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Contents

Economic projections for Belgium – autumn 2004

1. Introduction

In the spring of 2004 the macro-economic projections for the euro area, produced as part of the Eurosystem's twice yearly exercise, expected that the recovery in activity which had begun in mid 2003 would gather strength. That recovery would initially be export-driven, supported by the momentum of the global economy and international trade in a favourable context on the financial and commodity markets. In particular, in line with the trend in prices implied in forward contracts, the price of a barrel of Brent crude oil was expected to fall by the second half of 2004, from an average of 37 dollars in the first half year.

In that context, the Bank had predicted that the renewed vigour of activity in Belgium, apparent since the third quarter of 2003, would be sustained in 2004 and 2005 after more than two years in the doldrums. The initial impetus provided by exports was expected to be gradually reinforced by an endogenous strengthening of the economy, via investment and employment. However, the accelerating growth was not expected to fuel inflation in view of the moderating effects exerted by the euro's recent appreciation, the expected decline in oil prices and the relatively weak pressure on production capacity, leading to a restrained rise in labour costs.

Coinciding with the publication of the new euro area projections in the ECB Bulletin dated December 2004, this article gives a brief presentation of the results for the Belgian economy. Those results, obtained using the same methods and procedures as in the spring[1], take account of developments which have occurred since then.

(1) NBB (2004), " Economic projections for Belgium, 2004-2005 ", Economic Review 2-2004.

For instance, the rise in the oil price persisted after the spring, and the euro appreciated once again at the end of the year. In Belgium, GDP growth was also more robust than expected up to the third quarter of 2004. The new projections also take account of the government budgets available for 2005.

The cut-off date for the projections for Belgium was 19 November 2004.

2. International environment and assumptions

In 2004 the global economy reached the peak of the current business cycle, with real growth attaining almost 5 p.c. The expansion should remain strong in 2005, bordering on the potential growth rate, though it is likely to be lower than in 2004, particularly because of the progressive return towards a neutral economic policy stance. World trade should continue to grow strongly, in line with activity in general.

The high oil prices are also expected to inhibit growth. Owing to buoyant demand, particularly from the United States and China, the low level of stocks, limited production and transport capacities, and uncertainty regarding the continuity of supplies from certain major producers, prices on the international markets continued to rise through the year, reaching a maximum averaging over 49 dollars per barrel of Brent in October 2004. The forward markets now predict that the price will drop back towards a level of around 40 dollars per barrel in two years' time, which is 10 dollars higher than previously forecast, reflecting a gradual return towards an equilibrium price which has itself been revised upwards.

Box 1 – Eurosystem assumptions

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

- **short-term interest rates** are set at 2.2 p.c. for the period of the projections;
- **long-term interest rates** in euro are based on market expectations; when the projections were produced, they stood at 4 p.c. and are expected to rise slowly, reaching 4.3 p.c. by the end of 2005;
- **bilateral euro exchange rates** are kept constant at their mid-November value, namely 1.29 dollars to the euro in the case of the US currency;
- in line with the trend in prices implied in forward contracts, **world oil prices** are expected to fall slowly during the period covered by the projections, from the level of over 49 dollars per barrel reached in October 2004. On average over the year, the price per barrel of Brent is likely to come to 39 dollars in 2004 and 44.4 dollars in 2005, against 28.9 dollars in 2003;
- **Belgium's export markets**, measured as the weighted sum of imports from third countries, including the euro area partners, are predicted to expand by around 7 p.c. in 2004 and 2005;
- while the euro's appreciation had a major impact on **competitors' prices** in 2003, that effect should moderate during the period under consideration. In annual average terms, competitors' prices are assumed to continue falling by 1.7 p.c. in 2004, becoming steady in 2005;
- the results for **public finances** take account of the macroeconomic environment and of the budget measures already announced and sufficiently outlined.

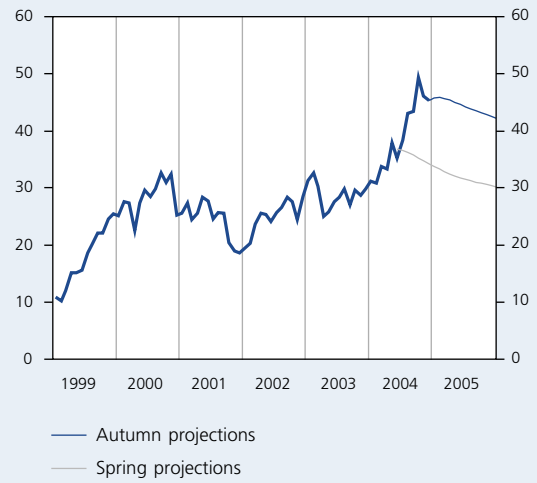
EUROSYSTEM PROJECTIONS: RESULTS AND ASSUMPTIONS

	2003	2004	2005
Projections for the euro area		*(Annual averages)*	
GDP in volume	0.5	1.6 – 2.0	1.4 – 2.4
Inflation (HICP)	2.1	2.1 – 2.3	1.5 – 2.5
Eurosystem assumptions			
Three-month interbank rates in euro	2.3	2.1	2.2
Ten-year bond yields	4.2	4.2	4.2
Euro exchange rate against the US dollar	1.13	1.24	1.29
Oil price (US dollars per barrel)	28.9	39.0	44.4
		(Percentage changes)	
Export markets relevant to Belgium	2.9	7.1	7.1
Competitors' export prices	–6.1	–1.7	0.2
of which: Competitors in the euro area	–0.1	0.4	0.5

Source: ECB.

CHART 1 PRICE OF CRUDE OIL

(Monthly averages – barrel of Brent in dollar)



Source : ECB.

The impact of the higher oil prices on economic activity in the euro area appears to have been less significant than the effects of the dynamism of external demand in the first half of the year. According to the new Eurosystem projections, GDP growth in 2004 would be slightly higher than predicted in June, at between 1.6 and 2 p.c., following a rise of just 0.5 p.c. in 2003. Growth is expected to accelerate only slightly in 2005, reaching between 1.4 and 2.4 p.c., but will be more strongly supported by domestic demand. Inflation in terms of the overall HICP is likely to range between 2.1 and 2.3 p.c. in 2004 and between 1.5 and 2.5 p.c. in 2005. The energy component is expected to account for much of the rise in the HICP in 2004 and early 2005. After that, inflation should subside.

3. Activity, employment and demand

In Belgium, too, the marked revival in business activity which began in 2003 continued unabated for much of 2004. According to the NAI estimates, which go up to the third quarter, real GDP grew at a rate of 0.75 p.c. per quarter from mid 2003. Year-on-year growth came to 3 p.c. in the third quarter of 2004, the largest annual increase in four years. This acceleration was also more sustained than expected, as GDP growth was slightly but systematically higher than predicted in successive quarters, owing to upward adjustments to the national accounts data and new observations which were better than forecast.

GDP growth should continue durably at a robust rate, though below that of the past few quarters. In the short term, the recent results of the business surveys – the main source of information for assessing developments in activity in real time – indicate a dip in the upward trend which had been sustained until the summer. In more fundamental terms, the composition of economic growth should become more balanced in 2004 and 2005, particularly in view of the increase in employment and investment, whereas at the end of 2003 the marked revival in economic activity had been driven by accelerating exports and substantial stock building.

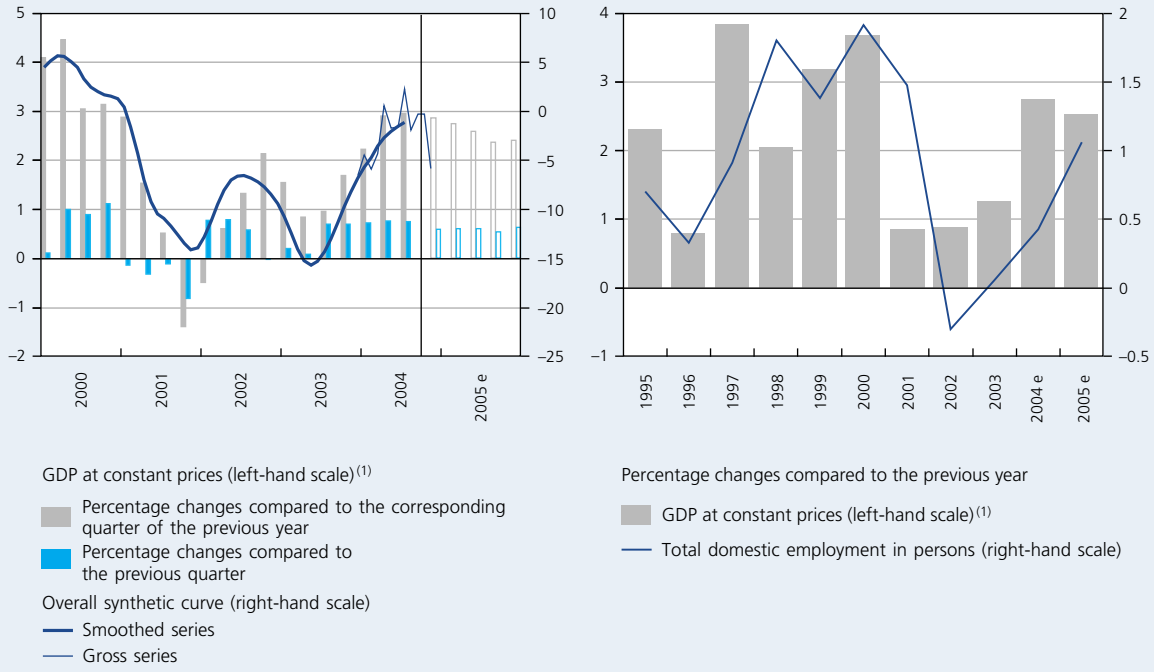
Overall, economic growth looks set to rise from 1.3 p.c. in 2003 to 2.7 p.c. in 2004, representing a 0.4 percentage point revision for this year compared to the spring projections. Growth is expected to reach 2.5 p.c. in 2005, once again outpacing that in the euro area.

The strengthening of activity should generate an expansion in private sector employment, running at only 0.4 p.c. in 2004 but rising to 1.2 p.c. in 2005. The rate of increase in productivity per person should therefore come to 1.1 p.c. in 2005, after substantial gains in 2004 reflecting the absorption of the labour reserves which accumulated in firms at the time of the cyclical downturn, despite a decline in employment of around 1 p.c. over the preceding two years as a whole. If a small increase in the public sector workforce is also taken into account, net job creation comes to around 62,000 jobs for the period 2004-2005 as a whole. In view of the increase in the labour force, due to the rise in the population of working age and in the activity rate, job creation should cause the unemployment rate to stabilise at an average of 7.8 p.c. in 2004 and 2005, against 8 p.c. in 2003.

The rise in employment will be the main factor contributing to the increase in household disposable incomes in 2005. The favourable movement in non-labour incomes – connected with the rise in business operating surpluses – will also contribute to the increase, either directly in the case of self-employed persons or indirectly via profit distributions in the case of companies. Thus, private consumption should rise at a steady 2.2 p.c. in 2004 and 2005, comparable to the 2003 figure, but this growth would be due mainly to the acceleration in purchasing power, as the savings ratio will be stable at 14.2 p.c. of disposable income in 2005, after a cumulative decline of more than 2 points in the preceding two years. The contribution made to growth by private consumption will probably remain substantial, partly explaining why the Belgian economy has outperformed the euro area average of late. This performance is largely

CHART 2 GDP, BUSINESS SURVEY INDICATOR AND EMPLOYMENT

(Seasonally adjusted data)



Sources : NAI, NBB.

(1) Calendar adjusted data.

based on stable, balanced fundamentals which provide support for household expectations. Public consumption is also likely to be more dynamic in Belgium : real growth of 3.5 p.c. is expected in 2004, due mainly to the rise in expenditure on health; an increase of 1.6 p.c. is predicted for 2005.

Following a substantial fall in 2002 and 2003, the signs of a fragile recovery in business investment appeared at the beginning of 2004. In parallel with the improvement in employment, this should accelerate during the period covered by the projections, bolstered mainly by the steady growth of both demand and profitability. In all, business investment is forecast to increase by 3.5 p.c. in 2004 and 4.9 p.c. in 2005, or 2.9 and 4.7 p.c. respectively if the purchase of public buildings is excluded. Despite the latter transactions, public investment is likely to remain strong in the run-up to the local elections. Investments by individuals in housing are expected to accelerate in 2005 in parallel with the rise in household disposable incomes.

According to the Eurosystem assumptions, Belgium should see external demand increase at a sustained rate in 2004 and 2005. Real export growth is therefore expected to speed up, rising from 1.7 p.c. in 2003 to 3.8 p.c. in 2004 and 5.4 p.c. in 2005, as the negative effects on competitiveness of the euro's past appreciation ebb away. Imports are expected to rise at much the same rate as exports in 2005, whereas they had outstripped export growth in 2003 and early 2004. This means that net exports should make a small positive contribution to growth once again in 2005, in contrast to the change in stocks, following the substantial stock building recorded at the beginning of the economic upswing. Changes in stocks were also among the reasons why growth in Belgium outpaced that for the euro area as a whole.

TABLE 1 GDP, EMPLOYMENT AND MAIN CATEGORIES OF EXPENDITURE

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

	2002 (3)	2003	2004 e	2005 e
GDP (1)	0.9	1.3	2.7	2.5
Total domestic employment in persons	–0.3	0.1	0.4	1.1
Categories of expenditure (1)				
Final consumption expenditure of individuals	0.3	2.2	2.2	2.2
Final consumption expenditure of general government	2.3	2.7	3.5	1.6
Gross fixed capital formation	–3.4	–0.6	3.2	4.7
Housing	–3.3	2.6	1.0	2.6
General government	–0.6	1.0	6.6	8.9
Enterprises	–3.8	–1.9	3.5	4.9
Change in stocks (2)	0.7	–0.1	0.5	–0.1
Total domestic expenditure	0.6	1.6	3.2	2.5
Net exports of goods and services (2)	0.3	–0.3	–0.4	0.1
Exports of goods and services	1.3	1.7	3.8	5.4
Imports of goods and services	1.0	2.1	4.4	5.5

Sources : NAI, NBB.

(1) At 2000 prices.

(2) Contribution to the change in GDP.

(3) These figures are influenced by the reclassification of the public broadcasting companies from the non-financial corporations sector to the general government sector. Without that operation, final consumption expenditure of individuals increased by 0.8 p.c. in 2002, that of general government increased by 1.7 p.c., gross fixed capital formation of enterprises and general government were down by –3.7 p.c. and –1.5 p.c. respectively, and domestic expenditure and GDP were up by 0.8 p.c. and 1.0 p.c. respectively.

4. Prices and costs

The pattern of inflation in 2004 and 2005 mainly reflects the recent rises in crude oil prices and the modest fall expected in 2005. Measured by the HICP, inflation gathered speed, rising from 1 p.c. in March 2004 to 2.7 p.c. in October. After a temporary dip, it should return to that level in the initial months of 2005 before subsiding to around 2 p.c. towards the end of the year. Overall, inflation is expected to average 1.9 p.c. in 2004 and 2.2 p.c. in 2005, figures which are respectively 0.1 and 0.5 point higher than in the spring projections. This revision is due mainly to the higher level of oil prices.

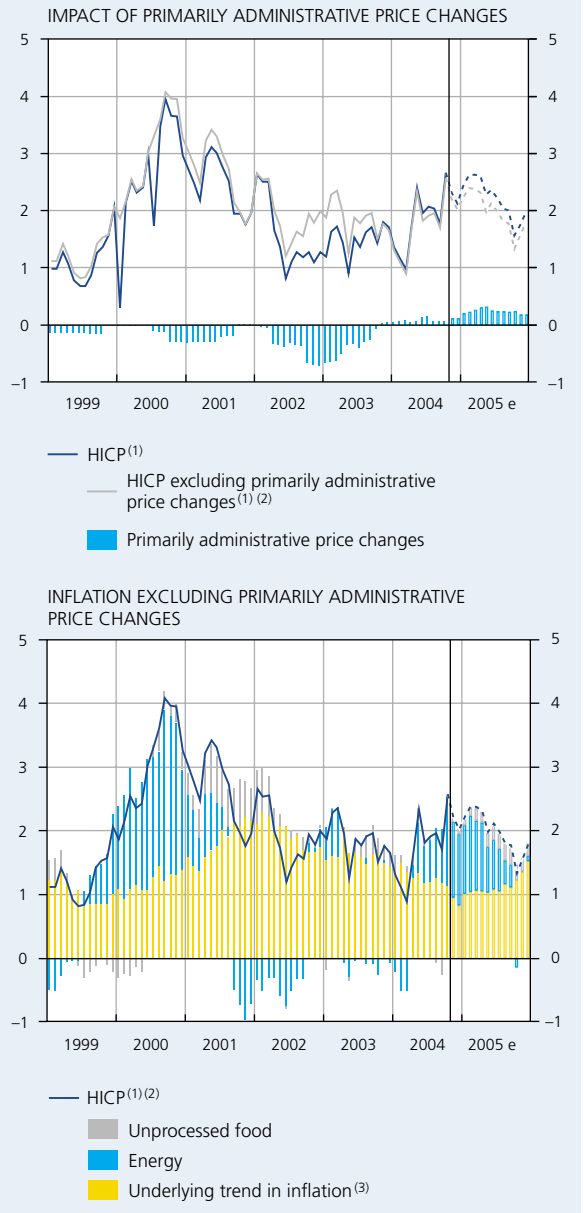
Primarily administrative price changes are also expected to add to the accelerating inflation, their contribution rising from 0.1 point in 2004 to 0.2 point in 2005. This effect is slightly greater than was predicted in the spring, owing to increases in indirect taxes introduced in the 2005 budget.

Leaving aside primarily administrative price changes, and changes in the prices of energy and unprocessed food, for which the favourable effect of the mild weather in 2004 is expected to fade away, the underlying inflation rate should average 1.5 p.c. in 2004 and 1.4 p.c. in 2005, against 2 p.c. in 2003. Apart from the indirect effects which more expensive commodities are likely to exert on the selling prices of processed products or certain services, inflationary pressure should remain moderate as far as both imports and domestic costs are concerned, at least in the absence of any second round effects via wages in Belgium and in the euro area.

As in the preceding two years, the rise in unit labour costs in the private sector should remain modest during the period covered by the forecasts, averaging around 0.5 p.c. Apart from the steep rise in productivity in 2004, a movement which is generally observed at the beginning of phases of accelerating activity and which is likely to diminish during 2005, this development is expected to come from relatively low increases in hourly labour costs, in the order of 2.5 p.c. per annum from 2003 to 2005. The 2.3 p.c. rise in hourly costs assumed for 2005 corresponds

CHART 3 INFLATION : ANALYTICAL BREAKDOWN

(Contributions of the various components in percentage points, unless otherwise stated)



Sources : EC, NBB.

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

(2) Excluding the estimated effect, in January and July 2000, of the fact that prices discounted in sales have been taken into account in the HICP since 2000.

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

to a technical assumption based – as specified by the law of 1996 on employment promotion and the preventive safeguarding of competitiveness – on the average movement in labour costs expected in the three neighbouring countries, and therefore does not in any way anticipate the outcome of the current round of pay talks.

5. Public finances

The autumn projections, like those of the spring, indicate a budget deficit of 0.3 p.c. of GDP for general government in 2004, at least if no further measures are taken at the end of the year. The upward and downward revisions to public revenues and expenditure in relation to the spring forecasts almost entirely cancel one another out. On the revenue side, it looks as if tax receipts will significantly exceed expectations. This mainly concerns corporation tax revenues and to a lesser extent VAT and other indirect taxes which have grown relatively strongly in the first three quarters of 2004. Besides, the government has downgraded the amount which it expects to receive from the one-off declaration of financial assets, so that the original estimate of 850 million euro taken as a technical assumption in the spring forecasts has been reduced to a range of 200 to 300 million euro. This adjustment is only partly offset by the non-recurring capital transfer totalling 175 million euro made by Belgocontrol in exchange for the government's assumption of the company's pension liabilities. On the expenditure side, the cost of health care was considerably higher than expected during the first half year, and an over-run of slightly more than 625 million euro is predicted for the 2004 health budget. On the other hand, the economy measures introduced by certain communities and regions in the autumn are having a favourable impact : in addition to one-off sales of property, these measures concern structural reductions in expenditure.

The projection for the budget balance in 2005 has been upgraded sharply in comparison with the spring estimate, which was still predicting a deficit of 1 p.c. of GDP. One of the main reasons is the allowance made for the 2005 budgets drawn up in the autumn. Thus, the federal government has implemented various consolidation measures. As regards structural measures, this mainly concerns the introduction of a general tax on company cars, an increase in the tax on drinks in non-returnable packaging and in some other minor taxes, and finally, tougher measures to combat the evasion of taxes and social security contributions. The government's estimate of the proceeds from this last measure was taken as a technical assumption in the autumn forecasts. In addition, there will be new non-recurring measures such as sales of additional buildings which should bring in 485 million euro for the government, and the securitisation and sale of certain tax arrears, which should raise 300 million euro. Account was also taken of a one-off capital transfer totalling 150 million euro made by BIAC in exchange for the government's assumption of the company's pension liabilities. Overall, the projections currently point to a government deficit of 0.4 p.c. of

TABLE 2 PRICE AND COST INDICATORS

(Percentage changes compared to the previous year)

	2002	2003	2004 e	2005 e
Total HICP	1.6	1.5	1.9	2.2
of which : Energy products	–3.6	0.2	6.9	7.5
GDP deflator	1.8	2.0	2.0	2.2
Labour costs in the private sector				
Unit labour costs	1.7	1.0	–0.1	1.1
Hourly labour costs	4.2	2.7	2.6	2.3 (1)

Sources : NAI, NBB.

