecedented ability to generate profits by pursuing their commercial activity.

Chart 1 places recent trends in a longer-term perspective, with details of the changing breakdown of value added between staff costs, depreciation and operating results, the three main possible allocations. Thus, it is evident

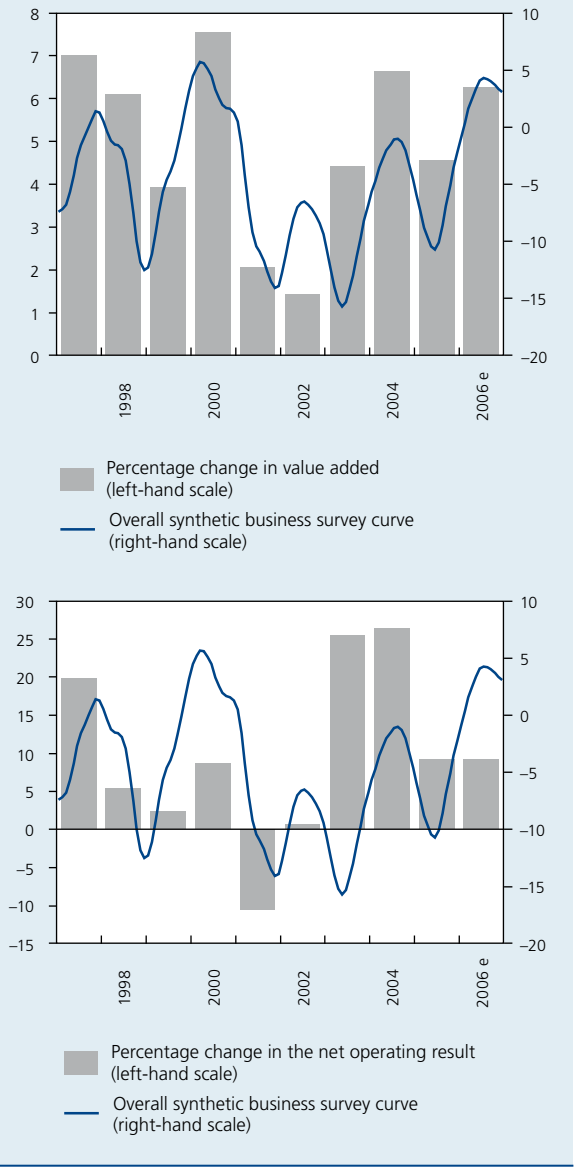
CHART 1 CHANGE IN THE BREAKDOWN OF VALUE ADDED

(percentages of value added)



Source : NBB.

CHART 2 VALUE ADDED, NET OPERATING RESULT AND BUSINESS SURVEY INDICATOR



Source : NBB.

(1) It should be remembered that in 2000, i.e. at the peak of the previous business cycle, the operating result stood at 19 billion euro.

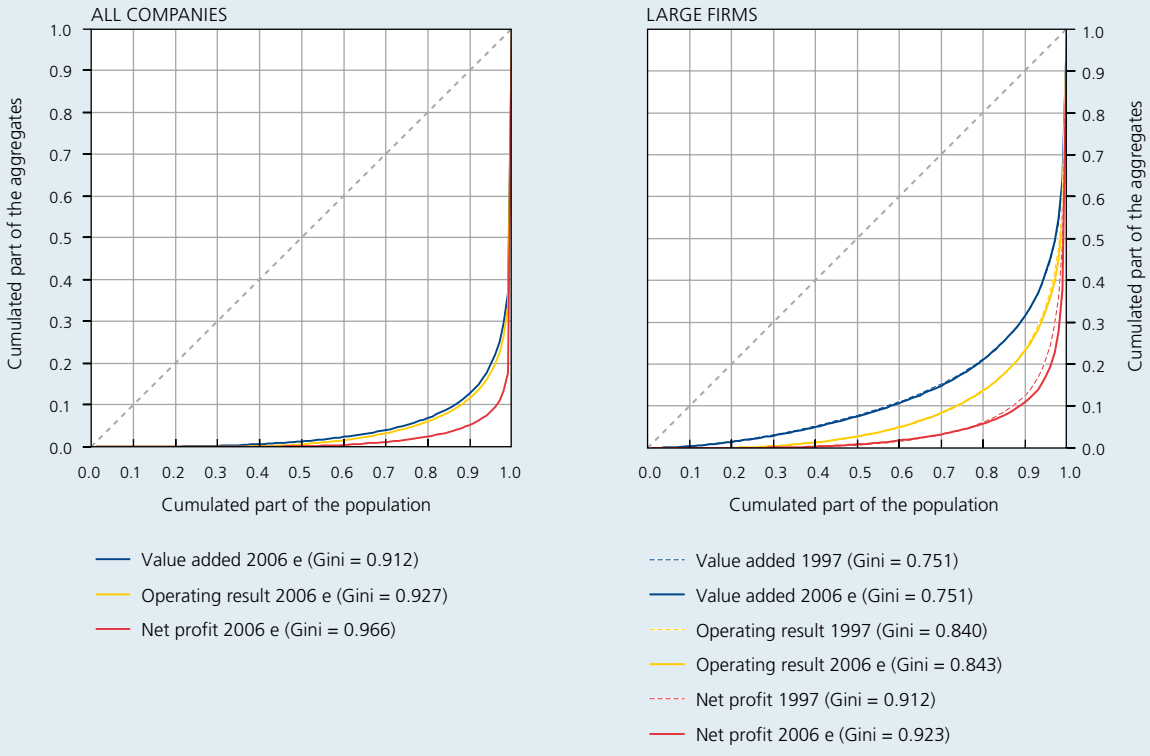
that the proportion allocated to the operating result increased considerably over a 20-year period, from 15 p.c. in 1987 to 21 p.c. in 2006. That increase is largely mirrored by the reduction in the share represented by staff costs, down from 63 to 56 p.c. over the same period. It is also apparent that these changes are even more marked from 1993 onwards, which was the last year of economic recession in Belgium so far. Having gradually increased up to 2001, allocations to depreciation declined significantly in subsequent years, echoing the reduced investment in tangible fixed assets.

The movements in corporate value added and operating results can also be compared with the movement in the Bank's business survey indicator, which measures business confidence (cf. chart 2). Following a dip in mid 2005, this indicator rose steadily until July 2006. Although the indicator did decline slightly in the final months of the year, it still remained at a very high level in relation to the figure for the past ten years. (1) That picture is linked to the accelerating growth of value added, which in 2006 reached a level well above the average for the preceding years. As for the operating result, while growth remained constant at the 2005 level it should be remembered that substantial gains had been made in the previous three years, certainly exhausting most of the scope for improvements, especially in regard to cost cutting.

In line with the trend seen over the past decade, the financial result increased again during the year under review, and now totals almost 10 billion euro. As in 2005, the net exceptional result was decidedly positive, the main factors being the capital gains on the realisation of assets in the energy sector. After deduction of taxes on profits, financial corporations made a total net profit of more than 43 billion euro in 2006, up by around 5 p.c. compared to the previous year. The profit excluding the exceptional result climbed almost 14 p.c. to 34 billion euro. These movements recorded in 2006 are in line with the trend towards a dramatic recovery in corporate results, apparent since 2003. It should be remembered that the profit excluding the exceptional result came to only 15 billion in 2002.

(1) Moreover, as stated in the Bank's annual report, the gross indicator attained its highest value since calculations began according to the current methodology, i.e. since 1980.

CHART 3 LORENZ CURVES AND GINI INDEX FOR SOME COMPONENTS OF THE PROFIT AND LOSS ACCOUNT



Source : NBB.

It is worth mentioning that, as every year, the overall developments presented above mainly reflect the situation of a relatively small number of large and very large companies whose results have a major influence on the overall total. Chart 3, which presents the Lorenz curves for all companies and for large firms on their own, bears witness to the degree of concentration of the main profit and loss account balances.

A Lorenz curve[1] determines the percentage of an aggregate represented by various portions of a population, the latter being arranged in ascending order according to the values of that aggregate. For example, if all firms produce the same value added, the Lorenz curve of value added will coincide with the diagonal. Conversely, if the value added is concentrated in just one firm, the Lorenz curve will be confined to the lower right-hand corner of the chart. The degree of concentration can also be summarised numerically by the Gini coefficient. Its numerator is equal to the area between the Lorenz curve and the diagonal, while its denominator is equal to the whole of the area beneath the diagonal. This coefficient ranges from 0 (perfectly even distribution) to 1 (total concentration in a single firm).

The first part of chart 3 presents some results relating to Belgian corporations in general. It reveals the large concentration of components of the results within a small fraction of firms. For example, 87 p.c. of the total value added is generated by 10 p.c. of companies. This result is due to the existence, in the population studied, of very large firms alongside a multitude of small entities. Moreover, the lower one "descends" in the profit and

(1) Named after M.-O. Lorenz who, at the beginning of the 20th century, developed ways of measuring the concentration of wealth. See Lorenz M.-O. (1905), *Methods of measuring the concentration of wealth*, American Statistical Association, New Series, n° 70.

TABLE 3 VALUE ADDED AND NET OPERATING RESULT BY BRANCH OF ACTIVITY

(percentage changes compared to the previous year)

	Value added		Net operating result		*p.m. Percentage share of the branches in total value added in 2006 e*
	2005	2006 e	2005	2006 e	
Manufacturing industry	**2.2**	**6.0**	**5.7**	**13.6**	***32.0***
of which:					
Agricultural and food industries	2.0	–0.4	1.4	–0.9	*4.0*
Textiles, clothing and footwear	–8.5	–0.1	–10.8	1.2	*1.2*
Timber	1.6	6.3	14.2	10.2	*0.6*
Paper, publishing and printing	–2.4	3.4	–11.4	9.2	*2.2*
Chemicals	7.2	8.6	9.3	13.5	*9.0*
Metallurgy and metalworking	–1.5	6.8	2.2	19.7	*4.6*
Metal manufactures	2.8	11.6	27.0	30.3	*7.0*
Non-manufacturing branches	**5.7**	**6.4**	**10.9**	**7.2**	***68.0***
of which:					
Retail trade	**4.8**	**5.3**	**3.9**	**11.8**	***8.2***
Wholesale trade	6.2	6.2	17.5	10.0	*12.9*
Horeca	7.2	2.3	16.4	–9.2	*1.7*
Transport	8.0	4.6	104.6	11.3	*7.8*
Post and telecommunication	0.5	2.4	0.5	0.1	*4.8*
Real estate activities	6.9	5.3	3.2	8.1	*3.1*
Business services	8.3	8.7	8.1	5.4	*13.1*
Energy and water	–1.9	9.5	–6.3	–3.1	*4.0*
Construction	5.9	8.9	24.8	14.8	*6.3*

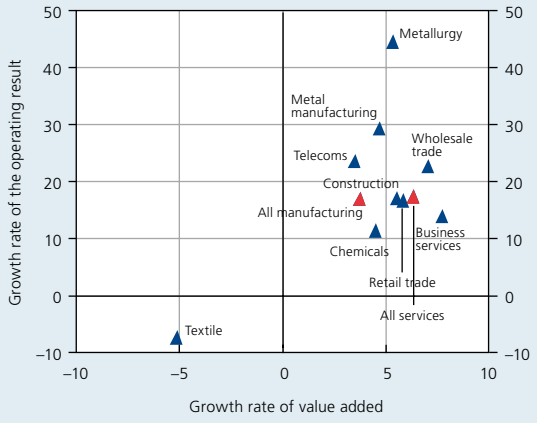
Source: NBB.

loss account, the more the balances tend to converge. In particular, the larger concentration of net profits is due to the concentration of financial and exceptional results. Finally – though this is not apparent from the chart – the degree of concentration has not changed significantly in the past ten years, so that the 1997 curves are almost the same as those for 2006.

The second part of the chart relates only to large firms. Similar conclusions can be drawn, with a few minor variations. Although, as one would expect, the concentration is less pronounced in this sub-population, it is still substantial, particularly as regards the net profit, with 89 p.c. of the total originating from fewer than 10 p.c. of firms in 2006. Furthermore, there has been no significant change in the appearance of the curves in ten years, except for the curve showing the net profit, which has shifted slightly towards the lower right-hand corner.

CHART 4 MOVEMENT IN VALUE ADDED AND OPERATING RESULTS BETWEEN 2000 AND 2006

(geometric averages of annual percentage changes)



Source : NBB.

2.2 Results by branch of activity

In contrast to the previous year when the industry had suffered from the deterioration in the international environment, the expansion of manufacturing activity was particularly vigorous in 2006 (+6 p.c., cf. table 3). Belgian industry taken as a whole benefited from the strong expansion of its main export markets, namely the countries of the euro area. Moreover, the Belgian economy was less affected by adverse shocks than in the past : the euro exchange rate changed little during the year under review, while the rise in the price of oil slowed down. Logically, industrial expansion was driven by the branches with the strongest export focus, namely chemicals, metal manufactures and metallurgy. It was these same three branches that made the biggest contribution to the rise in the industrial operating result, particularly via the control of staff costs. On that subject, it is notable that the jobs gained in chemicals and metallurgy in 2006 were largely counterbalanced by the jobs lost in metal manufacturing.

In the non-manufacturing branches, activity remained robust, with value added growing by more than 5 p.c. for the fourth consecutive year. Overall, as in 2005, these branches were bolstered by the dynamism of domestic demand. Thus, construction benefited from household expenditure on house building and renovation.[1] The operating result also showed a significant increase in the service branches. In that respect, too, construction was the branch that produced the strongest performance.

Finally, chart 4 depicts the movement in value added and operating results from 2002 to 2006 for a number of branches. That period corresponded in fact to a continuous and sustained improvement in the overall financial position of enterprises, following the adverse effects, particularly in terms of profitability and financial risks, caused by the deteriorating economic situation in 2001 and 2002. The operating result increased at much the same pace in the manufacturing and non-manufacturing branches (taken as a whole), despite the significantly smaller rise in the growth of value added in manufacturing. This result is closely linked with the performance recorded in metallurgy and metalworking, where operating expenses increased far more slowly than value added. In particular, the overall job losses during the period considered drove down staff costs in these two branches. Finally, it should be pointed out that only the textile industry falls into the lower left-hand quadrant, indicating a decline in both value added and net operating result. This is due to the structural problems with which the branch has been struggling for many years, particularly the competition from low-cost countries. Textile exports are the ones hardest hit by the appreciation of the euro in recent years.

3. Financial situation of firms

The financial analysis which follows is based on the theory of interpretation of the annual accounts, from which a number of ratios have been taken.[2]

(1) See the Bank's Annual Report on this subject.

(2) Since the concepts used cannot be explained in detail in this article, the reader is requested to consult the reference works on the subject.

The ratios are presented both in global form and as a median. 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. of firms have a ratio below it. The two measures are complementary as they reflect different realities. 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.

3.1 Profitability

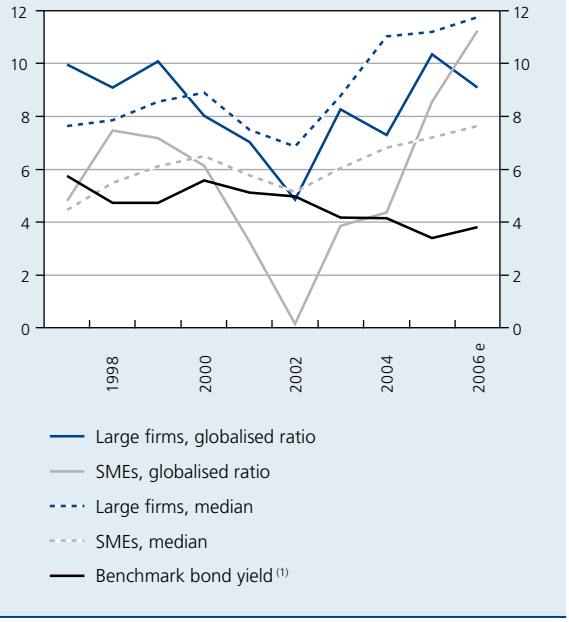
Profitability concerns the firms' ability to generate profits. It can be assessed, in particular, on the basis of the net return on a firm's own capital. This ratio, also known as the return on equity (ROE), expresses the net profit after tax as a percentage of the equity capital. It therefore indicates the return which shareholders receive 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 premium to compensate for the risk to which they are exposed: this is known as a risk premium.

In 2006, the globalised return on equity came to 9.1 p.c. for large firms and 11.2 p.c. for SMEs (cf. chart 5). SMEs therefore achieved higher profitability than large firms, which is the exception to the historical rule. The globalised profitability of large firms declined in 2006, mainly because of the strong growth of the equity, which itself seemed to be dictated by the recent changes in the tax rules (cf. section 4). However, analysis of the medians indicates that profitability has risen again in the majority of large firms, as it also has in SMEs. Taken overall, and whatever the approach adopted, Belgian companies' 2006 profitability figures were the highest for almost twenty years, though it should be remembered that, every year, over a quarter of Belgian companies are loss-making.

The globalised return of large firms can be compared to the yield on government bonds. In 2002, for the first time since 1994, the profitability of large firms had fallen below the benchmark yield on linear bonds. Since then it has climbed rapidly, and that combined with the downward trend in yields on government bonds has given shareholders an increasingly substantial risk premium. From the investor's point of view, equity investments

CHART 5 RETURN ON EQUITY AND BENCHMARK BOND YIELD (1)

(percentages)



Source: NBB.
(1) Average yield on ten-year linear bonds.

have therefore become progressively more attractive in the past few years. That trend is also reflected in the stock market indices. Thus, the BEL 20 began rising again from the beginning of 2003. This comparison should be viewed with caution for two reasons: equities and government bonds are different financial instruments, and many of the large firms considered are not listed on the stock market.

3.2 Solvency

Solvency concerns the ability of firms to honour all their short-term and long-term financial commitments. This article analyses it on the basis of three concepts: the degree of financial independence, the degree to which borrowings are covered by the cash flow, and the interest charges on financial liabilities.

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. This has two beneficial effects: first, financial expenses are low and therefore exert little downward pressure on profits; also, if necessary, the firm can easily contract new debts on favourable terms. The degree of financial independence

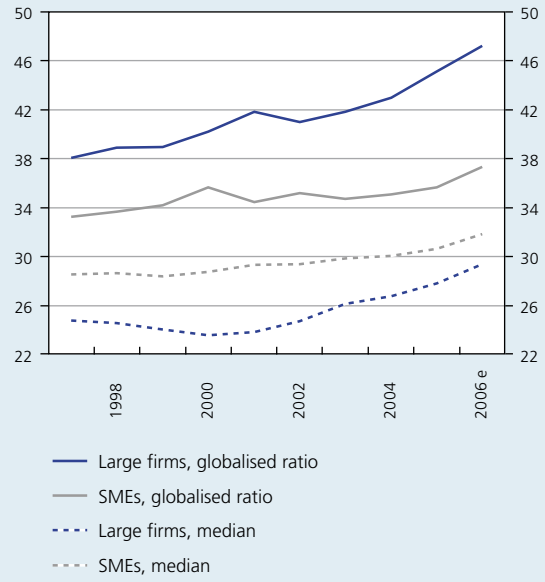
can also be interpreted as a measure of the firm's financial risk, since the remuneration of third parties is fixed, unlike the firm's results which fluctuate over time.

In 2004, globalised financial independence stood at 47.3 p.c. for large firms and 37.3 p.c. for SMEs, which traditionally record a lower figure (cf. chart 6). In both categories of firms, the globalised ratio has been rising for the past fifteen years: between 1997 and 2006 it gained 9 p.c. in the case of large firms and 4 p.c. for SMEs. The upward trend in the globalised ratio gathered pace in the last two years under review, mainly on account of the changes to the tax rules (cf. section 4). The increased financial independence also applied to the majority of firms, as is evident from the rise in the median ratio. While chart 6 presents a sound and stable picture of corporate solvency, it must be stressed that a number of companies – often small ones – experience serious problems regarding their financial independence. Thus, the tenth percentile of SMEs is equal to –20 p.c. For these firms the situation has deteriorated further, since that same percentile had a value of –13 p.c. ten years earlier.

The degree of financial independence and its reciprocal, the debt level, provide a picture of the general balance of the assets and liabilities. While this picture is necessary to diagnose solvency, it is not sufficient since it does not permit appraisal of the firm's ability to repay their debts, nor the level of charges which they incur. These two concepts will be addressed below.

CHART 6 DEGREE OF FINANCIAL INDEPENDENCE

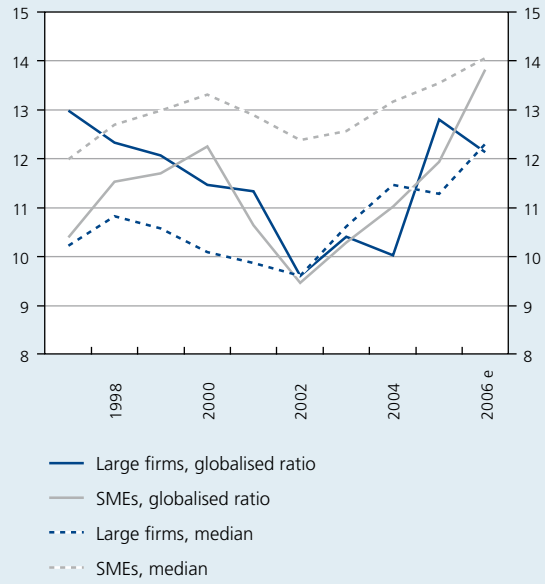
(percentages)



Source : NBB.

CHART 7 DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW

(percentages)



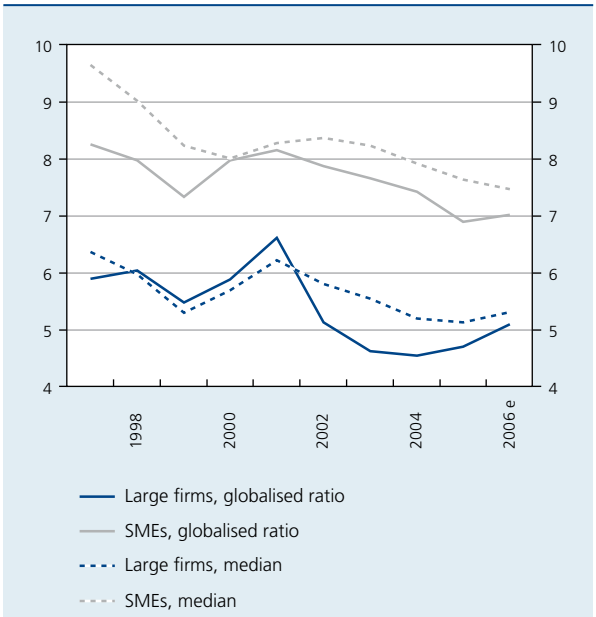
Source : NBB.

As a measure of the percentage of its debts that the firm could repay by allocating the whole of the year's cash flow to that purpose, the degree to which borrowings are covered by cash flow 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 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 2006, large firms and SMEs recorded divergent movements in their globalised cover rates of borrowings (cf. chart 7). Following a marked recovery in 2005, the ratio of large firms dipped slightly in 2006 to 12.1 p.c., as the increase in the cash flow was not enough to offset the rise in debts. However, the ratio remained well above the average for the last decade. The continuing rise in the median ratio of large firms also indicates that the cover rate of borrowings has improved for the majority of firms in this sub-population. In the case of SMEs, both the globalised ratio and the median improved again in 2006,

CHART 8 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS

(percentages)



Source : NBB.

bringing these ratios to their highest level in the period under review.

The average interest charges on financial debts provide a means of assessing the cost of recourse to borrowings. In 2006, in globalised terms these charges came to 5.1 p.c. for large firms and 7 p.c. for SMEs (cf. chart 8). For both categories of firms, charges edged upwards again in 2006, owing to a small rise in market interest rates. Nonetheless, both interest rates and the cost of borrowing are still at historically low levels. Since the early 1990s, average interest rates have in fact fallen by around 5 percentage points for SMEs and 4 percentage points for large firms. Moreover, the interest charges paid by large firms are structurally lower than those incurred by SMEs. For the same method of financing, SMEs generally have to pay a risk premium because lenders consider their financial profile to be less sound. They also make greater use of cash loans, which are a more expensive form of credit.

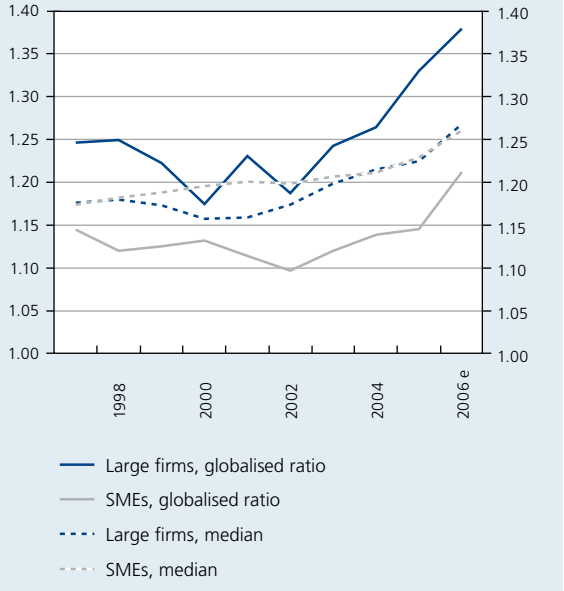
3.3 Liquidity

Liquidity indicates 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 particular, if the ratio is higher than 1, the net working capital is positive.

In 2006, the globalised ratio reached 1.38 for large firms and 1.21 for SMEs (cf. chart 9). In both categories of firms, liquidity has been rising since 2003, and reached record levels in 2006. This improvement in the balance of asset and liability maturities applies to the whole population of companies, as is evident from the movement in the median ratios. Finally, as in the case of the other ratios, the serene image presented by the globalised ratio and the median may mask the disparities between firms. Thus, over 35 p.c. of the companies considered have liquidity in the broad sense which is less than 1, and therefore negative net working capital.

The situation of companies whose liquidity is precarious can be ascertained by examining the overdue debts payable to the tax authorities and the NSSO, mentioned in the annex to the annual accounts. Arrears of payments to these two preferential creditors are usually synonymous with an acute cash flow crisis for a firm; they also serve as "warning lights" for the investigation departments of

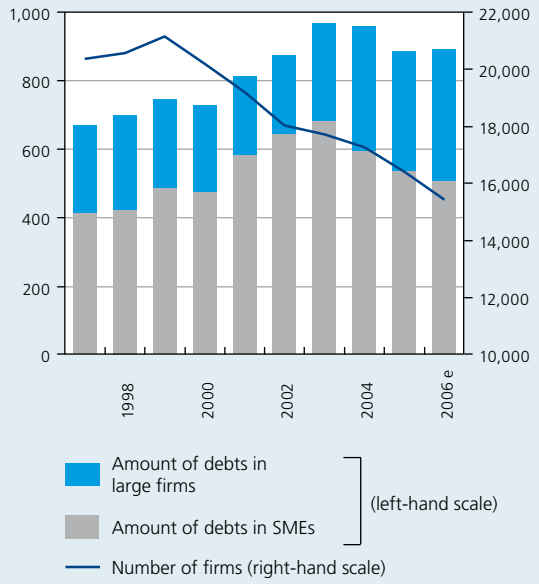
CHART 9 LIQUIDITY IN THE BROAD SENSE



Source : NBB.

CHART 10 OVERDUE DEBTS TO THE TAX AUTHORITY AND THE NSSO

(millions of euro, unless otherwise stated)



Source : NBB.

the commercial courts in their work of tracking down firms in difficulties.

In 2006, around 15,500 companies, the very great majority being SMEs, reported overdue debts to the tax authority and the NSSO totalling almost 900 million euro (cf. chart 10). The textile industry, construction and the hotel and restaurant trade were among the branches most affected. Since 2003, the total amount of these debts has been declining, and the number of firms affected has fallen steadily since 1999. This marked tendency towards a reduction in the cash flow risks is one of the consequences of the recent improvement in the financial position of firms.

4. Corporate income tax

4.1 Corporate income tax revenues

The analysis which follows focuses on a series of recent tax reforms concerning non-financial corporations. Up to 2006, revenues generated by corporate income tax moved in parallel with the ratio between corporate income tax and value added (cf. chart 11). Since 2002, corporate income tax revenues have risen each year, increasing by 11.5 p.c. in 2004 and 10.9 p.c. in 2005. In 2006, following the introduction of the new rules on corporate income tax authorising the deduction of risk capital, those revenues have increased by only 4.9 p.c. (cf. 4.3. The tax reforms).

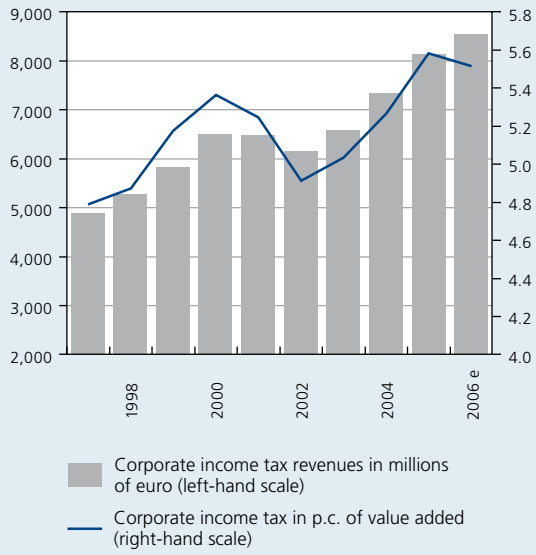
The ratio between corporate income tax revenues and value added also increased (by 0.7 percentage point) between 2002 and 2005. However, that upward trend was halted in 2006, and revenues generated by this tax subsided by 0.1 percentage point. That decline was due both to the slower growth of corporate income tax revenues and the substantial expansion of value added (+6.3 p.c.).

The decline in tax revenues recorded from 2003 following the first corporate income tax reform was more than outweighed by the expansion of the tax base resulting from the increase in the net operating surpluses of companies. In 2006, corporate income tax revenues reached a new record of 8.5 billion euro.

However, it would be wrong to conclude that the tax burden has risen since 2003. Although corporate income tax revenues expressed as a percentage of value added have increased since 2002, the implicit rate has fallen over the same period (cf. chart 12). The High Council

CHART 11 CORPORATE INCOME TAX REVENUES

(millions of euro and percentages of value added)



Source : NBB.

of Finance[1] considers that the implicit tax rate (cf. 4.2. Tax burden) is the only accurate way of measuring the real tax burden. The ratio between the revenues generated by this tax and value added is not a reliable indicator of the tax burden. Although the numerator of the ratio of these tax revenues expressed as a percentage of value added corresponds to the tax paid, the denominator differs from the tax base, as the growth of corporate profits considerably outpaces the rise in operating expenses.

4.2 Tax burden

Various indicators can be used to measure the burden of taxation on corporate profits.[2] International companies generally base their investment decisions on the standard nominal rate. That rate is currently 33 p.c. (33.99 p.c. including the crisis contribution), but SMEs may qualify for a progressive reduced rate.[3]

Companies may be able to deduct various items thereby reducing the tax base. Consequently, the real tax burden may differ from the standard nominal rate. One of the indicators offering a more accurate idea of the real tax burden is the implicit rate, namely the ratio between corporate income tax and the tax base.

By calculating the implicit rate on the basis of the annual accounts of non-financial corporations it is possible to limit the tax base to profitable companies only. If the losses incurred by firms were included in the denominator, that would make the implicit rate sensitive to the economic cycle. Loss-making firms do not have to pay any tax, so that – since losses cannot be identified in the denominator – that results in overestimation of the real tax burden in periods of weak economic activity.

The drawback of this method of calculating the implicit rate lies in the fact that it does not permit adequate adjustment of the denominator in the event of double counting of profits between companies paying dividends and those collecting them. The profits are included in the tax base of these two types of companies, whereas in reality the profit paid out is recorded in the tax base only of the companies paying the dividends, and is deducted from the taxable profit of the companies receiving them. Consequently, the denominator of the implicit rate is overestimated, while the real tax burden is underestimated.

This method has a second drawback in that the numerator includes not the tax actually payable but the figure recorded in the profit and loss account of the annual accounts. That figure includes the estimated tax calculated on the basis of the expected profit in the current calendar year and the regularisations. These may be either positive or negative, and result from a tax inspection, an underestimation or even an overestimation of the tax actually payable and imputed to a previous financial year.

The conclusion is therefore that the implicit rate calculated on the basis of the annual accounts of non-financial corporations must be used with caution, and that it represents only an indication of the difference between the nominal tax rate and the real tax burden.

The globalised implicit rate based on the annual accounts of non-financial corporations hovered around a constant level of 21 p.c. up to 2002 (cf. chart 12). In 2003, this indicator of the tax burden on corporate profits recorded a decline,[4] which may be due to the introduction of the first tax reform (cf. 4.3. The tax reforms). In 2006, the second tax reform again reduced the tax burden: it led to a decline in the implicit rate, which eventually came to around 16 p.c. However, account must also be taken of the impact of both the exemption applicable to the profits of the coordination centres and the deduction of finally taxed incomes (FTI),[5] available to only a small number of companies. These two factors contribute to the underestimation of the tax burden.

The median of the implicit rate, which is less sensitive to the influence of tax measures applied to a small number of companies, is higher for both large firms and SMEs, except that the tax burden on SMEs is lower owing to the reduced rate applicable to them. Here, too, the effect of the two tax reforms is undeniable, and the measures adopted have reduced the tax burden on both categories of firms. In 2003, the median of the implicit rate declined by 5.9 p.c. for both large firms and SMEs. The second tax reform led to a larger reduction in the tax burden on large firms (–3.8 p.c.) than on SMEs (–2.4 p.c.) in 2006.

(1) High Council of Finance (2001), *The corporate income tax reform: the framework, the issues, the possible scenarios*.

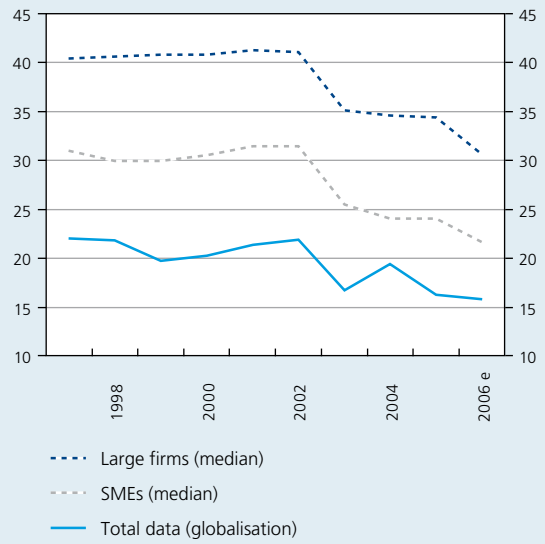
(2) For an overview of the various indicators, see the article "Recent trends in corporate income tax", published in the June 2007 Economic Review.

(3) That rate (plus the 3 p.c. crisis contribution) comes to:
- 24.25 p.c. on taxable incomes between 0 and 25,000 euro;
- 31 p.c. on taxable incomes between 25,000 and 90,000 euro;
- 34.5 p.c. on taxable incomes between 90,000 and 322,500 euro.

(4) The real tax burden was underestimated in 2003 owing to the considerable capital gains in excess of 5.9 billion euro realised on shares in the telecommunications branch. This category of capital gains is totally free of tax.

(5) The system of finally taxed incomes (FTI) avoids double taxation on the payment of dividends. The profits paid out appear exclusively in the tax base of the paying company, whereas 95 p.c. of the dividend income is kept separate from the taxable profits of the company receiving the dividend. The other 5 p.c. constitutes a fixed amount corresponding to the costs entailed in collecting the dividend.

CHART 12 IMPLICIT CORPORATE INCOME TAX RATE
(percentages)



Source : NBB.

4.3 The tax reforms

Belgium has carried out two successive corporate income tax reforms. The first[1] was intended to improve corporate competitiveness, from the 2004 tax year, by cutting the nominal rate of tax from 40.17 to 33.99 p.c. (taking account of the 3 p.c. complementary crisis contribution) and lowering the reduced basic rates for SMEs. The tax status of SMEs was also improved : profits imputed to an investment reserve are now exempt and there is no tax surcharge payable in the event of a shortfall or absence of advance payments during the first three years following a company's establishment.

Apart from the tax cuts, a number of compensatory measures were adopted in order to ensure that the corporate income tax reform was neutral in its effect on the budget. The application of a 10 p.c. withholding tax on the profits from liquidation, a change in the depreciation rules, the introduction of new conditions for application of the FTI scheme and reinforcement of the rules on deductions relating to regional taxes are all compensatory measures which augment the tax base by reducing tax-deductible expenses.

The second corporate income tax reform[2] aimed to attenuate, from the 2007 tax year, the discrimination between risk capital and borrowings. Previously, only the interest charges on borrowed capital were tax deductible. The introduction of tax relief for risk capital, also known as the "notional interest deduction", ended the inequality of tax treatment between these two forms of financing. Combined with the abolition of the 0.5 p.c. registration fee on capital contributions or issue premiums, this tax allowance encourages companies to consolidate their equity capital. By implicitly reducing the real tax rate, the measure should also make Belgium more attractive to foreign investors from the tax angle. Moreover, it is an alternative to the coordination centre arrangements which are to be abolished in 2010.

The notional interest deduction allows companies to calculate annual notional interest on their capital and to deduct that from the tax base. The basis for calculating the risk capital allowance is the amount of equity capital "adjusted" at the end of the tax period preceding the one in which the deduction is requested. The adjustment is intended to prevent a "cascade" of deductions between companies in the same group,[3] to reject assets on which incomes are not taxable under double taxation treaties,[4] and to prevent certain abuses whereby certain tangible assets are artificially lodged with a company.[5] A weighted average was applied to the changes in the basis of calculation or the adjustment factors during the tax period.[6]

The notional interest rate applied to the amount of the basis of calculation is the annual average of the interest rates on 10-year linear bonds (OLOs) published each month by the Securities Regulation Fund. The interest rate applicable for each tax year is the rate for the penultimate calendar year preceding the tax year. However, the interest rate thus fixed cannot differ by more than one percentage point from the rate applied during the previous tax year, and cannot exceed 6.5 p.c. For the 2007 tax year, the interest rate for the notional interest deduction is 3.442 p.c. That rate is increased by 0.5 percentage point for SMEs, bringing it to 3.942 p.c.[7]

(1) Law of 24 December 2002 amending the rules on the taxation of corporate incomes and introducing a system of advance decisions on taxes.

(2) Law of 22 June 2005 introducing a tax deduction for risk capital.

(3) Shares in profits are excluded from the basis of calculation in order to prevent the parent company and the subsidiary from both receiving a tax allowance based on the same capital.

(4) A company which has a permanent establishment in a country party to the convention and whose income is exempt in Belgium cannot apply any risk capital deduction to the part of the capital attributable to that establishment.

(5) The basis of calculation is reduced by the net accounting value of the tangible fixed assets to the extent that those fixed assets are unreasonably excessive compared to the needs of the business, assets which do not produce any taxable periodic income and are held by way of an investment, and property held for private purposes.

(6) Considering that the change took place on the first day of the calendar month following its occurrence.

(7) For the 2008 tax year, the rate will be higher owing to the increase in interest rates between 2005 and 2006. It will thus rise to 3.781 p.c. for large firms and 4.281 p.c. for SMEs.

If the company has insufficient taxable profits to take full advantage of the notional interest deduction, the exemption not granted can be carried forward successively to taxable profits in the next seven financial years. However, it cannot be carried forward in the event of a takeover or change of control over the company which does not correspond to legitimate economic or financial objectives.

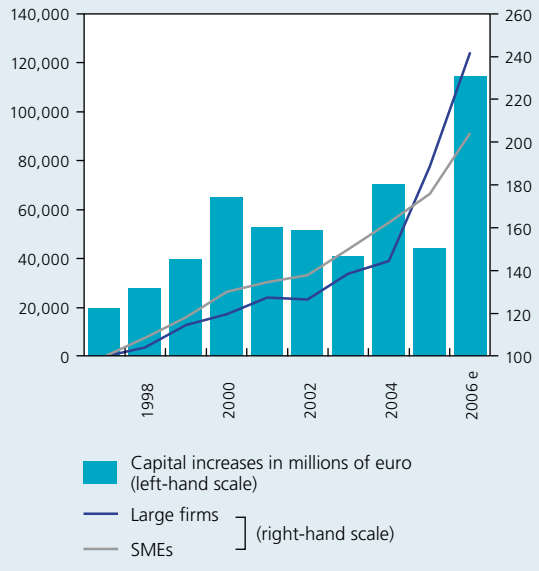
This reform also made provision for a number of compensatory measures aimed at budget neutrality. Tax incentives, such as the tax credit for SMEs, were abolished, the rate of the investment allowance (single or staggered)[1] was cut to zero and the legal definition of the concept of "capital gains" was amended.[2] The measure relating to the tax-exempt investment reserve for SMEs was not abolished, but cannot be applied at the same time as the notional interest deduction. SMEs which form an investment reserve during a given tax period cannot deduct notional interest for that period or for subsequent tax periods.

4.4 Financial behaviour of firms

By introducing the tax relief for risk capital, the authorities hope to encourage firms to invest more by means of their own capital, either by issuing new shares or by making use of reserved profits. Since it came into force in 2005, the measure has had a structural impact on the financial behaviour of firms (cf. charts 13 et 14). It is even probable that there has been a dynamic effect, with firms trying to increase the impact of the notional interest deduction by specifically targeted optimisation techniques, such as increasing the equity capital, reducing the amounts of adjustment items, or restructuring.

CHART 13 ADJUSTED EQUITY CAPITAL AND CAPITAL INCREASES

(index 1997 = 100)



Source : NBB.

The movement in the adjusted equity capital can be compared with the figures on capital increases published in the annexes to the Moniteur belge. These two variables generally follow a similar pattern. Chart 13 shows, in addition to capital increases via share issues, the positive adjusted capital of non-financial corporations excluding coordination centres. Only firms with positive adjusted capital can in fact claim the notional interest deduction. Moreover, the measure does not apply to companies eligible for an excessively generous tax scheme under ordinary law, such as the coordination centres.

In 2006, share issues reached a record level of 114 billion euro, representing an increase of more than 250 p.c. against 2005.[3] In regard to capital increases, many firms therefore seem to have waited until 2006 before adjusting their financial structure.

The adjusted equity capital reached a record level in 2006, for both large firms and SMEs. This upward trend had already begun in 2005 for both categories of firms, but it was mainly large firms that recorded a break in the trend from 2005. Their adjusted equity capital in fact increased by around 30 p.c. for two consecutive years, whereas it had never previously risen by more than 14 p.c.

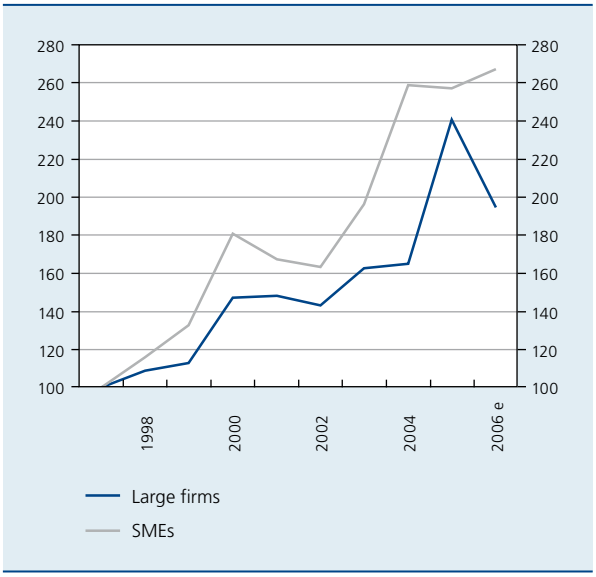
Although SMEs qualify for a 0.5 percentage point higher deduction, it is mainly international firms and those with substantial financial resources that are restructuring their capital. The notional interest deduction is in fact more attractive for the most heavily capitalised firms. Apart from the notional interest deduction, SMEs are still able to opt for the investment reserve. Several factors influence that choice, such as the amount of the (adjusted) equity capital, the investment forecasts, profit forecasts and dividend policy.

(1) But the increased deduction for investments continues to apply to patents, investments in research and development, energy-saving investments, investments designed to secure business premises, or investments intended for the production of reusable containers for drinks and industrial products.

(2) From the 2007 tax year, the exemption is explicitly limited to the net capital gain, and the costs entailed in realising a capital gain can no longer be deducted from the exempt amount.

(3) A large part of the transactional value is generally imputable to a small number of firms. The high level attained in 2004 is attributable exclusively to a single coordination centre whose capital increased by 11 billion euro.

CHART 14 DIVIDENDS PAID OUT
(index 1997 = 100)



Source : NBB.

The difference in the financial behaviour of large firms and SMEs is very clear from their dividend policy (cf. chart 14). Since 2003, both categories of firms have recorded a large increase in dividends paid out, owing to the profit growth achieved. Dividends paid out by SMEs reached a record level of 2 billion euro in 2004 and fluctuated around that level in 2005 and 2006. Dividend payments by large firms reached a record level of 24.4 billion euro in 2005. There was then a break in the trend in 2006, when they fell by 20 p.c. The introduction of the notional interest deduction reinforces the attraction of equity capital.

Conclusion

Overall, the economic environment in 2006 was largely favourable to businesses : expansion of the export markets, a stable currency, slowing of the pace of oil price rises, low long-term interest rates and rising stock markets. In that context, the value added of non-financial corporations mirrored the trend in GDP : its growth rate in fact accelerated in 2006, to reach 6.3 p.c. at current prices, a level comparable to that of 2004 (cf. table 2). While the rise in total operating expenses was amplified again in 2006, to reach 5.5 p.c., it still remained below the rise in value added. Consequently, the net operating result, which had already increased dramatically in the three preceding years, recorded a further strong rise (+9.2 p.c.). In the space of four years, the net operating profit thus virtually doubled from 17 billion in 2002 to almost 33 billion euro in 2006.

In line with the trend seen over the past decade, the financial result increased again during the year under review, and now totals almost 10 billion euro. As in 2005, the net exceptional result was decidedly positive, the main factors being the capital gains on the realisation of assets in the energy sector. After deduction of taxes on profits, financial corporations made a total net profit of more than 43 billion euro in 2006, up by around 5 p.c. compared to the previous year. The profit excluding the exceptional result climbed almost 14 p.c. to 34 billion euro. These movements recorded in 2006 are in line with the trend towards a dramatic recovery in corporate results, apparent since 2003. It should be remembered that the profit excluding the exceptional result came to only 15 billion in 2002.

The financial situation of companies continued to improve in 2006. Both the globalised ratios and the distribution figures indicate the – in historical terms – exceptionally high levels attained by the profitability, solvency and liquidity of Belgian firms. Nonetheless, some firms are in a precarious position : thus, a quarter of Belgian companies are loss-making, while 16 p.c. of them have negative equity.

A record level of corporate income tax revenues totalling 8.5 billion euro was recorded in 2006 in the case of non-financial corporations. However, the increase in those revenues was less marked in 2006 (+4.9 p.c.) than in 2004 and 2005 owing to the effect of the notional interest deduction. That effect is also apparent in the ratio between corporate income tax revenues and value added. Following an upward trend during the period 2002-2005, that ratio declined by 0.1 percentage point in 2006. Yet the growth of corporate income tax revenues does not mean that the tax burden has risen since 2003. The globalised implicit rate declined in 2003, perhaps on account of the first tax reform, before falling further in 2006 to around 16 p.c. as a result of the second tax reform. The latter has probably had a structural influence on corporate financial behaviour. Share issues reached a record total of 114 billion euro in 2006, an increase of more than 250 p.c. against 2005. The adjusted equity capital – which forms the basis for calculating the amount of the tax relief for risk capital – also reached a record level in 2006. It is mainly large firms that have recorded a break in the trend since 2005, as their adjusted equity capital increased by around 30 p.c. for two consecutive years. The difference between large firms and SMEs is also apparent in their dividend policy. Large firms paid out 24.4 billion euro in dividends in 2005, a record figure, but in 2006 there was a 20 p.c. decline in the profits distributed.

MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1997 AND 2006

(millions of euro)

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 e
Value added		**102,066**	**108,272**	**112,546**	**121,045**	**123,532**	**125,295**	**130,829**	**139,504**	**145,872**	**154,994**
Staff costs	(–)	60,637	63,756	66,960	70,986	73,734	76,114	77,326	79,973	82,367	86,270
Depreciation, downward value adjustments and provisions	(–)	20,176	21,397	22,163	24,434	25,695	25,104	24,380	23,947	24,980	27,163
Other operating expenses	(–)	4,960	5,933	5,793	6,456	6,956	6,808	7,442	8,165	8,581	8,849
Total operating expenses		*85,773*	*91,085*	*94,917*	*101,876*	*106,386*	*108,025*	*109,148*	*112,084*	*115,927*	*122,282*
Net operating result		**16,293**	**17,186**	**17,629**	**19,169**	**17,146**	**17,270**	**21,681**	**27,420**	**29,945**	**32,712**
Financial income	(+)	24,974	23,259	25,774	35,724	37,655	46,875	50,061	43,829	41,888	46,678
Financial charges	(–)	23,249	20,820	22,258	29,620	30,979	43,015	44,975	37,830	33,699	36,785
Financial result		*1,724*	*2,440*	*3,516*	*6,104*	*6,676*	*3,859*	*5,085*	*5,999*	*8,189*	*9,893*
Ordinary result		**18,017**	**19,626**	**21,145**	**25,273**	**23,822**	**21,129**	**26,767**	**33,419**	**38,134**	**42,605**
Exceptional result[1]	(+)	2,583	2,911	5,798	2,822	1,438	–2,665	5,922	7	11,145	9,181
Net result before tax		**20,600**	**22,537**	**26,943**	**28,095**	**25,261**	**18,465**	**32,689**	**33,426**	**49,279**	**51,785**
Taxes on profits	(–)	4,890	5,276	5,822	6,491	6,479	6,156	6,587	7,347	8,145	8,546
Net result after tax		**15,711**	**17,261**	**21,121**	**21,604**	**18,782**	**12,309**	**26,102**	**26,078**	**41,133**	**43,239**
p.m. Net result after tax excluding the exceptional result		***13,128***	***14,350***	***15,323***	***18,782***	***17,344***	***14,973***	***20,179***	***26,071***	***29,989***	***34,059***

Source: NBB.

(1) There is very little sense in calculating a percentage change for this aggregate, which may be either positive or negative and does not lend itself to reliable estimation.

Annex 2

SECTORAL CLASSIFICATION

	NACE-Bel reference
Manufacturing industry	**15-37**
of which:	
Agricultural and food industries	15-16
Textiles, clothing and footwear	17-19
Timber	20
Paper, publishing and printing	21-22
Chemicals	24-25
Metallurgy and metalworking	27-28
Metal manufactures	29-35
Non-manufacturing branches	01-14 and 40-95
of which:	
Retail trade	50-52
Wholesale trade	51
Horeca	55
Transport	60-63
Post and telecommunication	64
Real estate activities	70
Business services	72-74 (1)
Energy and water	40-41
Construction	45

(1) Except 74,151 (management of holding companies).

Annex 3

DEFINITION OF THE RATIOS

	Item numbers allocated	
	full format[1]	abridged format
1. Return on equity		
Numerator (N)	70/67 + 67/70	70/67 + 67/70
Denominator (D)	10/15	10/15
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
10/15 > 0[2]		
2. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
3. Degree to which borrowings are covered by cash-flow		
Numerator (N)	70/67 + 67/70 + 630 + 631/4 + 6501 + 635/7 + 651 + 6560 + 6561 + 660 + 661 + 662 – 760 – 761 – 762 + 663 – 9125 – 780 – 680	70/67 + 67/70 + 8079 + 8279 + 631/4 + 635/7 + 656 + 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		
4. Average interest charges on financial debts		
Numerator (N)	650	– 65 – 9125 – 9126
Denominator (D)	170/4 + 42 + 43	170/4 + 42 + 43
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		
6. Implicit rate of corporate income tax		
Numerator (N)	67/77	67/77
Denominator (D)	9903 – ((280 + 282 + 284) / 28) × 750	9903
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
9903 > 0		
If 28 = 0, then D = 9903 (full format)		
(9903 – (((280 + 282 + 284) / 28) × 750)) > 0 (full format)[2]		

(1) In which the profit and loss account is presented in list form.
(2) Condition valid for the calculation of the median but not for the globalised ratio.

The social balance sheet 2006

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P. Heuse
H. Zimmer

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 as a basis for analysing the trend in employment, staff costs and working time, the structure of employment at the end of the financial year, staff movements and employee training. In addition, the social balance sheet was intended to provide information on the use which businesses made of various employment promotion measures. However, the constant adjustments to the employment policy have rendered that record obsolete and hence unusable, despite the efforts of the legislature to update it. In the new version of the social balance sheet, this table will no longer appear since the NSSO is able to supply the information requested from the multi purpose declaration that businesses have been required to file since 2003. In addition, changes are being made to the tables concerning training in order to take better account of all corporate training efforts: formal training, informal training and initial training will be recorded in separate tables.

This article discusses the results of the social balance sheets filed for 2006. It is divided into five main sections. The first examines the trend in employment between 2005 and 2006 and the second looks at staff movements recorded in 2006. The third comments on the structure of employment (particularly working arrangements, type of employment contracts and the use of agency workers), and the last two focus on staff costs and training.

The results set out in this article are obtained, for each financial year, from uniform populations of firms which have filed a social balance sheet meeting a range of quality criteria. Annex 1 contains a brief account of the methodological principles governing the construction of these populations. Since the analysis focuses on regional variations in corporate behaviour, Annex 1 also explains how the regional breakdown of firms was produced. The breakdown by branch of activity is based on the sections and divisions of the NACE-Bel nomenclature and is reproduced in Annex 2. As in previous years, Annexes 3 to 9 contain a series of indicators per branch of activity. Annexes 10 to 12 break down some of those indicators according to the region to which the firms belong.

Most of the results of this analysis are obtained from a constant reduced[(1)] population of firms. Use of a constant population permits analysis of the movement in a range of variables between the 2005 and 2006 financial years, whereas comparison with the data relating to the complete population for 2005 would introduce a bias which would distort the conclusions. However, 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 bankrupt companies, 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, the adoption of this approach is justified in view of the excessive length of time required to obtain information for all firms, and the safeguards offered by the representativeness of the reduced population.

(1) Firms have seven months from the end of the financial year to send their social balance sheets to the Central Balance Sheet Office. In view of the extra time needed to check the data, the full set of social balance sheets was not available on 19 September 2007, the date on which the 2006 figures were extracted.

TABLE 1 CHARACTERISTICS OF THE TOTAL AND REDUCED POPULATIONS IN 2005

(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	*77,218*	*1,758,120*	*43,797*	*1,318,476*
Breakdown by branch of activity				
Agriculture	1.7	0.5	1.6	0.4
Industry	13.7	26.4	15.5	29.6
Construction	14.7	7.6	14.8	7.0
Trade, transport and communication	43.5	32.3	42.0	33.0
Financial, real estate and business services	19.9	17.1	20.3	17.2
Other services	6.5	16.1	5.8	12.7
Breakdown by size of firm[2]				
Small firms (up to 50 FTEs)	94.8	34.3	92.9	28.1
Medium-sized firms (over 50 to 250 FTEs)	4.2	20.4	5.7	20.9
Large firms (over 250 FTEs)	1.0	45.3	1.4	51.1
Breakdown by region				
Single-region firms	98.7	73.6	–	–
Brussels	11.8	8.4	–	–
Flanders	60.9	46.8	–	–
Wallonia	26.0	18.4	–	–
Multi-region firms	1.3	26.4	–	–

Source: NBB (social balance sheets).
(1) Sum of items 1001 (full-time workers) and 1002 (part-time workers).
(2) Determined according to the value of item 1003 (FTEs) in 2005.

The reduced population comprises 43,797 firms employing 1,318,476 workers in 2005; that represents 57 p.c. of the firms in the total population and 75 p.c. of the workers employed by them.

The breakdown of firms by branch of activity is based on the NACE-Bel codes. Workers employed in the trade, transport and communication branch represent one third of the reduced population, and industry 30 p.c. The other branches are less important in relative terms, namely 17 p.c. for the financial, real estate and business services branch, 13 p.c. for the other services branch and 7 p.c. for construction. Agriculture remains decidedly marginal. Representativeness, which measures the proportion of workers employed in firms in the reduced population as a percentage of all employees in the total population, is relatively low in the other services branch (59 p.c.) and in construction (69 p.c.). Conversely, in industry (84 p.c.), it is well above average.

The classification of firms by size is based on the average number of workers expressed as full-time equivalents (FTEs)[1]. Small firms with no more than 50 FTEs, or 93 p.c. of firms in the reduced population, employed around 28 p.c. of that population's workforce in 2005, well below the figure of 34 p.c. recorded in the total population. Medium-sized firms, employing 50 to 250 FTEs, accounted for 21 p.c. of the workforce in the reduced population, a proportion similar to that for the total population. Large firms, with over 250 FTEs, employed just over half of the workforce in the reduced population, compared to 45 p.c. in the total population. The results obtained from the reduced population are therefore influenced by the over-representation of large firms.

(1) Item 1003 in the social balance sheet.

The regional breakdown was based on the location of the various production units of the firms as indicated by the NSSO statistics per establishment. Firms active in only one region are called single-region firms and are attributed to the region in which they operate. Multi-region firms have production units in more than one region. As explained in Annex 1, neither the majority allocation formula (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 formula (which breaks down the social balance sheet items among the various regions in which the firm is active according to the employment recorded there) was considered satisfactory. The group of multi-region firms was therefore not broken down among the regions. The breakdown between single-region and multi-region firms was effected only on the basis of the total population, as the results of a breakdown based on the reduced population were liable to be insufficiently representative at regional level. 2005 is the latest financial year for which the total population is available. At that time there were 76,202 single-region firms, or almost 99 p.c. of the total. On average, these were small firms since their workforce comprises only 74 p.c. of all workers, almost two-thirds of whom are employed in Flanders, 25 p.c. in Wallonia and 11 p.c. in Brussels. Firms active in more than one region, numbering 1,016 in 2005, together employed 26 p.c. of the workforce.