(1) Technical assumption based on the average movement in labour costs expected in the three neighbouring countries.

GDP in 2005, corresponding to a structural deficit of 0.5 p.c. of GDP.

The deviation from the balanced budget announced by the government for 2005 is due to various factors. Thus, unlike the budget, the Eurosystem projections cannot yet take account of any proceeds from the harmonisation of taxation on savings in the EU, as there is still uncertainty over the entry into force of the framework legislation and its immediate effect on tax revenues. It is also assumed that the overspending of the 2004 health budget will not be entirely offset next year, so that the projection for that expenditure is higher than in the budget for 2005. Finally, the budget is based on a slightly more favourable estimate of the macroeconomic environment. The growth of activity is a little stronger than the figure in the Bank's projections (2.5 p.c. against 2.3 p.c. (1)) and the latter are based on a slower rise in the wage bill, which has an adverse effect on public revenues.

The debt ratio, which had already fallen just below the 100 p.c. level at the end of 2003, is likely to continue contracting to around 95.3 p.c. in 2005. However, the reduction in the debt will slow down to some extent when the current BNRC is broken up on 1 January 2005.

(1) The GDP growth rate of 2.3 p.c. taken into account in producing the forecasts for public finances for 2005 was obtained by allowing for a calendar effect of –0.25 percentage point in the growth of 2.5 p.c. explained elsewhere in the article. This last growth figure is the outcome of changes predicted solely on the basis of economic developments, connected in particular with cyclical or trend movements. The calendar effect is negative in 2005 because the year is one day shorter than 2004 and comprises 53 Saturdays. Allowance for this effect is made in order to conform to the method of compiling the government accounts used in the national accounts, and therefore to anticipate their results as accurately as possible.

TABLE 3 GENERAL GOVERNMENT ACCOUNT

(Percentages of GDP)

	2002	2003	2004 e	2005 e
Revenue	50.3	51.3	49.4	49.2
Primary expenditure	44.2	45.6	44.8	45.0
Primary balance	6.1	5.7	4.6	4.2
p.m. Structural primary balance	*6.0*	*4.5*	*4.2*	*4.0*
Interest charges	6.0	5.4	4.8	4.5
Financing requirement (–) or capacity	0.1	0.3	–0.3	–0.4
p.m. Structural balance	*–0.1*	*–1.0*	*–0.7*	*–0.5*
Debt	105.4	100.0	96.1	95.3

Sources : NAI, NBB.

The entity which will manage the company's infrastructure and the majority of its debts is most likely to come under the statistical definition of the general government sector, and this will inflate the consolidated gross debt by around 2.5 p.c. of GDP.

6. Assessment of factors creating uncertainty

The Belgian projections for 2004-2005 are dominated by the same determinants as in the spring, namely the consolidation of growth via employment and investment in a context of relatively favourable external demand, with inflationary pressures under control, apart from the rise in energy prices. The possibility of a stronger than expected recovery, which had been mentioned in the spring projections, has materialised in Belgium, and to a lesser extent in the euro area. The further oil price rises since the spring, also mentioned as a factor of uncertainty, were mainly confined to the energy component of inflation and appear to have had little effect on activity and consumer demand in the short term. These factors explain why growth in 2004 has been upgraded from 2.3 to 2.7 p.c. and why inflation has been revised upwards from 1.7 to 2.2 p.c. in 2005.

However, it must be remembered that the results presented here are based on the information available when the projections were produced, and on the assumptions adopted. Experience has shown that rapid and substantial changes to the general context can sometimes occur, and that could yet give rise to significant revisions for 2004, and especially for 2005.

Developments on the international oil markets are still a major source of uncertainty. If prices are maintained at high levels, that could threaten the vigour of the global economy and international trade. The high oil price could also fuel inflation, particularly if it were to trigger wage increases. However, there is still a possibility that prices could fall sooner than predicted.

The international environment could also be affected by turbulence or sudden changes affecting exchange rates and long-term interest rates in a context of large current account imbalances, or by an abrupt slowdown in the economies where growth has been particularly dynamic in recent years, especially China. Moreover, the expected expansion in employment, consumption and investment throughout the euro area has yet to be confirmed.

Underpinned by consumption, the Belgian economy has demonstrated greater resilience than the euro area since the beginning of 2002, and the growth predicted for 2004 and 2005 is also higher. However, it is not likely that any significant differential will be maintained in the medium term, as Belgium is still subject to the vagaries of international business activity and faces a situation which is comparable overall to that of the neighbouring countries in terms of potential growth.

TABLE 4 COMPARISON OF THE FORECASTS FOR BELGIUM

(Percentage changes compared to the previous year)

	Real GDP (1)		Inflation (2)		Publication date
	2004	2005	2004	2005	
NBB – Autumn 2004	2.7	2.5	1.9	2.2	December 2004
p.m. Spring 2004	*2.3*	*2.6*	*1.8*	*1.7*	*June 2004*
NAI	2.4	2.5	1.6	2.1	October 2004
IMF	2.5	2.3	1.8	1.6	September 2004
EC	2.5	2.5	2.0	1.9	October 2004
OECD	2.7	2.4	1.8	2.0	November 2004
Belgian Prime News (3)	2.5	2.5	1.9	1.8	September 2004

(1) The Bank's forecasts, and in principle those of the NAI and the OECD, are produced with adjustment for calendar effects. As a rule, the IMF and EC forecasts do allow for those effects. For Belgian Prime News, the treatment varies according to the institutions taking part.

(2) HICP, except for NAI : national consumer price index.

(3) Average of the forecasts of institutions taking part.

Compared to the forecasts published recently by the NAI and the international institutions, the Bank's projections differ by indicating slightly more sustained GDP growth, principally in 2004, and stronger inflation in 2005. These differences are due chiefly to the available information on Belgium's national accounts and the oil price assumptions made when the various forecasts were produced.

Annex 1

PROJECTIONS FOR THE BELGIAN ECONOMY : SUMMARY OF THE MAIN RESULTS

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

	2001	2002	2003	2004 e	2005 e
Growth (calendar adjusted data)					
GDP at 2000 prices	0.9	0.9	1.3	2.7	2.5
Contributions to growth :					
Domestic expenditure, excluding change in stocks	1.1	–0.1	1.6	2.6	2.5
Net exports of goods and services	0.6	0.3	–0.3	–0.4	0.1
Change in stocks	–0.9	0.7	–0.1	0.5	–0.1
Prices and costs					
Harmonised index of consumer prices	2.4	1.6	1.5	1.9	2.2
Health index	2.7	1.8	1.5	1.6	2.0
GDP deflator	1.8	1.8	2.0	2.0	2.2
Terms of trade	0.1	1.0	–0.1	–0.5	0.1
Unit labour costs in the private sector	4.8	1.7	1.0	–0.1	1.1
Hourly labour costs in the private sector	3.9	4.2	2.7	2.6	2.3 (1)
Hourly productivity in the private sector	–0.9	2.4	1.6	2.7	1.2
Labour market					
Domestic employment (annual average change, thousands of units)	60.5	–12.3	2.3	17.2	45.1
Harmonised unemployment rate (p.c. of labour force)	6.7	7.3	8.0	7.8	7.8
Incomes					
Real disposable income of individuals	2.7	0.1	1.1	0.9	1.8
Savings ratio of individuals (p.c. of disposable income)	16.3	16.6	15.5	14.3	14.2
Public finances					
Primary balance (p.c. of GDP)	7.2	6.1	5.7	4.6	4.2
General government financing requirement (–) or capacity (p.c. of GDP)	0.6	0.1	0.3	–0.3	–0.4
Public debt (p.c. of GDP)	108.0	105.4	100.0	96.1	95.3
Current account (p.c. of GDP according to balance of payments)	3.9	5.7	4.2	3.9	3.6

Sources : EC, NAI, NSI, NBB.

(1) Technical assumption based on the average movement in labour costs expected in the three neighbouring countries.

Price-setting behaviour in Belgium : what can be learned from an ad hoc survey ?

L. Aucremanne
M. Druant [1]

Introduction

This article presents the results of an ad hoc survey on price-setting behaviour, conducted among some 2,000 Belgian firms active in industry, construction, trade and business services. The sectors covered by the survey together represent 60 p.c. of GDP. The survey was conducted by the Bank in February 2004 and is the Belgian section of an initiative concerning the entire euro area, within the scope of the Eurosystem Inflation Persistence Network (IPN). This research network of the Eurosystem examines the degree, causes and consequences of inflation persistence.

Intuitively, inflation persistence refers to the time which the inflation process takes to return, after a shock, to its equilibrium value. This equilibrium value corresponds to the level at which inflation tends to settle in the long term, after all the shocks have produced their effects, and is in principle dictated by the current monetary policy regime and the inflation target used, whether that is explicit or not. The monetary policy strategy of the euro area stipulates in this respect that annual inflation must not exceed 2 p.c. in the medium term, but should remain close to that threshold. In practice, however, the inflation rate deviates from that target in the short term. For a given variance in the shock-generating process, these deviations will be greater and more long-lasting the greater the inflation persistence.

(1) The authors wish to thank the approximately 2,000 firms for their kind participation, the section Short-term Indicators of the NBB for conducting the survey, and the participants to the IPN for their comments.

The questions which the IPN intends to answer primarily concern the extent to which the inflationary process is persistent in the euro area. The IPN also wants to verify the existence of asymmetries here. The potential asymmetries may consist in the fact that the inflationary process is more persistent after an upward shock than after a downward shock, or that inflation persistence varies according to the nature or size of the shock.

A second set of questions concerns the causes of inflation persistence. One possible explanation is the rigidity of the labour and product markets. If it takes time for wages and prices to adapt to a change in the economic context and/or if adjustments to wages and prices do not always take full account of changes in the economic reality, there is a degree of inertia in the price adjustment process and the inflation process. Inflation persistence may also result from the way in which expectations are formed. As a rule, rational expectations – which are, by definition, forward-looking – lead to low persistence. On the other hand, if the expectations imply a substantial backward-looking element, persistence is greater since, in that case, past inflation automatically becomes a determinant of future inflation.

As regards the causes of inflation persistence, the IPN intends to find out to what extent the observed persistence is an intrinsic characteristic of the inflationary process or how far it depends on the current monetary policy regime and its credibility. In the former case, inflation persistence is an exogenous factor for monetary policy and therefore constitutes a kind of structural

handicap which one must not attempt to change and which monetary policy needs to take into account in all circumstances. The latter case, on the other hand, is more favourable in that it offers the prospect of the monetary policy regime helping to determine the degree of inflation persistence, and can therefore reduce that persistence if price stability is set as a credible target.

The IPN also aims to verify the implications of inflation persistence for economic policy. The implications for monetary policy proper are the first point to be examined. A persistent inflationary process is in fact harder to control than a less persistent process. Next, the other implications are examined in turn. Thus, if it were found that inflation persistence is largely attributable to frictions in the operation of the labour market and/or the product markets, that could lead to recommendations for structural reforms on those markets. The implementation of those reforms could then reduce inflation persistence and ease the monetary policy trade-offs.

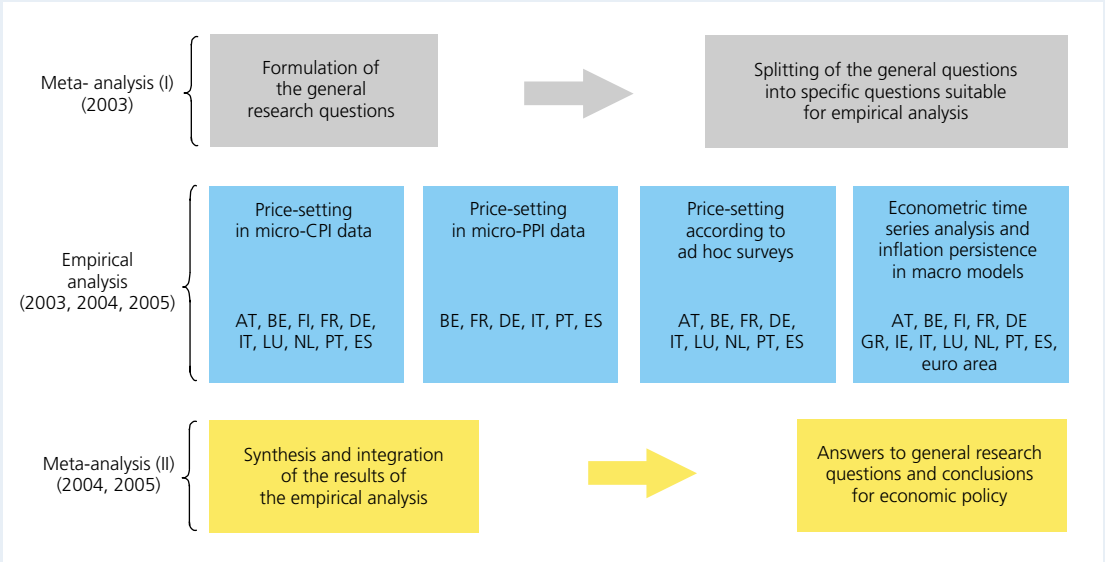
In order to answer some of these questions, the IPN considered it appropriate, in parallel with other forms of empirical analysis (cf. box 1), to conduct a survey in the various euro area countries to obtain a better understanding of the firms' price-setting behaviour. This survey is based on Blinder et al. (1998), who conducted a similar survey of American firms in the 1990s.

Box 1 – The Eurosystem Inflation Persistence Network (IPN)

The IPN is a network of researchers from each of the twelve NCBs in the euro area, the ECB and universities; its task is to examine inflation persistence in the euro area.

The overall output of the IPN consists of research projects on certain specific aspects – empirical analysis – and "meta-analysis" which aims to incorporate the detailed research results. The network commenced its activities in 2003 and will complete its work during 2005.

IPN WORKING METHOD



The meta-analysis comprises two phases. During the first phase, the research field was defined and relevant research questions formulated. These general questions were then subdivided into more specific questions which could be addressed by empirical analysis. The first phase of the meta-analysis took place mainly in 2003. On the basis of the results of the detailed analysis, it was possible to launch the second phase of the meta-analysis in 2004. This phase aims to synthesise the mass of detailed results and incorporate them in a global approach, which should provide answers to the research questions raised and enable to deduce the relevant economic policy implications.

Overall, the empirical analysis concerns four types of data, the first three being databases which can be used to study pricing behavour at the microeconomic level. One of the benefits of the IPN is that it has produced the necessary impetus for microeconomic data concerning price-setting to be made available for the research project in many euro area countries. This aspect of the study aims to give a detailed presentation of the microeconomic factors underlying the macroeconomic phenomenon of inflation persistence. This point is essential not only to arrive at a quantitative estimate of the degree of persistence, but also for a qualitative understanding of the factors behind the phenomenon. Such an analysis is more particularly important to determine whether or not inflation persistence is an intrinsic characteristic of the inflationary process.

First, the microeconomic data available are those from the detailed databases used to compile the consumer price indices (CPIs) of the various countries. These are generally very rich databases covering a fairly long period and containing information on a wide range of product categories as well as on numerous individual observations within each product category. These data files are available in ten euro area countries.

Next, six countries have microeconomic data which can be used to study how producers set their prices. These may be qualitative data taken from the monthly business surveys or quantitative microeconomic data. The latter are used to compile the producer price index (PPI).

A third source of microeconomic data on price-setting behaviour consists of the ad hoc surveys conducted by nine NCBs in the euro area. As will become clear later on in this article, the comparative advantage of this type of survey is that it permits exploration of the underlying reasons for the price-setting behaviour observed; that is more difficult with the quantitative databases mentioned above.

Finally, the network measures the degree of inflation persistence by means of econometric analysis of time series and simulations on the basis of macroeconomic models. These are generally based on sectoral or macroeconomic time series, which are often public, both for euro area countries and for the euro area as a whole.

Where Belgium is concerned, data are available for each of these fields, and the Bank is closely involved in each facet of the analysis.

This article analyses the results of the ad hoc survey conducted in Belgium on the price-setting behaviour of firms, but without prejudging the overall results relating to the euro area, which will not be published until some time in 2005. The rest of this article comprises three chapters. Chapter 1 deals with the design of the survey. Chapter 2 presents the main results. Finally, the third and last chapter summarises the main conclusions of the survey.

1. Survey design

1.1 Creation of the survey

The Bank took on the task of designing the questionnaire and organising the survey. The content of the questionnaire is based to a large extent on the content of similar surveys conducted in the United States (Blinder et al., 1998), the United Kingdom (Hall et al., 2000), Sweden (Apel et al., 2001) and Italy (Fabiani et al., 2004). However, the questionnaire was adapted to the specific context of Belgium by adding questions concerning price-setting behaviour on foreign markets.

In addition, the staff responsible for the survey endeavoured to take account of the latest developments in the economic literature in two areas. First, a long list of factors which might explain price rigidity, in both nominal and real terms, was drawn up. Next, a question about the information used in the price-setting process was added, since the type of information (backward- or forward-looking) may be a supplementary cause of persistence. This is probably the first survey to cover that subject.

An initial draft questionnaire was sent out in December 2003 to twenty industrial firms. Fourteen firms took part in this pilot study. They were then all contacted by telephone to obtain their impressions of the survey. On the whole, these were favourable. At the same time, they were asked why they had omitted certain questions. The questionnaire was then adjusted. The final survey form takes account of the comments made by the firms taking part in the pilot study. The questions which did not generate an adequate response rate or those which appeared to be ambiguous were reworded.

In February 2004, the final questionnaire (cf. in Annex 1 the questionnaire for industrial firms) was sent to all firms in the sample. The firms had previously received a letter explaining the importance of the survey. They had three weeks in which to reply.

1.2 Sample

The ad hoc survey sample is the same as that for the Bank's monthly business survey. It comprises 5,600 firms active in industry, construction, trade and business services. The sample does not cover the sectors comprising agriculture, energy, public and financial services, post and telecommunications, and services offered directly to consumers (hotels and restaurants, health care by etc.) (cf. Annex 2 for an exhaustive list). The sectors covered represent 60 p.c. of GDP.

TABLE 1 SAMPLE : NUMBER OF FIRMS

	Population size (1)	Sample size (2)	Number of respondents	Response rate (p.c.)	Weighting based on turnover
Total	394,339	5,600	1,979	35	100.0
Industry	44,439	2,000	753	38	30.9
Construction	70,685	1,200	384	32	5.0
Trade	132,292	1,400	478	34	36.7
Business services	146,923	1,000	364	36	27.4
Industry					
0-49 employees	42,603	n.	433	n.	6.3
50-199 employees	1,363	n.	211	n.	5.2
200 employees or more	473	n.	109	n.	19.4
Construction					
0-49 employees	70,211	n.	330	n.	3.5
50-199 employees	403	n.	45	n.	0.9
200 employees or more	71	n.	9	n.	0.6
Trade					
0-49 employees	131,565	n.	429	n.	23.1
50-199 employees	585	n.	31	n.	6.5
200 employees or more	142	n.	18	n.	7.0
Business services					
0-49 employees	145,893	n.	291	n.	20.5
50-199 employees	822	n.	54	n.	3.5
200 employees or more	208	n.	19	n.	3.5

Source : NBB.
(1) Firms liable for VAT, belonging to the sectors covered by the survey; 2001 data.
(2) The sample is the same as that for the monthly business survey.

1,979 firms replied to the survey. This represented a 35 p.c. response rate, spread evenly among the sectors and ranging from 32 p.c. in construction to 38 p.c. in industry. Since the response rate was considered satisfactory, no reminders were sent out to firms failing to reply to the survey.

In view of the method of composing the sample, which was done in close collaboration with the business federations, large firms are over-represented. In order to make the survey results representative of the population of firms as a whole, stratification was subsequently carried out for the ad hoc survey. For this purpose, the population was divided into twelve strata according to the sector of activity and size class in terms of the number of employees. Next, weighting coefficients were calculated per stratum on the basis of turnover. These coefficients were used to weight the survey results. Of course, results on a level of aggregation below stratum level were not weighted. That applies particularly to the results per sub-sector.

1.3 Questionnaire

The questionnaire is in three sections. Section A contains questions on the main product and the main market to which the answers should relate. It also contains questions on the level of competition and questions aimed at finding out to what extent the firm has market power or, conversely, sets its prices according to those charged by its competitor(s). Firms are also asked whether they set their prices independently. Participating firms which do not set their prices themselves need not answer a large part of the questionnaire.

Section B covers price adjustments. It concerns how frequently and at what point in time prices are reviewed and changed, and the information used for the purpose of setting prices. The questions in section B also make it possible to determine whether the price-reviewing process is time-dependent or state-dependent, and whether the response of prices to shocks is asymmetric, according to the nature and direction of the shock. Numerous factors explaining price rigidity, in both nominal and real terms, are also examined.

Finally, section C only has to be completed by industrial firms which are active in more than one market. It aims to find out whether the method of price-setting varies between markets, in other words whether the firm engages in pricing-to-market.

It was deliberately decided not to mention any reference period – e.g. last year, in this case 2003 – in order to eliminate the effect of events specific to that period. Moreover, the absence of any reference year makes it possible to obtain some idea of adjustments made less than once a year, in the case of the questions on price adjustments.

The questionnaire in Annex 1 is intended for the industrial sector. The questionnaires for firms in construction, trade and business services are almost identical. Since firms in those sectors are almost exclusively active on the Belgian market, the questionnaires designed for them do not contain any details concerning the market, whereas the responses by industrial firms have to relate to their main market. Section C was also dropped in the case of non-industrial firms.

The questionnaire contains three types of question. In the first type of question, participants are asked to indicate the importance of a particular statement by selecting "1 = unimportant", "2 = of minor importance", "3 = important", "4 = very important" or "? = I don't know". This article gives the average scores for the first four options, disregarding question marks and non-responses. In the second type of question, participants had to tick just one answer in a list. In the third type of question, they had to enter exact figures. The number of questions of this type was kept to a minimum in order to make the task easier for the participants.

A response rate was calculated for each question. All of these response rates were considered satisfactory (over 90 p.c.), except for one. Over half of the participants failed to answer the (difficult) question A6 on the price elasticity of demand. The fact that question B4 contained a long list of factors explaining price rigidity did not affect the rate of response to this question. Similarly, many firms answered the relatively difficult questions (B2a and B2b) concerning the information used to review prices.

In each case, the article presents the results for the participants as a whole. Where appropriate, a subdivision into sectors and sub-sectors is added. The sub-sector breakdown is based on the NACE-BEL A31 classification. However, it was necessary to rearrange some of the groups to obtain a sufficient number of participants in each sub-sector every time (cf. Annex 3). Moreover, the retail trade was deliberately taken as a separate sub-sector. However, a breakdown of the variance of all the survey results showed that the variance is attributable mainly to the dispersion within the strata, and only partly to the dispersion between sectors or sub-sectors. The dispersion according to firm size is always negligible, which is why the breakdown of the results by firm size was not

included in the article. For that reason, the differences between the weighted results used in this article and the initial, unweighted results are minimal.

2. Main results

The results are divided into six main topics: To what extent is the survey representative of price-setting behaviour? What is the context in which the firms work? Are prices flexible or rigid? What are the causes of price rigidity? What factors encourage price adjustments? Finally, in conclusion, the characteristics of firms with a flexible approach to price-setting are compared with the characteristics of firms with a rigid approach.

2.1 Representativeness of the survey for price-setting behaviour

The overall representativeness of the survey in terms of participating sectors and response rates has been examined above. However, this section deals additionally with the question of the representativeness of the results for price-setting behaviour. The first point examined was whether the participating firms – in fact, the persons questioned – actually had any information to provide on the price-setting process, as the survey sample had been designed for other purposes, namely the business survey. The next point checked was whether the specific products concerned in the replies were sufficiently representative.

TABLE 2 QUESTION A8: WHO SETS THE PRICE?
(Percentages)

	The firm	Government	The parent company or group	Others	*p.m. Response rate*
Total	82.3	1.1	7.1	9.5	*99.7*
Industry	85.8	1.1	8.2	4.9	*99.8*
Construction	96.9	0.3	0.3	2.5	*99.4*
Trade	75.1	1.3	9.0	14.6	*100.0*
Business services	88.0	1.0	4.0	7.1	*99.3*
Food industry	90.8	1.4	2.8	4.9	*99.3*
Textiles and leather	94.4	0.0	2.2	3.3	*98.9*
Wood	93.1	0.0	3.4	3.4	*100.0*
Paper and publishing industry	93.2	0.0	1.4	5.5	*100.0*
Chemical industry	78.0	3.4	11.9	6.8	*100.0*
Rubber and plastics	86.7	0.0	13.3	0.0	*100.0*
Other non-metallic mineral products	82.7	2.9	14.7	0.0	*100.0*
Metallurgy and metalworking	90.0	0.0	6.4	3.6	*100.0*
Machinery and equipment	96.8	0.0	1.6	1.6	*100.0*
Electrical and electronic equipment	82.6	2.2	8.7	6.5	*100.0*
Manufacture of transport equipment	70.8	0.0	20.8	8.3	*100.0*
Other manufacturing industries	86.4	0.0	0.0	13.6	*100.0*
Wholesale trade, motor vehicle trade and repairs	77.9	2.7	13.3	6.2	*100.0*
Retail trade	71.0	0.4	7.9	20.6	*100.0*
Transport and storage	85.6	3.2	4.0	7.2	*100.0*
Real estate, rental and other business services	89.5	0.0	4.6	5.9	*99.2*

Source: NBB.

2.1.1 Who sets the price ?

The majority of firms set their prices independently (82 p.c.), while in the case of the other participants the price is fixed by the government (1 p.c.), the parent company or group to which the firm belongs (7 p.c.) or others (10 p.c.). The parent company or group plays a key role in pricing in the sub-sectors comprising the manufacture of transport equipment, other non-metallic mineral products, rubber and plastics, wholesale trade, motor vehicle trade and repairs, and the chemical industry. In the retail trade, many firms (21 p.c.) state that the price is set by "others". The participants marking this reply were asked to specify who set the price in that case. A frequent response was the supplier. It is in fact common practice for the producer to stipulate the price to be charged by the retailer for certain branded goods.

The fact that 82 p.c. of firms set their prices independently means that, for the majority of firms, the decision-making process associated with pricing takes place entirely within the firm itself. These firms were therefore able to answer the whole of the questionnaire, including all the questions on the qualitative aspects of price-setting. The other firms were only able to answer a shorter list of questions focusing mainly on the frequency of price changes. That information can in fact always be supplied, even if the price is not actually set by the firm.

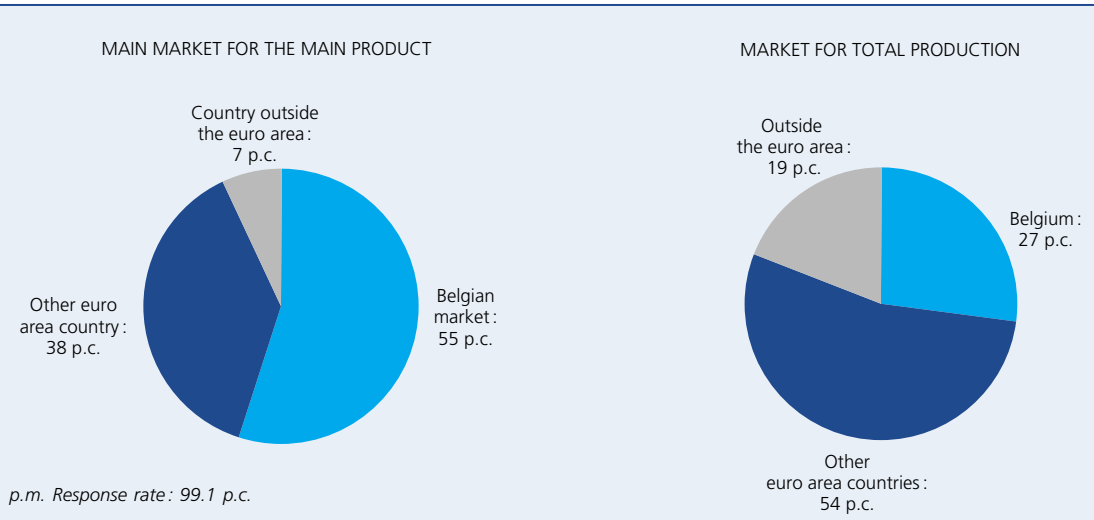
2.1.2 Main product

Since the participants were asked to answer the questions by considering their main product, it matters whether that product is representative of the firm or not. That is so since, on average, 69 p.c. of turnover is generated by the main product. However, that percentage varies considerably between sectors. It is highest in the business services and construction sectors (almost 90 p.c.), a little lower in industry (68 p.c.) and lower still in trade (53 p.c.). Firms active in this last sector, and particularly in the retail trade, offer a wide range of products for sale, and it is often difficult for them to define a "main product". The usefulness of this aspect of the survey lies in the fact that the firms have to concentrate on a specific product in order to give reliable answers to the questions concerning the frequency of price adjustments, but at the same time there must be no doubt about the representativeness of the product for the firm as a whole. Placing the emphasis on the main product makes it possible to take account of representativeness while ensuring sufficiently specific responses.

2.1.3 Main market

Over half of the industrial firms replied that the Belgian market is the main market for their main product. This is only apparently at odds with the openness of the Belgian economy – over 70 p.c. of the turnover of participating

CHART 1 QUESTION A3 : MAIN MARKET FOR THE MAIN PRODUCT IN INDUSTRY



Source : NBB.

TABLE 3 QUESTION A5: MAIN CUSTOMERS

(Percentages)

	Industry		Construc-tion	Trade	*p.m. Retail trade*	Business services		Total	
Divisions and companies in your group	18.5	63.7	4.1	7.8	*7.9*	9.8	55.8	10.8	43.5
Companies not forming part of your group									
with which you have a long-term relationship	45.2		16.4	19.3	*2.6*	46.0		32.7	
with which you do not have a long-term relationship	19.4		9.3	6.0	*1.8*	17.0		12.4	
Consumers	14.2		48.7	64.6	*86.8*	23.3		40.2	
Government	2.7		21.6	2.3	*1.0*	3.9		3.8	
Total	100.0		100.0	100.0	*100.0*	100.0		100.0	
p.m. Response rate	*93.5*		*97.7*	*91.8*	*90.1*	*93.1*		*93.8*	

Source: NBB.

industrial firms comes from foreign markets – since the question is concerned with a single specific market for the main product. This is generally the Belgian market, since exports are spread among a number of foreign markets and the importance of one particular export market rarely exceeds that of the home market. The survey puts the emphasis on the main market for the same reason as that justifying the choice of the main product, namely the desire to achieve sufficiently specific responses.

The participating firms from the sub-sectors comprising textiles and leather, machinery and equipment and manufacture of transport equipment are geared more towards exports: almost 90 p.c. of their turnover comes from foreign countries. The firms from the sub-sectors other manufacturing industries, food industry, wood, and the paper and publishing industry are more active than the average on the home market.

2.2 Context of the firms' activity: market structure and competition

The market structure and level of competition are crucial external factors for price-setting behaviour. Thus, a certain level of market power is necessary for a firm's decisions on price to make sense, because without market power (perfect competition) the price always corresponds to the marginal costs and no mark-up is applied. In such an environment, price rigidity does not exist. At present, the New-Keynesian models with sticky prices are therefore often based on a monopolistic competition situation in which the price corresponds to the marginal costs plus a mark-up.[1] It is this mark-up that leaves firms some margin not to adjust their prices when the costs change. The survey therefore assesses these external factors in depth.

2.2.1 Main customers

In industry and business services, around 60 p.c. of turnover comes from customers with whom there is a long-term relationship of some kind (either the customer is a group company or it does not belong to the group but the participant explicitly states that there is a long-term relationship). Conversely, trade is geared more towards direct sale to consumers (65 p.c.). It was assumed that there are not generally any long-term relationships in that case. However, this was not verified by the survey, in order to keep the questionnaire as short as possible. The retail trade is the sub-sector particularly geared to consumers (87 p.c.). Construction also obtains a large proportion of its turnover from consumers (49 p.c.). The surprisingly high percentage of sales to consumers in the case of business services (23 p.c.) is found mainly in motor vehicle rentals, insurance brokers, IT activities, lawyers and notaries. These are in fact services which are offered to a varied public (firms and individuals).

(1) Blanchard and Kiyotaki (1987) are a classic reference here.

TABLE 4 QUESTION A4: HOW MANY COMPETITORS DO YOU HAVE ON YOUR MAIN MARKET FOR YOUR MAIN PRODUCT?
(Percentages)

	Industry	Construction	Trade	Business services	Total
None	3.1	1.9	2.2	4.9	3.1
Less than 5	31.1	10.9	24.2	21.8	24.7
Between 5 and 20	49.8	43.6	47.6	28.3	43.1
Over 20	16.0	43.6	26.1	45.0	29.1
Total	100.0	100.0	100.0	100.0	100.0
p.m. Response rate	*96.9*	*89.4*	*89.4*	*90.0*	*93.3*

Source: NBB.

2.2.2 Level of competition

The level of competition is measured at various points in the survey.

Question A4 is intended to find out the number of competing firms. Around 43 p.c. of participants operate on a market comprising between 5 and 20 competing firms, while some 30 p.c. have fewer than 5 competitors and another 30 p.c. have over 20 competitors. Firms with over 20 competitors are least numerous in industry, where they total only 16 p.c., against almost 45 p.c. in construction and business services. The main implication of this is probably that the industrial firms taking part in the survey as well as their competitors are mainly large firms, rather than implying that the actual level of competition is lower in industry. Overall, the results in terms of the number of competitors deviate clearly from a situation of perfect competition as well as from the monopolistic competition situation used in modern macroeconomic models. These results tend to indicate an oligopolistic market structure.

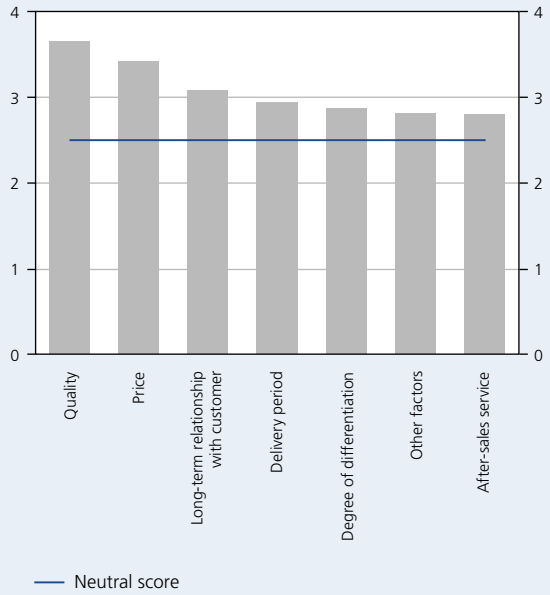
TABLE 5 QUESTION A6: IF YOU WERE TO INCREASE THE PRICE OF YOUR MAIN PRODUCT BY 10 P.C., BY WHAT PERCENTAGE WOULD THE TURNOVER OF YOUR MAIN PRODUCT FALL?
(Percentages)

Percentages reduction in turnover	Industry	Construction	Trade	Business services	Total
0-10	12.0	10.6	24.7	33.9	22.7
11-25	19.5	11.2	26.6	18.1	21.6
26-50	26.9	30.0	32.2	27.8	29.4
51-75	14.7	11.6	5.4	12.0	10.1
76-100	26.9	36.6	11.2	8.1	16.2
Total	100.0	100.0	100.0	100.0	100.0
Average	50.2	57.8	32.6	34.9	39.9
Median	50.0	54.9	26.8	25.0	34.9
Standard deviation	33.2	33.0	26.3	29.8	31.1
p.m. Response rate	*53.3*	*49.9*	*43.7*	*46.2*	*47.1*

Source: NBB.

CHART 2 QUESTION A7 : FACTORS DETERMINING COMPETITIVENESS

(Average scores)



p.m. Response rate (excluding "other factors") : 97.2 p.c.

Source : NBB.

The price elasticity question (question A6) may provide additional information on the level of competition. However, under half of the participants answered this question, which appears to have been the most difficult in the survey. Furthermore, 23 p.c. of participants reply that a 10 p.c. price increase would cause a less than 10 p.c. reduction in their turnover ; this represents a price elasticity of less than 1 – the lower limit in theoretical models. That is probably due to the differing time horizons that participants considered ; the short-term effect of a relative price increase is probably less important than its long-term effect. Overall, some caution is therefore called for in interpreting the information obtained from this question.

On average, a 10 p.c. price increase causes turnover to fall by 40 p.c. ; after conversion to quantities, this implies an average demand elasticity of 4.5. The average mark-up to be deduced from that is 29 p.c. [1] These figures do not correspond to a perfect competition situation either (infinite price elasticity and no mark-up). Elasticity is highest in construction and industry and lowest in trade. On that basis, the first two sectors seem to be the most competitive, but the deviations found do not appear significant in the light of the usual statistical levels.

In a perfect competition situation, all firms sell at the unique market clearing price, and the price is therefore the sole determinant of competitiveness. However, if other factors prove to be important for competitiveness, that is an additional indication that the firms are able to gain some market power. Question A7 looks at these factors.

Product quality seems to be more important than price as a determinant of the competitive position of firms. Competitiveness is also determined by the existence of long-term relationships with customers, delivery periods, the degree of differentiation, other factors (often defined as innovation, personal contact with customers, marketing, etc.) and after-sales service. The scores recorded for these factors are all higher than the neutral average score of 2.5. Firms therefore appear to have some scope, at various levels, for distinguishing their products from those of the competition and thus developing a degree of market power.

The ability of firms to determine their profit margin entirely independently also gives some indication of their market power. The ability of firms to act in this way is addressed by question A9.

In this question, a score has to be given to two statements, namely "We set our prices fully according to our costs and a completely self-determined profit margin" and "We set our price according to the price of our main competitor(s), meaning that we do not determine our profit margin ourselves". The average score for the first option is 3.0, slightly higher than that for the second option (2.8). As one might expect, the scores obtained for the two statements show a negative correlation in the individual responses. The correlation is –0,29 and is, given the large number of firms, significantly different from zero from a statistical point of view. This correlation is, however, relatively low in economic terms, indicating that a non-negligible number of firms had difficulties in clearly expressing a preference in favour of one of either statements. Nevertheless, the results obtained tend to suggest that, on average and to a small extent, Belgian firms are rather price-makers than price-takers, except in industry, where both statements receive the same average score.

(1) If ε represents the price elasticity of demand, profits are maximised if the price is set as follows : $p = \varepsilon/(\varepsilon-1)$ mc, where mc represents the marginal cost and the factor $\varepsilon/(\varepsilon-1)$ is the mark-up in multiplier form. The survey results give an average factor of 1.29. The actual mark-up is therefore 29 p.c.

TABLE 6 QUESTION A9: WHAT METHOD IS APPLIED WHEN SETTING PRICES – PRICE-MAKER OR PRICE-TAKER?
(Average scores)

	Industry	Construction	Trade	Business services	Total
We set our prices fully according to our costs and a completely self-determined profit margin . . .	2.9	3.5	3.0	3.1	3.0
We set our price according to the price of our main competitor(s), meaning that we do not determine our profit margin ourselves	2.9	2.6	2.8	2.7	2.8
p.m. Response rate	*95.5*	*82.0*	*89.6*	*93.3*	*91.8*

Source: NBB.

2.2.3 Pricing-to-market

In view of the openness of the Belgian economy, the main market is probably not the only market for industrial firms. Section C was added to the ad hoc survey in order to find out about pricing practices on other markets.

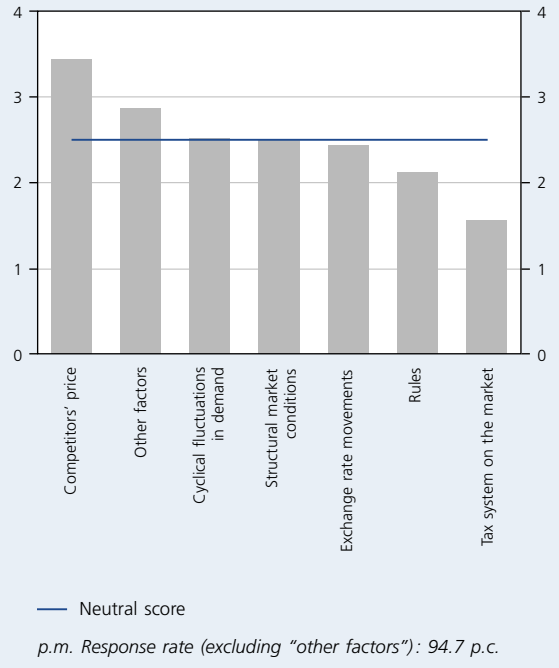
Almost 60 p.c. of firms in industry practise pricing-to-market. That is a very high percentage, given that payments within the euro area are effected in a common currency and the bulk of Belgian exports is destined for euro area countries. In industry, 73 p.c. of turnover comes from other countries, namely 54 p.c. from the euro area and 19 p.c. from elsewhere.

The strategy of pricing-to-market is most prevalent in the sub-sectors comprising the chemical industry, wood, other non-metallic mineral products and the food industry, and is least common in the sub-sector machinery and equipment, although the proportion here is still close to 40 p.c.

The primary reason for setting prices specific to a particular market is to take account of competitors' prices. Next come the other factors, often specified as transport costs, insurance costs, commission, etc. After that come cyclical fluctuations in market demand, structural conditions on the local market – such as tastes and standard of living – and exchange rate movements, which all get more or less the same average score. Differences in regulations are a little less important, while the system of taxation on the market ranks lowest. This essentially concerns indirect taxes, which are only a cost factor for consumers. Firms selling more directly to consumers therefore attach greater importance to the tax system as a factor encouraging pricing-to-market.

Finally, section C of the questionnaire asked whether competition is keener on the foreign market. Over 60 p.c. of participants said that it was. Firms in industry appear to have some kind of "home advantage", and have greater market power, on average, on the home market. The survey arrived at this conclusion despite the openness of the Belgian market, which is reflected in the absence of trade barriers and the presence of a substantial number of foreign firms.

CHART 3 QUESTION C2: FACTORS ENCOURAGING PRICING-TO-MARKET IN INDUSTRY
(Average scores)



Source: NBB.

To sum up, it seems that the context in which firms operate in the sectors industry and business services features many long-term relationships with customers. In contrast, construction and trade are more geared towards direct sales to consumers. Although Belgian firms face high competition, the results are different from a perfect competition situation. Nor do they indicate a monopolistic competition situation, although that forms the basis of the majority of macroeconomic models. The market structure appears to be more oligopolistic. To a small extent, firms seem to be rather price-makers than price-takers, and apart from their product quality they have a whole range of ways of acquiring market power (such as long-term relationships with customers, product differentiation, etc.). The majority of industrial firms applies pricing-to-market. The results indicate that industry faces the fiercest competition. The price elasticity of demand is greater there, and industrial firms are more price-takers than the average. They also state to have less market power abroad than on the home market.