1. General characteristics of employment developments

As an annual average, the workforce employed by the 43,797 firms in the reduced population expanded by 16,509 persons between 2005 and 2006, a rise of 1.3 p.c. That increase originated from the rise in the numbers of both full-time and part-time workers. However, with an increase of 11,543 units, it is the latter category which made the greatest contribution to the expansion of the workforce. The volume of employment expressed in FTEs grew by an annual average of 1.2 p.c. On the basis of the end-of-year situation, the change in both the total number of persons employed and the volume of employment expressed in FTEs was smaller (0.8 p.c.), bearing witness to the slackening pace of job creation during the year in these firms. On 31 December 2006, they were employing 10,499 more workers than a year earlier.

The increase in the number of employees on the staff register at the end of the year recorded as part-time workers – 7,902 persons – is due more to the female workforce, although the number of men registered as part-timers showed a more sustained increase, reflecting a changing pattern of behaviour. The number of men working part-time thus increased by 4.3 p.c. between 2005 and 2006, against 2 p.c. for female part-timers. Conversely, almost two-thirds of the change in the full-time workforce is attributable to the registration of male staff members.

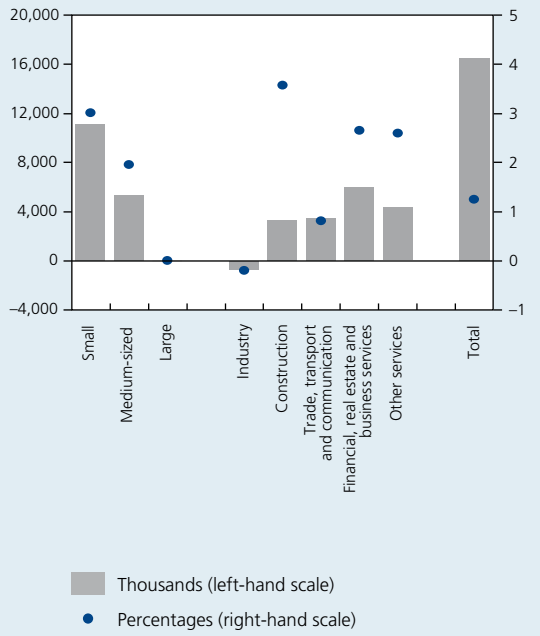
TABLE 2 EMPLOYMENT DEVELOPMENT BETWEEN 2005 AND 2006
(reduced population)

	Persons employed			FTEs
	Full-time	Part-time	Total	
Annual average				
Units	4,966	11,543	16,509	14,416
Percentages	0.5	3.8	1.3	1.2
As at 31 December				
Units	2,597	7,902	10,499	9,378
of which:				
Men	1,608	3,297	4,905	4,345
Women	989	4,605	5,594	5,033
Percentages	0.3	2.5	0.8	0.8

Source: NBB (social balance sheets).

CHART 1 CHANGE IN EMPLOYMENT BETWEEN 2005 AND 2006 : BREAKDOWN OF FIRMS BY SIZE AND BY BRANCH OF ACTIVITY

(annual averages, reduced population)



Source : NBB (social balance sheets).

The rise in the average number of workers was driven by small firms, which recorded an increase of 11,146 units in their average workforce (mainly full-time workers), and to a lesser extent by medium-sized firms. In contrast, the average workforce remained stable in large firms from 2005 to 2006, as the additional part-time jobs did not offset the reduction in full-time employment.

Employment expanded in all branches of activity, except industry where the average workforce contracted by 757 units, or –0.2 p.c., as a result of proportionately comparable job losses in manufacturing and in the energy and water supply sector. Construction firms created 3,309 additional jobs in 2006, mainly full-time, increasing average employment by 3.6 p.c. The number of persons employed in the trade, transport and communication branch was up by 3,510 units (a 0.8 p.c. increase). In this branch, the strongest employment growth took place in trade and repairs (3,637 persons, mainly employed part-time), while the hotel and restaurant sector created 544 additional jobs. Conversely, in transport and communication there was a decline in employment due to the heavy cuts in the full-time workforce. The financial, real estate and business services branch produced an overall rise in employment of 6,028 units, an increase of 2.7 p.c., with real estate and business services recording the largest increase in the number of workers (5,076 persons, three-quarters of them employed part-time). Finally, the other services branch expanded its workforce by 4,346 workers, predominantly part-timers; firms in the health and social work sector experienced the most dynamic employment growth. However, in 2005 a number of hospitals were not included in the population of firms owing to the poor quality of the data, which may have influenced the results.

2. Staff movements

2.1 Staff recruitment and departures in firms as a whole

The external staff movements underlying the changes in employment recorded by firms, i.e. incoming workers entered in the staff register and workers leaving on termination of their contract of employment during the year, are recorded in a special table in the social balance sheet. In 2006, these movements exceeded those in the previous year. Thus, for a total workforce as at 31 December 2006 of 1,331,065 persons, firms in the reduced population recorded 482,407 workers joining and 471,531 leaving; these figures are respectively 9.3 and 11.7 p.c. higher than in 2005. Altogether, net recruitment totalled 10,876 persons in 2006 (1), which was lower than the 19,411 recorded a year earlier. This decline in net recruitment affected both SMEs and large firms. The latter actually recorded net departures of workers in 2006, which was not the case the year before.

TABLE 3 STAFF RECRUITMENT AND DEPARTURES

(persons, reduced population)

	2005	2006
Recruitment	441,461	482,407
of which : full-format accounts	263,971	274,539
Departures	422,050	471,531
of which : full-format accounts	255,339	271,149
Net recruitment	19,411	10,876
of which : full-format accounts	8,632	3,390

Source : NBB (social balance sheets).

(1) This figure differs somewhat from that shown in table 2 (10,499 units), since the staff changes recorded as at 31 December in two consecutive years are not always equal to the balance of staff recruitment and departures.

While firms filing abbreviated accounts state only the number of workers joining and leaving, and their type of working arrangements, those filing full-format accounts are required to indicate the type of employment contract, sex and standard of education of workers added to or deleted from the staff register, and the reason for termination of their contract. Companies required to submit full-format accounts represented 19.3 p.c. of the total firms in the reduced population in 2006, but 78.9 p.c. of the average workforce. They recorded 274,539 workers joining and 271,149 leaving, or respectively 4 and 6.2 p.c. more than the previous year. Overall there was a marked decline in net recruitment.

2.2 Staff recruitment and departures in firms filing full-format accounts

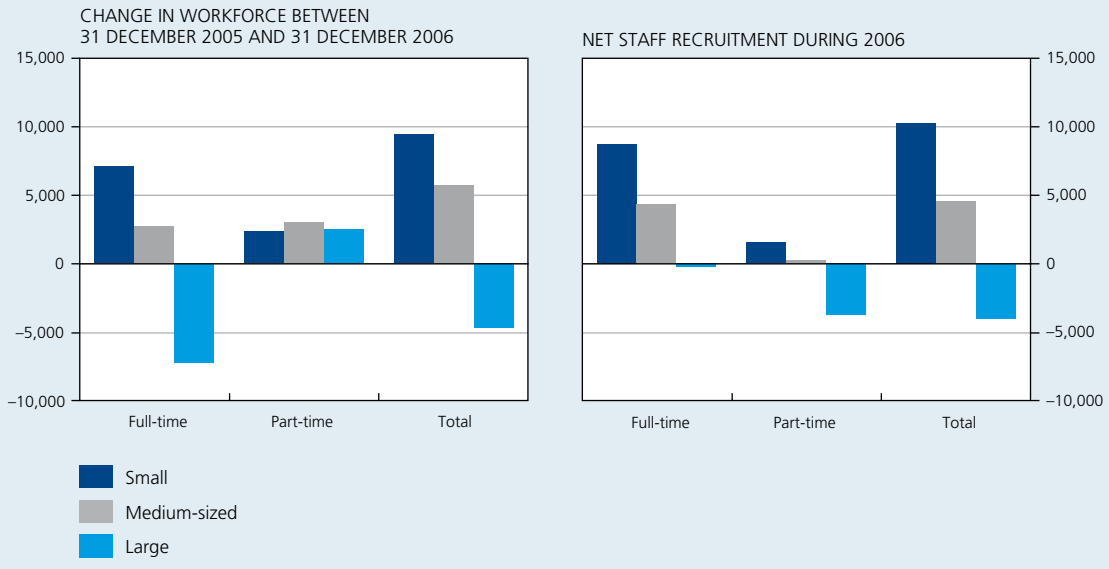
2.2.1 Expansion of part-time working

For some years now, the expansion of employment has been sustained by the growth of part-time working. This arrangement makes it possible both to spread the volume of work necessary for production over a larger number of persons and to develop new activities. Moreover, for the persons employed, switching to part-time work is an option which can attenuate the effects of restructuring in some firms, or make it possible to continue working as retirement approaches. From the individual's point of view, part-time working may be a way of achieving a better work-life balance. The wide range of motivations is reflected in the fact that the changing proportion of full-time to part-time workers is not due solely to external staff movements, but also arises from movements within the firms themselves. However, those movements cannot be identified as such in the social balance sheet. The scale of those movements can only be ascertained by comparing the situations between two year-end dates and the external staff movements during the year.

The expansion of part-time working in 2006 is in fact due only partly to the recruitment of part-time workers. In large firms, where the full-time workforce declined by 7,232 units between 31 December 2005 and 31 December 2006, the part-time workforce grew by 2,520 units. That increase corresponds mainly to workers switching from full-time to part-time working, as examination of external staff movements shows that recruitment of part-timers fell short of departures in these firms by a total of 3,747 units. In comparative terms, a small number of net departures was recorded for full-time workers (267 units). The rate of part-time working therefore increased by 0.6 percentage point in large firms, to reach 27.2 p.c. in 2006. In medium-sized firms, internal changes also played a decisive role in the expansion of the rate of part-time working (18.3 p.c. in 2006, or 0.7 point more than

CHART 2 STAFF MOVEMENTS IN 2006 : BREAKDOWN BY WORKING ARRANGEMENTS AND BY FIRM SIZE

(persons, reduced population)



Source : NBB (social balance sheets).

in 2005): while net recruitment of persons working under this arrangement totalled only 229 units, 3,022 extra part-time workers were recorded during 2006. In firms employing up to 50 FTEs, the part-time workforce grew by 2,360 units during the year. Internal changes increased the net inflow of employees under this working arrangement, who totalled 1,550 units. However, it was mainly full-time workers who contributed to the rise in employment between 31 December 2005 and year-end 2006 in these small firms. Consequently, the rate of part-time working hardly increased and stood at 22.3 p.c. in 2006.

In 2002, in the private sector the career break scheme was replaced by the time-credit scheme which accords entitlement to every worker up to a maximum of 5 p.c. of the firm's workforce[1]. Nevertheless, time-credit cannot be obtained in firms with fewer than 11 workers unless the employer authorises his staff to take advantage of the scheme. Of the full-time workers who opted to work reduced hours, many made use of the facilities offered by the various time-credit schemes to cut their working time. The National Employment Office's annual report states that almost half of the workers receiving an allowance to reduce their working time (211,743 in 2006) did so via the time-credit scheme. This working time adjustment scheme expanded by 15 p.c. in 2006. The one-fifth reduction in hours worked continued to expand, and in 2006 the proportion of this type of break was equivalent to 60 p.c. of all time-credit. Thus, some 60,000 persons received a time-credit of this type, 10,000 more than in 2005. There has been a year-on-year increase in the proportion of workers aged 50 years and over. In 2006 it reached 53.2 p.c. of all those receiving a time-credit allowance; in 2003, that figure was only 41 p.c.

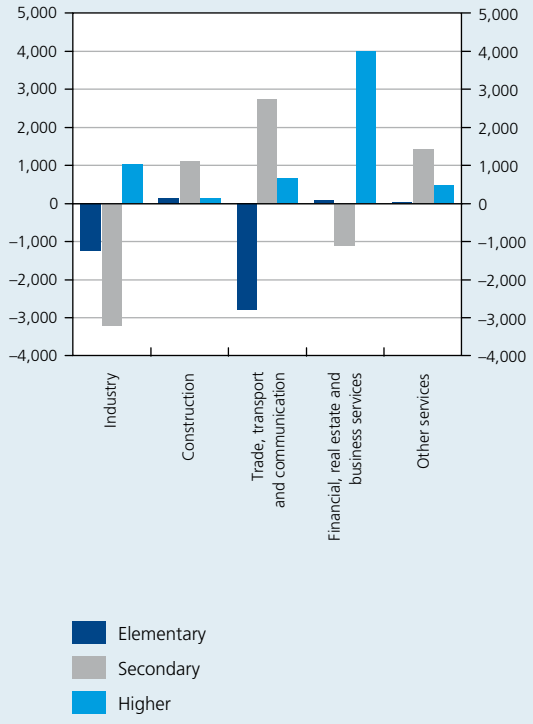
2.2.2 Education level of the workers

In line with what has been seen in recent years, the net expansion of the workforce recorded in firms filing full-format accounts, totalling 3,390 units, is due to a combination of net recruitment of workers with higher education qualifications (+6,295 units) or certificates of secondary education (+933 units) and net departures of holders of certificates of elementary education (–3,838 units).

All branches of activity recorded net recruitment of workers with higher education qualifications, but in varying proportions. For the financial, real estate and business services branch, the total came to almost 4,000 units, thus offsetting the net departures of medium-skilled workers. The activities of this branch rely on an increasingly skilled labour force, capable of adapting to the technological changes imposed by a modern economy. In industry, holders of higher education qualifications are the only category of workers for whom recruitment exceeds departures. The efforts that industrial firms have to devote to competitiveness are often reflected in staff restructuring, which mainly affects the low- or medium-skilled. In particular, net departures of workers with certificates of secondary education exceeded 3,000 units. The trade, transport and communication branch and the other services branch recorded more net recruitment of holders of certificates of secondary education than high-skilled workers. Finally, the latter made only a small contribution to the total net recruitment recorded in the construction branch. That is hardly surprising, since many of the skills necessary in construction are acquired on site or in secondary education. Industrial firms and those active in the trade, transport and communication branch recorded net departures of workers educated to elementary level. Nonetheless, a number of branches did record net recruitment of low-skilled workers, but the figures were marginal compared to the volume of net flows recorded.

CHART 3 NET STAFF RECRUITMENT IN 2006 : BREAKDOWN OF WORKERS BY STANDARD OF EDUCATION

(persons, reduced population, full-format accounts)



Source : NBB (social balance sheets).

(1) However, this limit may be adjusted by a sectoral collective agreement, a company agreement or the employment regulations.

2.2.3 Type of employment contract

Recruitment and departure of workers on permanent contracts represented an essential element of the dynamics of staff movements recorded by firms during 2006. Firms in the reduced population filing full-format accounts stated that 48.5 p.c. of recruitment and 52.8 p.c. of departures concerned workers on permanent contracts in 2006, against 46 p.c. and 42.2 p.c. respectively for fixed-term contracts.

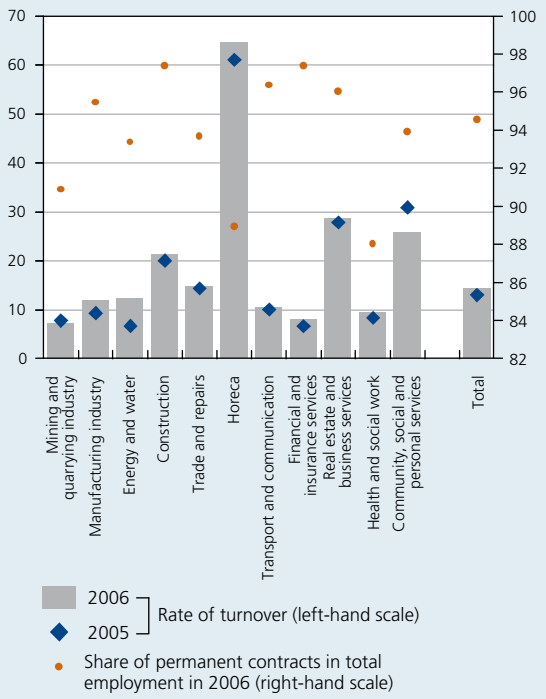
The turnover of fixed-term staff is high by nature, and the same applies to workers recruited as substitutes for members of the permanent workforce or to execute a particular project. Persons recruited as permanent staff also display some mobility – despite the supposedly more stable link between worker and employer – owing to natural wastage or termination of contracts at the worker's or employer's instigation. The rate of turnover is calculated by comparing the number of staff leaving during a year with the workforce recorded at the beginning of the year. In the reduced population, that was 14.3 p.c. in 2006, or 1.3 percentage points more than a year earlier. Large firms account for most of this increase.

The turnover of staff employed on a permanent basis varies according to the size of firm. It is highest in small firms, at 21.3 p.c. In large firms, the rate is 11.9 p.c. One reason for this difference may lie in the fact that the scope for internal mobility is greater in large firms, which also tend to have a more structured approach to pay progression.

Analysis by branch of activity also reveals that the lowest rate of turnover is found in the branches containing a high proportion of large firms. In particular, it was below 10 p.c. in financial and insurance services (8.1 p.c.) and in the health and social work branch (9.5 p.c.). The turnover rate was also relatively low in the transport and communication branch (10.6 p.c.) and in industrial firms, ranging from 7 p.c. in mining and quarrying to 12 p.c. in energy and water. However, manufacturing, and particularly the energy and water sector, recorded higher external mobility than in 2005; the restructuring which affected

CHART 4 RATE OF TURNOVER(1) FOR WORKERS UNDER PERMANENT CONTRACTS IN 2005 AND 2006

(percentages, reduced population, full-format accounts)



Source: NBB (social balance sheets).

(1) Ratio between the number of departures recorded in t and the workforce recorded at the end of year t less recruitment and plus departures recorded during the year. Agriculture was not shown because the data are not sufficiently representative.

TABLE 4 GROSS RECRUITMENT AND DEPARTURES OF STAFF, BY TYPE OF CONTRACT, IN 2006

(reduced population, full-format accounts)

	Recruitment	Departures	Recruitment	Departures
	Percentages of the total		Units	
Permanent contract	48.5	52.8	133,176	143,272
Fixed-term contract	46.0	42.2	126,200	114,338
Contract for execution of a specific project	2.2	2.1	5,920	5,716
Substitution contract	3.4	2.9	9,243	7,823

Source: NBB (social balance sheets).

these branches was probably a contributory factor. Turnover exceeded 20 p.c. in construction and in real estate and business services. In the community, social and personal services branch and in hotels and restaurants, where the social balance sheets record only part of the total volume of employment, these rates are actually in the region of 30 and 60 p.c. respectively, a level which may be due in most cases to the pay and employment conditions.

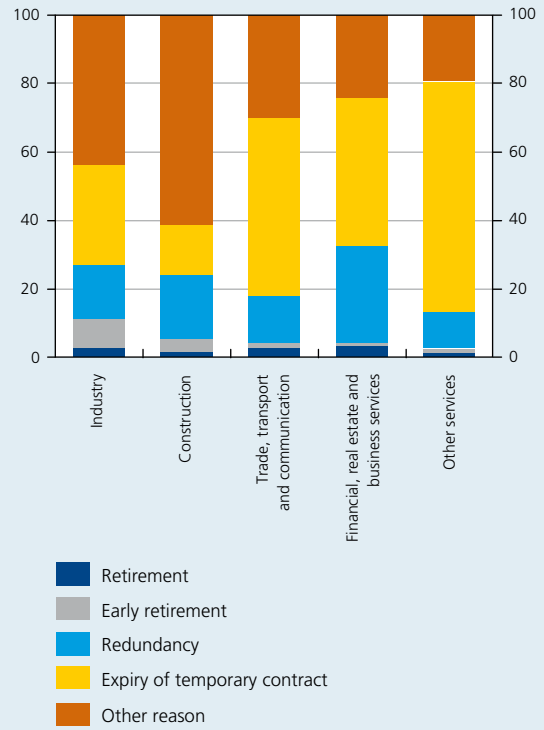
2.2.4 Reasons for leaving

In firms in the reduced population filing full-format accounts, gross staff departures increased by 6.2 p.c. in 2006. However, the breakdown by reason for leaving showed no fundamental change in relation to 2005. In almost half of the cases, the worker left on expiry of a temporary contract. The proportion of the total leaving voluntarily remains relatively high (around 31 p.c.), while redundancies affected almost 17 p.c. of the staff of the firms concerned. Normal and early retirement accounted for 2.4 and 2.8 p.c. of gross departures respectively. The share of these reasons dropped by 0.2 and 0.3 percentage points respectively compared to 2005. In a context in which gross staff departures have risen, this fall indicates that people are tending to continue working longer and make less use of early retirement.

Analysis of the motives for leaving shows that the main reasons vary according to the branch of activity. Expiry of a temporary contract accounts for 67.2 p.c. of staff departures in the other services branch, and 52.3 p.c. of departures in the trade, transport and communication branch. That was also the main reason for the departures recorded in the financial, real estate and business services branch. In construction and industry, the majority of those leaving did so voluntarily. Redundancies were more common than average in the financial, real estate and business services branch. Also, industry is the sector where the use of early retirement is most widespread, as this branch accounted for 62 p.c. of the early retirement recorded in 2006 in firms filing full-format accounts.

CHART 5 GROSS STAFF DEPARTURES IN 2006 : BREAKDOWN BY REASON

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



Source : NBB (social balance sheets).

3. Employment structure

3.1 Regional structure of employment

Since the regional breakdown could not be carried out on the basis of the reduced population owing to the lack of representativeness, it applies only to the total populations for the years 1998 to 2005 (for more details, see Annex 1).

The regional breakdown of the social balance sheets filed in 2005 by firms active in a single region reveals certain specific characteristics. The employment structure in Brussels firms is thus in sharp contrast to that in the other two regions. Combining the status of a major city with that of the country's federal capital and the administrative capital of the European Union, the Brussels region has an employment structure which is dominated by services. Here, the trade, transport and communication branch and the financial, real estate and business services branch represent respectively 30 and 36 p.c. of employment. Workers employed in the other services branch make up 16 p.c. of the workforce, and those in industry represent only 13 p.c., a much smaller proportion than in Flanders and Wallonia. Only 5 p.c. of employees of single-region firms in Brussels work in construction.

The breakdown of employment in single-region firms in Flanders is broadly comparable with that in Wallonia : most employment is concentrated in industry and in the trade, transport and communication branch. Construction accounts for 10 and 12 p.c. of employment in Flemish and

TABLE 5 REGIONAL STRUCTURE OF EMPLOYMENT IN 2005
(percentages of the total, total population)

	Single-region firms				Multi-region firms	Total
	Brussels	Flanders	Wallonia	Total		
By branch of activity						
Agriculture	0.1	0.8	0.7	0.7	0.0	0.5
Industry	12.5	31.8	28.1	28.6	20.2	26.4
Construction	5.0	9.8	11.8	9.8	1.7	7.6
Trade, transport and communication	29.8	28.5	25.2	27.8	44.6	32.3
Financial, real estate and business services	36.3	11.2	9.2	13.6	26.9	17.1
Other services	16.4	17.9	25.1	19.5	6.7	16.1
By gender						
Men	57.3	62.3	61.5	61.5	59.8	61.1
Women	42.7	37.7	38.5	38.5	40.2	38.9

Source: NBB (social balance sheets).

Wallonian single-region firms respectively, while financial, real estate and business services represent 11 and 9 p.c. of employment. The main difference is seen in the other services branch, which employs one in four workers in Wallonia and only 18 p.c. in Flanders.

The main branch in which multi-region firms pursue their activities is trade, transport and communication, where almost 45 p.c. of employment is concentrated. This is a far higher percentage than that recorded by single-region firms in each region. One reason for that is the presence in this branch of some large-scale distribution companies, the BNRC and the Post Office, whose networks cover the entire country. The financial, real estate and business services branch is also important at 27 p.c. of the total. The industrial sector accounts for 20 p.c. of employment in multi-region firms.

The male/female breakdown of employment also varies between regions; in single-region firms, Brussels has the highest proportion of women at almost 43 p.c., compared to 38 p.c. in Flanders and Wallonia. The importance of female employment in Brussels is due partly to the concentration of service activities there.

3.2 Full-time and part-time employment

Part-time employment has been expanding steadily in firms required to submit a social balance sheet. In 1998, one in five workers was employed for a reduced number of hours, but by 2004 the figure was one in four and there was a further small increase in 2005. The trend apparent in the reduced population indicates a further rise in the rate of part-time working, up by almost 2 p.c. in 2006. This development concerns both men and women. Already very widespread in the female working population, with about half of women working reduced hours, female part-time employment increased by a further 0.8 p.c. between 2005 and 2006. However, it is men who recorded the most marked rise in part-time working

TABLE 6 PART-TIME WORKING FROM 1998 TO 2006
(percentages of the corresponding employed population, 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	44.8	21.3
2002	8.1	46.5	22.8
2003	9.1	48.0	24.1
2004	9.8	49.0	25.2
2005	10.3	50.4	25.9
Reduced population			
2005	9.2	48.4	23.5
2006	9.5	48.8	23.9
p.m. Percentage change	*3.7*	*0.8*	*1.7*

Source: NBB (social balance sheets).

TABLE 7 PROFILE OF FULL-TIME AND PART-TIME WORKERS IN 2006

(percentages of the total, data as at 31 December, reduced population)

	Full-time workers	Part-time workers	Total
By gender			
Men	75.3	25.2	63.3
Women	24.7	74.8	36.7
By employment contract			
Permanent contracts	95.5	91.6	94.6
Temporary contracts (1)	4.5	8.4	5.4
By occupational status			
Managers	1.9	0.5	1.6
Clerical workers	51.9	63.3	54.6
Manual workers	45.3	35.3	42.9
Other	0.9	1.0	0.9

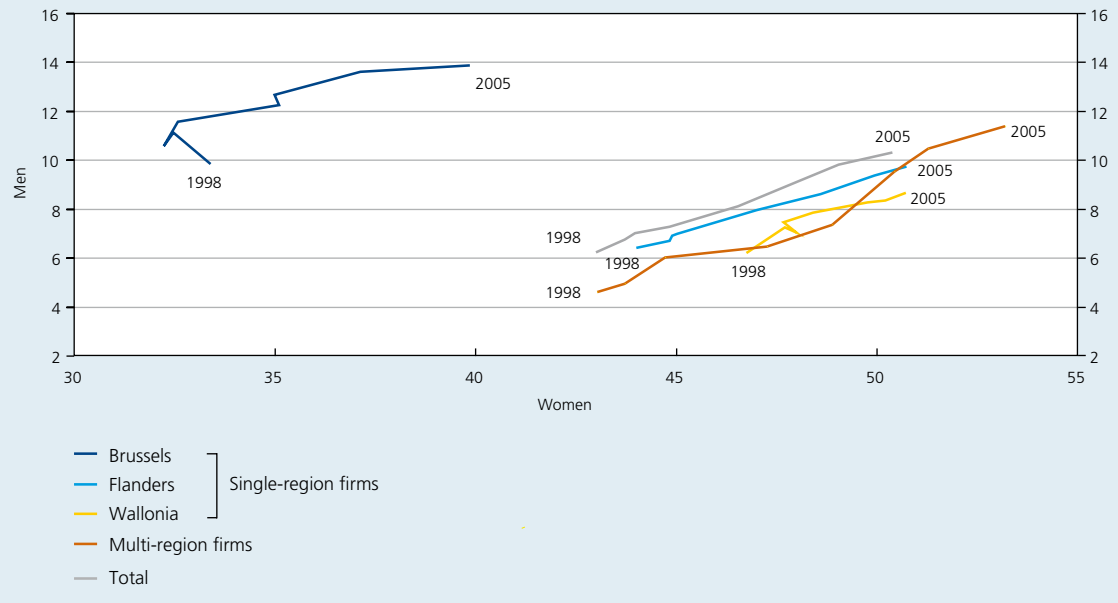
Source : NBB (social balance sheets).
(1) Fixed-term contracts, substitution contracts or contracts concluded for a specific project.

(3.7 p.c.), albeit starting from a much lower level. As already mentioned, the success of the various schemes for adjusting working time, particularly the one-fifth reduction in working time by men, has contributed to this development.

The profile of part-time workers in firms completing the social balance sheet differs from that of full-time workers in various respects. First, while women represented 37 p.c. of the workforce of firms in the reduced population, they made up the very great majority of part-time workers in

CHART 6 CHANGE IN MALE AND FEMALE PART-TIME WORKING BETWEEN 1998 AND 2005

(percentages of employment as at 31 December, total population)



Source : NBB (social balance sheets).

2006, namely 75 p.c., against only 25 p.c. of the full-time workforce. One reason for this structure could be the persistence of a model in which women are more inclined than men to devote themselves to family responsibilities, be it in households where both partners work or in single parent families where the adult is a woman in the majority of cases. Next, temporary contracts represent only 4.5 p.c. of the full-time workforce, whereas part-time workers are proportionately twice as numerous (8.4 p.c.) in the more flexible forms of contract such as fixed-term contracts, substitution contracts or contracts concluded for a specific project. Finally, 63 p.c. of part-time workers are classed as clerical workers and 35 p.c. as manual workers, the majority of whom are men. These proportions are 52 and 45 p.c. respectively in the case of full-time workers.