2.3 Flexible or rigid prices ? Timing and frequency of price adjustments

The frequency of price adjustments is a key determinant of inflation dynamics and plays an important role in modern monetary and macroeconomic theory. According to the theory, the fact that prices are not all adjusted in line with changes in the economic context at all times – in other words, the presence of price rigidity – explains why monetary policy influences real interest rates, and hence economic activity, in the short term. Price rigidities are therefore a factor which monetary policy must take into account, and they have a significant influence on the way in which the monetary policy makers should make the trade-off between the aim of price stability and the importance which they attribute more generally to real economic developments.

At microeconomic level, price rigidities have a major influence on the way in which households and firms adapt to shocks. At macroeconomic level, they may lie behind the persistence of fluctuations in inflation, output and employment. The survey therefore accords great importance both to measuring price rigidity and to identifying possible explanations for it.

The price adjustment process generally takes place in two stages. In the first, called the review stage, the firm examines its scheme for maximising profits in order to determine the price that it would like to charge. As this process entails costs, firms are unlikely to assess their prices continuously ; it is therefore useful to check how often this review process is launched. If the optimum price arrived at by this process is different from that actually charged, the price may be altered, but not necessarily. Price reviews and changes are not necessarily carried out simultaneously, and reviews are probably more frequent, since supplementary specific costs are associated with an actual change of price. It is therefore important to check the frequency of actual price changes as well, separately from the price reviews. This phased method also implies that it is more likely that price reviews will take place at regular intervals than price changes. That means that it is appropriate to investigate in the first phase of the adjustment process – in other words, the price reviews – whether the price-adjustment process is time-dependent or state-dependent. For these reasons, the two aspects of price adjustment are dealt with separately in section B of the questionnaire.

In this respect, the survey has a comparative advantage in relation to quantitative databases containing CPI or PPI micro data. In these, the analysis has to be confined to the frequency of actual price changes.

2.3.1 Time-dependent or state-dependent price reviews

The literature on the subject often distinguishes between time-dependent and state-dependent price-setting behaviour. If price-setting is time-dependent, the timing of the price adjustment is exogenous ; in other words, it does not depend on the economic situation. For example, a firm adjusting its price at the beginning of each year is practising purely time-dependent price-setting. Conversely, if price-setting is state-dependent, the timing of the price adjustment depends on the economic situation : the price will be adjusted if, following shocks, the difference between the price charged and its new optimum level has become sufficiently large to offset the costs of adjustment. In a state-dependent context, prices will therefore react immediately if the shocks are big enough, whereas in a time-dependent context firms will continue to wait for the time that they have determined in advance, even in the case of large shocks. The majority of macroeconomic models are based on a time-dependent adjustment process, because it is easier to model.

The survey participants were asked to specify when they review their prices, and were offered the following options : "at specific time intervals" (interpreted as time-dependent), "in reaction to specific events" (interpreted as state-dependent) and "mainly at specific time intervals, but also in reaction to specific events" (interpreted as essentially time-dependent, but possibly state-dependent if a sufficiently significant event occurs).

TABLE 7 QUESTION B1a: TIME-DEPENDENT AND STATE-DEPENDENT PRICE REVIEWS

(Percentages)

	Normal situation	Specific events
Time-dependent price review	**65.7 (48.7)**	**25.7 (25.1)**
Industry	65.9	23.5
Construction	53.4	17.1
Trade	63.9	29.4
Business services	70.8	24.6
State-dependent price review	**34.3 (51.3)**	**74.3 (74.9)**
Industry	34.1	76.5
Construction	46.6	82.9
Trade	36.1	70.6
Business services	29.2	75.4

Sources: Apel et al., NBB.
(...) Swedish results.
p.m. Response rate in Belgium: 94 p.c.; in Sweden: 92 p.c.

Price review which is purely time-dependent (meaning in all cases, i.e. even if a particular, sufficiently significant event occurs) concerns 26 p.c. of firms, while 34 p.c. of them use purely state-dependent reviewing (meaning in all cases, i.e. even when the situation is normal). For 40 p.c. of firms, the price review process is normally time-dependent, but may be state-dependent if a particular, sufficiently significant event occurs. This means that if the situation is normal, the majority of firms (66 p.c.) adapt time-dependent reviewing. However, if a sufficiently significant shock occurs, 40 p.c. of them will shift to state-dependent price-reviewing, so that altogether 74 p.c. of firms behave in this way while 26 p.c. continue to review their prices at regular time intervals. The existence of a combination of time-dependent and state-dependent price-setting was also observed in the examination of micro prices used as the basis for the Belgian consumer price index (Aucremanne and Dhyne, 2004). Furthermore, the above figures are very similar to the Swedish results of the survey by Apel et al. (2001). They therefore shed new light on the macroeconomic models currently used, which are generally based on time-dependent price-setting.

2.3.2 The information used for the price review process

This article has already mentioned a question concerning the information forming the basis of the price review process (questions B2a and B2b). In principle, when setting its prices, a firm takes account of all the relevant information for maximising its profits, thus including expectations concerning the future, since – in the case of price rigidity – the new price will remain in force for some time. However, a firm may behave in a different way, because there is a cost involved in collecting all the relevant information. In that case, the pricing is no longer "optimum" from a macroeconomic point of view, and – as the price setting becomes less forward-looking, it gives rise to additional inflation persistence.

As regards the information used, the survey gives firms a choice between two options, namely the application of a rule of thumb (e.g., change equal to a fixed amount or percentage, indexation on the basis of the consumer price index, etc.) or consideration of a wide range of information (demand, costs, competitors' price, etc.) relevant for profit maximisation. Firms choosing the second option had to state whether this information concerns the present context or both the present and future context the firm operates in. Only this last pricing method, which uses the fullest set of information, is associated with totally optimising behaviour.

This question refers more particularly to the last time that the price was reviewed, as the test showed that it was not easy to ascertain the general behaviour of the firms on this issue. It is in fact entirely possible that they may apply a rule of thumb during a particular period and, after a certain time, switch to an optimum form of behaviour when they realise that the price is too far away from its optimum level. In consequence, although this question may give an indication of the importance of rules of thumb in price-setting in general, it does not permit any clear distinction between firms for which the use of a rule of thumb is important and those for which it is optimum pricing that counts.

When reviewing their prices last time, 34 p.c. of firms optimised their prices. Another one-third of firms adopted an intermediate position by taking account of a wide range of information, but only in relation to the current economic situation. Around 37 p.c. of firms applied a rule of thumb. This means that, to a large extent, the pricing behaviour is not optimum and this friction in price-setting may be a significant source of inflation persistence. Industry achieves the highest score in terms of totally optimising behaviour (45 p.c. of firms consider a wide range of information which also takes account of the future)

TABLE 8 QUESTIONS B2a AND B2b: HOW DID YOU REVIEW THE PRICE OF YOUR MAIN PRODUCT LAST TIME?
(Percentages)

	Industry	Construction	Trade	Business services	Total
We applied a rule of thumb	28.7	35.8	35.0	46.1	36.6
We have considered a wide range of information					
related to the present context	26.6	38.5	34.6	22.9	29.4
related to the present and the future context	44.7	25.7	30.4	30.9	34.0
p.m. Response rate	*95.3*	*97.1*	*94.0*	*98.0*	*95.7*

Source: NBB.

and the lowest score as regards the use of rules of thumb (only 29 p.c.). This sector in fact faces greater competition and is therefore more inclined to adopt an optimum pricing approach than the other sectors, because a "miscalculated" price here has a greater impact on demand. The use of a rule of thumb, such as simple price indexation based on the consumer price index, is most common in the business services sector.

2.3.3 Frequency of price adjustments

The firms applying time-dependent price-reviewing (regardless of circumstances or when no specific event occurs) were asked to specify how often they review their prices (question B1b). All the firms were also asked to indicate how often they actually change their prices (question B5). The two questions give an idea of the frequency of price adjustments and permit calculation of the average implicit duration between two successive price reviews and between two successive price changes. This average duration is expressed in months.

For all participants, the average duration between two successive price reviews is 10 months, against almost 13 months between two successive price changes. The lower frequency of price changes tends to confirm the existence of specific costs relating to the price change process. However, it is possible that the price review process showed that no change was necessary. Moreover, there is a positive correlation between the two phenomena: firms with a short period between two reviews generally have a short period between two changes, and vice versa.

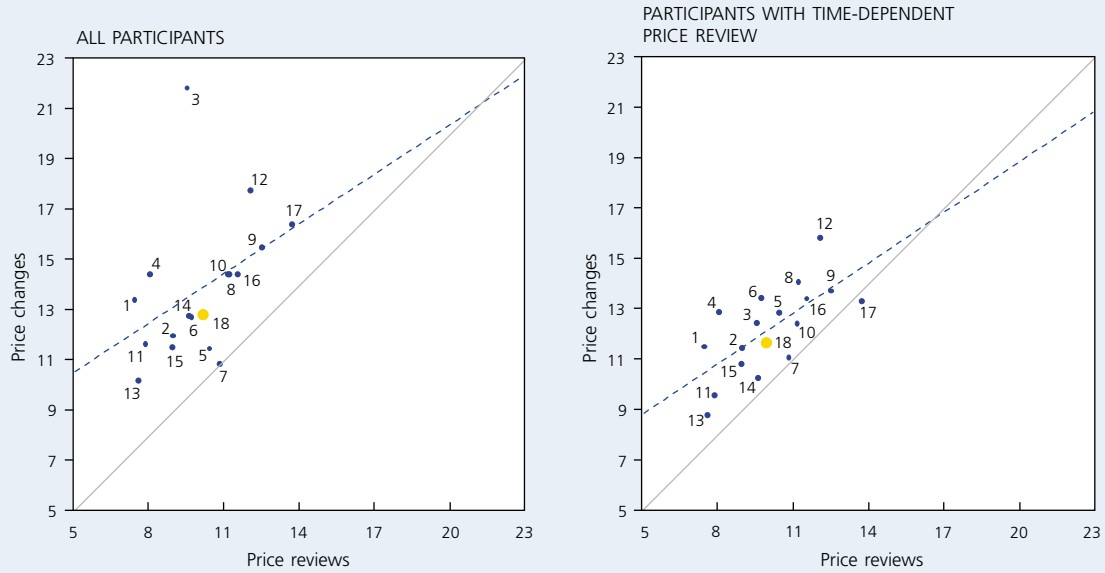
These two findings are borne out at sub-sector level: the trend line which can be drawn for the observations slopes upwards (positive correlation), and all the sub-sectors are above the diagonal, i.e. in the part of chart 4 where the duration between price changes is longer than the duration between price reviews.

The sub-sectors which are farthest towards the upper-right-hand corner of the left-hand section of the chart have the longest average duration both between reviews and between price changes, and are therefore the most rigid. That applies in particular to the sub-sectors comprising transport and storage, and real estate, rental and other business services, which together form the more protected business services sector. Conversely, construction is the most flexible sector (bottom left-hand corner of the left-hand section of the chart). The majority of the sub-sectors in industry and wholesale trade adopt an intermediate position, while the retail trade has a slightly more flexible approach to pricing. The results for the wood sub-sector are surprising. Although prices there are reviewed at relatively frequent intervals, it appears that actual changes are rare. However, the average duration between two price changes here is greatly influenced by the responses of two firms which were not required to answer the question on the frequency of price reviews since they do not conduct time-dependent price reviews.

Once firms adopting state-dependent price-reviewing have been excluded, the same sample is used to compare the average duration between two price reviews and two price changes. The results are presented in the right-hand section of the chart. There is no fundamental change in the situation; the correlation as regards the average time lag between two price changes for all participants and for the reduced group of participants reviewing their prices on a time-dependent basis is thus 60 p.c. The only fundamental change in the situation occurs in the wood sector, where the average duration between two price changes is 12 months instead of 22 months. Leaving this sector aside, the correlation as

CHART 4 QUESTIONS B1b AND B5 : PRICE REVIEWS AND PRICE CHANGES BY SUB-SECTORS

(Average duration between 2 successive reviews or between 2 successive changes)



1 Food industry
2 Textiles and leather
3 Wood
4 Paper and publishing industry
5 Chemical industry
6 Rubber and plastics
7 Other non-metallic mineral products
8 Metallurgy and metalworking
9 Machinery and equipment
10 Electrical and electronic equipment
11 Manufacture of transport equipment
12 Other manufacturing industries
13 Construction
14 Wholesale trade, motor vehicle trade and repairs
15 Retail trade
16 Transport and storage
17 Real estate, rental and other business services
18 Average of all participants

p.m. Response rate for price reviews : 93.1 p.c. and for price changes : 81.8 p.c.

Source : NBB.

regards the average duration between two price changes for the participants as a whole and for the smaller group who review their prices on a time-dependent basis is 82 p.c. However, the average duration between two price changes generally becomes slightly shorter if only firms which review their prices on a time-dependent basis are taken into account.

The firms which generally make time-dependent changes and which also review their prices exactly once a year (i.e. around 40 p.c. of the total number of participants) were also asked to state the month in which the operation takes place. In 43 p.c. of cases (around 16 p.c. of all participants), the reviews are carried out in January, compared to 9 p.c. in December and 8 p.c. in March. The other months each have a share of less than 5 p.c. The most marked synchronisation of price reviews in January is found in business services.

Overall, these results show a considerable level of price rigidity. Furthermore, they are broadly in line with the results of the analysis of the Belgian micro data for the calculation of the CPI (Aucremanne and Dhyne, 2004). The great majority of prices change fairly infrequently : in 50 p.c. of cases, less than once every 13 months. However, for certain product categories (unprocessed food and petroleum products) price changes are much more frequent. In this analysis, service prices also seem to have above-average rigidity with price changes tending to be concentrated in January. This analysis also noted the characteristics of time-dependent and state-dependent price-setting.

2.4 Causes of price rigidity

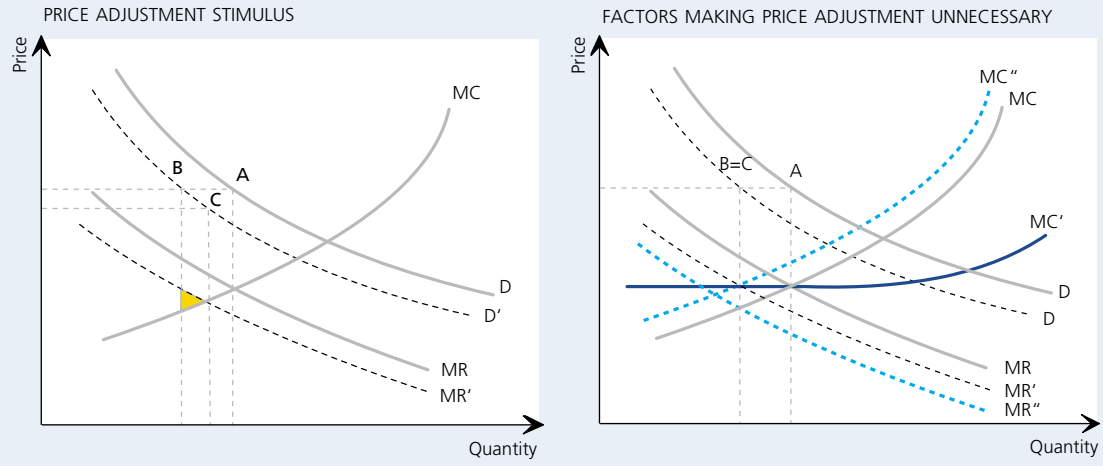
The survey also made it possible to examine the reasons for rigid pricing. In this regard, it is probably an exceptional source of information. For this purpose, a fairly long list of fifteen possible explanations for price rigidity was included in the questionnaire, and participants were asked to indicate, by means of a score of 1 to 4, the importance of each of these explanations for their firm. This list concerns both nominal and real price rigidities (cf. box 2). The possible explanations had to be expressed intuitively in situations arising in the life of the firm. This was probably the most difficult part of the survey. Despite the difficulty, the response rate was very high (94 p.c.).

Box 2 – Nominal and real rigidities as explanations for price rigidity

Price rigidity is due to both nominal and real rigidities. Nominal rigidities refer to the low frequency of price ajdustments on account of the adjustment costs, while real rigidities refer to the fact that, even in the absence of price adjustment costs, the real or relative price does not change substantially if the aggregate output changes. This real or relative price can in turn be broken down into a real marginal cost and a desired mark-up. Each of these elements may be a source of real rigidity, as illustrated below, based on Romer (2001).

For this purpose, it is assumed (left-hand section of the chart) that a (representative) firm is initially in a state of equilibrium with flexible prices. Profit maximisation causes it to produce the quantity at which marginal revenues (MR) equal marginal costs (MC) and to charge a price which is equal to the marginal costs plus a mark-up. This corresponds to point A on the demand curve (D). When aggregate demand falls, the demand curve and the curve for the marginal revenues of the firm in question shift inwards. If the firm leaves its price unchanged, the quantity produced will be determined by the quantity of demand at that price. In this new equilibrium, in the case of price rigidity – corresponding to point B – the shift in the demand curve is fully reflected in a decline in the quantity produced.

REAL RIGIDITY



However, at this level of output marginal revenues exceed marginal costs, so that it is in fact in the firm's interests to cut its price in order to increase production to the point at which the marginal costs are once again equal to the marginal revenues. That is the case at point C, which is the new equilibrium at flexible prices. At this point, the shift in the demand curve is divided between a fall in the price and a fall in the quantity produced, so that the impact on the latter is less than in the case of price rigidity.

The area of the yellow triangle in the chart corresponds to the increase in profits accompanying such a price adjustment and therefore measures the benefit for the firm in adjusting its price. Of course, the firm will compare this increase in profits with the costs associated with the price adjustment and, depending on the outcome of that appraisal, it may or may not change its price. For a given level of price adjustment costs – i.e. for a given level of nominal rigidity – the probability that price rigidity will be compatible with a state of equilibrium increases as the triangle in question becomes smaller. Real rigidity is a generic term designating all the factors which lead to a smaller triangle. The right-hand section of the chart gives an illustration of what these factors may be.

A primary source of real rigidity lies in the fact that fluctuations in demand may have little or no influence on real marginal costs, because the marginal cost curve is flat (as in the case of curve MC') or because it is subject to counter-cyclical shifts. In the case of a negative demand shock, the curve then moves upwards (towards curve MC"). It may also be that the potential cyclical character of marginal costs (curve MC) is offset by counter-cyclical movements in the mark-up, reinforcing the inward shift in the marginal revenue curve (as in the case of the curve MR"). Each of these examples illustrates an extreme situation of real rigidity, giving rise in all cases to the total disappearance of the yellow triangle, so that the new flexible price equilibrium corresponds to the new rigid price equilibrium. In other words, the degree of real rigidity is so large, in this example, that no nominal rigidity is required for price rigidity to be an equilibrium. In practice, however, the two phenomena coexist to some extent, and it is actually their interaction that causes price rigidity.

The above is also true, *mutatis mutandis*, in the case of an increase in aggregate demand.

2.4.1 Ranking of the possible explanations for price rigidity

A ranking was drawn up on the basis of the average scores obtained by each of the possible explanations for price rigidity. The first column in table 9 indicates the underlying theoretical concept and, in brackets, the corresponding code for the intuitive wording used in the questionnaire. The second column describes the type of rigidity, according to the classification explained in box 2.

Ranked at the top are two explanations with respect to nominal rigidity theories. The first of these is the *implicit contracts* theory, which is formulated as follows in the questionnaire : "our customers prefer a stable price and a change could damage customer relations, even if our competitors also change their price". The firms therefore want to avoid upsetting the customers and do not adjust their prices too often. The proviso "even if our competitors also change their price" is the factor permitting this explanation to be ranked among the nominal rigidities. It is in fact the expression of displeasure at price adjustments in general, unconnected with any change in the relative price. This explanation is immediately followed by another, offered by the *explicit contracts* theory whereby the existence of a written contract means that the price can only be changed if the contract is renegotiated. The predominance of the two theories is in line with the results already mentioned in regard to the main customers. They showed that a large part of the turnover (over 40 p.c. on average) comes from customers with whom there is a long-term relationship. In industry and business services, where the score of implicit and explicit contracts is slightly above average, the share of this type of customer relationship is actually close to 60 p.c.

Ranked third is an explanation offered by the *flat marginal costs curve* theory, stated as follows in the questionnaire : "our variable costs do not change much over the business cycle, which contributes to the price of our product remaining roughly the same". The real marginal costs curve may be flat – which means that marginal costs do not show any pronounced pro-cyclical movement – because real wages are not very pro-cyclical or because the organisation of the production process is flexible.

Next come four explanations relating to counter-cyclical movements in the desired mark-up. The first puts the emphasis on the *importance of fixed costs and/or liquidity constraints*, which are grouped together in one theory. According to the theory, during a recession, when cash-flow is low, the price has to be maintained (which means increasing the mark-up) in order to continue to have sufficient liquidity. Two elements are in fact combined. First, it is assumed that customers only respond gradually to a price reduction and that it therefore takes some time for the reduction to generate an increase in turnover. Next, it is assumed that there are capital market

TABLE 9 QUESTION B4 : RANKING OF THE POSSIBLE EXPLANATIONS FOR PRICE RIGIDITY

(Average scores)

	Type of rigidity	Industry	Construction	Trade	Business services	Total
Implicit contracts (244)	N	2.6	2.5	2.4	2.6	2.5
Explicit contracts (241)	N	2.9	2.9	1.8	2.7	2.4
Flat marginal costs curve (247)	R/A	2.3	2.6	2.4	2.5	2.4
Importance of fixed costs / liquidity constraints (246)	R/B	2.2	2.4	2.2	2.2	2.2
Kinked demand curve (245)	R/B	2.4	2.0	2.3	2.0	2.2
Shifting customer clientele (251)	R/B	1.9	2.1	2.2	2.1	2.1
Thick-market demand (248)	R/B	2.0	1.9	2.3	1.8	2.0
Judging quality by price (254)	N	1.7	1.9	2.1	2.0	1.9
Thick-market supply (249)	R/C	1.7	1.8	1.9	1.7	1.8
Risk of having to readjust price in the opposite direction (253)	N	1.8	1.6	1.8	1.7	1.8
Changing non-price elements (255)	N	1.9	2.0	1.6	1.6	1.7
Counter-cyclical financing costs (250)	R/C	1.6	1.8	1.7	1.7	1.7
Psychological price thresholds (252)	N	1.4	1.6	2.0	1.6	1.7
Information-gathering costs (243)	N	1.6	1.7	1.6	1.6	1.6
Physical menu costs (242)	N	1.5	1.5	1.6	1.4	1.5
p.m. Response rate		*94.2*	*93.3*	*88.9*	*93.8*	*91.9*

Source : NBB.
(…) Corresponding code in the questionnaire.
N : Nominal rigidity.
R/A : Real rigidity / flat real marginal costs curve.
R/B : Real rigidity / counter-cyclical movements in desired mark-ups.
R/C : Real rigidity / counter-cyclical shifts in the real marginal costs curve.

imperfections which lead to liquidity constraints. These are due to a reduction in cash-flow combined with the fact that a (major) part of the costs remains constant. During the last cyclical slowdown, for example, the emphasis was often on the fact that firms had to restructure their balance sheets and that this factor prevented them from lowering their prices (or increasing them by less than they eventually did); in the end, this limited the cyclical fall in inflation.

According to the *kinked demand curve* theory, firms are not tempted to be the first to change their prices. They are afraid that their competitors will not follow suit with a (relative) price increase and that they will thus lose market share. A (relative) reduction in price could spark a process prejudicial to all the market players. In both cases, firms prefer to wait for their competitors to act before then doing the same. Meanwhile, they prefer to adjust their mark-up downwards (or upwards) when marginal costs increase (or fall) during an upturn (or downturn) in economic activity.

The theoretical concept of *shifting customer clientele* suggests the existence of two types of customers. On the one hand, there are loyal customers with low demand elasticity, and on the other there are customers who are less loyal, presenting higher demand elasticity. Since the loyal customers remain customers during a recession, the price elasticity of demand is lower than during boom periods. Consequently, the mark-up can be increased during a recession, so that the price can remain unchanged or only a small reduction is needed. During a boom, the opposite happens : high elasticity, lower mark-up and prices unchanged or only slightly increased.

The last explanation concerning counter-cyclical mark-ups relates to *the thick-market on the demand side*. It is worded as follows : "when our customers buy a lot, they have more interest in comparing prices than when they don't buy a lot. They are more sensitive to price changes in booms than in recessions". This implies that the elasticity of demand is greater during periods of expansion,

which depresses prices by a reduction in the mark-up. During recessions, the elasticity of demand is less and the mark-up is higher, preventing prices from falling.

Ranked eighth is the theoretical concept of *judging quality by price*, which applies only in the case of a price reduction; according to this theory, if prices are reduced, customers may think that the product quality has declined. This could prevent price reductions.

Apart from the *thick-market effects* on the demand side, similar effects on the *supply side* may obviate the need to adjust prices. In a period of prosperity, the costs of attracting customers are reduced, keeping prices at a low level. This theory suggests the existence of counter-cyclical shifts in the marginal cost curve, caused by economies of scale.

Next come two concepts relating to nominal rigidities. The first shows the *risk of having to readjust the price in the opposite direction*. The firms therefore prefer to take no decision in order to minimise their price adjustment costs. The second suggests that an increase in demand can be absorbed by *changing non-price elements*, such as longer delivery times.

The explanation offered by the theory of *counter-cyclical financing costs* ranks twelfth. Owing to capital market imperfections, external financing becomes more expensive during recessions. This keeps marginal costs – and hence prices – at a high level. Of course, this explanation of price rigidity may also be applied – *mutatis mutandis* – to a boom situation.

Bottom of the list are three explanations relating to nominal rigidities. The use of *psychological price thresholds* may hamper price adjustments unless the firm can immediately switch to a new attractive price. This may be a price that is rounded off (ending in "0" or "5") or it may be a "psychological" price (ending in "9"). This nominal price rigidity source gets, on average, low scores.

The low scores of the two explanations connected with the nominal rigidity theory with respect to the costs entailed in the price adjustment process are slightly surprising. The fact that the concept of *information-gathering costs* comes bottom of the list is at odds with the finding that the price review process is rigid – prices are only reviewed every 10 months, on average – and with the fact that this process is not always based on a full range of relevant information. The two results could be consistent if the relatively low score for information-gathering costs related to the limited information used for non-optimum price-setting. *Physical menu costs*, which are often mentioned in the economic literature as an explanation for price rigidity, are right at the bottom of the list. This may be due to the literal way in which the term is interpreted, namely the presence of physical price adjustment costs such as those entailed in printing new catalogues, changing price labels, etc. In the macroeconomic literature, on the other hand, menu costs generally have a wider meaning and implicitly cover a broad range of (fixed) costs associated with price adjustments.

Two exceptions aside, the ranking differs little between sectors. In trade, far less importance is attached to the explicit contracts theory. On the other hand, firms in the trade sector give a higher score to the use of psychological price thresholds. The analysis of the sub-sectors reveals that these two characteristics are still more pronounced in the case of the retail trade. That seems logical, since the retail trade is far more geared towards direct sale to consumers: in their case, explicit contracts are probably rare but price thresholds are very widely used.

2.4.2 International comparison

Although the similar surveys in other countries were conducted in different ways, the list of theories tested was different (the number of theories tested is indicated in brackets in the table) and the wording used was not identical, the explanations of price rigidity most frequently cited in Belgium also head the ranking in other countries. In all countries, price rigidities are essentially explained by implicit and explicit contracts, flat marginal costs curves, the importance of fixed costs or liquidity constraints and the kinked demand theory. The explanations connected with the theories relating to information-gathering costs and the existence of physical menu costs are universally ranked very low.

Calculation of the Spearman rank correlation coefficient confirms this finding. This test is used to compare the ranking of the price rigidity explanations common to Belgium and other countries. This coefficient is positive and relatively high, indicating substantial symmetry in the ranking between the countries. It is 0.83 for the Belgium-Italy comparison (6 theoretical explanations in common), 0.80 for the Belgium-Sweden comparison (12 theoretical explanations in common), 0.63 for the Belgium-UK comparison (9 theoretical explanations in common) and 0.46 for the Belgium-US comparison (10 theoretical explanations in common).

TABLE 10 RANKING OF POSSIBLE EXPLANATIONS FOR PRICE RIGIDITY: INTERNATIONAL COMPARISON

	Type of rigidity	Belgium (15)	Sweden (13)	US (12)	GB (11)	Italy (6)
Implicit contracts (244)	N	1	1	4	5	–
Explicit contracts (241)	N	2	2	5	1	1
Flat marginal costs curve (247)	R/A	3	3	2	2	–
Importance of fixed costs/liquidity constraints (246)	R/B	4	6	–	–	–
Kinked demand curve (245)	R/B	5	4	1	3	2
Shifting customer clientele (251)	R/B	6	8	7	9	–
Thick-market demand (248)	R/B	7	12	–	–	–
Judging quality by price (254)	N	8	–	12	10	–
Thick-market supply (249)	R/C	9	10	–	–	–
Risk of having to readjust price in the opposite direction (253)	N	10	–	–	–	3
Changing non-price elements (255)	N	11	–	3	8	–
Counter-cyclical financing costs (250)	R/C	12	5	–	–	–
Psychological price thresholds (252)	N	13	7	8	4	5
Information-gathering costs (243)	N	14	13	6	–	6
Physical menu costs (242)	N	15	11	6	11	4
Spearman rank correlation coefficient			0.80	0.46	0.63	0.83
(number of explanations in common)			(12)	(10)	(9)	(6)

Sources: Apel et al., Fabiani et al., Blinder et al., Hall et al., NBB.
(...) Corresponding code in the questionnaire.
N: Nominal rigidity.
R/A: Real rigidity/flat real marginal costs curve.
R/B: Real rigidity/counter-cyclical movements in desired mark-ups.
R/C: Real rigidity/counter-cyclical shifts in the real marginal costs curve.

The results show that both nominal and real rigidities play a role in the price adjustment process and that the interaction between the two is important for a good understanding of inflation dynamics. This finding is in line with both recent advances in theories on this subject[1] and with recent empirical tests conducted on the basis of general equilibrium models[2].

2.5 Factors prompting price adjustments

It is also important to know how prices react to shocks and how the reaction differs in the case of a price increase or a price reduction. In question B3, participants were asked to indicate the importance of a series of factors prompting either a price increase or a price reduction. Cost factors, namely labour costs and other production costs, seem to be the main cause of *price increases* and their average scores are noticeably higher than those of other factors – often defined as exchange rate fluctuations – and higher than the score for a price increase by the competitor(s). Variations in demand, financial costs and a decline in productivity receive the lowest scores.

Competitors' prices are the reason most frequently cited for *price decreases*. Next come three factors which receive very similar average scores, namely demand fluctuations, other factors – apart from exchange rate fluctuations, often defined as "at the customer's request" –, and other production costs. Labour costs, increases in productivity and financial costs receive the lowest scores.

To sum up, it can be said that firms react asymmetrically to shocks. Cost factors are the main cause of price increases, while competitors' prices and variations in demand are the most important reasons for price reductions. However, the significance of this asymmetry is

(1) Cf. Romer (2001), for example.
(2) Cf. Eichenbaum and Fisher (2004), for example.

TABLE 11 QUESTION B3: FACTORS PROMPTING A PRICE INCREASE / PRICE REDUCTION
(Average scores)

	Industry	Construction	Trade	Business services	Total
Price increase					
Labour costs	3.0	3.5	2.5	3.3	2.9
Other production costs	3.1	2.9	2.8	2.7	2.9
Other factors	2.3	2.6	3.2	2.2	2.6
Competitors' price	2.7	2.3	2.6	2.3	2.5
Demand	2.3	2.5	2.0	2.3	2.2
Financial costs	2.0	2.5	2.3	2.2	2.2
Productivity	2.1	2.4	1.9	1.9	2.0
Price decrease					
Competitors' price	3.1	2.6	3.0	2.5	2.9
Demand	2.7	2.8	2.5	2.4	2.5
Other factors	2.5	2.1	3.1	1.5	2.4
Other production costs	2.6	2.4	2.2	2.1	2.3
Labour costs	2.1	2.7	1.9	2.2	2.1
Productivity	2.2	2.4	1.9	2.0	2.0
Financial costs	1.6	2.1	1.8	1.8	1.8
p.m. Response rate (excluding "other factors")					
Price increase	*92.8*	*94.1*	*87.7*	*93.7*	*91.1*
Price decrease	*87.9*	*89.5*	*79.3*	*83.9*	*83.4*

Source: NBB.

uncertain, since the response rate was much higher for price increases (91 p.c.) than for price reductions (83 p.c.). Moreover, the average scores for price reductions are generally lower. This could imply that firms are not used to seeing prices fall, and therefore do not answer this set of questions, or they tend to class all the factors as not very important. It is also possible that a firm which has not recently encountered a reduction in costs is not inclined to state that this could lead to a reduction in prices. Since firms are more used to seeing a decline in demand, that may explain the higher score for the latter factor.

The most marked sectoral differences concern trade, where "other factors" score the highest for both a price increase and a price reduction. In industry, above-average importance is attached to changes in competitors' prices, and that is true of both price increases and price reductions. These results appear to confirm once again that industry is the sector most exposed to competition.

2.6 Characteristics of firms with flexible or rigid pricing

By crossing the answers to different questions, it is possible to reveal some characteristics of firms with flexible pricing and firms with rigid pricing. A firm for which the average duration between two successive price changes is 3 months or less is regarded as a firm with flexible pricing. The choice of that threshold is dictated by the fact that a quarter is the minimum frequency used in macroeconomic models, even though an average duration of 3 months between two price changes is not in itself a sign of great flexibility. A firm with rigid pricing is defined as one for which the average duration between two successive price changes exceeds 12 months. In principle, all firms which deviate from the criterion used for firms with flexible pricing – in this case, an interval of 3 months or less – must be regarded as firms with rigid pricing. However, it proved necessary to remove from the analysis the large group of firms which change their prices annually, otherwise the results would have been less clear. Firms in that group in fact have divergent characteristics, even if they all change their prices with the same frequency.

TABLE 12 FIRMS WITH FLEXIBLE PRICING AND RIGID PRICING

(Average scores, unless otherwise stated)

	Firms with flexible pricing (1)	Firms with rigid pricing (2)
Firms with flexible pricing face more competition		
A4 – Over 5 competitors (p.c.)	82	67
A6 – Average fall in turnover (p.c.)	56	36
A9 – The price is set according to the price of the main competitor(s)	2.8	2.8
B3 – Importance of competitors' prices for a		
price increase	2.6	2.3
price reduction	3.0	2.6
C2 – Importance of competitors' prices in the pricing-to-market strategy	3.5	3.1
Firms with flexible pricing have fewer long-term customer relationships (A5)		
Over 50 p.c. of the main customers are		
group companies (p.c.)	6	8
companies outside the group having a long-term relationship (p.c.)	22	35
Firms with flexible pricing are slightly more geared towards exports		
Turnover achieved on foreign markets (p.c.)	46	38
Optimum pricing (B2a/b)		
We applied a rule of thumb (p.c.)	24	34
We have considered a wide range of information (p.c.)	76	66
concerning the present context (p.c.)	35	36
concerning the present and future context (p.c.)	41	30
Firms with flexible pricing attach less importance to the possible explanations for price rigidity		
Explanations for nominal rigidity	1.9	2.0
Explanations for real rigidity	2.1	2.1

Source : NBB.

(1) Firms for which the average duration between two successive price changes is 3 months or less.

(2) Firms for which the average duration between two successive price changes exceeds 12 months.

An initial conclusion drawn from the cross-analysis is that firms with flexible pricing seem to be more exposed to competition; 82 p.c. of firms with flexible pricing have more than 5 competitors, while that is true of only 67 p.c. of firms with rigid pricing. Moreover, demand elasticity is greater in firms practising flexible pricing. They also attach more importance to their competitors' prices in deciding to increase or lower their price, and in applying a pricing-to-market strategy. On the other hand, it is not possible to distinguish clearly between the two groups as regards the average score for the price-taker option, worded as follows: "we set our price according to the price of the main competitor(s)". These findings tend to suggest that competition fosters price flexibility.

Second, firms with flexible pricing have fewer long-term relationships with customers (companies in the same group or external companies with which they explicitly state that they have a long-term relationship). The existence of such relationships seems to enhance price rigidity.

Third, firms practising flexible pricing are slightly more geared towards exports. This conforms to the finding whereby they face greater competition, since the firms in section C of the questionnaire state that they have less market power on foreign markets than on the Belgian market.

The results concerning the extent to which pricing is optimal are hard to interpret. If a firm with rigid pricing adjusts its price, one would expect the new price to be optimum immediately, i.e. that all the available relevant information concerning the present and future context

will have been taken into account. Yet according to the survey results, it seems that firms with rigid pricing most often applied a rule of thumb, and that their pricing behaviour is less forward-looking than in the case of firms with flexible pricing. This disconcerting result may be due to the fact that the question concerns only the last price revision, and cannot measure the firm's structural characteristics in that respect.

Finally, firms with flexible pricing attach slightly less importance to the possible explanations for price rigidity, as their average score in respect of the nominal rigidity theories is slightly lower than for firms practising rigid pricing. In the case of the real rigidity theories, however, the average score is no different; but overall, this finding is in line with expectations based on the economic literature, namely that the nominal theories play a more crucial role in the overall degree of price rigidity. Without nominal rigidity, the real rigidities will generally lead to minor price adjustments, but not infrequent price adjustments.

3. Conclusion

Belgian firms evidently operate in a context different from a perfect competition situation. Firms do have some market power, and that is greater on the Belgian market than abroad. The majority of industrial firms apply a pricing-to-market strategy. It seems that all the conditions are met for the price decision-making process to be meaningful and for price rigidity to be an equilibrium (temporarily).

However, that does not mean that customer relationships and competitors' behaviour are not important for the price-setting behaviour of Belgian firms, since they class competitors' prices as a key factor determining their own price and prompting price adjustments; that applies more to price increases than to price reductions. Overall, competitors' prices play a slightly more important role in industry. Other survey results also suggest that the environment in which industrial firms operate, is generally more competitive than it is for the other sectors. Costs also play an important role in price-setting behaviour, slightly more so for increases than for reductions, while demand fluctuations seem to be primarily a reason for cutting prices.

As regards the frequency and timing of price adjustments, the survey results indicate a relatively high degree of price rigidity. The average time elapsing between two successive price reviews totals 10 months, and between two successive price changes it is 13 months. The highest degree of price rigidity is found in business services, and the lowest in construction. In the majority of firms, price reviews are time-dependent when the situation is normal. If sufficiently significant economic shocks occur, however, the process becomes largely state-dependent.

The explanations for price rigidity concern both nominal and real rigidity. The former are essentially connected with the existence of implicit and explicit contracts, physical menu costs and costs related to the gathering of information relevant for the price-setting decision playing only a minor role. Real rigidities concern mainly: a) a flat cyclical marginal costs curve; b) various sources of counter-cyclical movements in the desired mark-up. These findings conform to the recent economic theory in which the interaction between the two types of rigidities is specifically proposed as an explanation for the inertia in the price-setting.

Moreover, only one-third of firms conducted their last price review on the basis of a full set of information which also incorporated expectations concerning the future, while the other firms base their decisions on more limited information or apply a rule of thumb. The approach to pricing focuses more on the future in industry, while business services make greater use of rules of thumb. The fact that a high proportion of firms practise pricing which is not geared to the future may be an additional source of inertia in the inflation process.

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Annex 1

SURVEY ON PRICING BEHAVIOUR - INDUSTRY

Contact person for the questionnaire: +32(0)2 221 42 70

Please return the questionnaire by **3 March 2004** at the latest.
You can use the enclosed self-addressed envelope or our free of charge fax number **0800 95 969 (only in Belgium)** or **32 2 221 31 07 (only from foreign countries)**

Preliminary remarks: By "price" we mean the sales price actually charged, even in cases where it deviates from the list price. If you have different prices for different types of customers, please state the most common type of customer in your answer.

Turnover of your company during the last available fiscal year (excluding VAT): .....euro
Which percentage of this turnover is generated: - in Belgium .....%
- in other euro area countries.....%
- outside the euro area .....%

100%

Number of employees in your company, according to your latest declaration to the national social security office:
.....persons

Part A - Information on your main product and on the market in which it is sold

A1 What is your main product, in other words, the product that generates the highest turnover? .....

A2 How much per cent of the turnover does your main product account for? .....%

A3 What is, in terms of turnover, the main market for your main product?
(tick only one answer please)

- ❑1 the Belgian market
- ❑2 another euro area country
- ❑3 a non-euro area country

From now on, your answers should refer to the main market for your main product. In other words, when answering the questions, please always try to bear in mind the main product (**A1**) and the main market (**A3**).

A4 How many competitors do you have on your main market for your main product?
(tick only one answer please)

- ❑1 none
- ❑2 less than 5
- ❑3 between 5 and 20
- ❑4 more than 20
- ❑5 I don't know

A5 How much per cent of your turnover do you generate by selling your main product to:

-	companies and divisions within your own group	....%
-	companies outside your own group with a long-term relationship	....%
-	companies outside your own group without a long-term relationship	....%
-	directly to consumers	....%
-	government	....%
		100%

A6 If you decided to increase the price of your main product by 10%, all other factors remaining unchanged (including competitors' prices), by what percentage would the turnover of your main product fall?

by .....% ❑1 I don't know

A7 Different factors can determine your competitiveness. What is the importance in your company of the factors listed below?
please quote the relevant importance for each answer, by selecting one of the options:
1 = unimportant 2 = of minor importance 3 = important 4 = very important ? = I don't know

- ☐ the price of our product
- ☐ the quality of our product
- ☐ the degree to which our product can be distinguished from that of our competitors
- ☐ delivery period
- ☐ long-term relationship with customers
- ☐ the after-sales service
- ☐ other factors; please specify .....

A8 Does your firm have the possibility to set the price of the main product itself, or is it set by somebody else? (tick only one answer please)

- ❑1 we set our price ourselves ☞ continue to **A9**
- ❑2 our price is set by the government
- ❑3 our price is set by the parent company/group ☞ continue to **B5**
- ❑4 others set the price;
  please specify who .....

A9 There are various ways of setting the price of your main product. How well do the following methods apply to the situation in your company?
please quote the relevant importance for each answer, by selecting one of the options:
1 = unimportant 2 = of minor importance 3 = important 4 = very important ? = I don't know

- ☐ we set our price fully according to our costs and a completely self-determined profit margin
- ☐ we set our price according to the price of our main competitor(s), meaning that we do not determine our profit margin ourselves

Part B - Price adjustments

B1a When do you review the price you want to charge for your main product (this does not necessarily mean that the price actually changes)? (tick only one answer please)

- ☐ 1 at specific time intervals
- ☐ 2 mainly at specific time intervals, but also in reaction to specific events (e.g. a considerable change in our costs) ☞ continue to **B1b**
- ☐ 3 in reaction to specific events (e.g. a considerable change in our costs)
- ☐ 4 I don't know ☞ continue to **B2a**

B1b If you review your prices at specific time intervals, how often does this occur (this does not necessarily mean that the price actually changes)? (tick only one answer please)

- ☐ 1 more than once a year ☞ how many times a year? .....
- ☐ 2 once a year ☞ in which month? .....
- ☐ 3 less than once a year ☞ once in how many years? .....