The regional breakdown of the social balance sheets allows comparison of the rates of female and male part-time working between the various regions. In that regard, the situation of single-region firms based in Brussels is in marked contrast to that of firms based in Flanders and Wallonia. The rate of male part-time working is higher there. Starting from a level which is already higher than that seen in firms based in the other regions in 1998, the proportion of men working part time was 14 p.c. in 2005, against less than 10 p.c. in Flanders and Wallonia. Conversely, the rate of female part-time employment, around 40 p.c., is lower there than in the other two regions (approximately 50 p.c.). Fewer than half of the women employed in financial, real estate and business services – a branch in which Brussels is specialised – are working reduced hours, whereas almost 60 p.c. of women active in other services (a branch which employs one in four workers in Wallonia) work part time. In the multi-region firms, the rate of part-time work has risen rapidly since 1998, both for men (+6.8 percentage points to 11.4 p.c. in 2005), and for women (+10.2 percentage points to 53.2 p.c. in 2005).

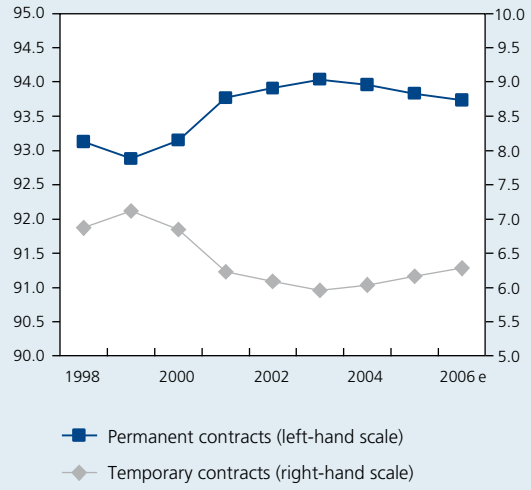
3.3 Type of employment contract

Temporary employment contracts – i.e. fixed-term contracts, substitution contracts or contracts concluded for a specific project – and contracts employing agency workers are instruments for adjusting the volume of labour according to production requirements. After declining between 1999 and 2001, the proportion of temporary contracts subsequently remained more or less stable. The information obtained from the reduced population does not indicate any change in the general trend: the share of temporary work has remained stable (+0.1 percentage point) between 2005 and 2006, despite a more buoyant economy. Permanent contracts still account for the bulk of total employment (93.7 p.c. in 2006).

(1) Federation of temporary recruitment agencies.

CHART 7 RELATIVE IMPORTANCE OF TEMPORARY [1] AND PERMANENT CONTRACTS BETWEEN 1998 AND 2006 [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 2006 were calculated by applying the change recorded between 2005 and 2006 for the reduced population to the value observed for the total population in 2005.

Only firms filing full-format accounts are required to submit information on the use of employment agency workers. In terms of the hours worked, the volume of labour stated in the social balance sheets nevertheless represents over 40 p.c. of that recorded by Federgon [1] for 2006. The conclusions which can be drawn from the social balance sheet therefore appear to be representative. In the reduced population, 61 p.c. of firms filing full-format accounts made use of agency workers in 2006. It was mainly firms with over 50 FTEs that employed agency workers. While half of small firms use this type of labour, that increases to 90 p.c. in the case of large firms. However, the share of agency work in total FTE employment is greater in firms with no more than 50 FTEs. Here it was equivalent to 6.1 p.c. of the workforce, against 5.6 p.c. in medium-sized firms and 2.8 p.c. in large firms.

The use of agency workers by firms in the reduced population increased between 2005 and 2006, rising from 33,550 to 39,655 FTEs (up 18.2 p.c.), or 3.9 p.c. of total employment in 2006. The volume of hours worked

increased by 17.2 p.c., and in 2006 represented 4.8 p.c. of the total volume of work. The average annual amount of time worked per agency worker therefore declined slightly, falling from 1,883 hours in 2005 to 1,868 hours in 2006. The average hourly cost of an agency worker, up from 22.6 to 23.2 euro, increased by 2.6 p.c., noticeably less than the 3.2 p.c. average increase for staff on the register of firms filing full-format accounts. Altogether, in 2006, the cost of employing agency workers represented 3.1 p.c. of the staff costs of firms filing full-format accounts.

Having increased by almost one percentage point since 1998, in 2005 the share of agency workers in the FTE employment of single-region firms in Flanders (4.1 p.c.) outstripped the proportion recorded for firms in Wallonia, which changed little between these two dates. Among the firms based solely in Brussels, agency staff represented only 2.6 p.c. of the persons employed in 2005. That reflects notably the fact that Brussels specialises more in financial, real estate and business services, where the use of agency workers is still relatively limited. Industry is the sector making most frequent use of temporary recruitment agencies: 84 p.c. of firms in this branch filing full-format accounts made use of agencies in 2006, and agency work represented 5.5 p.c. of the total FTE employment. Moreover, half of the agency workers are employed in this branch of activity. The proportion of agency work is smaller in multi-region firms, mainly because those firms are larger, on average, and because of their relative specialisation.

TABLE 8 WORK PERFORMED BY AGENCY STAFF IN FIRMS FILING FULL-FORMAT ACCOUNTS

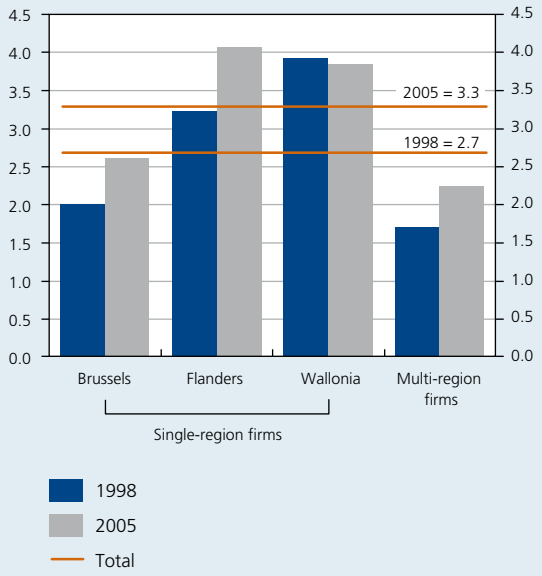
(reduced population)

	2005	2006
Percentages of the total		
Number of FTEs	3.3	3.9
Hours worked	4.1	4.8
Staff costs	2.7	3.1
Units		
Number of FTEs	33,550	39,655
Hours worked (thousands)	63,166	74,057
Hours worked per FTE	1,883	1,868
Staff costs per hour worked (euro)	22.6	23.2
Percentages of agency work recorded by Federgon		
Hours worked	41.2	42.8

Source: NBB (social balance sheets).

CHART 8 USE OF AGENCY WORKERS

(percentages of average FTE employment, full-format accounts)



Source: NBB (social balance sheets).

4. Staff costs

The staff costs recorded in the social balance sheets comprise only payments by employers to workers recorded in the staff register. They differ from the labour cost concept used in the national accounts in that they do not include the payments made to pensioners – who are no longer recorded in the staff register – or certain costs associated with any restructuring, which may be recorded on the balance sheet of firms as exceptional expenses. Furthermore, the picture indicated by the social balance sheets relates to a reduced population of firms, constant for 2005 and 2006, with the omissions of workers and firms which this methodology implies. Consequently, the movement in costs mentioned in the social balance sheets is not directly comparable to that calculated on the basis of the national accounts.

The costs incurred by firms in the reduced population in respect of workers recorded on the register increased by 4.3 p.c. between 2005 and 2006. Over the same period, the number of workers expressed as FTEs rose by 1.2 p.c., pushing up the average annual labour cost per FTE from 49,150 to 50,667 euro, a rise of 3.1 p.c.

TABLE 9 STAFF COSTS RELATING TO WORKERS RECORDED IN THE STAFF REGISTER

(euro, unless otherwise stated; reduced population)

	2005	2006	Percentage change between 2005 and 2006
Per FTE	49,150	50,667	3.1
Per hour worked	32.1	33.1	3.1
Full-time workers	32.7	33.7	3.1
Part-time workers	29.0	30.0	3.7

Source: NBB (social balance sheets).

The volume of labour expressed in hours grew at the same rate as FTE employment, so that the costs per hour worked also increased by 3.1 p.c., rising from 32.1 to 33.1 euro, on average. The increase was slightly greater in the case of part-time workers, whose hourly pay increased from 29 to 30 euro, a rise of 3.7 p.c., probably because of a change in the structure of the population employed part-time. Starting from a slightly higher level, the hourly costs associated with full-time work increased at the average rate, rising from 32.7 to 33.7 euro.

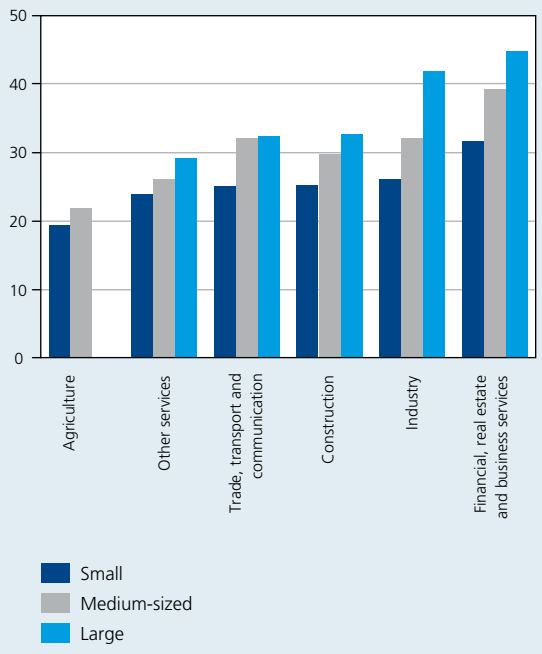
The hourly labour cost of part-time workers is often more volatile than that of full-timers, as the costs depend not only on the number of workers employed part-time, but also on their average pay, which is related to their jobs, qualifications, age, etc. The success of the schemes to adjust working time for older workers has probably boosted the incidence of part-time working, causing the hourly costs to rise more quickly, because – all other things being equal – the salary of the oldest workers is generally higher than the average. The volume of labour is influenced by the scale of the average reduction in working time. The decision by new part-time workers to cut their hours by half or one-fifth therefore does have an influence.

The rise in hourly labour costs has been more restrained in medium-sized firms (3.1 p.c.) than in large firms (3.3 p.c.), and particularly small firms (3.6 p.c.). There are also differences between branches of activity, and they are accentuated when viewed in more detail. The increase was well below average in agriculture (1.8 p.c.) and industry (2.9 p.c.). In the latter branch, the rise was particularly small in the energy and water sector (0.3 p.c.). Conversely, hourly costs showed a well above average increase in the other services branch (3.6 p.c.), particularly in community, social and personal services (4 p.c.). In the other three main branches the increase was between 3.1 and 3.3 p.c.

While the changes in staff costs per hour worked are different in firms arranged by size or by branch of activity, the levels also differ. As a general rule, hourly costs increase the larger the firm. In 2006, in the reduced population, they averaged 26.4 euro in small firms, 32.2 euro in medium-sized firms and 37.5 euro in large firms. There are also very wide variations between branches of activity: one hour of labour cost on average just under 20 euro in firms active in agriculture, between 28 and 30 euro in construction, the trade, transport and communication

CHART 9 STAFF COSTS PER HOUR WORKED IN 2006: BREAKDOWN BY FIRM SIZE AND BY BRANCH OF ACTIVITY

(euro, reduced population)



Source: NBB (social balance sheets).

branch and the other services branch, around 37 euro in industry and almost 40 euro in financial, real estate and business services.

There are also differences in pay conditions between the regions. Thus, in 2005, in single-region firms, hourly costs were lower on average in Wallonia (27 euro) than in Flanders (29 euro) and particularly Brussels (33.8 euro). In multi-region firms, these costs averaged 36.7 euro.

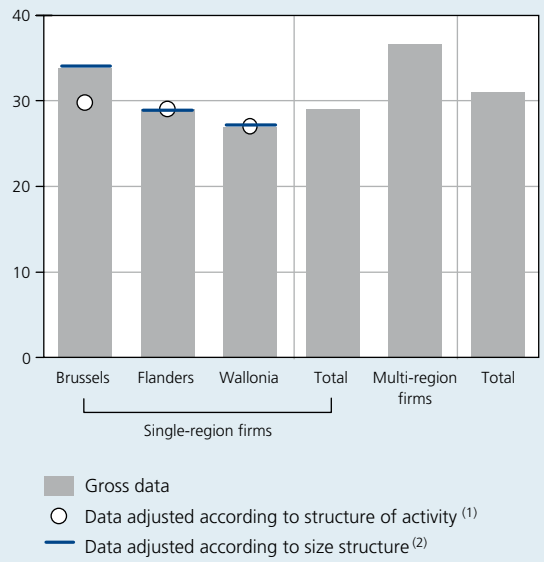
The firms' specialisation has a significant influence on these findings: some activities require the employment of more skilled staff, others offer more opportunities for productivity gains or are more exposed to national and international competition. The average size of the firms is also a factor behind pay differentiation, particularly because of the differing bargaining power of employers and workers. These two factors combined explain the differences in costs per hour worked between multi-region and single-region firms. The former specialise essentially in services, which represent almost 80 p.c. of their activity. In particular, 27 p.c. of employment is concentrated in financial, real state and business services, where mean hourly pay in 2005 was more than 20 p.c. higher than the average. The average size of multi-region firms is also considerably greater than that of single-region firms. Pay conditions prevailing in firms with over 500 FTEs are considerably better than the average.

Single-region firms – which are smaller – are proportionately more concentrated in the primary and secondary sectors, which account for 39 p.c. of activity and where labour costs per hour worked are – in some branches – below average. That applies in particular in agriculture and construction. Differences in the structure of activity – based on the six main branches of activities – are relatively slight between firms established in Flanders and Wallonia. Conversely, a higher proportion of those based in Brussels are active in services.

In order to take account of the differences in specialisation between single-region firms, particularly the divergences which could emerge if the activities were broken down in more detail, staff costs per hour worked, calculated at the level of NACE-Bel 2-digit activity divisions (i.e. for 49 branches), were weighted according to each of these division's share in the total volume of hours worked in all single-region firms. This uniform weighting exercise only affects firms based in Brussels, where hourly costs were reduced from 33.8 to 29.8 euro on average, whereas the costs remained unchanged in Flanders and Wallonia. The differences of structure are too small to have any notable influence on the total. Moreover, the standard deviation – which measures the variability in relation to the average – is of the same order of magnitude in these two regions, whereas it is higher for firms based in Brussels.

CHART 10 STAFF COSTS PER HOUR WORKED IN 2005: INFLUENCE OF SIZE AND BRANCH OF ACTIVITY ON REGIONAL RESULTS

(euro, total population)



Source: NBB (social balance sheets).

(1) Weighting according to the breakdown, by NACE-Bel 2-digit activity division (49 branches), of the volume of hours worked in all single-region firms.

(2) Weighting according to the breakdown by size (6 classes) of the volume of hours worked in all single-region firms.

A similar exercise was done to determine whether, despite the same average size, differences in the allocation of firms between six size groups (1) had a significant influence on the regional results. In Wallonia, employment is concentrated more than in the other two regions in companies with up to 50 FTEs (48.5 p.c. of the total, compared to 44.5 p.c. in Flanders and 46.3 p.c. in Brussels). Medium-sized firms based in Brussels employ 27.8 p.c. of the workforce, against 25.5 and 21.1 p.c. respectively in Flanders and Wallonia. Conversely, firms with over 250 FTEs are relatively less important in Brussels (25.9 p.c.) than in the other two regions (around 30 p.c.). However, the adjustment to neutralise the influence of size is minimal in all three regions, so that this factor cannot be said to have any significant influence.

(1) The six groups of firms respectively employ up to 10 FTEs, between 10 and 50 FTEs, between 50 and 100 FTEs, between 100 and 250 FTEs, between 250 and 500 FTEs, and over 500 FTEs.

5. Training

The social balance sheet makes it possible to measure the training efforts of firms exhaustively on an annual basis. It currently comprises two tables, one concerning formal training and the other dealing with training, guidance and mentoring activities resulting from the law of 5 September 2001 promoting the employment rate of workers. These last activities are relatively uncommon, unlike formal training activities: in 2005, fewer than 400 of the 72,000 firms in the total population stated that they had used them, and in the reduced population, the figure was under 300 in 2006. This small proportion makes it difficult to arrive at a valid interpretation of the results thus obtained. Moreover, this information will disappear in the next version of the social balance sheet. It was therefore decided not to devote a special section to it this year.

5.1 Formal training recorded in the social balance sheets

Formal training covers the training courses and programmes run by a person trained for the purpose in premises devoted to that activity. The organisation of these activities is planned according to the needs of the trainer. Employers are required to state the number of participants attending one or more forms of training, the hours spent on these activities and the costs incurred by the firm, stating the figures separately for men and women. The concept of training costs is understood in the broad sense, i.e. not only the costs invoiced, the trainers' pay and the various logistical costs associated with these activities, but also the pay of the participants and specific payments to the sectoral and social security funds, less any subsidies received.

At the level of the total population, just over 5,000 firms – only about 7 p.c. of the total – complete each year the social balance sheet table relating to formal training; the others are therefore considered not to have given their staff any formal training. In 2006, in the reduced population, the number of firms organising formal training totalled 4,080 units, which represents over 9 p.c. of companies in this population. It should be noted that the training programmes of some firms may vary considerably from one year to another according to their investment projects and the available budgets. Moreover, not all firms arrange training activities systematically every year. These characteristics must be taken into account in assessing the results recorded in relation to the training targets set.

In 1998, under the central agreement for 1999-2000, the social partners had quantified the amount to be spent on training in the next six years: in 2004, training costs were to represent 1.9 p.c. of labour costs incurred by all firms in the private sector. Intermediate targets had been set for the years 2000 (1.4 p.c.) and 2002 (1.6 p.c.). In 2003, at the employment conference, a target for participation in training was added: by 2010, one in two workers must have access to training each year. 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 them to define new growth paths, including at sectoral level. However, the Pact stipulates that the target of 1.9 p.c. of the wage bill to be spent on training must now be achieved in 2006, or two years later than the social partners originally planned.

The number of workers trained in firms in the reduced population increased by 2.6 p.c. between 2005 and 2006. Over the same period, the workforce expanded by only 1.3 p.c., so that the participation rate increased by 1.3 p.c. Although it is worth highlighting, the rise in this rate is not surprising: it is the only indicator relating to all firms which increased steadily between 2000 and 2005. However, there is still a long way to go to meet the target of one in two workers receiving training each year: if the increase recorded for the reduced population is applied to the latest observation for the total population (36 p.c. in 2005), the participation rate comes to 36.4 p.c. in 2006, which is almost 14 percentage points below the target set for 2010, namely 50 p.c.

The rise in the number of workers participating in training remained modest between 2005 and 2006 if it is compared with the increase in the budget or in the number of hours of training. The former increased by almost 11 p.c., and the latter by 8 p.c. In comparison, overall staff costs were up by only 4.3 p.c. and hours worked increased by 1.2 p.c.

The share of training budget in the total staff costs has therefore risen, for the first time since the beginning of the decade. In the firms in the reduced population, it was up from 1.29 to 1.37 p.c., an increase of more than 6 p.c., while between 2000 and 2004, for the total population, it had fallen steadily before becoming stable at 1.13 p.c. in 2004 and 2005. If the change recorded in the reduced population between 2005 and 2006 is applied to this last observation, that gives a rate of 1.20 p.c., which is well below the figure for 2000 (1.42 p.c.). On that basis, it is already apparent that the target of 1.9 p.c. for 2006 is unlikely to be achieved for the total population, since the change in the reduced population has an upward bias

owing to the over-representation of large firms which, traditionally, invest more in training.

The number of hours of training expressed as a percentage of the total hours worked also increased considerably between 2005 and 2006 in firms in the reduced population. The rise came to 6.9 p.c., whereas between 2000 and 2005 the decline seen in the total population had averaged around 3 p.c. per annum, or almost 15 p.c. altogether.

The indicators calculated only for training firms also increased between 2005 and 2006. The number of hours of training per participant rose by 5.4 p.c., reversing the downward trend observed for the total population since 2000. Costs per hour of training continued to rise, increasing by 2.6 p.c. between 2005 and 2006. In these respects, the situation for women is very different from that for men. Despite largely similar participation rates in 2006, the average number of hours of training per female worker was around 25 p.c. below that for men. There is a comparable divergence in regard to the cost of one hour of training.

There are significant variations in training performance between firms operating in only one region and those active in more than one region. The average size of the firms in these two groups is obviously an explanatory factor. Overall, in 2005, fewer than 4 p.c. of training firms were in the category of those employing up to 50 FTEs, compared to about half in firms of medium size and almost nine out of ten in firms employing over 250 FTEs. Unsurprisingly, proportionately fewer single-region firms, which are smaller on average, mention their investment in training. On average, training firms represented 6.2 p.c. of all single-region firms in 2005, compared to 44.8 p.c. of multi-region firms. In the first group, the proportion of training firms was considerably larger in Brussels and Flanders (respectively 6.7 and 6.8 p.c.) than in Wallonia (4.4 p.c.).

The structure of activity influences these results, as training policies differ fairly widely between branches of activity. Thus, while the proportion of training firms averaged 6.7 p.c. in 2005, it was almost 14 p.c. in industry and the other services branch, mainly because of the programmes conducted in the energy and water branch and in the health and social work branch respectively. The percentage of training firms was smaller, though still above average, in the financial, real estate and business services branch (around 8 p.c.), while in construction and in the trade, transport and communication branch it was much lower (3 and 4 p.c. respectively). Considerable differences were also seen in the management of training budgets, with some branches of activity providing cheap training for a large number of participants (that applies, for example, to the health and social work branch), while others use far more expensive types of training

TABLE 10 FORMAL TRAINING IN FIRMS

	Training firms	Training participants	Training costs		Hours of training	
	(as p.c. of total firms)	(as p.c. of average employment)	(as p.c. of staff costs)	(average per hour, in euro)	(as p.c. of hours worked)	(average per participant, in hours)
Total population						
1998	7.5	33.0	1.34	44.5	0.75	33.1
1999	7.9	34.6	1.30	44.4	0.74	31.2
2000	7.6	35.1	1.42	43.0	0.86	35.3
2001	7.0	35.0	1.36	44.3	0.84	34.0
2002	7.2	34.6	1.27	46.4	0.79	31.8
2003	7.1	34.7	1.20	45.4	0.77	31.0
2004	6.8	35.7	1.13	46.6	0.73	28.4
2005	6.7	36.0	1.13	47.8	0.73	28.0
Reduced population						
2005	9.1	40.4	1.29	49.7	0.83	28.8
2006	9.3	40.9	1.37	51.0	0.89	30.4
p.m. Percentage change	*2.0*	*1.3*	*6.4*	*2.6*	*6.9*	*5.4*

Source: NBB (social balance sheets).

(particularly financial and insurance services, and energy and water).

In terms of the six main categories of activity, single-region firms have a fairly similar structure in Flanders and Wallonia, so that one would expect their training indicators to be relatively comparable. However, single-region firms in Wallonia score 16 to 18 p.c. less than the single-region average for each of the indicators relating to all firms, whereas Flemish firms achieve systematically higher scores. The deficit in training firms in Wallonia partly explains the lower average results. In industry, the proportion of training firms recorded in Wallonia represents almost 80 p.c. of the figure for Flanders, but in the other branches the figure is around 60 p.c.

The regional indicators calculated for training firms only are more uniform: Flanders and Brussels produce similar results for participation rates and the relative length of training, but the financial indicator is still higher for firms in Flanders. Wallonia comes last for all three of these indicators, with results around 10 p.c. below the average. Training firms are therefore not only less common there than in the other regions, but they also achieve lower scores.

It is interesting to examine the extent to which the structure of activity influences the regional results of training firms. The exercise was conducted in the case of the financial effort devoted to training, given the political importance of this indicator. The training budget represents 1.40 p.c. of the staff costs of single-region firms in Flanders. In Brussels and Wallonia, the respective figures are 1.26 and 1.20 pc. To measure the effect of structure, the indicators observed in each region at the level of the NACE-Bel 2-digit activity divisions were given a uniform weighting, representing the share of each of these divisions in the total staff costs recorded for all single-region firms. The adjustment resulting from this uniform weighting is marginal for Flanders, where the structure is relatively close to the average. Conversely, the adjusted indicators came to 1.08 and 1.01 p.c. respectively for Brussels and Wallonia, i.e. a downward adjustment of almost 0.2 percentage point in both cases. In the case of Wallonia, the adjustment is not due to results which are systematically and significantly below the average. In 11 of 49 activity divisions, the results obtained for Wallonian single-region firms are higher than those recorded for their Flemish counterparts, and in 8 other divisions, the Wallonian results are only 0.2 percentage point lower at most. The main downward contribution comes from the metal manufacturing division, which invests 2.34 p.c. of its staff costs in training in Wallonia (a figure only slightly below that observed in Flanders, namely 2.45 p.c.), but whose weight is, in Wallonia, twice the average recorded for single-region firms in general.

TABLE 11 FORMAL TRAINING IN FIRMS IN 2005: BREAKDOWN BY REGION

	Training firms, as p.c. of total firms	Training participants, as p.c. of average employment	Hours of training, as p.c. of hours worked	Training costs, as p.c. of staff costs
	Data relating to all firms			
Single-region firms	6.2	27.1	0.54	0.72
Brussels	6.7	26.6	0.53	0.69
Flanders	6.8	29.1	0.57	0.77
Wallonia	4.4	22.1	0.45	0.61
Multi-region firms	44.8	60.7	1.30	2.08
	Data relating to training firms only			
Single-region firms	100.0	59.1	1.17	1.34
Brussels	100.0	61.3	1.19	1.26
Flanders	100.0	61.0	1.20	1.40
Wallonia	100.0	52.6	1.06	1.20
Multi-region firms	100.0	66.3	1.42	2.22

Source: NBB (social balance sheets).

5.2 Comparison of the results obtained from the social balance sheets and the CVTS survey

Regular, structured information originating from firms is relatively rare in regard to training policy. Only the social balance sheet supplies that information on an exhaustive annual basis. At the same time, a survey on continuous training in firms (Continuing Vocational Training Survey or CVTS), harmonised at European level, is conducted in all EU countries. So far, there have been three successive waves, in 1993, 1999 and 2005. Since 2005, the CVTS has been organised on a five-yearly basis, and, in Belgium, responsibility for the survey rests on the Directorate General Statistics Belgium of the FPS Economy, whereas previously it was conducted by university teams under contracts concluded with the European Commission.

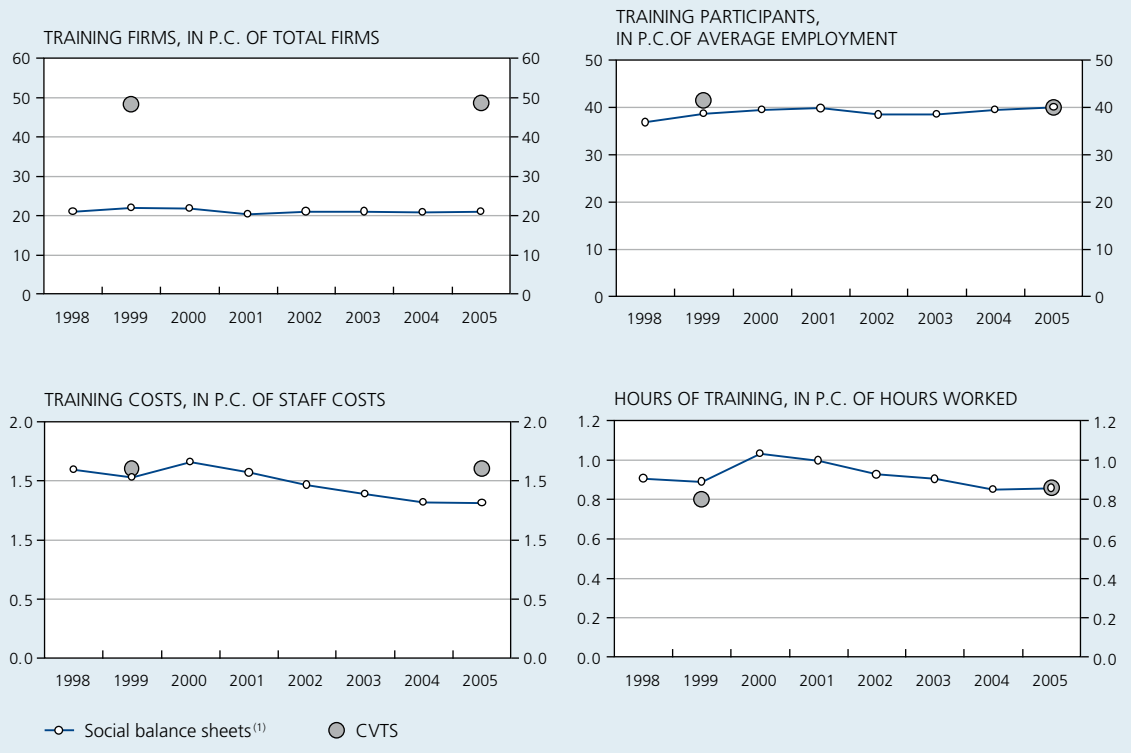
The population of firms covered by the CVTS survey is not the same as that required to complete the social balance sheet. The survey is conducted on a voluntary basis among firms with 10 or more employees operating in branches of activity C to K of the NACE-Bel nomenclature[1]. Altogether, information collected from 2,953 enterprises was used to extrapolate the results for the population as a whole: that is a considerably smaller sample than the population considered for the analysis of the social balance sheets, but is nevertheless a significant improvement on previous surveys (1,038 and 1,129 firms respectively were considered for CVTS1 and CVTS2). It should be noted that, in view of the change of operator, working method and questionnaire, the results of the three surveys are not entirely comparable.