B2a How did you review the price of your main product the last time? (tick only one answer please)

- ☐ 1 we have applied a rule of thumb (e.g. a fixed amount/percentage change, indexation based on the consumer price index, ...) ☞ continue to **B3**
- ☐ 2 we have considered a wide range of information (demand, costs, competitors' price ...) relevant for profit maximisation within our company ☞ continue to **B2b**

B2b If you considered a wide range of information the last time you reviewed the price, what was it related to? (tick only one answer please)

- ☐ 1 this range of information was only related to the present context in which our company operates
- ☐ 2 this range of information was related both to the present and to the expected future context in which our company operates

B3 Which factors cause you to raise/lower the price of your main product?

please quote the relevant importance for each answer, by selecting one of the options:

1 = unimportant 2 = of minor importance 3 = important 4 = very important ? = I don't know

The importance of each factor may be different from one column to the other.

Factors causing a price increase	Factors causing a price decrease
☐ an increase in our labour costs	☐ a decrease in our labour costs
☐ an increase in our financial costs	☐ a decrease in our financial costs
☐ an increase in our other costs	☐ a decrease in our other costs
☐ an decrease in our productivity	☐ a increase in our productivity
☐ an increase in demand	☐ a fall in demand
☐ an increase in our competitors' price	☐ a decrease in our competitors' price
☐ other factors please specify	☐ other factors; please specify .....

B4 There can be various reasons as to why a price is not (or only very slightly) changed during a certain period. Please indicate their importance in your company.
please quote the relevant importance for each answer, by selecting one of the options:
1 = unimportant 2 = of minor importance 3 = important 4 = very important ? = I don't know

- ☐ we have a written contract with our customers specifying that the price can only be adjusted when the contract is renegotiated
- ☐ price changes entail "physical" costs (e.g. printing new catalogues, changing price tags, adjusting the website, ...)
- ☐ it is costly in terms of time and/or money to collect relevant information for pricing decisions
- ☐ our customers prefer a stable price and a change could damage customer relations, even if our competitors also change their price
- ☐ there is a risk that competing companies might not adjust their prices and that we might be first. So we wait for our competitors to act, and then follow suit.
- ☐ in a recession, when cashflow is low, our price may need to be kept up in order to have sufficient liquidities at one's disposal. A substantial part of our costs is indeed fixed, whereas it takes some time before a price decrease results in a higher turnover.
- ☐ our variable costs do not change much over the business cycle, which contributes to the price of our product remaining roughly the same
- ☐ when our customers buy a lot, they have more interest in comparing prices than when they don't buy a lot. They are more sensitive to price changes in booms than in recessions.
- ☐ during economic booms the costs incurred by the company to reach customers decline. This contributes to keeping our price down.
- ☐ during an economic recession, it is more difficult to obtain external financing (e.g. bank loans). This contributes to keeping our price up.
- ☐ our customer mix changes over the business cycle, during a recession we lose our least loyal customers, while more loyal customers remain. As the latter are less price-sensitive, our price can be left unchanged during a recession.
- ☐ our price is set at an attractive threshold (e.g. 4.99 euro or 25.00 euro) and is only changed when it is convenient to move to a new attractive threshold
- ☐ there is a risk that we subsequently have to readjust our price in the opposite direction
- ☐ we are afraid that customers will interpret a price reduction as a reduction in quality
- ☐ an increase in demand for our product is met by elements other than a price increase, e.g. an extension of the delivery period

B5 How often does the price of your main product actually change, including reductions, but excluding sales or sell-off? (tick only one answer please)

- ☐1 more than once a year ☞ how many times a year? .....
- ☐2 once a year
- ☐3 less than once a year ☞ once in how many years? .....

Part C - Pricing behaviour on other markets than the main market
(only to be filled out by companies for which the market mentioned in **A3** is not the only market)

C1 You may have different prices according to the market on which you operate. Which of the following statements best describes your main product? (tick only one answer please)

- ❑ 1 the price denominated in euro is the same for all countries ☞ continue to **C3**
- ❑ 2 the price denominated in euro is the same for all euro area countries, but not for non-euro area countries ☞ continue to **C2**
- ❑ 3 the price denominated in euro is different, both for euro area countries and for non-euro area countries ☞ continue to **C2**

C2 What is the importance of the following factors in a differentiated price-setting behaviour between markets?
please quote the relevant importance for each answer, by selecting one of the options:
1 *= unimportant* **2** *= of minor importance* **3** *= important* **4** *= very important* **?** *= I don't know*

- ☐ exchange rate movement of the currency used for payment
- ☐ tax system on the market (e.g. VAT-rate)
- ☐ structural market conditions on the market (e.g. taste, standard of living,...)
- ☐ cyclical fluctuations in demand on the market
- ☐ the price of the competitor(s) on the market
- ☐ rules on the market
- ☐ other factors; please specify .....

C3 Is competition for your main product stronger on the foreign market than on the Belgian market? (tick only one answer please)

- ❑ 1 yes
- ❑ 2 no
- ❑ 3 our company does not operate on the Belgian market
- ❑ 4 I don't know

Name and phone number of the person who filled out this questionnaire:

NAME:
.....

Phone:
.....

Thank you for taking part in the survey.

Annex 2

SECTORAL COVERAGE (NACE CODES)

(Sectors outlined in bold are covered by the survey sample)

Code	Description	Sector
01	Agriculture, hunting and related service activities	
02	Forestry, logging and related service activities	
05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	
10	Mining of coal and lignite; extraction of peat	
11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying	
12	Mining of uranium and thorium ores	
13	Mining of metal ores	
14	Other mining and quarrying	
15	**Manufacture of food products and beverages**	
16	**Manufacture of tobacco products**	
17	**Manufacture of textiles**	
18	**Manufacture of wearing apparel; dressing and dyeing of fur**	
19	**Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear**	
20	**Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials**	
21	**Manufacture of pulp, paper and paper products**	
22	**Publishing, printing and reproduction of recorded media**	
23	**Manufacture of coke, refined petroleum products and nuclear fuel**	
24	**Manufacture of chemicals and chemical products**	
25	**Manufacture of rubber and plastic products**	Industry
26	**Manufacture of other non-metallic mineral products**	
27	**Manufacture of basic metals**	
28	**Manufacture of fabricated metal products, except machinery and equipment**	
29	**Manufacture of machinery and equipment n.e.c.**	
30	**Manufacture of office machinery and computers**	
31	**Manufacture of electrical machinery and apparatus n.e.c.**	
32	**Manufacture of radio, television and communication equipment and apparatus**	
33	**Manufacture of medical, precision and optical instruments, watches and clocks**	
34	**Manufacture of motor vehicles, trailers and semi-trailers**	
35	**Manufacture of other transport equipment**	
36	**Manufacture of furniture; manufacturing n.e.c.**	
37	**Recycling**	
40	Electricity, gas, steam and hot water supply	
41	Collection, purification and distribution of water	
45	**Construction**	Construction

SECTORAL COVERAGE (NACE CODES) (continued)

(Sectors outlined in bold are covered by the survey sample)

Code	Description	Sector
50	**Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel**	Trade [1]
51	**Wholesale trade and commission trade services, except of motor vehicles and motorcycles**	
52	**Retail trade services, except of motor vehicles and motorcycles; repair services of personal and household goods**	
55	Hotel and restaurant services	
60	**Land transport and transport via pipeline services**	Business services
61	Water transport services	
62	Air transport services	
63	**Supporting and auxiliary transport services; travel agency services**	Business services
64	Post and telecommunication services	
65	**Financial intermediation services, except insurance and pension funding services** [2]	Business services
66	Insurance and pension funding services, except compulsory social security services	
67	**Services auxiliary to financial intermediation**	Business services
70	**Real estate services**	
71	**Renting services of machinery and equipment without operator and of personal and household goods**	
72	**Computer and related services**	
73	**Research and development services**	
74	**Other business services**	
75	Public administration and defence services; compulsory social security services	
80	Education services	
85	Health and social work services	
90	Sewage and refuse disposal services, sanitation and similar services	
91	Membership organisation services n.e.c.	
92	Recreational, cultural and sporting services	
93	Other services	
95	Private households with employed persons	
99	Services provided by extra-territorial organisations and bodies	

(1) Except commission trade services, which are included in "Business services".
(2) Only financial leasing is included in "Business services".

Annex 3

LIST OF SUB-SECTORS ACCORDING TO THE NACE-BEL CLASSIFICATION

A31	Divisions of A60	Name of sub-sector	Number of participants
DA	15 + 16	Food industry	143
DB + DC	17 + 18 + 19	Textiles and leather	91
DD	20	Wood	29
DE	21 + 22	Paper and publishing industry	73
DF + DG	23 + 24	Chemical industry	59
DH	25	Rubber and plastics	30
DI	26	Other non-metallic mineral products	34
DJ	27 + 28	Metallurgy and metalworking	140
DK	29	Machinery and equipment	62
DL	30 + 31 + 32 + 33	Electrical and electronic equipment	46
DM	34 + 35	Manufacture of transport equipment	24
DN	36 + 37	Other manufacturing industries	22
FF	45	Construction	384
GG excluding retail trade	50 + 51 (excluding 51.1)	Wholesale trade, motor vehicle trade and repairs	226
Retail trade	52	Retail trade	252
II	60 + 63	Transport and storage	125
KK	70 + 71 + 72 + 73 + 74 + 90 + 51.1 + 65.21 + 67.20	Real estate, rental and other business services	239
Total			1,979

The finances of the communities and regions

Johan Claeys
Thomas Stragier
Kris Van Cauter
Luc Van Meensel

Introduction

Since 1970 the Belgian administrative system has evolved into a federal structure with three communities and three regions. The Flemish, Walloon and Brussels Capital Regions are territorially defined entities with powers in such spheres as town and country planning, housing, the environment, public works, supervision over lower level authorities and certain aspects of the policy on agriculture, energy, transport, employment and the economy. The Flemish, French and German-speaking Communities, comprising the population of the Dutch, French and German language areas respectively, mainly have powers relating to subjects concerning people, such as education, culture, welfare and certain aspects of health policy[1]. In Flanders, the community and regional institutions have been merged.

The Belgian administrative reform took place in five phases, in 1970, 1980, 1988/89, 1993 and 2001 respectively, with powers increasingly being devolved from federal level to the federated entities. At the same time, the funds were provided to finance those powers. The administrative reform therefore had a major impact on Belgian public finances.

This article is in five sections. Section 1 outlines the position of the communities and regions in general government as a whole. Section 2 analyses the revenues of the communities and regions. Section 3 discusses their expenditure. Section 4 contains an analysis of the changes in the financing balance and the debt level. Finally, section 5 explains the results of the projections concerning the movement in community and regional finances.

1. Position of the communities and regions in general government

At present, both the revenues and the expenditure of the communities and regions account for around a quarter of general government revenue and expenditure. Education accounts for roughly half of the expenditure of the communities and regions.

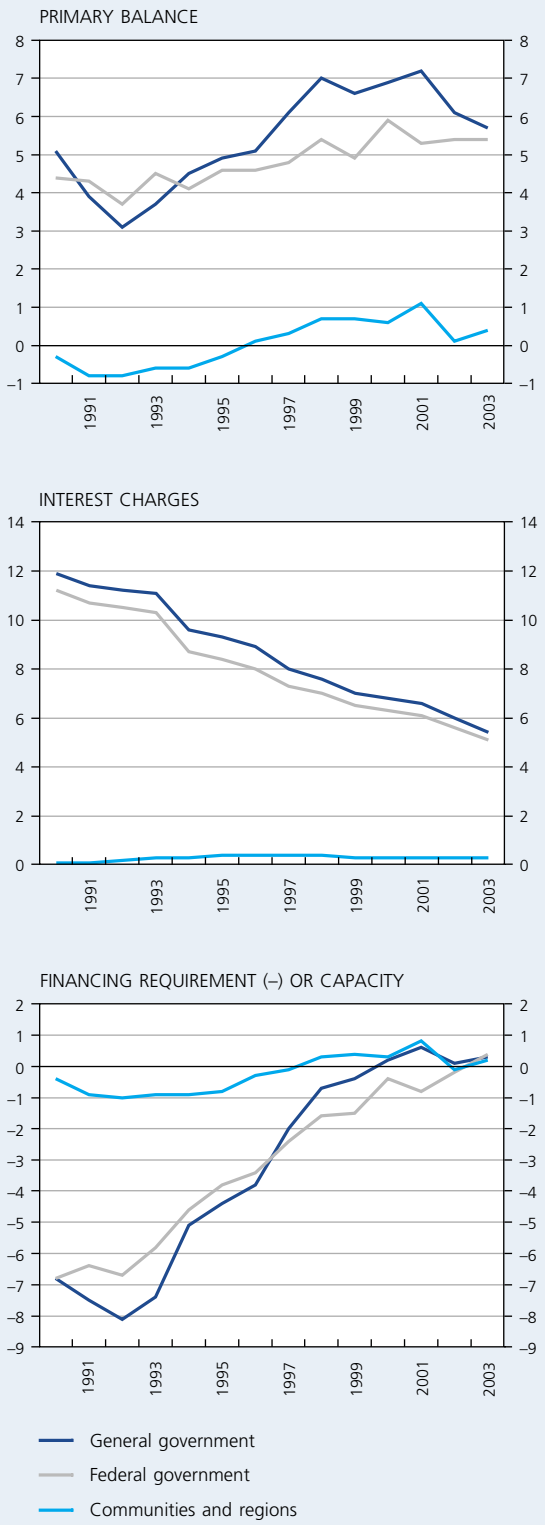
During the past decade, the financing balance of general government has gradually been improving. The deficit, which still stood at 6.8 p.c. of GDP in 1990, was converted to a surplus of 0.3 p.c. in 2003, almost all of which was attributable to the movement in the balance of the federal government. The improvement in that balance was attributable partly to the increase in the primary surplus, but was due mainly to the interest charges, which fell by 6.1 p.c. of GDP between 1990 and 2003.

The balance of the communities and regions has also improved. At the beginning of the 1990s, they were still recording deficits of around 1 p.c. of GDP, but in recent years the communities and regions have tended to balance their budgets or even achieve a surplus. In view of the relatively low interest charges of the communities and

(1) In the bilingual Brussels Capital Region, the community powers are exercised by the French Community Commission, the Flemish Community Commission and the Joint Community Commission.

CHART 1 PRIMARY BALANCE, INTEREST CHARGES AND FINANCING BALANCE OF GENERAL GOVERNMENT

(Percentages of GDP)



Source : NAI

TABLE 1 GOVERNMENT EXPENDITURE AND REVENUE (1)

(Annual average percentage change at constant prices, 1991-2003) (2)

	Primary expenditure	Revenue
General government	2.5	2.3
Federal government	0.9	1.0
Communities and regions	2.5	3.1
Local authorities	3.0	2.5
Social security	2.5	2.1
p.m. GDP growth	*1.8*	

Sources : NAI, NBB.
(1) Adjusted for the main non-recurring factors.
(2) Deflated by the national consumer price index.

regions, the main factor in that improvement is the change in the primary balance. The primary deficits of the communities and regions, which were still as high as 0.8 p.c. of GDP in the first half of the 1990s, have given way to primary surpluses in the last few years.

The explanation for this improving trend in the balance of the communities and regions lies in the fact that the real rate of growth in their primary expenditure, which matched that of general government, was 0.6 of a percentage point lower, on average, than the growth of their revenues between 1990 and 2003. Revenues in fact increased sharply : with growth of 3.1 p.c. per annum in real terms, the communities and regions saw their revenues increase considerably faster than those of general government, which increased by 2.3 p.c. (1)

In 2003, the general government debt came to 100 p.c. of GDP. The federal government accounted for over 90 p.c. of the consolidated gross debt – in other words, the liabilities minus the government securities held by the State itself. Only a small percentage of the debt is attributable to the communities and regions. Since they recorded deficits for a major part of the 1990s, their debt ratio increased from 3.2 p.c. of GDP in 1990 to a peak of 7.4 p.c. of GDP in 1996. Improved financing balances made it possible to reduce the debt level after that to 5.2 p.c. of GDP by the end of 2003.

(1) In this article, the national accounts data have been adjusted to avoid breaks in the series and to align them more closely with budgetary reality. To take account of the fact that the public broadcasting companies were reclassified in the government sector in 2002, the revenue and expenditure figures were adjusted. No account was taken of the imputed pensions or the imputed social security contributions. The data concerning the Brussels Capital Region before 1995 have been adjusted to take account of the effect of the Region's assumption of the powers of the Brussels Conurbation from 1995 onwards. Although these adjustments affect the pattern of revenues and expenditure, their impact on the balances is neutral.

2. Revenues

2.1 General

The revenues of the communities and regions can be divided into three categories:

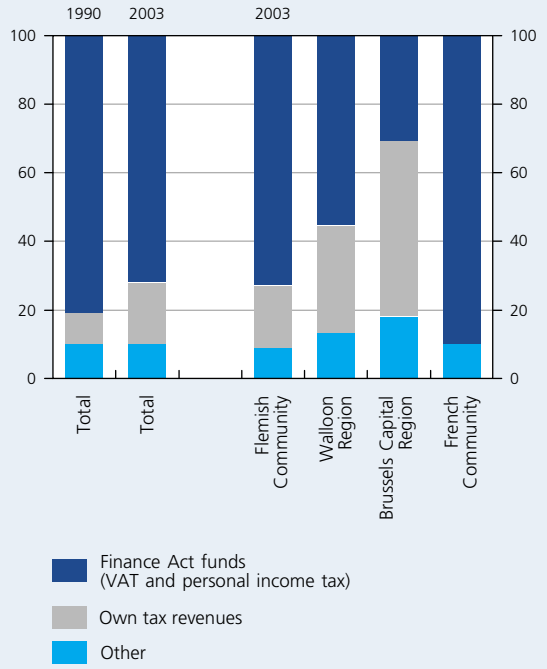
- their resources consist mainly – in 2003 the figure was 72 p.c. – of a portion of the proceeds from personal income tax and VAT made over to them by the federal government in accordance with the parameters laid down in the Finance Act 1989[1], supplemented by the Saint Michel Agreement of 1993 and the Lambermont agreement of 2001. These revenues will be referred to here as "Finance Act funds";
- their own tax revenues, such as registration fees, inheritance taxes, motor vehicle duty, water charges and environmental levies, currently represent around 18 p.c. of their revenues;
- the remaining 10 p.c. consists of other transfers from the federal government, the proceeds from the sale of goods and services and other miscellaneous revenues.

The revenue structure tends to vary from one individual entity to another. In practice, the communities have hardly any tax revenues of their own because of the lack of any territorial basis[2]. The Finance Act funds therefore represent a much larger proportion of total revenue in the French Community than elsewhere. The two "genuine" regions, the Walloon Region and the Brussels Capital Region, raise a relatively large proportion of tax revenue themselves. In the Brussels Capital Region the figure actually comes to half of the total revenues. The Flemish Community's own tax revenues fall mid-way between those of the other federated entities, which is to be expected for an entity which is both a community and a region.

Under the Lambermont Agreement which granted greater fiscal autonomy to the regions, the communities and regions saw a sharp increase in their own tax revenues from 2002. The impact of this on the budget was neutralised by reducing the amount of personal income tax made over pursuant to the Finance Act via the "negative term". This shift in resources has no influence on the revenues of the federated entities as a whole, but it does distort the rate of growth of the individual revenue items. In this article, those growth rates are adjusted for the influence of this shift.

CHART 2 STRUCTURE OF THE REVENUES OF THE COMMUNITIES AND REGIONS

(Percentage shares)



Sources: NAI, NBB.

Since 1990, the total revenues of the federated entities have increased in real terms by 3.1 p.c. per annum. The three different revenue categories each grew by around 3 p.c. Later on in this section there will be a more detailed explanation of the reasons for this.

2.2 Finance Act funds

The revenues of the communities and regions consist mainly of the part of the proceeds from personal income tax and VAT to which they are entitled under the Finance Act rules. These funds increased in volume by an average of 3 p.c. between 1990 and 2003, far outpacing real GDP growth (1.8 p.c.) and the rise in general government revenues (2.3 p.c.)[3].

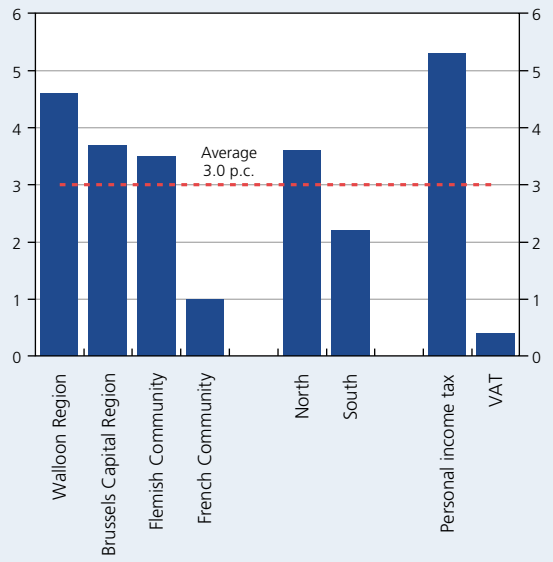
(1) Special law of 16 January 1989 on the financing of the communities and regions.