While the social balance sheet currently focuses mainly on formal training, the CVTS survey also comprises a section on initial training and a section on less formal and informal training, i.e. training activities directly connected with the job or the place of work, in which the participants largely organise the activities themselves and select the content according to their needs.

(1) C: mining and quarrying; D: manufacturing; E: electricity, gas and water supply; F: construction; G: wholesale and retail trade; repair of motor vehicles, of motorcycles and of personal and household goods; H: hotels and restaurants; I: transport, storage and communication; J: financial intermediation, and K: real estate, renting and business activities.

CHART 11 TRAINING INDICATORS: COMPARISON OF RESULTS ACCORDING TO THE SOCIAL BALANCE SHEETS AND CVTS

(percentages)



Sources: FPS Economy (Directorate General Statistics Belgium), NBB.

(1) Population compatible with the CVTS methodology, i.e. firms with at least 10 employees, active in NACE-Bel branches of activity C to K.

Leaving aside initial training activities, 62.5 p.c. of the firms covered by the survey offered formal, less formal or informal training to their employees in 2005. In 1993 and 1999, the figures were 46 and 70.2 p.c. respectively. There has therefore been some reduction in the percentage of training firms between 1999 and 2005. That decline is due to the reduction in the proportion of firms offering only less formal and informal training, since the proportion of formal training firms has remained unchanged at 48 p.c.

To ensure the comparability of the results obtained from the social balance sheets and the CVTS surveys, the social balance sheet analysis population was confined to firms with at least 10 FTE employees active in branches C to K. This ad hoc population comprised a total of 17,695 firms in 2005, of which 3,720 had completed the table relating to formal training. The proportion of training firms, namely 21 p.c., is therefore considerably smaller than that estimated by the CVTS3 survey. The difference between the two sources is transversal : it concerns all branches of activity and all sizes of firm. In the latter case, the difference is greater the smaller the firm. In this connection it must be pointed out that the number of firms questioned in the CVTS survey is considerably smaller, and there is a high level of response monitoring. Reminders were sent out, and large firms were also telephoned so as to increase the response rate. There is nothing like that in the case of the social balance sheets : although their submission is compulsory, no action is taken in the case of firms which do not complete the tables relating to training.

Despite the differences in the proportion of training firms between the two sources, the rate of workers' participation in training is similar according to the social balance sheets and the CVTS3 survey : four out of ten workers had access to training in 2005, a rate which has remained stable since 1999. Looking only at training firms, the participation rate is considerably higher according to the social balance sheets, namely more than six out of ten workers, compared to only one in two according to the CVTS3 survey.

The working time devoted to training is the same according to the two sources. In 2005 it amounted to 0.9 p.c. of hours worked, taking all firms together. That proportion became very slightly higher, by 0.06 percentage point, between the 1999 and 2005 CVTS surveys. According to the social balance sheets, the percentage of training hours in the total volume of hours worked increased from 0.9 to 1 p.c. between 1999 and 2000, before gradually dropping back, by 2005, to the level of the start of the period. For training firms only, the same indicator calculated on the basis of the social balance sheets is significantly higher (1.3 p.c.) than that measured via the CVTS3 survey (1.1 p.c.). Since the number of participants is also proportionately higher in training firms required to submit a social balance sheet, the average duration of training received by each participant is about thirty hours according to both statistical sources.

According to the CVTS3 survey, training costs came to 1.6 p.c. of staff costs in 2005, the same as the percentage recorded in 1999, despite the growth targets set at national level and the considerable communication efforts made in recent years to draw attention to the importance of lifelong learning.

TABLE 12 FORMAL TRAINING IN 2005 ACCORDING TO THE SOCIAL BALANCE SHEETS AND THE CVTS3 SURVEY

	All firms		Training firms only	
	Social balance sheets (1)	CVTS3	Social balance sheets (1)	CVTS3
Training firms, as p.c. of the total	21.0	48.4	–	–
Participants in training, as p.c. of employment	40.0	39.9	62.0	50.8
Hours of training, as p.c. of hours worked	0.9	0.9	1.3	1.1
Duration per participant, in hours	–	–	30.4	31.0
Training costs, as p.c. of staff costs	1.3	1.6	1.8	1.9
Cost per participant, in euro	–	–	1,549	1,811
Cost per hour of training, in euro	–	–	50.9	58.4

Sources : FPS Economy (Directorate General Statistics Belgium), NBB.
(1) Population compatible with the CVTS methodology, i.e. firms with at least 10 employees, active in branches of activity C to K.

In 1998, it was the provisional results of the CVTS1 survey for Belgium's three main trading partners that had guided the social partners in their choice of the target for the financial effort which firms should devote to training. In comparison with the movements recorded between 1999 and 2005 in the three neighbouring countries, Belgium's results look relatively satisfactory: still provisional and therefore subject to revision, the data published by Eurostat in fact show that the indicator relating to financial effort is down sharply in the Netherlands (having fallen from 2.8 to 2.2 p.c.) and in France (from 2.4 to 1.7 p.c.) whereas it remained more or less steady in Germany (from 1.5 to 1.4 p.c.).

The financial indicator measured on the basis of the social balance sheets for a population of firms compatible with the CVTS methodology stood at 1.5 p.c. in 1999, a level slightly below that measured at the time by the CVTS2 survey, but in 2005 it represented only 1.3 p.c. of staff costs compared to 1.6 p.c. for the CVTS3 survey. The difference between the two sources has therefore grown considerably.

However, the data relating only to training firms show that the budget devoted to training expressed as a proportion of staff costs is similar in size according to the two sources, namely 1.8 p.c. according to the social balance sheets and 1.9 p.c. according to the CVTS3 survey. Since the participants in training and the number of hours of training are significantly higher according to the social balance sheets, the expenditure per participant and the cost per hour of training are both lower than according to the CVTS3 survey: the average expenditure comes to 1,811 euro per person and 58.4 euro per hour according to the latter source, whereas the firms which file a social balance sheet state on average that they spend 1,549 euro per worker trained and 50.9 euro per hour of training.

Conclusions

This study presented the provisional results drawn from the analysis of the social balance sheets for 2006. Since the full set of social balance sheets is not yet available for this year, the analysis is based on a reduced population constructed according to the constant sample principle. The workforce of the 43,797 firms in that reduced population increased by 1.3 p.c. between 2005 and 2006. The part-time workforce made the largest contribution to that increase, so that the total volume of employment expressed in FTEs grew at an annual average of 1.2 p.c. Bearing witness to a slackening pace of job creation during the year, the year-on-year growth rate was 0.8 p.c.

SMEs accounted for most of the increase in the average number of workers, as the workforce of large firms remained stable. Employment expanded in all branches of activity except industry, which recorded a decline in its average workforce.

External staff movements were more numerous than during the previous year. Altogether, however, net recruitment – close to 11,000 units – in 2006 was almost half the 2005 figure. This decline affected firms of all sizes, and large firms actually recorded net departures of workers, which had not been the case in the previous year. The growth of the workforce recorded in firms filing full-format accounts is due mainly to net recruitment of workers with higher education qualifications; these more than offset the net departures of holders of certificates of elementary education.

Analysis of the motives for leaving shows that the reasons vary according to the branch of activity. Expiry of a temporary contract was the main reason for leaving in the tertiary sector. In construction and industry, the majority of departures were voluntary. Redundancies were more frequent than average in the financial, real estate and business services branch, and it was in industry that early retirement was most widespread, despite less use of that option than in 2005.

In the case of workers employed under permanent contracts, the turnover rate in 2006 was 14.3 p.c., or 1.3 percentage points more than a year earlier. In particular, some industrial branches – which traditionally have a lower staff turnover rate – experienced greater external mobility.

Part-time working has been constantly expanding since 1998 in firms required to submit a social balance sheet. In the reduced population, there was a further increase in the rate of part-time working in 2006. Already very widespread among the female working population, since around half of women work reduced hours, female part-time working showed a further slight increase between 2005 and 2006 (0.8. p.c.). However, men have recorded the most marked increase in part-time working (3.7 p.c.), although admittedly starting from a much lower level.

The expansion of part-time working in 2006 is due only partly to the recruitment of new workers under this type of arrangement. In medium-sized and large firms, the growth of the part-time workforce corresponds mainly to changes in working arrangements. Many workers have taken advantage of the facilities offered by the various time-credit schemes to reduce their working hours. In firms with up to 50 FTEs, internal changes reinforced the

net inflow of part-time workers. But in this category of firms, it is full-time workers who accounted for most of the increase in employment in 2006.

Comparison of the rates of male and female part-time working between regions reveals that the situation of single-region firms based in Brussels contrasts strongly with that of firms in Flanders and Wallonia. The rate of male part-time working is highest there, whereas the rate of female part-time working is significantly lower than in the other two regions.

As regards the more flexible forms of employment, the proportion of temporary contracts has remained more or less stable since 2001 in firms in the total population, and the information obtained from the reduced population does not indicate any change in the general trend : permanent contracts still make up the bulk of total employment. In the reduced population, 61 p.c. of firms filing full-format accounts made use of agency workers in 2006, the practice being proportionately more widespread in large firms. Furthermore, it is in industry that temporary recruitment agencies are most frequently used : half of agency workers are active in this branch of activity. That characteristic is reflected in the results for single-region firms based in the various regions. In Flanders and Wallonia, where the secondary sector is comparatively more developed, the share of agency workers in employment was around 4 p.c. in 2005, while the figure was considerably lower in Brussels.

The wage bill increased by 4.3 p.c. between 2005 and 2006 in firms in the reduced population. At the same time, the volume of labour expanded by 1.2 p.c. so that hourly costs increased by 3.1 p.c. on average. There are considerable differences according to whether the firms are classified by size, branch of activity or region. The costs are notably higher in multi-region firms than in single-region firms, whose average size is substantially smaller. Among the latter, labour costs are lower in Wallonia than in Flanders, and especially Brussels. In this region, the structure of activity, concentrated more on the tertiary sector, exerts a significant upward influence on the average level of hourly costs. Conversely, the effect of the structure of activity is negligible for the other two regions.

In regard to training, the actual performance falls well short of the targets set. In contrast to previous years, the indicator relating to the share of training budget in staff costs increased (by over 6 p.c.) in the reduced population. If that percentage were applied to the level achieved in 2005 for all firms, the training budget would represent 1.2 p.c. of staff costs in 2006, a level well below the target of 1.9 p.c. adopted in that year under the Generation Pact. The rate of workers' participation in training has also risen, by 1.3 p.c. More than one in three workers had access to training in 2006, the target being one in two by 2010. In regard to training, the performance of single-region firms based in Wallonia is also below average. That finding is due to a shortage of training firms in that region, but also to an inadequate training effort on the part of the training firms based there.

The results of the European survey on training in firms for 2005 (CVTS3) were published recently. They were compared with those obtained from the social balance sheets for a comparable population, namely firms with at least 10 employees, working in NACE-Bel branches C to K. According to the CVTS3 survey, the percentage of training firms is twice as high as indicated by the social balance sheets ; that is probably due in part to the monitoring conducted in connection with the survey. Conversely, the participation rate and the percentage of working time devoted to training are of the same order of magnitude. Finally, as regards the indicator relating to the financial effort, there is a considerable difference between the results of the CVTS3 survey (1.6 p.c.) and the social balance sheets (1.3 p.c.) for 2005, a difference which has widened significantly since the previous survey relating to 1999, since expenditure on training was estimated at that time at respectively 1.6 and 1.5 p.c. of staff costs.

Annex 1 – Methodology

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

The methodological principles governing the composition of the populations of firms to be 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 a series of 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 belong to the private sector[1], they must have at least one FTE employee, and their economic activity must be clearly identified[2]; the data reported in the social balance sheet must tally with the data in the annual accounts[3]; firms submitting abnormal values for hourly staff costs or hours worked per FTE are eliminated, as well as 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 and consistent data. However, it does mean that the number of social balance sheets used for the analysis in this article is 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 2006 is conducted on a constant reduced[4] population, which further limits the coverage of the analysed population in relation to the balance sheets filed at the Central Balance Sheet Office. The results presented in this article for 2006 therefore reflect the changes recorded in a population which remained stable between 2005 and 2006, 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 2005 comprised 77,218 firms and 1,758,120 employees. For the same year, the constant reduced population comprised 43,797 firms which employed 1,318,476 workers, corresponding to 75 p.c. of the persons employed in all the firms of the total population, although the number of firms included in the reduced population represents only 57 p.c. of the total population of firms. The workers employed in firms in the reduced population represent 51.4 p.c. of the private sector employment recorded in the national accounts[6].

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 2005, 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 are not represented in the analysis population. NPIs employing fewer than 20 persons, for example, are not required to submit a social balance sheet, and temporary employment agencies are omitted for the sake of the consistency and quality of the analysis populations. Consequently, representativeness expressed as a percentage of the employment recorded in the national accounts is particularly low in the branches where these enterprises operate, respectively the community, social and personal services branch and the real estate and business services branch. It is also low in the health and social work branch, since a number of hospitals filed, for this year, social balance sheets which did not respect the quality criteria.

(1) Excluding firms in NACE-Bel branches 75 (public administration and defence; compulsory social security) and 80 (education).

(2) However, temporary employment agencies (NACE-Bel 74-502) are excluded.

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

(4) Firms have seven months 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 additional time needed to check the data, the full set of social balance sheets relating to 2006 was not available on 19 September 2007 when the data relating to 2006 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 the reduced population for 2006 lead to some distortion in favour of large firms.

(6) The concept of private sector employment used here corresponds to the employment recorded in the total economy (S1) less employment in the public sector (S13) and the household sector (S14). This concept also excludes persons working 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.

TABLE 1 REPRESENTATIVENESS OF THE REDUCED POPULATION IN 2005

	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					
Agriculture	16,570	9,220	5,217	31.5	56.6
Industry	591,123	464,315	389,905	66.0	84.0
Mining and quarrying industry	3,092	2,968	2,513	81.3	84.7
Manufacturing industry	563,894	439,159	371,952	66.0	84.7
Energy and water	24,137	22,188	15,439	64.0	69.6
Construction	178,659	133,963	92,715	51.9	69.2
Trade, transport and communication	773,017	567,171	435,523	56.3	76.8
Trade and repairs	452,982	306,542	233,269	51.5	76.1
Hotels and restaurants	86,742	57,398	24,394	28.1	42.5
Transport and communication	233,293	203,231	177,860	76.2	87.5
Financial services, real estate and business activities	520,166	300,169	227,431	43.7	75.8
Financial and insurance activities	127,507	113,208	91,930	72.1	81.2
Real estate and business activities	392,659	186,961	135,502	34.5	72.5
Other services	486,399	283,282	167,685	34.5	59.2
Health and social work	390,818	244,724	141,429	36.2	57.8
Community, social and personal services	95,581	38,558	26,256	27.5	68.1
Total	**2,565,934**	**1,758,120**	**1,318,476**	**51.4**	**75.0**
According to the criterion concerning the number of firms	**n.**	**77,218**	**43,797**	**n.**	**56.7**

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).

2. Methodological principles governing the regional breakdown of the social balance sheets

This article analyses the social balance sheets from a regional angle, as did the article "Social balance sheet 2003" which appeared in the Economic Review for the fourth quarter of 2004.

The regional breakdown of firms could not be based on the reduced population (which was insufficiently representative). It therefore applies only to the total populations obtained on the basis of the methodological principles described in section 1 for the years 1998 to 2005.

The methodology governing this regional breakdown is similar to that used in 2004.

TABLE 2 REGIONAL BREAKDOWN OF FIRMS FILING A SOCIAL BALANCE SHEET IN 2005 (1)

(total population)

	Number of firms	Number of employees	Wage bill (millions of euro)
Brussels	9,394	262,870	13,853
of which:			
Single-region	97.0	56.3	51.0
Multi-region	3.0	43.7	49.0
Flanders	47,499	1,117,132	46,171
of which:			
Single-region	98.9	73.7	71.6
Multi-region	1.1	26.3	28.4
Wallonia	20,325	378,118	14,707
of which:			
Single-region	98.9	85.5	80.8
Multi-region	1.1	14.5	19.2
Total	**77,218**	**1,758,120**	**74,731**
of which:			
Single-region	**98.7**	**73.6**	**69.6**
Multi-region	**1.3**	**26.4**	**30.4**

Source: NBB (social balance sheets).
(1) Results based on a majority breakdown whereby the firm's social balance sheet is attributed to the region in which it records the largest number of jobs.

Single-region firms are those whose registered office and place(s) of business are located in the same region. In 2005, these single-region firms numbered 76,202, 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, while firms established in more than one region employ an average of 456 persons.

The remaining 1,016 firms, classed as multi-region, are established in more than one region. In their case, the regional breakdown can be performed in two ways. 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 recorded in its places of business.

The 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 58 p.c. of its residents as at 1 January 2006, while others are allocated to the Brussels region owing to the location of their registered office, where many services and hence workers are concentrated.

According to this majority breakdown method, in 2005 over half of the workers of multi-region firms attributed to Brussels were active in the financial, real estate and business services branch, owing to the location in the capital of the head offices of numerous banks and insurance companies. The attribution to Flanders of the largest firms active in the trade, transport and communication branch is the reason for the concentration of employment in that branch – 53 p.c. – whereas in Wallonia, fewer than one in three jobs is in that branch. In this last region, industry is the main provider of jobs and accounts for almost half of the workforce, compared to just 21 p.c. in Flemish multi-region firms and 6 p.c. in Brussels multi-region firms.

TABLE 3 BREAKDOWN OF EMPLOYMENT BY BRANCH OF ACTIVITY IN MULTI-REGION FIRMS IN 2005 ACCORDING TO THE MAJORITY BREAKDOWN APPROACH

(percentages of the total, total population)

	Brussels	Flanders	Wallonia	Total
Industry	6.2	20.9	45.9	20.2
Construction	3.0	1.2	1.5	1.7
Trade, transport and communication	30.1	52.9	30.3	44.6
Financial, real estate and business services	57.7	17.3	13.4	26.9
Other services	2.9	7.7	8.9	6.7
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: NBB (social balance sheets).

The proportional allocation approach consists in allocating the social balance sheet items of multi-region firms among the regions where they have their registered office and their places of business. Such a formula can be calculated for employment or wages on the basis of the data per establishment collected by the NSSO, 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 applies, for example, to continuous training and to 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.

Using the same proportional breakdown as that which the NAI uses in the compilation of the regional employment accounts, the population of Flemish firms would record 1,057,500 jobs, or 60,000 fewer than according to the majority allocation method. Conversely, Wallonian firms would employ an extra 53,000 workers compared to the workforce obtained on the basis of the majority allocation, and Brussels firms 6,000.

These differences make it complicated to interpret the results. That is why the regional distinction used for this article concerns only single-region firms. This permits a valid comparison of the regional characteristics of firms operating in only one of the three Belgian regions, since these results are not influenced by those recorded in the large multi-region firms often active in all three regions.

TABLE 4 MAJORITY AND PROPORTIONAL METHODS FOR THE REGIONAL BREAKDOWN OF THE SOCIAL BALANCE SHEETS FOR 2005

(total population)

	Units, thousands			Percentages of the total	
	Majority breakdown (1)	Proportional breakdown (2)	Difference	Majority breakdown (1)	Proportional breakdown (2)
Brussels	262.9	269.1	6	15.0	15.3
Flanders	1,117.1	1,057.6	–60	63.5	60.2
Wallonia	378.1	431.4	53	21.5	24.5
Total	**1,758.1**	**1,758.1**	**0**	**100.0**	**100.0**

Source: NBB (social balance sheets).

(1) The majority breakdown consists in allocating all of a firm's social balance sheet items to the region in which it records the largest number of jobs.

(2) The proportional breakdown consists in allocating the firm's social balance sheet items among the regions where it is established according to the number of jobs recorded there.

Annex 2 – Classification of firms by branch of activity

The classification of the firms by branch of activity is based on the activity code given in the directory of firms prepared by the FPS Economy on the basis of the DBRIS database[1]. That directory contains a range of administrative data on firms active during any year. The 2005 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 2006. Firms which do not appear in the DBRIS directory keep the activity code allocated 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. In Annexes 3 to 9, these two breakdowns appear systematically. The breakdown used in the weighting exercises in sections 4 and 5 of this article is based on the allocation of activities according to the NACE-Bel 2-digit nomenclature, i.e. 49 branches of activity in this analysis.

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 industry	C	10-14
Manufacturing industry	D	15-37
Energy and water	E	40-41
Construction	F	45
Trade, transport and communication		
Trade and repairs	G	50-52
Horeca	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).

(1) DBRIS : DataBase of Providers of Statistical Information (enterprises).

Annex 3

CHANGE, BETWEEN 2005 AND 2006, IN THE NUMBER OF WORKERS RECORDED IN THE STAFF REGISTER IN FIRMS IN THE REDUCED POPULATION

	Full-time equivalents			Number of persons						
	Average employment		Employment as at 31 December	Average employment						Employment as at 31 December
				Full-time		Part-time		Total		
	(units)	(p.c.)	(p.c.)	(units)	(p.c.)	(units)	(p.c.)	(units)	(p.c.)	(p.c.)
Agriculture	149	3.3	0.6	156	4.2	–82	–5.5	74	1.4	–0.1
Industry	–933	–0.2	–0.7	–2,594	–0.7	1,837	4.4	–757	–0.2	–0.7
Mining and quarrying industry	30	1.2	1.5	22	0.9	11	7.4	33	1.3	1.6
Manufacturing industry	–640	–0.2	–0.5	–2,258	–0.7	1,774	4.4	–483	–0.1	–0.5
Energy and water	–324	–2.1	–5.6	–358	–2.5	52	5.2	–307	–2.0	–5.5
Construction	3,225	3.5	3.3	2,985	3.4	324	6.9	3,309	3.6	3.4
Trade, transport and communication	2,500	0.6	0.3	–1,019	–0.3	4,529	3.9	3,510	0.8	0.5
Trade and repairs	3,353	1.6	1.2	2,465	1.5	1,172	1.6	3,637	1.6	1.1
Horeca	298	1.7	–0.4	169	1.4	375	3.0	544	2.2	0.0
Transport and communication	–1,151	–0.7	–0.7	–3,653	–2.5	2,982	9.6	–671	–0.4	–0.2
Financial, real estate and business services	5,999	3.0	2.5	3,776	2.3	2,252	3.6	6,028	2.7	2.2
Financial and insurance services	958	1.1	1.5	–12	0.0	965	4.0	952	1.0	1.3
Real estate and business services	5,040	4.2	3.2	3,789	3.9	1,287	3.3	5,076	3.7	2.8
Other services	3,475	2.6	1.9	1,663	1.9	2,683	3.3	4,346	2.6	1.8
Health and social work	3,116	2.8	2.0	1,526	2.3	2,313	3.1	3,838	2.7	1.8
Community, social and personal services	359	1.5	1.4	137	0.7	370	5.7	508	1.9	1.7
Total	**14,416**	**1.2**	**0.8**	**4,966**	**0.5**	**11,543**	**3.8**	**16,509**	**1.3**	**0.8**

Source: NBB (social balance sheets).

Annex 4

HOURS WORKED BY WORKERS RECORDED IN THE STAFF REGISTER

	Units, per year (total population)									*Percentage change between 2005 and 2006 (reduced population)*		
	1999	2000	2001	2002	2003	2004	2005					
	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	1,572	1,573	1,537	1,545	1,533	1,556	1,525	1,520	820	*0.7*	*1.0*	*4.5*
Industry	1,537	1,534	1,518	1,506	1,508	1,533	1,516	1,517	998	*0.3*	*0.5*	*–0.2*
Mining and quarrying industry	1,516	1,517	1,479	1,487	1,497	1,490	1,463	1,463	933	*1.5*	*1.2*	*8.2*
Manufacturing industry	1,539	1,540	1,523	1,510	1,512	1,539	1,521	1,521	997	*0.2*	*0.4*	*–0.3*
Energy and water	1,501	1,416	1,415	1,426	1,425	1,410	1,445	1,445	1,040	*1.6*	*1.6*	*0.4*
Construction	1,469	1,461	1,439	1,428	1,432	1,465	1,443	1,437	966	*0.2*	*0.3*	*–1.7*
Trade, transport and communication	1,711	1,677	1,640	1,626	1,616	1,605	1,578	1,579	886	*–0.1*	*0.1*	*–0.1*
Trade and repairs	1,650	1,634	1,627	1,609	1,600	1,608	1,597	1,600	960	*–0.5*	*–0.4*	*–0.7*
Horeca	1,621	1,624	1,580	1,590	1,567	1,562	1,561	1,539	610	*–0.4*	*–0.2*	*–1.6*
Transport and communication	1,827	1,739	1,666	1,656	1,648	1,608	1,554	1,558	968	*0.4*	*0.7*	*1.4*
Financial, real estate and business services	1,613	1,601	1,589	1,552	1,542	1,551	1,536	1,555	855	*–0.3*	*–0.1*	*1.4*
Financial and insurance services	1,534	1,529	1,501	1,428	1,426	1,436	1,422	1,461	835	*–0.4*	*–0.3*	*1.7*
Real estate and business services	1,675	1,657	1,654	1,646	1,625	1,630	1,609	1,616	866	*–0.4*	*–0.2*	*1.2*
Other services	1,560	1,555	1,514	1,513	1,520	1,531	1,510	1,505	911	*–0.5*	*–0.6*	*0.1*
Health and social work	1,555	1,549	1,503	1,502	1,508	1,523	1,496	1,486	915	*–0.4*	*–0.6*	*0.2*
Community, social and personal services	1,600	1,596	1,584	1,581	1,594	1,583	1,593	1,585	860	*–0.5*	*–0.4*	*–1.2*
Total	**1,595**	**1,584**	**1,559**	**1,545**	**1,543**	**1,552**	**1,532**	**1,534**	**902**	***0.0***	***0.1***	***0.2***

Source: NBB (social balance sheets).

Annex 5

BREAKDOWN OF THE NUMBER OF WORKERS RECORDED IN THE STAFF REGISTER BY TYPE OF EMPLOYMENT CONTRACT AND BY GENDER

(percentages of the total workers recorded in the staff register as at 31 December)

	1999	2000	2001	2002	2003	2004	2005	*2005*	*2006*
	(total population)							*(reduced population)*	
By type of contract									
Permanent contract	92.9	93.1	93.8	93.9	94.0	94.0	93.8	*94.7*	*94.6*
Fixed-term contract	5.5	5.4	4.8	4.8	4.9	5.0	5.2	*4.5*	*4.6*
Agriculture	8.8	7.4	7.5	5.2	6.1	6.2	6.4	*5.3*	*5.0*
Industry	4.6	5.2	4.2	3.8	3.5	3.8	3.9	*3.9*	*4.4*
Mining and quarrying industry	4.5	6.1	5.6	5.8	6.0	6.1	6.3	*7.1*	*8.6*
Manufacturing industry	4.4	5.1	4.0	3.7	3.4	3.7	3.7	*3.8*	*4.3*
Energy and water	8.8	8.0	7.4	6.3	6.4	6.0	6.3	*7.3*	*6.4*
Construction	3.2	3.1	2.1	2.7	2.7	2.7	2.9	*2.3*	*2.5*
Trade, transport and communication	5.2	4.6	4.7	5.2	5.7	5.5	6.0	*5.2*	*5.0*
Trade and repairs	4.7	5.1	5.6	5.6	6.0	5.7	6.1	*6.2*	*5.7*
Horeca	8.1	9.9	8.9	9.7	11.4	12.6	15.0	*10.0*	*10.6*
Transport and communication	5.0	2.8	2.5	3.7	3.7	3.2	3.3	*3.3*	*3.2*
Financial, real estate and business services	5.0	4.7	4.2	4.1	4.2	4.0	4.4	*2.9*	*2.8*
Financial and insurance services	4.9	4.8	4.4	3.5	2.9	3.0	2.9	*2.7*	*2.6*
Real estate and business services	5.0	4.7	4.0	4.6	5.1	4.7	5.2	*3.0*	*2.9*
Other services	8.9	8.5	7.9	7.4	7.2	7.7	7.6	*7.1*	*7.4*
Health and social work	8.9	8.5	7.8	7.2	7.0	7.7	7.5	*7.4*	*7.7*
Community, social and personal services	8.4	8.9	8.8	8.8	8.6	7.9	8.4	*5.9*	*5.5*
Substitution contract	1.4	1.3	1.2	1.1	0.9	0.9	0.8	*0.7*	*0.7*
Contract for a specific project	0.2	0.2	0.3	0.2	0.2	0.2	0.2	*0.1*	*0.2*
By gender									
Men	62.1	62.9	62.6	61.9	61.6	60.9	61.1	*63.5*	*63.3*
Women	37.9	37.1	37.4	38.1	38.4	39.1	38.9	*36.5*	*36.7*

Source: NBB (social balance sheets).