(2) The French community receives a small amount in the form of levies on RTBF, RTL-TVI and private radios.

(3) Under the Saint Michel Agreement (1993) and the Lambermont Agreement (2001), the regions were given more powers. They therefore also received supplementary budgets. However, the effect of this measure on the average revenue growth for the period between 1990 and 2003 is marginal (around 0.04 p.c. per annum).

CHART 3 FINANCE ACT FUNDS

(Annual average percentage change at constant prices, 1991-2003)[1]



Sources : FPS Finance, NAI, NBB.
(1) Deflated by the national consumer price index.

The average growth rate of the Finance Act funds varied greatly according to the individual entity : 4.6 p.c. for the Walloon Region, around 3.5 p.c. for the Brussels Capital Region and the Flemish Community, and just 1 p.c. for the French Community.

These variations are not surprising since the figures relate to different types of entity – communities, regions and the Flemish entity which is both a community and a region – and the rates of increase in the revenues stipulated by the Finance Act vary greatly according to whether the revenues are used to finance education – by far the most important community power from the point of view of the budget – or other powers of the communities and regions[1]. Since 1990, funding for education – i.e. the VAT revenues allocated – has grown in real terms by only 0.4 p.c. per annum, whereas the personal income tax allocated has risen by 5.3 p.c.

(1) When the Finance Act 1989 was first introduced, the VAT resources corresponded to the former education grants. Since then, there has no longer been any explicit link between the two, since the communities have autonomy over the whole of their revenues.

(2) Here it was assumed that 20 p.c. of the education spending consists of fixed costs which are unaffected by the number of pupils. The French Community accounts for 80 p.c. of the number of young people under the age of 18 in the Brussels Capital Region, while the Flemish Community accounts for 20 p.c.

One way of eliminating the influence of institutional differences and comparing more uniform entities is to calculate the revenues of the north and south of the country. Here, the north is defined as the Flemish Community and 20 p.c. of the Brussels Capital Region ; the south comprises the French Community, the Walloon Region, the German-speaking Community and 80 p.c. of the Brussels Capital Region. The calculations reveal that, between 1990 and 2003, the Finance Act funds increased in real terms by 3.6 p.c. per annum in the north, compared to just 2.2 p.c. in the south.

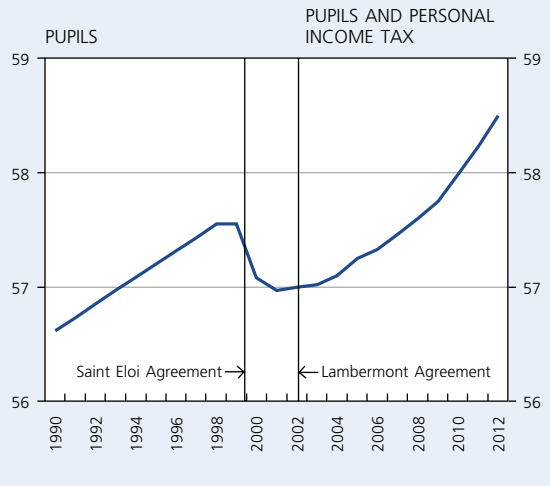
Later on, this article will explain the difference in the growth rate on the basis of the principal mechanisms underlying the increase in the resources handed over to the regions and communities in the form of both VAT and personal income tax revenues.

2.2.1 Increase in VAT resources

As already stated, the VAT resources allocated to the two communities to finance their expenditure on education increased by an average of 0.4 p.c. per annum in real terms between 1990 and 2003. This very weak growth is due to the mechanism built into the Finance Act 1989, whereby these resources are only adjusted in line with the movement in consumer prices and 80 p.c. of the rise in the number of persons under the age of 18 in the community where the number of young people shows the largest increase or the smallest decline[2]. In the

CHART 4 SHARE OF THE FLEMISH COMMUNITY IN THE VAT RESOURCES ALLOCATED TO THE COMMUNITIES

(Percentages)



Sources : State revenue and resources budget, NBB.

event, that proved to be the French Community, where the number of young people showed a very small increase (averaging 0.1 p.c. per annum). This mechanism demonstrates that there is no connection at all between the increase in the resources allocated, despite their name, and the increase in VAT revenues. Under the Lambermont Agreement, additional lump sum resources were allocated to the communities from 2002, namely 198 million euro in 2002 and another 149 million euro in 2003.

Between 1990 and 2003, the VAT resources allocated to the Flemish Community increased by 0.5 p.c. per annum, slightly outpacing the rise for the French Community (0.3 p.c.). These growth differences are due to the allocation formulas used.

The Finance Act 1989 provided for a gradual shift away from the education grant allocation existing in 1988, namely 56.5 p.c. for the Flemish Community and 43.5 p.c. for the French Community, towards an allocation based on the number of pupils registered in 1987, namely 57.55 p.c. in the Flemish Community and 42.45 p.c. in the French Community. As a result, the allocation formula was gradually adjusted in favour of the Flemish Community.

Under the Saint Eloi Agreement, the grants were allocated from 2000 onwards on the basis of an annual census of the number of pupils. This caused the share of the Flemish Community to decline from 57.55 p.c. to around 57 p.c. from 2000 onwards, so that its resources grew rather more slowly than those of the French Community during that period.

As a result of the Lambermont Agreement, the number of pupils ceased to be the sole basis for the allocation of the VAT resources; gradually, more importance was attached to the amount generated by personal income tax in each community. In practice, this means that, in 2002, 65 p.c. of the supplementary funding granted under the Lambermont Agreement – i.e. not the initial budget specified in the Finance Act 1989 – was allocated on the basis of pupil numbers and 35 p.c. on the basis of personal income tax revenues. This last percentage will gradually increase to 100 p.c. in 2012.

The share of the Flemish Community in personal income tax came to 64 p.c. in 2003, far more than the figure based on pupil numbers (57 p.c.). Assuming that these figures remain unchanged, the allocation of VAT resources will be altered in the years ahead in favour of the Flemish Community – according to the simulations, its share will increase from 57 p.c. to almost 58.5 p.c. in 2012 – and to the detriment of the French Community.

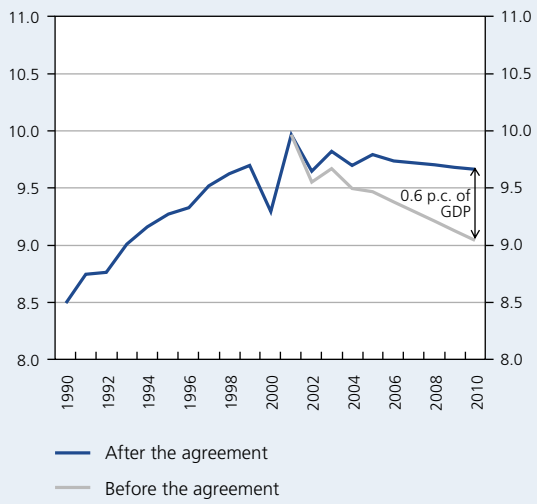
Impact of the Lambermont Agreement on the revenues of the communities and regions

The special law of 13 July 2001 on the refinancing of the communities and the extension of the fiscal powers of the regions, implementing the Lambermont Agreement, brought a fundamental change in the calculation of the budget resources allocated to the communities and regions.

The main provision of the Lambermont Agreement concerned substantial supplementary funding for the communities. During the Finance Act's transitional period, up to 1999, the VAT resources transferred to the communities were only adjusted to allow for inflation and 80 p.c of the change in the number of young people under the age of 18. Under the Lambermont Agreement, these VAT resources were increased sharply by the allocation of flat-rate amounts of 198 million euro in 2002, 149 million euro in 2003 and 2004, 372 million euro in 2005, 124 million euro in 2006 and 25 million euro in the period from 2007 to 2011. In addition, from 2007 onwards the total VAT resources will be 91 p.c. linked to the real growth in gross national income.

CHART 5 IMPACT OF THE LAMBERMONT AGREEMENT ON THE RESOURCES ALLOCATED (1)

(Percentages of GDP)



Sources : State revenue and resources budget, NAI, NBB.

(1) Personal income tax (disregarding the effect of the transfer of new regional taxes from 2002) and VAT.

Under the Finance Act, the personal income tax and VAT resources allocated to the communities and regions during the transitional period from 1989 to 1999 tended to increase in relation to GDP. Without the Lambermont Agreement, the opposite would have happened from 2000 onwards. As a result of the agreement, the share of the communities and regions in government revenues will have increased by 0.6 p.c. of GDP by 2010. As a result, the funds transferred to the communities and regions will be closely aligned with GDP growth, though without exceeding it.

2.2.2 Growth of resources in the form of personal income tax

First, this section explains the reason for the large increase in the proportion of personal income tax revenues allocated to the communities and regions. Next follows a detailed examination of the variations in growth rates between the different entities.

2.2.2.1 The communities and regions as a whole

Part of the personal income tax revenues collected in Belgium is transferred to the regions and, to a lesser extent, to the communities to finance their powers other than education. (1) The amount allocated to the communities and regions in the form of personal income tax came to roughly 30 p.c. more than the VAT resources transferred in 2003.

During 1990-2003, these funds increased in real terms by an average of 5.3 p.c. per annum. For the proportion of the personal income tax revenues allocated, the Finance Act 1989 distinguishes between the transitional period – from 1989 to 1999 – and the final period commencing in 2000. The average real growth of 5.3 p.c. during 1991-2003 is the outcome of an extremely strong 6.8 p.c. rise in the transitional period and a far more modest growth rate of 2 p.c. from 2000 onwards.

(1) Since 2002, as a result of the Lambermont Agreement, the Community Commissions and municipalities in the Brussels Capital Region have also received a small part of the personal income tax (around 50 million euro per annum).

During the transitional period, it was primarily two mechanisms, the "annual instalments" and "bonuses", that accounted for the strong rise in the transfers in the form of personal income tax.[1]

The communities and regions did not receive immediately each year the full amount that the federal authority had to transfer to them for the new powers. However, the largest part of this amount still owing was paid later in the form of annual instalments calculated for a period of 9 to 10 years. The entities therefore received in year t+1 a first annual instalment which related to year t; in year t+2 they received the second annual instalment for year t and the first for year t+1, etc. Thus, the gradual accumulation of the various annual instalments in the 1990s resulted in a rapid growth rate.

Under the Finance Act 1989, the allocation of the resources between the various entities was changed: there was a gradual switch away from the formula existing up to 1988, which was replaced by the relative contributions of the entities to personal income tax revenues.[2] During the transitional period, two techniques were applied here.

1. For some of the powers, at the end of the transitional period the budget resources granted to each region in proportion to the personal income tax collected in their own territory must be equal to the average for the regions as a whole. To attenuate the effect of that criterion – because the relatively poor entities thus lose resources, while the richer ones gain – the Finance Act provides for a solidarity allowance in favour of the regions where the personal income tax paid per capita is below the average. During the transitional period, this technique only changes the allocation of the resources among the three regions; it has no impact on the overall resources transferred to the entities by the federal authority, and therefore does not affect their growth rate.

2. In contrast, for some of the other powers the resources allocated to each entity in proportion to the personal income tax collected on its territory are gradually linked to the highest percentage calculated for the various entities. This technique prevents any reduction in the resources for the poorer entities, and only increases the allocation to the richer entities. This gradual allocation of "bonuses" during the transitional period implied additional funding from the federal government and therefore represents the main reason why the resources transferred in the 1990s increased so rapidly.

Since the start of the final period in 2000, the calculation of the personal income tax allocated to the communities and regions has been simpler. For the entities as a whole, the real growth rate is determined mainly by the rise in real gross national income[3] and by the changes (at constant prices) in the total amount of the solidarity allowance.[4] These changes occur if there are variations in the trend in personal income tax paid per capita in the respective regions.[5]

From 2000 to 2003 the amount of personal income tax transferred increased in real terms by an average of 2 p.c. per annum. This was due to the fact that gross national income grew by 1.4 p.c. and there was also an increase in the solidarity allowances in favour of the Walloon Region and the Brussels Capital Region. This second factor will be examined in more detail at the end of the next section.

2.2.2.2 Individual entities

For the individual entities, the differences in the growth rate are much larger for the allocated part of the personal income tax revenues than for the VAT resources. Where the regions are concerned, the resources in the form of personal income tax increased between 1990 and 2003 by 6.5 p.c. for the Flemish Region (for regional powers only), against 4.6 p.c. for the Walloon Region and just 3.7 p.c. for the Brussels Capital Region. As regards the communities, the funds increased by 6 p.c. for the Flemish Community (community powers only), exactly double the figure of 3 p.c. for the French Community. To sum up, this means an increase in personal income tax of 6.3 p.c. for the north as opposed to 4 p.c. for the south.

These striking variations are due to the Finance Act 1989 which stipulates that the allocation between the different entities of the allocated part of the personal income tax revenues must take account of the personal income tax

(1) During the initial years of the transitional period, the growth rate was also speeded up by the fact that the revenues intended for the regions were only released progressively as the regions actually took over the powers assigned to them (capital spending). However, this factor is of minor importance since the period considered by this article does not begin until 1990.

(2) The allocation formula applicable up to 1988 was based on the population, the land area and the personal income tax in each entity.

(3) Since the Lambermont Agreement, the calculation has become somewhat more complicated. First, the funding is linked to the real growth in gross national income and to the national consumer price index, but after that it is reduced by what is called the "negative term". However, the latter increases by only 91 p.c. of the real growth in gross national income, so that – on balance – the growth rate of the personal income tax transferred slightly outpaces that of gross national income.

(4) Each year the increase in the funding allocated is also influenced by adjustments relating to the amounts due in the previous year, because the final parameters may differ from the provisional figures.

(5) During the transitional period, the solidarity allowance had no influence on the funds allocated as a whole. In contrast, during the final period every change affects the amount of the total funds allocated.

collected in each territory,[1] but with the proviso that this principle of a "fair return" is moderated by the granting of a solidarity allowance to the regions with a weaker economy.

The technique whereby this principle is reflected in the figures is rather complicated. However, the mechanism explaining the differences in growth between the entities can be illustrated on the basis of two findings.

First, in 1989 – the first year in which the new funding system applied – there were large differences between the various entities in the funds allocated on the basis of the former federal credits, expressed as a percentage of the personal income tax collected in each entity. As already stated, under the Finance Act it was decided that these percentages would be progressively aligned – at least in respect of part of the funds allocated – with the highest percentage calculated for the various entities[2]. For the relevant part of the resources intended for the regional powers, the 1989 figures were 15.8 p.c. for the Brussels Capital Region, 19.1 p.c. for the Flemish Region and 28.5 p.c. for the Walloon Region. As regards the funds allocated for community powers other than education, the figures were 12.4 p.c. for the Flemish Community and 15.4 p.c. for the French Community.

In practice, this meant that, in 1989, for powers other than education, an amount based on the former federal credits was allocated to the French Community; expressed in relation to the personal income tax collected in that entity, this came to 15.4 p.c. The corresponding figure for the Flemish Community was only 12.4 p.c. At the end of the transitional period, all other things being equal, it was necessary to increase this figure to 15.4 p.c. in all entities so that supplementary resources – "bonuses" – were granted to the Flemish Community during the 1990s. The mechanism was the same for the regional powers concerned. Therefore, the fact that, in 1989, for some of the powers, the funds granted were relatively modest in the Flemish Community and the Brussels Capital Region in relation to the personal income tax collected, led to the progressive allocation of supplementary funds to these entities; this was one reason for the relatively steep rise in their revenues.

Second, the principle of linking most of the budget resources allocated to the proceeds of personal income tax gave rise to different growth rates in each entity, not only because of the "bonuses" mentioned above and relating to the 1989 allocation, but also because personal income tax revenues have grown at different rates in the three regions. During the period considered, between 1990 and 2003, the real annual growth in the proceeds of personal income tax came to 3.6 p.c. in the Flemish Region, compared to 2.7 p.c. in the Walloon Region and barely 1 p.c. in the Brussels Capital Region[3]. This divergence in economic development over this period is another reason for the relatively strong rise in the share of the proceeds from personal income tax allocated to the Flemish Community.

For the Brussels Capital Region, the reason for the increase in the resources allocated is more complex. On the one hand, the funds allocated to this region in 1989 were relatively meagre in relation to the proceeds from personal income tax, and the Brussels Capital Region – like the Flemish Community – therefore qualified for the gradual allocation of "bonuses". However, their favourable effect was more than offset by the very weak growth in personal income tax per capita in this region during the 1990s.

As already stated, the impact of the proceeds of personal income tax on the resources allocated is attenuated by the granting of a solidarity allowance, where appropriate. The Finance Act provides for such an allowance to be granted once there is a negative difference, for a particular region, between personal income tax per capita and that same variable for the country as a whole. The amount of this allowance is fixed according to the size of that difference.[4]

In the case of the Walloon Region, this applied each year: the negative deviation of 9.4 p.c. recorded in 1990 for personal income tax increased to 11.5 p.c. in 1993, a level which was more or less maintained until the end of the 1990s, before increasing to 13.9 p.c. in 2003[5]. In the Brussels Capital Region, the relative decline in personal income tax collected per capita was substantial. While the level of personal income tax per capita was still 12 p.c. above the national average in 1990 (compared to only 3 p.c. in Flanders), this positive difference declined steadily, and was converted to a negative difference from 1997, reaching 6.4 p.c. in 2003. Since 1997 the Brussels Capital Region has therefore qualified for an increasing solidarity allowance.

(1) For the purpose of determining the formula for allocation between the communities, 80 p.c. of the personal income tax collected in the Brussels Capital Region is attributed to the French Community and 20 p.c. to the Flemish Community.

(2) For the regional powers, this concerned the second and third parts of the funding, relating to the former credits for the Municipal and Provincial Fund and the former allowances. For the community powers, it concerned the powers other than education.

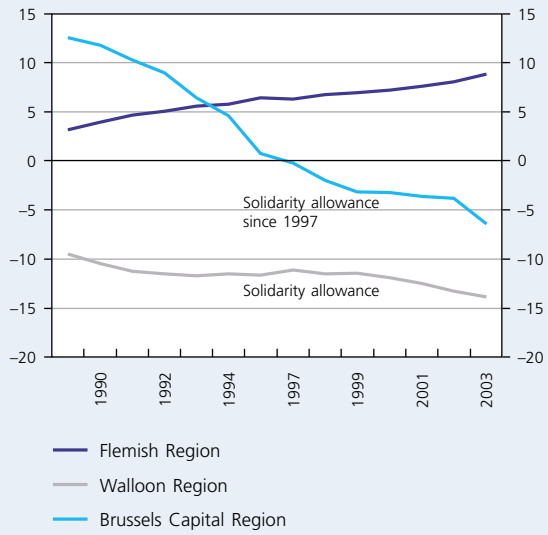
(3) These differences in growth rates have little connection with demographic trends – in the Brussels Capital Region the rise of 0.1 p.c. on average is nonetheless slightly below the figure of 0.3 p.c. seen in the rest of the country – but they do to a large extent reflect the divergences in personal income tax per capita.

(4) The basic amount of the solidarity allowance, expressed in 1988 francs, comes to 468 francs (11.60 euro) per head and per percentage point of difference between the region and the country as regards the proceeds of personal income tax per capita. This amount is adjusted each year in line with the national consumer price index.

(5) The figures stated are the percentages used to calculate the funding in any particular year, but they relate to the latest available statistics, namely those for the preceding tax year.

CHART 6 PERSONAL INCOME TAX PROCEEDS PER CAPITA

(Percentage deviation from the national average)



Sources : State revenue and resources budget, NBB.

2.3 Own tax revenues

2.3.1 General overview and volume of own tax revenues

The regions exercise their fiscal powers in three ways. First, the Finance Act contains a list of taxes which used to be federal revenues and which are transferred to the regions. Next, the regions can charge additional cents or grant rebates on personal income tax.[1] Finally, the regions have their own tax-raising powers in respect of items not already taxed by another authority.

The taxes transferred to the regions form by far the largest category of own tax revenues, representing 89 p.c. in 2003. In practice, these consist of registration fees, inheritance taxes, motor vehicle duty, road fund tax, withholding tax on income from immovable assets, the "eurovignette" (road haulage toll), gift tax and three minor taxes, namely the tax on amusement machines, the tax on gambling and betting and the tax on the opening of licensed premises. The radio and television licence fee is also part of the taxes transferred. Before 2002, the proceeds from this tax went to the communities; since the Lambermont Agreement, this tax has constituted revenue for the three regions. This change had no impact on the budget because the amount of personal income tax transferred was increased or reduced respectively by the same amount for the communities and regions. The Lambermont Agreement also granted the regions full autonomy over this tax. The three regions have made use of that power : in Flanders and the Brussels Capital Region, the radio and television licence fee has been abolished, and the rates have been lowered in the Walloon Region.

Under the Lambermont Agreement, the volume of these taxes transferred to the regions increased significantly from 2002 onwards. Existing taxes which had not previously been handed over to the regions (motor vehicle taxes) or only in part (41.408 p.c. of the registration fees on transfers of title in return for payment) were from then on handed over in full to the regions. In addition, supplementary regional taxes were transferred to the regions : the road fund tax, the mortgage registration fees and the fees on the division of immovable property, the "eurovignette" and gift tax. Altogether this came to around 2.7 billion euro in supplementary regional taxes ; as already stated, their impact on the budget was neutralised by a reduction in the personal income tax transferred via what is called the "negative term". A number of federal restrictions on regional taxes were also lifted and the regions now have total autonomy over the basis of assessment, the tax rates and the exemptions.[2]

Apart from the taxes transferred, all the regions have also introduced water charges and environmental levies. Finally, they have introduced – for a small amount – other taxes on items not taxed by any other authority. In practice, the main ones are the flat-rate tax payable by heads of households, businesses and self-employed persons and the tax on non-residential buildings in the Brussels Capital Region.