Annex 6

BREAKDOWN OF EMPLOYMENT BY STATUS OF WORKERS IN FIRMS FILING FULL-FORMAT ACCOUNTS

(percentages of average FTE employment)

	1999	2000	2001	2002	2003	2004	2005	*2005*	*2006*
	(total population)							*(reduced population)*	
Workers recorded in the staff register	**96.5**	**96.3**	**96.5**	**96.5**	**96.4**	**95.7**	**95.6**	***95.8***	***95.2***
Agency workers	**2.8**	**3.0**	**2.8**	**2.7**	**2.8**	**3.2**	**3.3**	***3.3***	***3.9***
Agriculture	3.3	2.9	3.6	5.4	5.4	6.7	4.5	*4.1*	*6.9*
Industry	4.2	4.8	4.2	4.1	4.3	5.0	5.0	*4.8*	*5.5*
Mining and quarrying industry	2.9	4.1	3.3	3.7	3.1	2.3	2.6	*2.3*	*2.4*
Manufacturing industry	4.4	5.0	4.4	4.3	4.5	5.2	5.2	*5.0*	*5.7*
Energy and water	0.7	0.8	0.9	0.8	1.0	1.1	1.0	*1.0*	*1.1*
Construction	1.5	1.4	1.3	1.1	1.1	1.2	1.6	*1.7*	*2.2*
Trade, transport and communication	2.8	2.8	2.8	2.7	2.9	3.4	3.7	*3.4*	*4.1*
Trade and repairs	3.2	3.6	3.5	3.3	3.5	3.9	4.0	*3.9*	*4.5*
Horeca	4.2	6.1	5.0	4.7	4.0	4.0	4.4	*4.0*	*4.9*
Transport and communication	2.2	1.9	1.9	2.0	2.2	2.9	3.4	*2.9*	*3.7*
Financial, real estate and business services	1.9	2.1	2.0	1.8	1.7	2.0	2.1	*2.2*	*2.6*
Financial and insurance services	1.1	1.2	1.2	0.8	0.7	0.6	0.7	*0.7*	*0.9*
Real estate and business services	2.7	3.0	2.9	2.7	2.7	3.2	3.2	*3.4*	*4.0*
Other services	0.9	0.9	0.9	0.9	0.9	1.0	1.0	*1.0*	*1.2*
Health and social work	0.4	0.4	0.4	0.4	0.4	0.6	0.5	*0.3*	*0.3*
Community, social and personal services	5.7	5.3	5.1	5.1	5.1	5.2	5.3	*5.6*	*6.3*
Persons seconded to the firm[1]	**0.8**	**0.7**	**0.7**	**0.8**	**0.9**	**1.1**	**1.1**	***0.9***	***0.9***

Source: NBB (social balance sheets).

(1) 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 2005 and 2006 (reduced population)*
	1999	2000	2001	2002	2003	2004	2005	
Agriculture	26,361	26,656	27,005	28,417	28,745	29,775	29,829	*2.5*
Industry	44,104	44,971	46,456	48,695	49,693	51,594	52,678	*3.2*
Mining and quarrying industry	38,998	39,958	41,812	43,941	45,628	46,147	46,671	*2.9*
Manufacturing industry	42,693	43,826	45,277	47,288	48,630	50,293	51,358	*3.3*
Energy and water	77,820	70,529	74,067	77,518	74,835	77,793	79,096	*1.9*
Construction	32,944	33,644	34,677	35,806	36,673	37,855	38,014	*3.5*
Trade, transport and communication	36,807	37,439	38,765	40,441	41,196	42,341	43,526	*3.2*
Trade and repairs	37,791	38,282	39,717	40,988	41,473	42,339	43,404	*3.2*
Horeca	24,464	24,748	25,146	26,504	27,496	28,230	28,665	*2.7*
Transport and communication	37,798	38,419	39,754	42,002	43,215	44,943	46,493	*3.4*
Financial, real estate and business services	52,650	53,586	55,182	56,146	56,860	57,483	58,037	*2.8*
Financial and insurance services	61,517	62,443	63,899	64,263	65,618	67,246	68,871	*3.5*
Real estate and business services	45,539	46,692	48,656	49,960	50,540	50,730	51,113	*2.6*
Other services	33,367	33,891	33,929	35,863	37,500	39,106	39,735	*3.1*
Health and social work	33,457	33,996	33,848	35,677	37,383	39,171	39,697	*3.0*
Community, social and personal services	32,698	33,169	34,417	37,052	38,244	38,682	39,956	*3.7*
Total	**40,639**	**41,379**	**42,725**	**44,397**	**45,259**	**46,491**	**47,499**	***3.1***

Source: NBB (social balance sheets).
(1) Item 1023 / item 1003.

Annex 8

STAFF COSTS PER HOUR WORKED [1]

	Euro (total population)							*Percentage change between 2005 and 2006 (reduced population)*
	1999	2000	2001	2002	2003	2004	2005	
Agriculture	16.77	16.94	17.57	18.40	18.75	19.13	19.56	*1.8*
Industry	28.69	29.31	30.61	32.34	32.96	33.66	34.74	*2.9*
Mining and quarrying industry	25.73	26.35	28.27	29.56	30.48	30.96	31.90	*1.5*
Manufacturing industry	27.75	28.46	29.74	31.32	32.17	32.67	33.78	*3.1*
Energy and water	51.84	49.80	52.36	54.35	52.52	55.17	54.75	*0.3*
Construction	22.43	23.03	24.10	25.07	25.60	25.84	26.35	*3.3*
Trade, transport and communication	21.51	22.32	23.64	24.86	25.49	26.39	27.58	*3.3*
Trade and repairs	22.91	23.43	24.40	25.47	25.92	26.33	27.18	*3.7*
Horeca	15.10	15.24	15.91	16.67	17.55	18.08	18.36	*3.1*
Transport and communication	20.69	22.09	23.86	25.37	26.23	27.96	29.91	*3.0*
Financial, real estate and business services	32.65	33.47	34.74	36.18	36.88	37.06	37.79	*3.1*
Financial and insurance services	40.09	40.84	42.58	45.00	46.02	46.82	48.43	*3.9*
Real estate and business services	27.18	28.18	29.41	30.34	31.10	31.12	31.78	*2.9*
Other services	21.39	21.79	22.40	23.70	24.67	25.54	26.32	*3.6*
Health and social work	21.52	21.94	22.52	23.75	24.79	25.71	26.54	*3.4*
Community, social and personal services	20.44	20.79	21.73	23.43	23.99	24.43	25.08	*4.3*
Total	**25.48**	**26.12**	**27.40**	**28.74**	**29.34**	**29.95**	**31.00**	***3.1***

Source: NBB (social balance sheets).
(1) Item 1023 / item 1013.

Annex 9

FORMAL TRAINING IN 2006 IN FIRMS IN THE REDUCED POPULATION

	Training participants			Hours of training				Training costs			
	(as p.c. of employment)			(as p.c. of hours worked)	(average per participant, units)			(as p.c. of staff costs)	(average per participant, in euro)		
	Total	Men	Women		Total	Men	Women		Total	Men	Women
Agriculture	3.5	2.1	7.8	0.05	17.9	22.2	15.2	0.06	448	648	323
Industry	49.7	51.4	45.6	1.14	33.7	33.7	33.6	1.49	1,609	1,624	1,548
Mining and quarrying industry	30.1	30.8	21.1	0.61	29.3	29.5	26.8	0.79	1,250	1,204	2,048
Manufacturing industry	48.6	50.4	43.8	1.11	33.7	33.6	34.2	1.42	1,543	1,552	1,505
Energy and water	80.9	80.9	90.8	1.93	33.3	35.4	26.7	2.61	2,603	2,786	2,032
Construction	14.0	14.0	10.8	0.23	23.7	23.8	21.7	0.29	835	827	984
Trade, transport and communication	36.4	39.3	31.6	0.82	31.7	35.1	24.6	1.37	1,562	1,750	1,169
Trade and repairs	28.0	28.5	27.4	0.47	23.3	25.8	20.3	0.65	938	1,089	758
Horeca	13.1	13.9	12.4	0.20	17.4	18.3	16.4	0.38	668	765	552
Transport and communication	50.8	51.8	48.6	1.35	38.5	40.4	31.8	2.29	2,054	2,116	1,836
Financial, real estate and business services	41.8	43.8	39.3	1.01	33.0	35.2	30.1	1.83	2,371	2,495	2,213
Financial and insurance services	60.3	63.3	56.7	1.55	33.0	33.4	32.7	2.86	3,065	3,150	2,967
Real estate and business services	29.5	31.9	26.7	0.69	32.9	37.5	26.2	0.90	1,435	1,696	1,060
Other services	47.8	39.2	51.1	0.70	18.0	22.0	16.9	0.76	539	686	499
Health and social work	51.6	41.1	54.4	0.75	17.4	20.2	16.8	0.81	515	628	492
Community, social and personal services	27.6	35.0	19.5	0.48	24.6	26.4	20.7	0.55	780	833	666
Total	**40.9**	**41.5**	**40.4**	**0.89**	**30.4**	**33.4**	**25.0**	**1.38**	**1,551**	**1,722**	**1,247**

Source: NBB (social balance sheets).

Annex 10

TYPE AND STRUCTURE OF EMPLOYMENT CONTRACTS: BREAKDOWN BY REGIONS[1]

(total population)

	1998	1999	2000	2001	2002	2003	2004	2005
Part-time employment (percentages of employment as at 31 December)								
Single-region firms	20.5	21.3	21.2	21.2	22.7	23.6	24.8	25.1
Brussels	20.2	20.4	20.0	20.7	22.4	22.3	23.9	25.0
Flanders	20.2	20.9	21.0	20.7	22.4	23.4	24.9	25.2
Wallonia	21.7	22.9	22.4	22.8	23.7	24.5	24.7	24.9
Multi-region firms	18.4	19.1	19.5	21.7	23.0	25.4	26.3	28.2
Brussels	11.3	12.0	12.4	13.1	16.7	19.4	19.2	20.5
Flanders	21.5	22.0	21.9	25.1	25.7	28.7	29.7	31.6
Wallonia	19.8	21.5	21.7	21.6	21.8	22.0	22.7	26.0
Total	**20.0**	**20.8**	**20.7**	**21.3**	**22.8**	**24.1**	**25.2**	**25.9**
Temporary work[2] (percentages of employment as at 31 December)								
Single-region firms	6.6	6.9	7.0	6.1	6.0	6.0	6.2	6.3
Brussels	7.1	7.6	7.7	6.1	6.4	7.3	7.5	7.2
Flanders	5.9	5.9	5.9	5.1	4.6	4.6	4.8	5.1
Wallonia	8.5	9.4	9.7	8.8	9.4	9.1	9.0	9.0
Multi-region firms	7.7	7.8	6.4	6.6	6.4	5.9	5.7	5.7
Brussels	7.7	7.2	6.2	5.6	4.8	4.0	4.3	4.0
Flanders	7.7	8.1	6.1	6.7	6.7	6.3	5.9	5.9
Wallonia	7.5	8.1	8.8	8.1	7.7	7.5	7.4	8.0
Total	**6.9**	**7.1**	**6.9**	**6.2**	**6.1**	**6.0**	**6.0**	**6.2**
Agency work in firms filing full-format accounts (percentages of average FTE employment)								
Single-region firms	3.2	3.2	3.5	3.3	3.2	3.2	3.6	3.8
Brussels	2.0	2.3	2.4	2.3	2.4	2.3	2.5	2.6
Flanders	3.2	3.2	3.6	3.3	3.3	3.4	3.9	4.1
Wallonia	3.9	3.7	4.2	3.8	3.5	3.4	3.6	3.8
Multi-region firms	1.7	1.8	2.0	1.9	1.7	2.0	2.2	2.2
Brussels	1.2	1.3	1.6	1.5	1.1	1.0	1.1	1.2
Flanders	1.6	1.8	1.7	1.7	1.7	2.0	2.3	2.4
Wallonia	3.4	3.2	4.1	3.7	3.6	3.8	4.1	3.8
Total	**2.7**	**2.8**	**3.0**	**2.8**	**2.7**	**2.8**	**3.2**	**3.3**

Source: NBB (social balance sheets).

(1) Results based on a majority breakdown whereby a firm's social balance sheet is attributed to the region in which it records the largest number of jobs.

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

Annex 11

WORKING TIME AND LABOUR COSTS: BREADOWN BY REGIONS[1]
(total population)

	1998	1999	2000	2001	2002	2003	2004	2005
Hours worked per FTE (units, per year)								
Single-region firms	1,587	1,585	1,580	1,564	1,554	1,549	1,566	1,549
Brussels	1,623	1,633	1,621	1,623	1,605	1,586	1,598	1,579
Flanders	1,585	1,581	1,577	1,558	1,551	1,550	1,573	1,554
Wallonia	1,571	1,570	1,565	1,550	1,536	1,528	1,532	1,523
Multi-region firms	1,630	1,623	1,597	1,547	1,522	1,528	1,513	1,485
Brussels	1,613	1,613	1,566	1,526	1,475	1,461	1,462	1,449
Flanders	1,662	1,648	1,621	1,562	1,544	1,567	1,533	1,495
Wallonia	1,529	1,544	1,546	1,520	1,512	1,488	1,521	1,513
Total	**1,598**	**1,595**	**1,584**	**1,559**	**1,545**	**1,543**	**1,552**	**1,532**
Staff costs per FTE (euro, per year)								
Single-region firms	37,309	38,161	39,084	40,331	41,829	42,607	44,014	44,993
Brussels	45,806	46,151	47,352	48,835	51,150	50,787	52,498	53,406
Flanders	36,693	37,759	38,689	40,052	41,544	42,642	43,947	45,017
Wallonia	33,930	34,768	35,518	36,596	37,671	38,604	40,120	41,083
Multi-region firms	46,428	47,949	47,529	48,714	50,757	51,790	53,560	54,432
Brussels	51,758	54,475	56,360	57,562	58,626	59,678	62,465	63,386
Flanders	44,358	45,502	44,371	45,390	48,130	47,448	48,971	50,199
Wallonia	43,377	44,119	44,420	46,326	47,075	55,346	58,520	57,435
Total	**39,674**	**40,639**	**41,379**	**42,725**	**44,397**	**45,259**	**46,491**	**47,499**
Staff costs per hour worked (euro)								
Single-region firms	23.51	24.08	24.74	25.79	26.92	27.51	28.10	29.04
Brussels	28.23	28.27	29.21	30.10	31.87	32.02	32.85	33.83
Flanders	23.14	23.88	24.54	25.71	26.79	27.52	27.93	28.97
Wallonia	21.60	22.15	22.70	23.60	24.53	25.26	26.19	26.97
Multi-region firms	28.48	29.54	29.76	31.48	33.34	33.89	35.39	36.66
Brussels	32.10	33.78	35.99	37.71	39.73	40.83	42.72	43.76
Flanders	26.69	27.62	27.37	29.07	31.17	30.28	31.94	33.59
Wallonia	28.36	28.57	28.73	30.47	31.14	37.20	38.47	37.95
Total	**24.82**	**25.48**	**26.12**	**27.40**	**28.74**	**29.34**	**29.95**	**31.00**

Source: NBB (social balance sheets).
(1) Results based on a majority breakdown whereby a firm's social balance sheet is attributed to the region in which it records the largest number of jobs.

Annex 12

FORMAL TRAINING IN FIRMS: BREAKDOWN BY REGIONS[1]

(total population)

	1998	1999	2000	2001	2002	2003	2004	2005
Training participants (percentages of average employment)								
Single-region firms	25.8	27.2	27.2	24.7	26.3	25.8	26.8	27.1
Brussels	33.6	29.9	30.3	28.4	29.4	27.3	28.0	26.6
Flanders	27.3	30.3	30.3	26.2	28.2	27.9	28.8	29.1
Wallonia	16.4	16.9	16.8	18.6	19.5	19.6	20.9	22.1
Multi-region firms	54.3	57.0	56.7	61.1	55.6	56.8	61.7	60.7
Brussels	53.2	61.1	62.3	58.7	54.8	61.6	64.8	60.6
Flanders	58.0	57.7	56.0	63.4	56.6	55.8	60.4	61.0
Wallonia	40.5	46.5	49.2	53.6	52.3	51.8	62.1	59.4
Total	**33.0**	**34.6**	**35.1**	**35.0**	**34.6**	**34.7**	**35.7**	**36.0**
Hours of training (percentages of hours worked)								
Single-region firms	0.54	0.58	0.61	0.58	0.52	0.56	0.53	0.54
Brussels	0.75	0.64	0.72	0.61	0.59	0.60	0.48	0.53
Flanders	0.56	0.65	0.67	0.63	0.56	0.62	0.59	0.57
Wallonia	0.34	0.33	0.39	0.42	0.38	0.38	0.39	0.45
Multi-region firms	1.34	1.23	1.52	1.51	1.46	1.31	1.32	1.30
Brussels	1.63	1.40	1.27	1.43	1.35	1.28	1.38	1.48
Flanders	1.24	1.17	1.69	1.60	1.59	1.40	1.33	1.27
Wallonia	1.12	1.15	1.14	1.20	0.92	0.98	1.10	1.08
Total	**0.75**	**0.74**	**0.86**	**0.84**	**0.79**	**0.77**	**0.73**	**0.73**
Training costs (percentages of staff costs)								
Single-region firms	0.89	0.91	0.93	0.83	0.76	0.76	0.73	0.72
Brussels	1.48	1.17	1.18	0.87	0.85	0.74	0.62	0.69
Flanders	0.86	0.98	0.99	0.90	0.82	0.86	0.82	0.77
Wallonia	0.49	0.49	0.54	0.58	0.52	0.49	0.56	0.61
Multi-region firms	2.39	2.21	2.49	2.47	2.31	2.09	2.07	2.08
Brussels	2.93	2.91	2.76	2.75	2.48	2.48	2.49	2.60
Flanders	2.25	1.90	2.52	2.46	2.42	1.98	1.90	1.90
Wallonia	1.56	1.72	1.67	1.68	1.24	1.63	1.81	1.63
Total	**1.34**	**1.30**	**1.42**	**1.36**	**1.27**	**1.20**	**1.13**	**1.13**
Training firms (percentages of total firms)								
Single-region firms	6.9	7.3	7.0	6.4	6.6	6.4	6.3	6.2
Brussels	8.0	7.3	7.2	6.7	7.1	6.7	6.9	6.7
Flanders	7.7	8.4	8.0	7.1	7.2	7.2	7.0	6.8
Wallonia	4.1	4.3	4.6	4.5	4.7	4.5	4.5	4.4
Multi-region firms	46.5	45.4	46.8	46.3	47.6	43.4	44.1	44.8
Brussels	50.3	42.2	43.9	43.3	44.6	42.3	44.4	43.7
Flanders	46.6	48.5	48.3	48.2	50.2	46.1	48.3	49.1
Wallonia	40.0	42.7	47.0	46.2	45.7	38.3	34.2	36.6
Total	**7.5**	**7.9**	**7.6**	**7.0**	**7.2**	**7.1**	**6.8**	**6.7**

Source: NBB (social balance sheets).

(1) Results based on a majority breakdown whereby a firm's social balance sheet is attributed to the region in which it records the largest number of jobs.

The determinants of savings in the third pension pillar

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Introduction

The ageing of the baby boom generations will have significant implications for the sustainability of the statutory pension system (the first pillar), health care spending and taxation. That perspective is generating lively debate over the reforms which are needed in order to face that challenge. Individual pension saving – the third pillar – is one of the instruments that can remedy some of the shortcomings of the statutory system. The Belgian government realised that and introduced tax incentives twenty years ago to encourage this form of saving. This anniversary is a suitable occasion for taking stock of the progress of third pillar payments in Belgium and examining its macroeconomic and microeconomic determinants. That is the purpose of this article.

The first section aims to place the third pillar in the context of the financial assets of households. The second section explains the characteristics of the two systems making up the third pillar: pension savings and long-term savings. That section also takes a detailed look at the financial instruments which may be appropriate to each of the systems. The data used for the analysis are discussed in the third section. On that basis, the article continues with a macroeconomic study of the third pillar, with the aim of quantifying the influence of various factors (demography, participation rate, average income, rate of contributions) on its development. Next, the article examines the effect of a number of characteristics – personal or occupational – on the behaviour of households as regards third pillar participation and contributions. The article ends by summarising the conclusions.

1. Importance of the third pillar in the household portfolio

A clear trend is apparent in the financial assets of households, broken down by counterparty: in the past ten years, the market share of insurance companies and pension funds in the accumulated savings has risen very steadily from the modest level prevailing in 1996. At the end of 2006, the reserves held by those institutions represented almost a quarter of the financial asset portfolio of Belgian households, against less than one-tenth a decade earlier. That development was largely due to the strong growth of financial investments for the formation of an extra-legal pension under the second or third pillar.

The second pillar, built up at enterprise or sector level, is financed by capitalisation of the contributions paid by employers, self-employed persons or employees to a pension institution, be it a pension fund or a company offering group insurance. The third pillar refers to the supplementary pensions arranged individually, outside the world of work, which may qualify for tax reductions.

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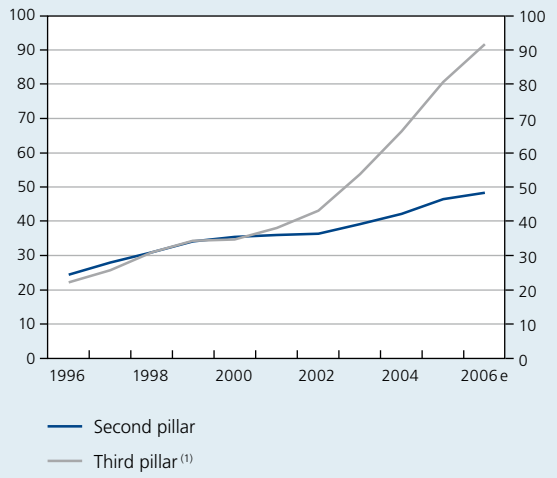
CHART 1 RESERVES IN EXTRA-LEGAL PENSION SYSTEMS

(billions of euro, outstanding totals on 31 December)



Sources : CBFA, NBB.

(1) In the broad sense, i.e. including all life insurance technical reserves outside class 23.

The strong expansion of the reserves in extra-legal pension pillars was unevenly distributed : so far, the third pillar has clearly grown considerably faster than the second. Starting from a level which was comparable to that of the second pillar, third pillar reserves have quadrupled in the space of ten years. Up to the year 2000, the reserve formed in each pillar grew at roughly the same rate. However, in 2001, the outstanding third pillar assets outstripped the amount of the second pillar reserves. Since then, the latter have grown at a modest rate while the third pillar reserves have surged ahead, despite the adverse influence of falling stock markets between 2000 and 2002. By 31 December 2006, the second pension pillar accounted for only just over one-third of the reserves of households in the form of supplementary pensions, against over half ten years previously. According to the statistics – which leave aside all class 23 life insurance technical reserves (contracts with no guaranteed return linked to UCIs) – third pillar growth is partly due to the inclusion of insurance notes and insurance accounts. Owing to their nature and their tax status, these instruments similar to banking products also attract savings for reasons unconnected with building up supplementary pensions. The next section aims to offer a more precise definition of the third pillar in the strict sense.

2. Characteristics of the third pillar

The third pillar of the pension system thus concerns the individual, voluntary build-up of a supplementary pension, which the government encourages by granting tax concessions. It may take two forms : pension savings and individual life insurance for the purpose of long-term savings. These systems were introduced in the second half of the 1980s. The intention was to encourage households, by specific tax incentives, to build up individual supplementary pensions. All taxpayers have the opportunity to combine the advantages offered by both forms of saving.

2.1 Pension savings

Pension savings constitute the best-known third pillar pension system, permitting the accumulation of capital by the payment of contributions to a bank (pension savings fund) or an insurance company (pension savings insurance) ; of course, bancassurance groups offer both forms. The difference between the two variants lies in the level of risk associated with the underlying products : pension savings funds offer no return guarantee, since their performance depends very much on financial market movements. However, there are various forms available with a range of long-term returns and associated risks, depending on the asset mix of the fund (equity funds, bond funds, mixed funds), and the saver has to choose between them according to his risk profile. In contrast, insurance contracts offer a guaranteed minimum return at the time of payment of the premiums, plus a bonus which depends on the profits made by the company (class 21). That certainty has a price : on average, pension savings insurance policies produce a lower return than pension savings funds.

Taxpayers must be between the ages of 18 and 64 in order to contribute to the pension savings system. In any one tax year they may effect payments into only one fund or one insurance policy with one institution. The contract must also meet a number of conditions :

- it must be effected for a minimum term of ten years ;
- payments must be made in at least five tax periods ;
- there must be provision for benefits payable to the taxpayer himself on survival ;
- there must be provision for benefits payable in the event of death to the spouse, registered partner or blood relation in the first or second degree.

In both cases, the tax advantage ranges between 30 and 40 p.c. – corresponding to the average special rate of tax – on the amounts paid in, plus the savings on the additional percentages charged as municipal tax.

The payments are subject to a maximum of 810 euro (2007 income) per taxpayer per annum.

But there is another side to the tax coin : if the taxpayer attains the age of 60 years, a "tax on long-term savings" is levied on the capital built up by way of pension savings if the payments had attracted a tax reduction, even if it was only once. In the case of pension savings funds, tax is levied not on the real capital but on the theoretical capital sum obtained by applying a notional interest rate of 4.75 p.c. to the contributions paid in (or 6.25 p.c. in the case of payments made before 1992). In the case of pension savings insurance, the taxable sum corresponds to the capital sum insured by the contract, while profit distributions are tax free. The taxpayer may take his capital out at any time from the age of 60 years. He can also continue paying contributions until the year of his 64th birthday : those contributions confer entitlement to a tax reduction, but are totally tax free on withdrawal. The tax rate applied on long-term savings is generally 10 p.c. of the taxable sum. It is even 16.5 p.c. on the part of the contract corresponding to contributions paid in before 1993. There are also special provisions applicable if the capital sum is withdrawn before the age of 60 or if the first contributions were not paid in until the age of 55 or later.

2.2 Long-term savings

Individual life insurance with a guaranteed return (class 21) is also regarded as a third pillar product if it is included in the tax framework for long-term savings. All taxpayers can contribute to this type of insurance with no age restrictions, though other conditions do apply. Thus, the contract in question :

- must be effected for a minimum term of ten years ;
- must be effected before the age of 65 ;
- must make provision for benefits payable to the taxpayer himself on survival ;
- must make provision, in the event of death, for benefits payable to the spouse, registered partner or blood relation in the first or second degree.

The tax deductible contributions under that system are also subject to a ceiling. The maximum is 15 p.c. of the first 1,600 euro of the taxpayer's net earned income, plus 6 p.c. of the balance of that income, up to an absolute maximum of 1,950 euro (2007 incomes). Here, too, the tax reduction is calculated at the average special rate and is therefore between 30 and 40 p.c. of the contributions paid below that ceiling.

The 10 p.c. advance levy on the capital built up by pension savings also applies to long-term savings. However, this scheme is subject to additional tax rules which make it less attractive than pension savings. For one thing, contributions paid into this scheme attract tax of 1.1 p.c., which does not apply to pension savings. Also, the insurer is charged tax at 9.25 p.c. on any bonuses paid out as a share of the profits of the insurance company, a tax which does not apply to pension savings. Finally, if the saver is already receiving a tax allowance for repayment of the capital on a mortgage loan or for other life insurance premiums (excluding pension savings contributions), the 1,950 euro maximum constitutes the total amount deductible for all these items together.

2.3 Underlying instruments

It is evident that pension savings and long-term savings each attract their own specific tax treatment. In practice, however, the same instrument may come under either of these systems, at the option of the saver. That is the case for class 21 life insurance contracts, which bancassurance groups usually offer in both forms. While the guaranteed return on those contracts must not exceed a statutory maximum of 3.75 p.c., the actual guaranteed returns are currently lower, even down to 0 p.c. for products which only guarantee the capital sum, in return for higher profit sharing. The rate fixed on the effective date of the contract used to apply to all subsequent contributions. From now on, the guaranteed return is generally determined on the date of payment of each contribution ; it can therefore be adjusted on the basis of market conditions. The profit bonus which supplements that return then varies according to the insurance company's results. In order to be able to offer a guaranteed return, insurance companies are obliged to invest the bulk of the third pillar reserves entrusted to them in fixed-income products. Thus, on 31 December 2006, bonds represented two-thirds of the investment portfolio relating to life insurance activities other than class 23. After that, the portfolio comprises equities (16 p.c.), various asset categories (12 p.c.) and units in UCIs (5 p.c.). Overall, class 21 life insurance contracts entail little risk for the saver, but that security has a price : a fairly low average return.

Unlike life insurance contracts, investment funds can only be used under the pension savings system. This concerns funds which were specially created for this system. Most of those funds invest primarily in equities. That overweighting is evident in the breakdown of the assets held by pension savings funds on 31 December 2006 : 62 p.c. shares and other equities, 33 p.c. fixed-income securities and 5 p.c. other assets (mainly deposits). This mix is

logical since it offers a more remunerative alternative to insurance products which, conversely, provide a degree of security. Savers buying units in a pension savings fund therefore incur a certain risk since neither the return nor even the capital are guaranteed. However, in recent years, more defensive pension savings funds have come onto the market; they differ in having a smaller percentage of equities in their portfolio.

3. Analysis of the third pillar data

The statistics obtained from the Belgian financial accounts relate to third pillar savings in the broad sense, extending beyond the special pension savings and long-term savings products attracting tax concessions. Furthermore, they do not lend themselves to a detailed analysis based on individual household characteristics. It is therefore useful for two reasons to use the tax return data instead. Since the savings built up under the third pillar carry entitlement to a tax reduction, provided they are declared, the tax returns constitute a statistical source which can be used for both macroeconomic and microeconomic analysis of the third pillar in the strict sense.

3.1 Description of the data

The detailed analysis in this section is therefore based on a sample of tax returns obtained from the FPS Finance.[1] In practice, for the period 1993 to 2003 a representative sample was composed via random selection from the personal income tax returns in each of the country's three regions (Brussels, Flanders, Wallonia). The size of the sample varies from one year to another: in 1993 it totalled 10,343 returns and in 2003 47,484. It is therefore not a panel consisting of the same households monitored over time, but comprises repeat, random samples taken from a representative population group. Owing to the actual nature of this data source, the household is used as the analysis unit (being the unit of taxation), regardless of whether it comprises a couple or a single person[2]. The analysis focuses on the population aged from 20 to 64 years, being the age group which pays the bulk of the contributions. For convenience, this group of taxpayers is regarded as equivalent to the population of working age.

At macroeconomic level, the tax returns comprising headings which remain relatively stable over the period considered permit analysis of the movement over time in third pillar participation and contributions. At microeconomic level, they provide numerous data which may explain the behaviour of households in regard to pension savings and long-term savings.

Despite the richness of the data source, it is subject to some limitations, the most important being that households are not obliged to declare their third pension pillar contributions. Nonetheless, a large number of them presumably do so in view of the associated tax reduction[3].

A second limitation concerns the ceiling on the amount qualifying for the tax allowance. Households may therefore only declare the maximum relevant for receiving the tax concession. In consequence, it may be that the amounts recorded in the database do not include all third pillar contributions. However, they currently provide the best available estimate for Belgium at microeconomic level. Furthermore, that aspect does not affect the measurement of participation in the third pension pillar.

It should be remembered – and this is a third limitation – that taxpayers are not obliged to declare certain income, such as their financial income on which the full withholding tax has already been paid. That income is therefore not taken into account in the analysis.

Finally, it is a relatively long time before the tax figures become available, which explains why the analysis period ends in 2003. However, the more recent movements can be described using alternative statistical sources.

3.2 Macroeconomic analysis

The ensuing paragraphs deal with the analysis of the third pillar from a macroeconomic angle. The data used are based on extrapolation to the whole population of the microeconomic data contained in the successive samples of tax returns obtained from the FPS Finance. The developments are examined by comparing the results from the two extreme years in that database: 1993 and 2003. No distinction is made between pension savings and long-term savings, and the third pillar is studied as a whole, since the two systems display largely similar macroeconomic tendencies.

(1) This section is very largely based on the article by Wuyts et al. (2007).

(2) Cohabitants are treated as single persons throughout the period considered – which is now no longer the case for registered cohabitants.

(3) Moreover, households covered by the third pillar as a result of previous payments but not making any contributions in the reference year are not included among the participants. However, according to a poll conducted in April 2007 by the insurance company Swiss Life, 95 p.c. of the persons covered by the third pillar pay contributions each year.

3.2.1 Developments between 1993 and 2003

The total third pillar contributions of persons of working age, thus covering both pension savings and long-term savings contributions, came to 1.736 billion euro in 2003. That amount was evenly divided between pension savings (893 million) and long-term savings (844 million).

In the space of ten years, third pillar contributions increased by 39 p.c. in real terms. Chart 2 shows the breakdown of contributions by age group. The movement in contributions between 1993 and 2003 varies greatly from one age group to another. There was little change in the contributions by the 20-39 age groups, whereas those in the 40-64 age groups showed a substantial increase.

In order to interpret these varying rates of change it is useful to break down the total amounts into their macro-economic determinants. Thus, in each age group the total amount of the contributions paid during a year is regarded as the product of four factors: population size, third pillar participation rate, average income of the participants and their rate of contribution. This breakdown is expressed by the following equation:

Contributions = Population x (Participants/Population) x (Participants' income/Participants) x (Contributions/participants' income)

or

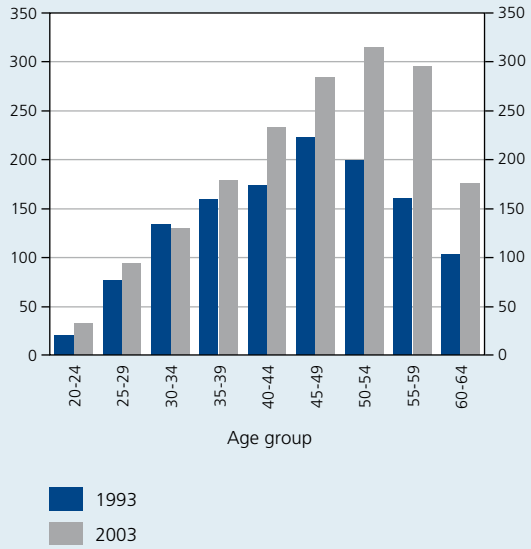
Contributions = Population x Participation rate x Participants' average income x Contribution ratio

Each of the four ratios derived from this breakdown plays a role in the third pillar payments.

In 2003 the **population of working age** totalled 6,208,000 taxpayers, with an overall average age of 42 years.

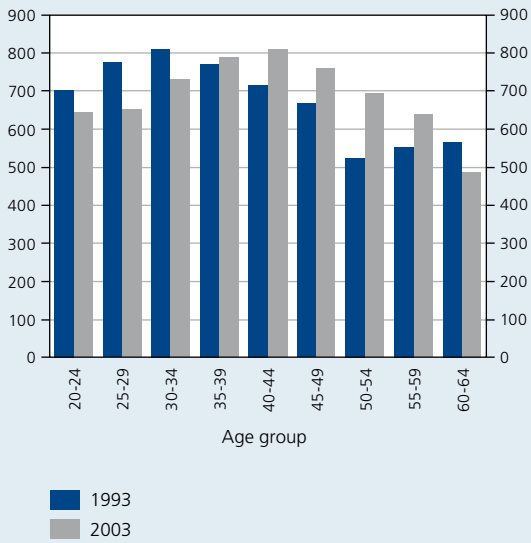
The influence of demography on the total level of contributions was clearly small: the population of working age increased by 2 p.c. between 1993 and 2003, expanding by 122,000 persons. But it was the population structure that showed a particularly marked change over those ten years, rather than the level. The proportion of older people increased, driving up the average age – which was only 40 years in 1993. More particularly, it is the 35 to 59 age groups which expanded, owing to the ageing of the baby boom generations. In contrast, both the younger population groups and those in the 60-64 group declined. The changing shape of the age pyramid was therefore a factor, albeit a moderate one, in the particularly strong increase in contributions paid by the over 40s.

CHART 2 CONTRIBUTIONS TO THE THIRD PILLAR
(millions of euro, 2003 prices)



Source: FPS Finance.

CHART 3 POPULATION OF WORKING AGE
(thousands of persons)



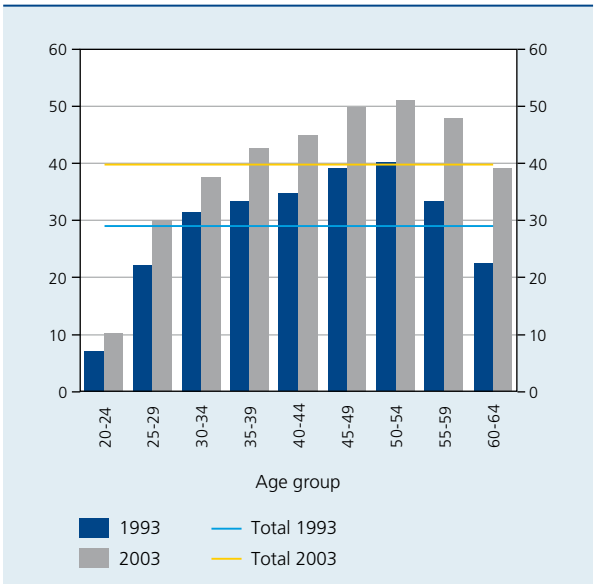
Source: FPS Finance.

The **rate of participation** in the third pillar is defined as the numbers participating in at least one of the two third pillar systems as a percentage of the population. That ratio averaged 40 p.c. in 2003. In other words, the third pillar concerned around 2,468,000 persons, of whom one-third contributed solely to long-term savings, 27 p.c. contributed to both systems simultaneously and 40 p.c. contributed exclusively to pension savings. It is hardly surprising that the youngest people had the lowest participation rate : their 10 p.c. participation rate is doubtless due to the fact that many younger people are still studying or looking for their first job. However, for the 25-29 age group that ratio is already 30 p.c. It then gradually increases, reaching over 50 p.c. for the 50-54 age group. More surprising is the subsequent decline, since the participation rate drops back below the 40 p.c. mark for the 60-64 age group. As in the case of the 20-24 age group, this lower participation rate among older people may be due to a relatively low rate of employment.

The rate of participation in the third pillar was only 29 p.c. in 1993. In the space of ten years, it has therefore increased by an impressive 11 percentage points. Its impact on the increase in the amount of the contributions is therefore undeniable, even decisive. This very remarkable increase in the participation rate may be due to various reasons. One is the increase in the employment rate recorded in the 1990s. Another explanation lies in the problem of population ageing. Since the 1990s, the public's attention has increasingly often been drawn to the limits on the funding of the first pension pillar, in the context of the ageing of the large baby boom group. The prospect of erosion of the replacement ratio [1] on retirement also encouraged a growing number of taxpayers to put savings into one of the tax-efficient third pillar schemes. Finally, it is also likely that these schemes steadily became more widely known as a result of the advertising campaigns run by banks and insurance companies.

CHART 4 THIRD PILLAR PARTICIPATION RATE

(percentages of the population)



Source : FPS Finance.

The **average income** of third pillar participants was 24,140 euro in 2003. Logically, it increases steadily with age, peaking around the age of 45 years then showing a very marked decline from the age of 55. The reason for that decline is that the incomes of all third pillar participants are taken into account, regardless of whether they are derived from working or from social security. It is therefore clear that a significant percentage of the participants receive replacement incomes, without which the average incomes would doubtless continue increasing up to retirement age.

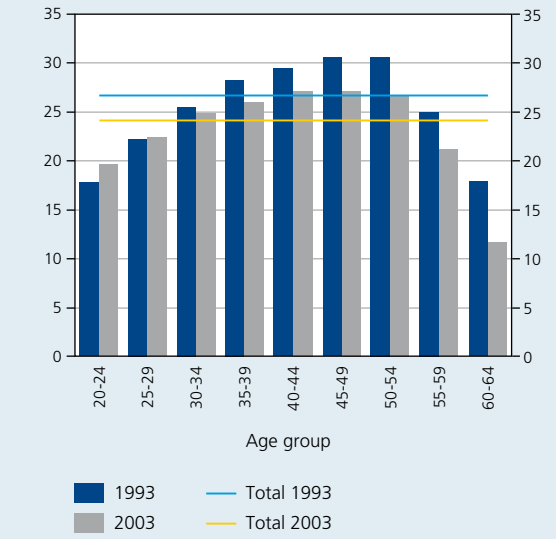
In real terms, the average income of third pillar participants dropped by 9 p.c. between 1993 and 2003. In contrast, during this period the average income of the total population of working age recorded a real increase of 22 p.c., reaching 17,111 euro in 2003. The income inequality between participants and non-participants persists, although it is tending to diminish. This convergence suggests that the increase in the number of participants mainly concerned the lowest income groups, pointing to a gradual democratisation of the third pillar.

The third pillar **contribution ratio** is defined as the percentage of participants' income devoted to third pillar savings. In 2003, the contribution ratio averaged 2.9 p.c. This ratio hovered around 2.5 p.c. of the income of participants aged from 20 to 54, whereas much higher ratios were recorded for the 55-64 age group. These higher contribution ratios offset the lower average incomes of the older people, so that the average level of contributions remains relatively stable. This strategy, which consists in postponing part of direct consumption, is easy to explain. First, as people grow older they think more about securing their standard of living after retirement, and are more willing to sacrifice part of their consumption for the sake of additional income in a forthcoming period. Also, the tax treatment favours the payment of contributions after age 60, as those contributions no longer give rise to tax on the capital paid out.

(1) Amount of the statutory pension as a percentage of pre-retirement income.

CHART 5 AVERAGE INCOME OF THIRD PILLAR PARTICIPANTS

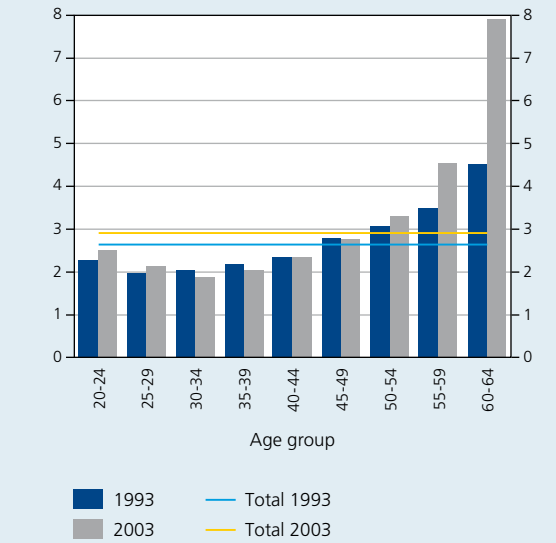
(thousands of euro, 2003 prices)



Source : FPS Finance.

CHART 6 CONTRIBUTION RATIO OF THIRD PILLAR PARTICIPANTS

(percentages of average income)



Source : FPS Finance.

During the period under review, the third pillar contribution ratio increased slightly. In 1993, it was 2.6 p.c. and thus gained 30 basis points over a ten-year period.

The product of average income and the contribution ratio gives the average amount of the participants' contributions. In 2003, this figure was 540 euro for pension savings and 575 euro for long-term savings. These figures can be compared with the ceilings applied in 2003, which stood at 600 and 1,800 euro respectively. It therefore seems that more use was made of the legal scope for pension savings than for long-term savings, where the ceiling also applies to other products.

3.2.2 Recent developments

The sample of tax returns currently available does not permit a survey of developments concerning the third pillar after 2003. However, the compilation of statistics obtained from the professional federations representing the third pillar players – Assuralia for the life insurance sector and BEAMA[1] for the investment fund sector – does provide some indication of recent developments in this form of savings. The results obtained point to an accentuation of the trends seen over the period 1993-2003.

Thus, pension savings payments increased very strongly from 2004 : in real terms, the increase in the contributions paid came to 62 p.c. between 2003 and 2006. It is true that the savers paying contributions into the pension savings funds are affected by the stock market situation, which has been particularly favourable since 2003. Furthermore, the tax limit applicable to the amount of the payments was increased substantially[2] in 2005, and that had a marked impact on the third pillar contribution ratio.

3.3 Microeconomic analysis

In the paragraphs which follow, the analysis focuses on the individual behaviour of households in regard to third pillar savings. It aims in particular to identify the factors determining the choices facing households in response to two questions : "Shall I pay third pillar contributions or not ?" and "If I take part in the third pillar, how much should I contribute ?". By using the sample of tax returns we gain an idea of a broad range of household characteristics which constitute a corresponding number

(1) Belgian Asset Managers Association.

(2) The ceiling was increased from 620 euro for 2004 incomes to 780 euro for 2005 incomes.

of potential determinants for third pillar savings. The variables considered most relevant were selected from the tax return forms, and can be divided into two categories:

1. Personal characteristics:
   - age;
   - number of dependants;
   - region of residence (Flanders, Wallonia or Brussels);
   - property ownership;
   - marital status (married couple or single).

2. Occupational characteristics:
   - amount of income;
   - occupational status (self-employed or not);
   - labour market situation (unemployed or not);
   - whether or not drawing an early retirement pension;
   - participation in a second pillar plan;
   - participation in the other third pillar system.

In formal terms, these characteristics were systematically regarded as potential explanatory variables in four separate equations relating to four dependent variables: participation in pension savings, participation in life insurance for the purpose of long-term savings, contributions to pension savings and contributions to life insurance for the purpose of long-term savings. The parameters of these equations were estimated by regression. The sign of these parameters, and their significance or non-significance, provide an indication of the nature of the influence of each determinant[1]. The presentation of the econometric model, definition of the variables used and the computed results of the regressions are set out in detail in the annex. The paragraphs which follow summarise the main findings and suggest the most likely explanations.

3.3.1 Personal determinants

According to the life cycle theory, people aim to maintain their consumption at a constant level throughout their life. To achieve that goal, younger people incur debts (to buy their house or to finance their children's education), the middle-aged generations accumulate savings with a view to their retirement, and retired people consume their assets by dissaving. It is therefore hardly surprising that age has a positive effect on participation in each of the two third pillar systems, bearing in mind that the analysis is confined to the population between the ages of 20 and 64 years. A similar result was obtained by the Belgian analysis conducted by Peeters et al. (2003), and in the study by Munnell et al. (2000) relating to American data. In addition, the influence of **age** can be understood from the tax angle. As demonstrated by Valenduc (2003), the effective tax rate on third pillar contributions is systematically negative because the percentage of the tax advantage on the contributions is higher than the tax rate applicable to the capital sum paid out. However, the level depends on the remaining term of the contract. The shorter that term – and consequently the older the taxpayer – the more negative the effective tax rate.

As regards the level of the contributions, there seems to be a positive link with the participant's age, at least for pension savings. In other words, all other things being equal, older people are not only more inclined to contribute to pension savings, they are also prepared to save more. However, that is not the case for long-term savings, where the amount of the contributions declines the older the participants.

At first sight, the desire to leave an inheritance for the family could encourage households with children to save more. Yet the number of **dependants** appears to have a negative effect, albeit slight, both on the likelihood of participation in the third pillar and on the amount of the contributions by participants in either system. Of course, a household with children faces heavier expenditure than a childless couple on the same income, reducing the ability to save. If money is nevertheless set aside, the savings may also be used for purposes other than building up a supplementary pension, e.g. for financing the children's higher education. Finally, there is a possibility that some couples also count on support from their children if they should get into difficulties after retirement, and therefore regard the third pillar as superfluous.

The **region** of residence has a significant influence on participation in the third pillar systems. Flemish households with the same characteristics are more likely to build up pension savings or long-term savings via life insurance contracts. Conversely, there are no noticeable differences in the behaviour of Walloon and Brussels households. The amount of the payments appears to be the same in all regions in the case of long-term savings, but Flemish households make larger contributions to pension savings. These results are interesting: since the tax incentives for participation in the third pillar are more or less the same in the three regions, regional variations in saving patterns must be attributable to non-fiscal factors. The relatively greater number of civil servants in Wallonia and Brussels

(1) The effect identified will need to be considered "all other things being equal" or more precisely "if the other explanatory variables remain constant". For example, a distinction can be made between the effect of age and the effect of income, even though these two variables are closely connected. Similarly, received ideas should be disregarded when determining the effect of unemployment: that effect will only correspond to the influence of being unemployed or not, and therefore cannot be explained by the receipt of lower incomes, since that forms the subject of a separate variable. In contrast, the real reason behind certain effects demonstrated can therefore be sought in factors which are not included in the model's explanatory variables: these include standard of education or regional allocation of the number of civil servants.

might play a role, since civil servants receive a higher statutory pension.

Ownership of **property** has a positive influence on third pillar participation. Peeters et al. (2003) arrive at the same conclusion. That link can be explained in the case of households owning their own home who have already paid off their mortgage: they spend less than households who have to pay a monthly rent. Conversely, the correlation between home ownership and third pillar participation is counter-intuitive in the case of owners who have to pay off a loan: one might expect such households to have to meet higher expenses than tenants and thus have less capacity to save. Furthermore, whether the loan has been repaid or not, owners can look forward to retirement free of housing costs, a prospect that ought to reduce the need for a supplementary pension. There is therefore a need to look for other explanations. The first might lie in the necessarily more frequent contact between home owners and their banker or insurer, perhaps offering the latter the opportunity to promote the third pillar systems. A second theory might be that owner occupiers are more worried about the future than people on the same income living in rented housing.

Also, owners make higher pension savings contributions but pay less into long-term savings. This last element may be due to the existence of a maximum tax allowance applicable to long-term savings which is the same for both life insurance premiums and mortgage loan repayments. In other words, people paying off a mortgage loan only get a tax allowance for a small part of the life insurance premiums paid, since the loan repayments have to be deducted first in most cases because the advantage of doing so is greater and they represent a substantial proportion of the tax allowance.

As regards the influence of **marital status**, married couples seem more inclined to participate in the third pillar than single persons. They also make larger contributions. At first sight this is surprising, since a couple consumes more than a single person and therefore has a smaller capacity to save if the income is the same. However, that factor may be offset by the fact that married couples are more concerned to provide safeguards.

3.3.2 Occupational determinants

According to the findings obtained respectively by Munnell et al. (2000), Bernheim and Garrett (1996) and Peeters et al. (2003), households with higher **incomes** are more inclined to participate in both pension savings and long-term savings. Their contributions are also higher than those of lower income households. This seems logical: since they have more money, they can save more. There is also a tax effect: wealthier households can save up to 40 p.c. tax on the contributions paid, whereas for lower income households the tax saving is generally only up to 30 p.c. of the payments, or even less in the special case of households paying very little tax. It is particularly important for the higher income groups to invest in a supplementary pension if they want to maintain their standard of living on retirement. Since the statutory pension is limited, the replacement ratio of the first pension pillar is in inverse proportion to final salary.

The **self-employed** are proportionately over-represented in both third pillar savings systems, a finding which tallies with the results of Peeters et al. (2003). They also pay higher contributions. That is entirely logical, since the statutory pension for self-employed persons remains less advantageous than that for employees. Until recently, it was also more difficult for the self-employed to obtain access to the second pension pillar. However, since 2003 the status of self-employed persons has improved considerably, in regard to both the generosity of the first pillar and access to the second pillar.

The **unemployed** are less inclined to participate in third pillar savings in the form of either pension savings or long-term savings. The unemployed who do participate in one of the systems also contribute comparatively less money. Where gross incomes are the same, it is surprising that there are proportionately fewer unemployed persons who want to top up their pension with a private, individual scheme, whereas their statutory pension is likely to be less generous.[1] Moreover, since little if any tax is payable on unemployment benefits, an unemployed person should in principle have a greater capacity to save than an employee with a comparable pre-tax income. However, any withholding tax deducted on the unemployment benefits is too little to render attractive the tax allowances for third pillar savings. The lack of preparation given the prospect of a lower statutory pension and a lower second pillar could also be indirectly connected with an element which does not appear on the tax return and is therefore absent from this study: the standard of education. It has in fact been demonstrated that persons seeking work have a lower average standard of education than persons in work.

(1) Periods of unemployment and early retirement are treated in the same way as periods of activity and therefore confer entitlement to a statutory pension. The pay taken into account for that purpose is notional: it is related to the actual pay received in the year prior to the suspension of activity. That pay is adjusted to the cost of living via a revaluation coefficient. Conversely, the real pay increases which might have been granted to persons seeking work or taking early retirement are disregarded in this revaluation.

It appears that **persons taking early retirement** are more inclined to participate in the third pillar, in both pension savings and long-term savings. Conversely, they make smaller contributions than employees with the same characteristics. As already stated, persons taking early retirement are perhaps preparing for a smaller statutory pension. Moreover, their supplementary pension is likely to be lower owing to the absence of contributions to the second pillar.

Although households paying personal contributions into the **second pillar** are less inclined to effect pension savings, they are more likely to arrange individual life insurance for the purpose of long-term savings. However, for 2003 these connections were hardly significant. To make a more accurate assessment of the second pillar effect it is probably necessary to have access to data on all the employees covered, and not just those who pay personal contributions and declare them on their tax returns, because the great majority of second pillar contributions are perhaps paid by employers, not by employees. The size of the second pillar is therefore difficult to estimate on the basis of the tax figures. Be that as it may, it can be assumed that some of the households participating in a group insurance scheme or pension fund consider that they have an adequate safety net for their pension, and therefore regard the third pillar as superfluous. At least, that is the conclusion arrived at by Bernheim and Garrett (1996).

In relation to the loss of purchasing power which households may face after retirement, the reserves accumulated via pension savings or long-term savings are indeed modest. That is part of the reason why so many households (11 p.c.) pay contributions to both **third pillar** systems. The microeconomic analysis confirms this finding. Thus, there is a positive link between participation in pension savings and long-term savings. In other words, households participating in either of these systems are more inclined to participate in the other one as well. They are also prepared to pay higher contributions. The two third pillar systems therefore appear to be complementary rather than competing systems. Households try to make maximum use of the scope for tax reductions offered by the two schemes. If they have reached the statutory limit in one of the systems, the surplus is saved under the other system.

(1) See in particular OECD (2005).

Conclusion

The macroeconomic analysis shows that there has been a substantial increase in third pillar payments in the past fifteen years. The increased rate of participation has played a decisive role in this development, which was encouraged by awareness that the statutory pension is inadequate. It is also evident that new participants have a lower average income than households which had long been participating in the system. These developments point to a tendency towards democratisation of the third pension pillar.

However, the microeconomic analysis qualifies that picture. True, various categories less able to rely on the first two pension pillars are quite justifiably more inclined to participate in the third pillar. This applies particularly to the self employed and persons taking early retirement. However, there are some other sub-categories displaying a high participation rate, even though their financial position is already sound, including after retirement : home owners on high incomes with group insurance cover are one example. In the case of these households, assured of a supplementary pension under the second pillar, the third pillar can nonetheless help to limit the loss of purchasing power after retirement.

Conversely, the majority of households still have no access to the second pillar. For that category, the third pillar is an advantageous way of topping up their statutory pension. In certain cases, it is actually the only way of securing a decent income after retirement age. However, the results of the microeconomic analysis show that, in contrast to the self-employed and persons taking early retirement, certain categories who will also have to manage on less after retirement are still nevertheless under-represented among third pillar participants : people in rented housing, the unemployed and persons on low incomes.

For some households, the lack of money makes any form of savings impossible : those households need to be able to rely on a sound first pension pillar. Some vulnerable households which are nevertheless able to save may be insufficiently informed, as the growing complexity of the financial products available for the third pillar is not improving their accessibility. It is therefore hardly surprising that a number of reports[1] draw attention to the need for financial education for savers. That should enable them to gain a better understanding of the supplementary pension products, particularly investments which offer no guaranteed return and place the risk with the investors, as in the case of pension savings funds. On the other hand, when savers have reached retirement age they should be given assistance to ensure optimum management of the funds which they obtain when the contracts mature.

Annex – Econometric analysis

Two types of equation were estimated in order to study the microeconomic determinants of third pillar saving. The first concerns participation in the third pillar and the second relates to the amount of the contributions paid by the participants. These two types of equation were estimated for both pension savings and long-term savings. The dependent and independent variables included in these equations are explained in Table 1.

TABLE 1 DEFINITION OF THE VARIABLES

Dependent variables	Definition
Part_Pension_Sav	= 1 if the household participates in pension savings, otherwise = 0
Part_Life_Ins	= 1 if the household participates in long-term savings, otherwise = 0
Pension_Sav	amount declared by way of pension savings (in euro)
Life_Ins	amount declared by way of long-term savings (in euro)
Independent variables	
Age	age of the household's main declarant (in years)
Married	= 1 if the tax return concerns a married couple, = 0 for single persons
Unempl	= 1 if the main declarant is unemployed, otherwise = 0
Self_Empl	= 1 if the main declarant is self-employed, otherwise = 0
Dep_Pers	number of dependent persons in the household
Prepension	= 1 if the main declarant has taken early retirement, otherwise = 0
Total_Inc	sum of salaries, unemployment benefits and self-employed income (in thousands of euro)
Home_Owner	= 1 if the household owns property, otherwise = 0
Part_Second_Pillar	= 1 if the household participates in the second pillar, otherwise = 0
Second_Pillar	amount declared under the second pillar (in euro)
Region_Fl	= 1 if the household lives in Flanders, otherwise = 0
Region_Wal	= 1 if the household lives in Wallonia, otherwise = 0

The equations using these variables are as follows:

$$Part\_Pension\_Sav_i = c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self\_Empl_i + c_6 Dep\_Pers_i + c_7 Prepension_i + c_8 Total\_Inc_i + c_9 Home\_Owner_i + c_{10} Part\_ Second\_Pillar_i + c_{11} Part\_Life\_Ins_i + c_{12} Region\_Fl_i + c_{13} Region\_Wal_i + u_i$$

$$Part\_Life\_Ins_i = c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self\_Empl_i + c_6 Dep\_Pers_i + c_7 Prepension_i + c_8 Total\_Inc_i + c_9 Home\_Owner_i + c_{10} Part\_ Second\_Pillar_i + c_{11} Part\_Pension\_Sav_i + c_{12} Region\_Fl_i + c_{13} Region\_Wal_i + u_i$$

$$Pension\_Sav_i = c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self\_Empl_i + c_6 Dep\_Pers_i + c_7 Prepension_i + c_8 Total\_Inc_i + c_9 Home\_Owner_i + c_{10} Second\_Pillar_i + c_{11} Life\_Ins_i + c_{12} Region\_Fl_i + c_{13} Region\_Wal_i + u_i$$

$$Life\_Ins_i = c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self\_Empl_i + c_6 Dep\_Pers_i + c_7 Prepension_i + c_8 Total\_Inc_i + c_9 Home\_Owner_i + c_{10} Second\_Pillar_i + c_{11} Pension\_Sav_i + c_{12} Region\_Fl_i + c_{13} Region\_Wal_i + u_i$$

The estimated results are set out in Table 2 (participation) and Table 3 (contributions). The equations relating to participation are of the logit type. In both cases, the significant coefficients (at the 5 p.c. level) are shown in bold.

TABLE 2a PARTICIPATION IN PENSION SAVINGS

	Part_Pension_Sav					
	1993	1995	1997	1999	2001	2003
C	**–7.593**	**–7.169**	**–6.168**	**–5.268**	**–4.728**	**–4.370**
	(0.497)	(0.485)	(0.451)	(0.377)	(0.286)	(0.189)
Age	**0.202**	**0.192**	**0.121**	**0.116**	**0.090**	**0.080**
	(0.024)	(0.024)	(0.022)	(0.019)	(0.014)	(0.009)
Age^2	**–0.002**	**–0.002**	**–0.001**	**–0.001**	**–0.001**	**–0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.070	0.127	–0.015	0.045	0.035	**0.084**
	(0.078)	(0.078)	(0.072)	(0.067)	(0.049)	(0.034)
Unempl	**–0.364**	**–0.207**	–0.103	–0.088	**–0.263**	**–0.215**
	(0.085)	(0.081)	(0.076)	(0.070)	(0.053)	(0.034)
Self_Empl	**0.450**	**0.252**	**0.347**	0.105	**0.229**	**0.193**
	(0.085)	(0.086)	(0.082)	(0.081)	(0.059)	(0.046)
Dep_Pers	**–0.080**	–0.055	–0.021	**–0.088**	**–0.064**	**–0.120**
	(0.033)	(0.032)	(0.031)	(0.030)	(0.021)	(0.015)
Prepension	–0.149	0.102	–0.071	0.064	0.029	**0.221**
	(0.153)	(0.151)	(0.145)	(0.135)	(0.111)	(0.075)
Total_Inc	**0.022**	**0.022**	**0.022**	**0.019**	**0.020**	**0.019**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Home_Owner	**0.570**	**0.621**	**0.485**	**0.649**	**0.600**	**0.667**
	(0.073)	(0.072)	(0.069)	(0.064)	(0.046)	(0.032)
Part_Second_Pillar	–0.128	**–0.283**	–0.153	**–0.160**	**–0.180**	–0.066
	(0.099)	(0.097)	(0.087)	(0.081)	(0.061)	(0.043)
Part_Life_Ins	**0.557**	**0.595**	**0.522**	**0.621**	**0.548**	**0.606**
	(0.084)	(0.072)	(0.064)	(0.058)	(0.042)	(0.030)
Region_Fl	**0.373**		**0.706**	**0.495**	**0.581**	**0.611**
	(0.115)		(0.121)	(0.107)	(0.078)	(0.054)
Region_Wal	–0.014		**0.287**	0.089	0.016	0.066
	(0.123)		(0.127)	(0.113)	(0.083)	(0.057)

TABLE 2b PARTICIPATION IN LONG-TERM SAVINGS

	Part_Life_Ins					
	1993	1995	1997	1999	2001	2003
C	**–2.969**	**–3.331**	**–3.967**	**–2.665**	**–3.648**	**–3.875**
	(0.493)	(0.432)	(0.420)	(0.367)	(0.291)	(0.200)
Age	0.049	**0.083**	**0.101**	**0.040**	**0.084**	**0.093**
	(0.026)	(0.023)	(0.022)	(0.019)	(0.015)	(0.010)
Age^2	**–0.001**	**–0.001**	**–0.001**	**–0.001**	**–0.001**	**–0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	**0.430**	**0.521**	**0.335**	**0.272**	**0.224**	**0.151**
	(0.097)	(0.085)	(0.076)	(0.072)	(0.052)	(0.037)
Unempl	–0.158	**–0.168**	**–0.254**	**–0.213**	**–0.288**	**–0.232**
	(0.089)	(0.079)	(0.076)	(0.073)	(0.056)	(0.037)
Self_Empl	**0.249**	0.172	**0.173**	**0.315**	**0.369**	**0.476**
	(0.103)	(0.089)	(0.084)	(0.080)	(0.060)	(0.046)
Dep_Pers	**–0.108**	**–0.107**	–0.041	–0.039	**–0.050**	**–0.088**
	(0.041)	(0.034)	(0.031)	(0.030)	(0.022)	(0.016)
Prepension	0.374	–0.007	0.324	**0.391**	**0.359**	**0.436**
	(0.242)	(0.222)	(0.184)	(0.159)	(0.128)	(0.086)
Total_Inc	**0.010**	**0.007**	**0.014**	**0.012**	**0.009**	**0.012**
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Home_Owner	0.164	**0.453**	**0.398**	**0.701**	**1.027**	**1.005**
	(0.088)	(0.077)	(0.071)	(0.068)	(0.051)	(0.035)
Part_Second_Pillar	**0.246**	**0.355**	0.102	**0.186**	0.085	0.012
	(0.108)	(0.092)	(0.084)	(0.079)	(0.061)	(0.043)
Part_Pension_Sav	**0.541**	**0.572**	**0.500**	**0.615**	**0.565**	**0.610**
	(0.084)	(0.072)	(0.065)	(0.058)	(0.043)	(0.030)
Region_Fl	0.201		**0.321**	0.167	**0.208**	**0.110**
	(0.132)		(0.114)	(0.105)	(0.080)	(0.055)
Region_Wal	–0.017		0.021	–0.014	–0.030	–0.092
	(0.141)		(0.121)	(0.111)	(0.084)	(0.058)

TABLE 3a PENSION SAVINGS CONTRIBUTIONS

	Pension_Sav					
	1993	1995	1997	1999	2001	2003
C	**–243.944**	**–215.679**	**14.370**	69.608	**190.763**	**231.852**
	(114.714)	(108.216)	(100.834)	(80.512)	(61.254)	(41.587)
Age	**24.193**	**23.436**	**13.854**	**14.028**	**10.318**	**6.576**
	(5.336)	(5.189)	(4.726)	(3.935)	(2.922)	(2.015)
Age^2	**–0.202**	**–0.169**	**–0.093**	**–0.114**	**–0.074**	–0.031
	(0.060)	(0.059)	(0.054)	(0.046)	(0.033)	(0.023)
Married	**270.365**	**293.472**	**286.026**	**301.860**	**343.521**	**330.520**
	(17.057)	(16.611)	(14.688)	(13.205)	(9.432)	(6.601)
Unempl	–56.903	–57.192	–47.420	**–48.303**	**–49.711**	**–40.122**
	(19.632)	(17.796)	(16.223)	(14.265)	(10.941)	(7.047)
Self_Empl	**65.148**	**50.381**	**36.997**	27.374	–1.890	**35.195**
	(17.258)	(17.002)	(15.626)	(15.254)	(10.745)	(8.238)
Dep_Pers	0.307	–0.701	**–17.313**	**–20.116**	–7.127	**–19.394**
	(7.307)	(7.009)	(6.378)	(5.909)	(4.186)	(3.021)
Prepension	–16.890	–10.358	**–62.164**	–48.424	–36.838	**–43.136**
	(32.572)	(30.712)	(29.071)	(26.111)	(20.942)	(13.476)
Total_Inc	**1.389**	**0.932**	**2.031**	**1.019**	**0.651**	**1.544**
	(0.310)	(0.225)	(0.262)	(0.186)	(0.107)	(0.112)
Home_Owner	29.028	4.924	23.906	20.529	**20.597**	**24.110**
	(16.444)	(16.155)	(14.970)	(13.395)	(9.629)	(6.551)
Second_Pillar	–0.029	0.010	–0.011	–0.013	0.000	**–0.018**
	(0.015)	(0.010)	(0.012)	(0.010)	(0.007)	(0.006)
Life_Ins	**0.045**	**0.044**	0.046	0.044	0.049	0.048
	(0.014)	(0.011)	(0.009)	(0.009)	(0.006)	(0.004)
Region_Fl	**56.030**		16.925	42.954	**32.826**	**60.010**
	(25.128)		(26.252)	(22.176)	(16.146)	(11.121)
Region_Wal	8.990		–30.918	1.276	**–57.243**	–10.023
	(26.979)		(27.565)	(23.320)	(17.190)	(11.759)

TABLE 3b LONG-TERM SAVINGS CONTRIBUTIONS

	Life_Ins					
	1993	1995	1997	1999	2001	2003
C	**475.390**	160.134	161.998	206.336	**646.030**	**844.574**
	(239.301)	(219.407)	(236.803)	(196.916)	(164.567)	(120.311)
Age	–10.308	0.298	–1.514	–5.137	**–24.150**	**–36.642**
	(12.529)	(11.598)	(11.912)	(9.973)	(8.105)	(5.928)
Age^2	**0.305**	0.195	0.247	**0.315**	**0.545**	**0.709**
	(0.154)	(0.141)	(0.143)	(0.121)	(0.095)	(0.070)
Married	46.791	**73.664**	**77.908**	**92.398**	**107.575**	**53.358**
	(41.854)	(37.364)	(36.547)	(33.291)	(25.491)	(19.059)
Unempl	–70.581	–28.050	–35.565	–24.666	–43.423	**–47.860**
	(40.646)	(36.250)	(38.666)	(35.855)	(29.023)	(20.334)
Self_Empl	**106.922**	**117.910**	–20.265	55.286	**80.440**	31.037
	(45.474)	(39.048)	(40.184)	(36.510)	(27.751)	(22.072)
Dep_Pers	–12.905	–27.825	–25.033	–23.255	**–44.483**	–12.147
	(18.745)	(16.246)	(15.429)	(14.563)	(11.072)	(8.359)
Prepension	**–371.058**	–79.459	**–238.962**	**–239.175**	**–230.829**	–79.090
	(109.807)	(105.215)	(93.300)	(79.417)	(64.391)	(44.696)
Total_Inc	**2.884**	**4.796**	**3.623**	**2.283**	**3.008**	**3.340**
	(0.959)	(0.768)	(0.707)	(0.460)	(0.438)	(0.328)
Home_Owner	**–139.064**	**–199.013**	**–209.428**	**–267.709**	**–283.956**	**–288.401**
	(38.315)	(32.677)	(33.489)	(31.361)	(24.612)	(18.253)
Second_Pillar	0.034	**–0.090**	–0.006	–0.004	0.016	–0.004
	(0.050)	(0.033)	(0.036)	(0.024)	(0.026)	(0.0019)
Pension_Sav	**0.348**	**0.445**	**0.394**	**0.377**	**0.327**	**0.383**
	(0.048)	(0.039)	(0.038)	(0.033)	(0.024)	(0.017)
Region_Fl	–28.343		44.782	57.123	–1.631	–12.159
	(60.461)		(58.692)	(52.307)	(40.902)	(29.831)
Region_Wal	–39.785		33.610	42.136	–30.558	–25.796
	(64.662)		(62.204)	(55.104)	(43.187)	(31.327)

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Summaries of articles

Economic projections for Belgium – Autumn 2007

Since the publication of the Bank's spring projections, the growth of activity and employment has proved robust in the euro area and in Belgium in the first half of 2007. However, the external environment has become more uncertain, owing to the financial market turmoil, the appreciation of the euro and the rising cost of energy and agricultural raw materials.

Maintaining its 2006 momentum, economic activity in Belgium remained buoyant during the first half of 2007, expanding at a rate of 0.7 p.c. per quarter. GDP growth dropped to 0.4 p.c. in the third quarter, confirming the hitherto moderate fall in the synthetic indicator of business confidence. The slower rate of expansion looks set to continue in the fourth quarter and in the first part of 2008. Overall, real GDP growth is projected to decelerate from 2.9 p.c. in 2006 to 2.6 p.c. in 2007 and 1.9 p.c. in 2008. The vigour of the Belgian economy at the beginning of 2007 was due mainly to the boost from domestic demand. In particular, firms and households were still resolutely increasing their fixed capital investment at the time, as they had in the preceding years, while private consumption was expanding significantly. These two factors are expected to weaken at the end of the year and in 2008.

Supported by the robust activity pace, net job creations increased in the first half of 2007. Employment is projected to grow by 1.6 p.c. in 2007 and 1 p.c. in 2008, representing net cumulative growth of almost 115,000 jobs in the two years. Taking account of the expected movement in the labour force, the decline in the unemployment rate which began in April 2006 should continue, bringing that rate down from an average of 8.3 p.c. in 2006 to 7.7 p.c. in 2007 and 7.3 p.c. in 2008.

Estimated on the basis of the HICP, overall inflation should fall from 2.3 p.c. in 2006 to 1.8 p.c. in 2007, before rising to 2.9 p.c. in 2008. This profile mainly reflects the movements in energy prices. The underlying inflation rate is projected to increase slightly in 2007, rising from 1.6 p.c. in the previous year to 1.9 p.c.; it should remain at that level in 2008. The rise in 2007 is due solely to the movement in prices of processed food. Conversely, inflation is expected to remain subdued in the case of non-energy industrial products and services, being held down by the appreciation of the euro, global competition and the generally moderate movement in wages over the recent years.

Reflecting modest growth in labour productivity, which stems from the marked expansion of employment in 2007 and the cyclical slowdown in activity in 2008, the rise in unit labour costs in the private sector is forecast to accelerate, from 1.4 p.c. in 2006 to 2.2 p.c. in 2007 and 2.1 p.c. in 2008. Hourly labour costs are projected to rise by 2.8 p.c. in 2007 and 3 p.c. in 2008, an increase comparable to the 2006 figure.

According to the latest data, public finances should end the year 2007 with a deficit of 0.1 p.c. of GDP. In 2008, the deficit is expected to rise to 0.3 p.c. of GDP. In 2007, public finances are benefiting from the favourable economic conditions and the further decline in interest charges. However, the positive impact of these factors is likely to be considerably outweighed by the disappearance of non-recurring factors. In 2008, the budget deficit will grow, despite a further fall in interest charges. In 2007 and 2008, the public debt will maintain its downward trend, falling by around 3 p.c. of GDP per annum. By the end of 2008, the debt ratio is forecast to reach 82.1 p.c.

JEL Codes : E17, E25, E37, E66

Key words : Belgium, macroeconomic projections, Eurosystem

Interest rate policy versus monetary base policy : impact on a central bank's balance sheet

The article discusses the relationship between the central bank balance sheet, the monetary base, monetary aggregates and credit in the euro area. In particular, it looks at the choice of the operational procedures available to the central bank, and for this purpose it compares the current interest rate policy to a hypothetical monetary base policy. In the latter case, monetary policy would be transmitted primarily via the monetary aggregates which are already monitored by the ECB as part of its monetary analysis. The analysis points out, however, that the euro area conditions favour an interest rate policy rather than a monetary base policy. The reason is that the uncertainty created in the very short run by money demand shocks and unstable money multipliers exceeds that created by global demand shocks. This explains why central banks of countries with developed financial markets follow an interest rate policy. Such a choice is not at odds with the fact that money plays a fundamental role in the monetary policy strategy of the Eurosystem, as the comparative advantage of the monetary analysis pertains to the medium to long term. Finally, the authors point out that an interest rate policy implies an endogenous central bank balance sheet, where changes in base money demand are passed on to the balance sheet. Therefore, extra interventions, as for example those during the summer of 2007, by a central bank aiming to stabilise the official rate do not signal a change in monetary policy stance.

JEL Codes : E51, E52, E58

Key words : central bank balance sheet, interest rate policy, monetary base policy

The Eurosystem's liquidity management during the period of financial turmoil

In the past few months, euro area money markets have been exposed to intense tensions. On 8 August, overnight interest rates rose to very high levels which required interventions of the Eurosystem in order to stabilise short-term money market interest rates around the target level, i.e. the minimum bid rate on the main refinancing operations.

The article explains how the Eurosystem steers very short-term money market interest rates by adjusting its supply of liquidity on the money market. It is shown how the Eurosystem's liquidity management stabilised short-term money market interest rates around the minimum bid rate on the main refinancing operations in the first half of 2007. Although short-term money market interest rates were more volatile during the period of financial turmoil, the Eurosystem nevertheless managed to safeguard the signalling function of the short-term money market interest rates by applying its operational framework in a flexible way. More specifically, the Eurosystem decided to allot more liquidity than the benchmark amount in the main refinancing operations early within the maintenance period. It was also decided to conduct fine-tuning operations on a more frequent basis in order to stabilise short-term rates. Finally, the Eurosystem also decided to increase the

share of longer-term refinancing operations in the total amount of outstanding open market operations.

Despite the relative success in stabilising very short-term money market interest rates, longer maturity unsecured interest rates – for instance the 3-month Euribor – increased significantly during the period of financial turmoil. These movements cannot be controlled directly by central banks as they are determined predominantly by private sector behaviour. However, when assessing the appropriate monetary policy stance, the Governing Council of the ECB takes these possibly changing financing conditions into account.

JEL codes: E43, E51, E52

Key words: monetary policy implementation, Eurosystem, open market operations

Trend in the financial structure and results of firms in 2006

In 2006, growth of total value added generated by Belgian non-financial corporations accelerated to reach 6.4 p.c. At the same time, operating costs rose by 5.5 p.c. So, for the fourth year in a row, value added rose faster than operating costs. As a consequence, net operating profit saw a further noticeable increase (+9.2 p.c.), reaching a total of nearly 33 billion euro. After taking into account the other elements of the profit and loss account, non-financial corporations generated an overall net profit after tax of 43 billion euro, representing a new year-on-year increase.

The financial position of firms also continued to improve in 2006. Globalised as well as median measures confirm the exceptional levels of profitability, solvency and liquidity that have been reached today.

Finally, the article focuses on the effects of the corporation tax reforms of 2003 and 2005. Although an increase in revenue from corporate taxation can be noted from 2002 onwards, the tax burden has declined for non-financial corporations as a result of these reforms. The most recent reform, which introduced a notional interest deduction from the 2007 tax year onwards, has had a structural impact on the financial behavior of corporations. Share issues grew by more than 250 p.c. to reach a record level of 114 billion euro. Large companies, in particular, resorted to techniques to optimise the impact of the tax deduction. Their rectified equity capital, which is used as a base to calculate the size of the tax deduction, increased by 30 p.c. and their payment of dividends decreased by 20 p.c. in 2006.

JEL Codes: G30, H25, L60, L80

Key words: firms results, financial structure, corporate tax, sectoral analysis

The determinants of saving in the third pension pillar

The paper analyses participation in and contributions to the third pillar of the pension system by Belgian households. This pillar represents individual saving for retirement and has been growing rapidly.

A detailed dataset of tax declarations over the period from 1993 until 2003 was used to analyse the possible determinants of saving in the third pillar. Firstly, this dataset makes an analysis from a macroeconomic point of view possible, showing an apparent increase in total contributions to the third pillar by 39 p.c. in real terms between 1993 and 2003. This increase is mainly due to a rise in the participation rate (29 p.c. in 1993 and 40 p.c. in 2003). A detailed analysis is provided across the age groups, which further shows the influence of the demographic evolution, the average income of the participants in the third pillar and the contribution rate.

The dataset also helps point up a wide number of possible microeconomic determinants of saving for retirement, such as age, income, professional status, civil status, region of residence, property ownership, employment situation, participation in second pillar pension schemes, number of dependents, etc. Moreover, the database allows a distinction to be made between the two forms in the third pillar : pension saving and life insurance.

From such a microeconomic point of view, the analysis sheds some light on the major determinants of participation to the third pillar. The main findings show that older households are more likely to opt for a third pillar pension scheme. Furthermore, it appears that households consider the two forms of the third pillar as being complementary rather than substitutes for each other : households that participate in pension saving schemes are also more likely to take out life insurance and vice versa. Besides age, the other determinants that have a positive impact on participation in the third pillar of the pension system are : having higher income, being self-employed, getting an early retirement pension, being a home owner, being married and living in Flanders rather than Brussels or Wallonia.

JEL Codes : D14, G22, G23, J32

Keywords : personal finance, pension fund, life insurance, private pensions

The social balance sheet 2006

According to the 2006 social balance sheets of Belgian enterprises, employment on average increased by 1.3 p.c. between 2005 and 2006. It expanded mainly in small and medium-sized enterprises while remaining unchanged in large companies. Employment grew in all branches of activity except in industry. A marked rise was recorded in the number of part-time workers, too. Consequently, the part-time employment rate increased again, the rise being especially strong for the male workforce. Staff movements were larger than in 2005, but net recruitment fell to only half of the previous year's level. A strong increase in the staff turnover rate was observed in some industrial branches.

Hourly labour costs rose by an average of 3.1 p.c. between 2005 and 2006, to 33.1 euro. Their level differs significantly between enterprises according to their branch of activity and their size. Labour costs are higher in enterprises operating in several regions than in single-region firms. In the latter, hourly labour costs are weaker in Wallonia than in the two other regions.

Performance in the field of training still fell well short of the targets of 1.9 p.c. in 2006 for the financial effort indicator and 50 p.c. by 2010 for the employee participation rate. The first indicator, that is, the training budget as a percentage of staff costs, was estimated at 1.2 p.c. in 2006. There was a further but small increase in the rate of employee participation in training: only 36.4 p.c. of workers had access to training in 2006. In Wallonia, the percentage of training firms is lower and the indicators calculated solely for training firms remain systematically weaker than in Brussels and Flanders.

Finally, the Belgian results of the Continuing Vocational Training Survey (CVTS) for 2005 were compared with those of the social balance sheets. The proportion of training firms is far higher in CVTS, probably because of the intensive follow-up provided to firms involved in the survey. On the other hand, the worker participation rate and the time spent on training as a percentage of working hours are similar in both statistics. As for the financial effort indicator, the results are very different, respectively 1.6 p.c. in CVTS and 1.3 p.c. in the social balance sheets, while they were quite similar in 1999 when the previous survey was carried out.

JEL Codes: J20, J24, J30, J31, 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

119. The determinants of stock and bond return comovements, by L. Baele, G. Bekaert and K. Inghelbrecht, October 2007.

The paper examines the economic sources of stock-bond return comovement and its time variation using a dynamic factor model. The authors identify the economic factors employing structural and non-structural vector autoregressive models for economic state variables such as interest rates, (expected) inflation, output growth and dividend payouts. They also view risk aversion, and uncertainty about inflation and output as additional potential factors. Even the best-fitting economic factor model fits the dynamics of stock-bond return correlations poorly. Alternative factors, such as liquidity proxies, help explain the residual correlations not explained by the economic models.

120. Monitoring pro-cyclicality under the capital requirements directive: *preliminary concepts for developing a framework*, by N. Masschelein, October 2007.

The paper provides an overview of the questions that will need to be addressed in order to determine whether increased cyclicality in capital requirements will exacerbate the pro-cyclicality in the financial system. Many central banks have raised concerns about the potential cost of procyclicality that could come with the Basel II framework, which will be implemented in the EU via the Capital Requirements Directive (CRD). Previous capital adequacy rules required banks to hold a minimum amount of capital for each loan, regardless of the different risks involved. The main objective of the Basel II framework/CRD is to make capital requirements more risk-sensitive. Therefore, by construction, the capital requirements under the CRD will be more cyclical than under the previous rules. This raises two questions. First, does it matter whether regulatory capital requirements fluctuate more than before if banks' (lending) behaviour is driven by other capital considerations (for example economic capital)? Second, if it does matter, what impact will this have on the economic cycle?

121. Dynamic order submission strategies with competition between a dealer market and a crossing network, by H. Degryse, M. Van Achter and G. Wuyts, November 2007.

The paper presents a dynamic microstructure model where a dealer market (DM) and a crossing network (CN) interact. Sequentially arriving traders with different valuations for an asset maximise their profits either by trading on a DM or by submitting an order for (possibly) uncertain execution via a CN. The authors develop the analysis for three different informational settings: transparency, "complete" opaqueness of all order flow, and "partial" opaqueness (with observable DM trades). A key result is that the interaction of trading systems generates systematic patterns in order flow for the transparency and partial opaqueness settings. The precise nature of these patterns depends on the degree of transparency at the CN. While unambiguous with a transparent CN, they may reverse direction if the CN is opaque. Moreover, in all three informational settings, the authors find that a CN and a DM cater for different types of traders. Investors with a high willingness to trade are more likely to prefer a DM. The introduction of a CN next to a DM also affects welfare as it increases total order flow by attracting traders who would otherwise not submit orders ("order creation"); in addition, it diverts trade from the DM ("trade diversion"). The authors find that the coexistence of a CN and DM produces more trader welfare than a DM in isolation. Also, more transparent markets lead to greater trader welfare but may reduce overall welfare.

122. The gas chain: influence of its specificities on the liberalisation process, by C. Swartenbroekx, November 2007.

Like other network industries, the European gas supply industry has been liberalised, along the lines of what has been done in the United Kingdom and the United States, by opening up to competition the upstream and downstream segments of essential transmission infrastructure. The aim of the paper is to draw attention to some of the stakes in the liberalisation of the gas market whose functioning cannot disregard the network infrastructure required to bring this fuel to the consumer, a feature it shares with the electricity market. However, gas also has the specific feature of being a primary energy source that must be transported from its point of extraction. Consequently, opening the upstream supply segment of the market to competition is not so obvious in the European context, because, contrary to the examples of the North American and British gas markets, these supply channels are largely in the hands of external suppliers and thus fall outside the scope of EU legislation on the liberalisation and organisation of the internal market in gas. Competition on the downstream gas supply segment must also adapt to the constraints imposed by access to the grid infrastructure, which, in the case of gas in Europe, goes hand in hand with the constraint of dependence on external suppliers. Hence the opening to competition of upstream and downstream markets is not "synchronous", a discrepancy which can weaken the impact of liberalisation.

Moreover, the separation of activities necessary for ensuring free competition in some segments of the market is coupled with major changes in the way the gas chain operates, with the appearance of new markets, new price mechanisms and new intermediaries. Starting out from a situation where gas supply was in the hands of vertically-integrated operators, the new regulatory framework that has been set up must, on the one hand, ensure that competitive forces can be given free rein, and, on the other hand, that free and fair competition helps the gas chain to operate coherently, at lower cost and in the interests of consumers, for whom the stakes are high as natural gas is an important input for many industrial manufacturing processes, even a "commodity" almost of basic necessity.

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
LU	Luxembourg
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
FI	Finland
EA	euro area
CZ	Czech Republic
DK	Denmark
EE	Estonia
CY	Cyprus
LV	Latvia
LT	Lithuania
HU	Hungaria
MT	Malta
PL	Poland
SK	Slovakia
SE	Sweden
UK	United Kingdom
EU-15	European Union excluding the countries which joined in 2004 and 2007
EU-25	European Union excluding Bulgaria and Romania
US	United States

OTHERS

ABCP	Asset Backed Commercial Paper
ABS	Asset Backed Security
BEAMA	Belgian Asset Managers Association
BFIC	Banking, Finance and Insurance Commission
BNRC	Belgian National Railway Company
CBFA	Banking, Finance and Insurance Commission
CVTS	Continuing Vocational Training Survey
DBRIS	Database of Providers of Statistical Information (enterprises)
DGSIE	Directorate-general Statistic and Economic Information Belgium
EC	European Commission
ECB	European Central Bank
ECP	Euro Commercial Paper
EDP	Excessive Deficit Procedure
Eonia	Euro OverNight Index Average
ESCB	European System of Central Banks
EU	European Union
Euribor	Euro Interbank Offered Rate
Federgon	Federation of temporary recruitment agencies
FPS	Federal Public Service
FRA	Forward Rate Agreement
FTE	Full-time equivalents
GDP	Gross domestic product
HICP	Harmonised index of consumer prices
Horeca	Hotel, restaurant and cafés
ICT	Information and Communication Technologies
IMF	International Monetary Fund
MFI	Monetary Financial Institution
NACE-Bel	Belgian version of the statistical nomenclature of economic activities in the European Community
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 Cooperation and Development
OLO	Linear bond
RDT	Finally taxed income
ROE	Return on equity

SIV	Structured Investment Vehicle
SME	Small and Medium-sized Enterprise
SPV	Special Purpose Vehicle
UCI	Undertaking for Collective Investment
VAT	Value added tax

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