The budgetary importance of the entities' own tax revenues expressed in relation to the Finance Act funds is highly variable. For the Flemish Community, this category of revenues is less important because this entity is both a community and a region.[3] The Walloon Region's own tax revenues represent just over half of the Finance Act funds. In contrast, in the Brussels Capital Region these resources are very important : here, the region's own tax revenues are actually 60 p.c. greater than the allocated portion

(1) The regions have been able to charge additional cents or grant rebates – up to a maximum of 3.25 p.c. from 1 January 2001 and 6.75 p.c. from 1 January 2004 – on the personal income tax proceeds for the region. However, these reductions or increases in tax must not give rise to any reduction in the progressive character of personal income tax, while all forms of unfair tax competition are also excluded.

(2) Although the regions have power to determine the basis of assessment for the withholding tax on incomes from immovable property, they cannot modify federal assessed property incomes. As regards the motor vehicle tax, the road fund tax and the "eurovignette", the exercise of this power is governed by a cooperation agreement to be concluded in advance by the three regions.

(3) The Flemish Community's own tax revenues amount to 75 p.c. of the Finance Act funds made available for regional powers only.

TABLE 2 OWN TAX REVENUES AS A PERCENTAGE OF THE FINANCE ACT FUNDS

(2003)

	Flemish Community	Walloon Region	Brussels Capital Region	p.m. Total (millions of euro)
1. Taxes transferred to the regions	**21.5**	**52.7**	**135.3**	**5,279**
Registration fees	8.3	19.1	67.7	2,088
Inheritance taxes	5.0	11.9	36.4	1,239
Motor vehicle tax	5.2	11.1	18.5	1,151
Road fund tax	1.1	2.0	6.0	248
Withholding tax on income from immovable property	0.9	0.9	2.7	164
Radio and television licence fees	0.0	5.4	0.0	153
Eurovignette (road haulage toll)	0.4	0.6	0.8	82
Gift tax	0.3	0.5	1.0	63
Other	0.3	1.2	2.3	91
2. Water charges and environmental levies	**2.5**	**3.2**	**3.8**	**463**
3. Other levies	**0.3**	**0.8**	**22.7**	**201**
Total	**24.3**	**56.7**	**161.8**	**5,944**

Sources: NAI, NBB.

of personal income tax. These high figures are due to the relatively substantial proceeds from registration fees, inheritance tax, motor vehicle tax and other levies such as the flat-rate regional tax and the tax on non-residential buildings.

2.3.2 Pattern of own tax revenues per region[1]

Taking all the federated entities together, own tax revenues increased by 3.2 p.c. per annum in real terms between 1990 and 2003. However, this increase was not uniform: while the annual average rise was only 2.1 p.c. in Flanders, it came to 3.8 p.c. in Brussels and actually reached 4.5 p.c. in Wallonia. This corresponds to a rise of 2.2 p.c. in the north and 4.3 p.c. in the south. The picture here is therefore the opposite of that presented by the rate of growth of the Finance Act funds.

These variations in the growth pattern of own tax revenues are due to the movement in the various revenue categories. In the Walloon Region, the real growth of the main sub-item, namely taxes transferred to the regions, was much higher – at 3.5 p.c. per annum – than in the other two regions where the increase was around 1.5 p.c. However, in the Brussels Capital Region this weak growth was largely offset by a considerably bigger increase in the other taxes, namely the introduction and raising of the flat-rate regional tax payable by heads of households, enterprises and self-employed persons, and a tax on non-residential buildings. Conversely, water charges and environmental levies made a smaller contribution to the growth of the budget in this region.

The movement in taxes transferred to the regions is examined in more detail below. In this connection, a distinction should be made between the period preceding 2002 and that which followed. Before 2002, the rates of certain minor taxes, such as the tax on gambling and betting, the tax on amusement machines and the withholding tax on incomes from immovable property were modified, but the effect on regional taxes in general was limited. That means that the substantial increase in those taxes as a whole over the period between 1990 and 2001 – when real growth averaged 3.6 p.c. [2] – was largely spontaneous and was due to the expansion of the tax bases in question. Nonetheless, it is clear that this growth varied greatly between the regions: in 2001, the index which stood at 100 in 1990 came to 174 in Flanders, against 149 in the Walloon Region and barely 117 in the Brussels Capital Region.

(1) To determine the movement in own tax revenues per region, the radio and television licence fee charged before 2002 is imputed to the various regions, even though at that time it actually constituted community revenue.

(2) Following adjustment for the effect of the Saint Michel Agreement, namely the decision to allocate the entire proceeds of the radio and television licence fee to the communities from 1993 onwards.

However, from 2002 onwards the regions made significant use of the greater fiscal autonomy granted to them under the Lambermont Agreement. In the Walloon Region, the impact of the tax cuts was relatively small, and in the Brussels Capital Region the effect of the reduction in the rates was entirely offset by the increase in other taxes. In the Flemish Community, on the other hand, the structural reduction came to 0.8 billion euro – or around 40 p.c. of the own tax revenues in 2001 – and 1 billion euro taking account of the non-recurring cut introduced in 2002.

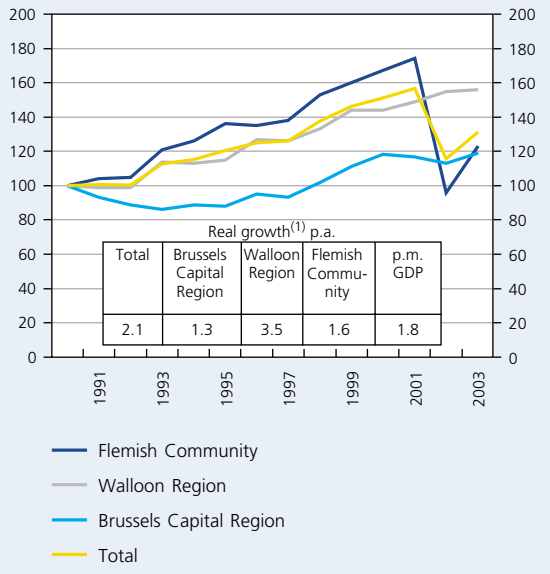
In the Flemish Community, the main measure was the introduction of a zero rate for the radio and television licence fee in 2002, and the reduction in registration fees implemented in the same year[1]. Apart from these structural measures, a non-recurring cut of 62 euro per person was also granted in respect of personal income tax payable on incomes in 2000. In practice, this reduction was implemented via the tax assessments, and its main impact on the budget was felt in 2002 (223 million euro). The budgetary impact was clearly apparent in the figures for the Flemish Community: in 2002, own tax revenues were down by 45 p.c. [2], but in 2003 they increased by 14 p.c., largely because of the absence of the non-recurring flat-rate reduction in personal income tax.

The Brussels Capital Region also introduced a zero rate for the radio and television licence fee in 2002. However, this tax cut was offset by an increase in the flat-rate tax on heads of households, enterprises and self-employed persons and an increase in the tax on non-residential buildings. In 2003, some of the inheritance tax rates were reduced and a preferential rate was introduced for housing. However, this measure was more than offset by a rise in inheritance taxes on bequests to relatives in the collateral line or to unrelated persons. In addition, the registration fees payable were reduced by 5,625 euro – or 7,500 euro in certain districts of the city – but this was partly offset by the abolition of the reduced rates for "modest" housing.

In the Walloon Region, the rates of the radio and television licence fee were reduced from 200 euro to 140 euro in 2003 for television sets and from 29.4 euro to 25 euro for car radios. The flat-rate charge for household waste was also abolished in 2003. An inheritance tax reform was introduced which had no impact on the budget: the first, tax-exempt tranche was increased to 25,000 euro for inheritances worth up to 125,000 euro per person and an adjustment was made for combined households, these measures being offset by an increase in the rate applicable to bequests in the collateral line or to unrelated persons.

CHART 7 TAXES TRANSFERRED TO THE REGIONS

(Indices at constant prices [1], 1990 = 100)



Sources: FOD Financiën, INR, NBB.

(1) Deflated by the national consumer price index.

TABLE 3 OWN TAX REVENUES

(Annual average percentage change at constant prices, 1991-2003) [1]

	Walloon Region	Brussels Capital Region	Flemish Community
Total	4.5	3.8	2.1
Regional taxes transferred	3.5	1.3	1.6
Contribution made by [2]:			
Water charges and environmental levies	0.8	0.3	0.7
Other	0.2	1.7	0.1

Sources: FPS Finance, NAI, NBB.

(1) Deflated by the national consumer price index.

(2) In the case of the water charges and environmental levies and other taxes, the figures are stated in terms of contributions (and not growth rates) since, in 1990, the proceeds came to zero in the majority of cases.

(1) First, the existing rates were cut by around 20 p.c. Next, the registration fees already paid can be taken into account up to a maximum of 12,500 euro, subject to certain conditions, on the purchase of a new home. Finally, for first-time buyers, the first 12,500 euro of the purchase price of a home was granted exemption.

(2) Excluding the supplementary funding made available by the Lambermont Agreement.

TABLE 4 PRINCIPAL RECENT TAX MEASURES

(Millions of euro)

	Flemish Community (2002)	Brussels Capital Region (2002-2003)	Walloon Region (2003)
A. Structural			
Radio and TV licence fee	–455	–63	–19
Registration fees	–367	–11	–
Inheritance tax	–	12	0
Other	–	63	–20
Total	**–822**	**0**	**–39**
B. Non-recurring cut in personal income tax	**–223**	–	–
Total	**–1,045**	**0**	**–39**

Sources : Budgets of the communities and regions, NAI.

2.4 Overall view of the Finance Act funds and own tax revenues

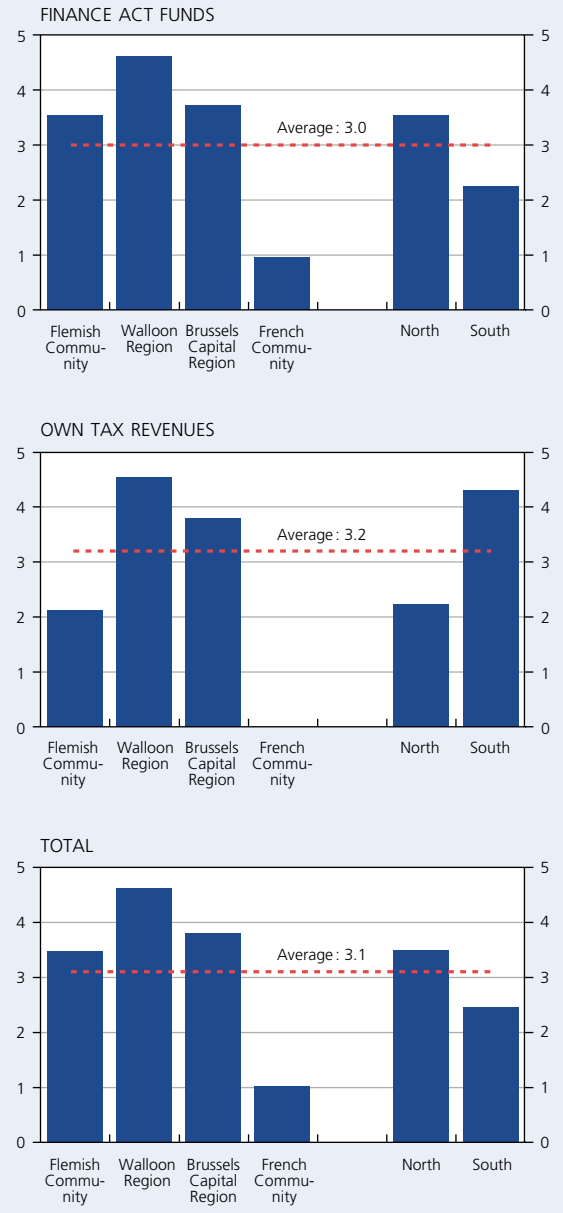
As already demonstrated, the pattern of Finance Act funds and own tax revenues varied between 1990 and 2003 in the different federated entities. The Finance Act mechanism, consisting essentially in a switch to the allocation of resources according to the personal income tax collected, had the effect of generating much stronger growth in these resources in the north of the country, namely 3.6 p.c. in real terms, than in the south (2.2 p.c.). In recent years, this has created scope for a large reduction in own tax revenues in the north of the country while in the south the reforms had to be implemented within a neutral budget framework. The growth of own tax revenues was therefore far more modest in the north of the country (2.2 p.c. in real terms) than in the south (4.3 p.c.). However, even after the tax cuts, the Finance Act funds and own tax revenues together continued to increase, on average, by around one percentage point per annum faster in the north of the country.

2.5 Other revenues

Apart from the Finance Act funds and own tax revenues, the communities and regions also have various other sources of revenue. A significant part comes from transfers from other authorities, excluding the portions allocated to the federated entities out of the proceeds of VAT and the personal income tax allocated.

CHART 8 FINANCE ACT FUNDS AND OWN TAX REVENUES

(Annual average percentage change at constant prices [1] 1991-2003)



Sources : FPS Finance, NAI, NBB.
(1) Deflated by the national consumer price index.

Transfers from the federal government came to 1,137 million euro in 2003[1]. This mainly concerned resources granted to the regions to finance the programmes for getting the unemployed back to work. There is also a subsidy for foreign students in university education. Under the Saint

(1) Some of the grants were specified in the Finance Act, others are made pursuant to an ordinary law or annual budget laws.

Eloi Agreement of 1999, the amount of these two types of resources was substantially increased. Mention must also be made of the grant to the German-speaking Community, where financing is governed by a separate law[1]. Every year, part of the profits from the National Lottery is shared between the communities. The Brussels Capital Region receives a grant to finance initiatives aimed at developing and promoting the international role and function of Brussels. The Joint Community Commission also receives a federal grant. Finally, there is the so-called "dead hand" compensation, which constitutes partial compensation payable to the Brussels Capital Region for the fact that buildings belonging to public institutions are exempt from withholding tax on income from immovable property.

Transfers from local authorities totalled 137 million euro in 2003. This mainly concerned the transfer of powers from the Brussels Conurbation to the Brussels Capital Region. The revenues of the Brussels Conurbation, consisting mainly of taxes, were in fact transferred to the revenue budget of the Brussels Capital Region which takes responsibility for all the expenditure of the conurbation.

A major part of the other revenues consists of the proceeds from the sale of goods and services, such as university enrolment fees.

3. Expenditure

The primary expenditure of the communities and regions increased on average by 1.8 p.c. per annum in real terms between 1994 and 2003[2]. In 2003, the Flemish Community accounted for 56 p.c. of this expenditure, the French Community 21 p.c., the Walloon Region 16 p.c. and the Brussels Capital Region 6 p.c.

However, the increase in expenditure was not uniform in the various communities and regions. While the rise was very modest – just 0.3 p.c. in real terms – in the French Community between 1994 and 2003, the growth rate fluctuated between 2.1 and 2.6 in the other federated entities. This was undoubtedly related to the far weaker increase in revenues in the French Community. To sum up, since 1994 expenditure has clearly increased faster in the north, with a growth rate of 2.1 p.c. per annum, than in the south where the rise was only 1.4 p.c.

The volatility of expenditure growth measured by the standard deviation is greatest in the Walloon Region and in the Brussels Capital Region, which can be regarded as genuine regions. This is probably due to the specific character of their expenditure, a substantial part of which consists of investments, subsidies, capital transfers, etc. The French Community has the lowest volatility, the reason being that much of its expenditure consists of education spending, comprising mainly wage costs. The Flemish community, which exercises both community and regional powers, comes very close behind it.

TABLE 5 PRIMARY EXPENDITURE OF THE COMMUNITIES AND REGIONS

(1995-2003, annual average percentage change at constant prices, unless otherwise stated) (1)

	Percentage share (2)	Expenditure growth (3)	p.m. Standard deviation
Communities and regions	–	**1.8**	**1.9**
of which :			
Flemish Community	56	2.1	2.2
French Community	21	0.3	1.6
Walloon Region	16	2.3	5.2
Brussels Capital Region	6	2.6	6.0
North	**57**	**2.1**	**2.2**
South	**43**	**1.4**	**2.3**

Sources : NAI, NBB.
(1) Deflated by the national consumer price index.
(2) In 2003.
(3) Adjusted for the main non-recurring factors.

4. Movement in balances and debt

4.1 Movement in the balances of the communities and regions

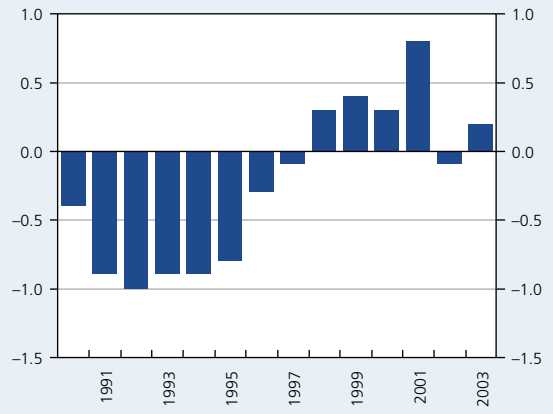
The balance for the communities and regions as a whole increased from a deficit of between 0.4 and 1 p.c. of GDP in the early 1990s to a surplus of 0.2 p.c. of GDP in 2003.

There were two phases here. At the end of the transitional phase of the Finance Act, in 1999, the surplus stood at 0.4 p.c. of GDP. The improvement in the balance was due to the strong growth of revenues, which increased by an average of 4.3 p.c. per annum in real terms between 1990 and 1999, whereas expenditure increased by 3.1 p.c. In contrast, after 2000, in the final phase of the Finance

(1) Law of 31 December 1984 reforming the institutions of the German-speaking Community.
(2) Since 1989 the National Accounts Institute has published the accounts for the communities and regions as a whole. Accurate figures for the individual communities and regions have only been available since 1994.

CHART 9 FINANCING REQUIREMENT (–) OR CAPACITY OF THE COMMUNITIES AND REGIONS

(Percentages of GDP)



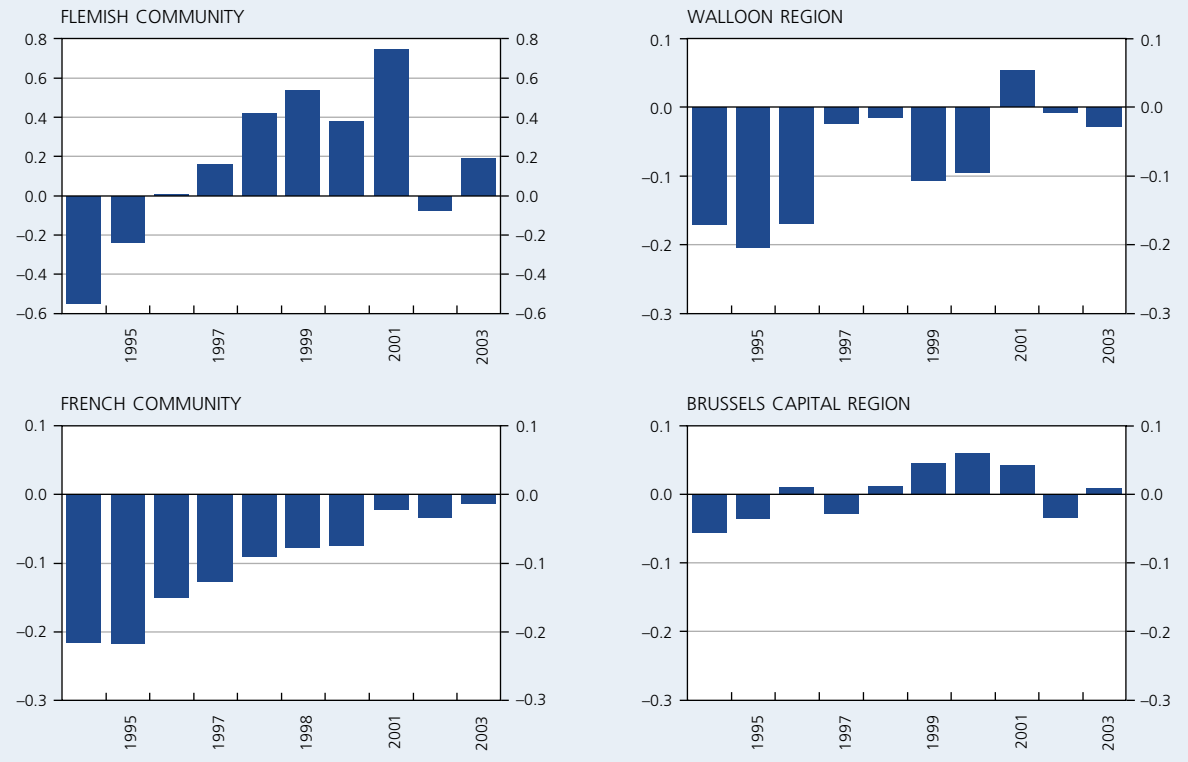
Source : NAI.

Act, the average annual growth of revenues in real terms dropped to 1.4 p.c., owing to the smaller rise in funds transferred under the Finance Act and to tax cuts applied by certain regions. Since the real expenditure growth during this period, although declining, was still 2.3 p.c., the surplus was reduced to 0.2 p.c. of GDP in 2003.

All the communities and regions succeeded in achieving a gradual improvement in their balance. The Flemish Community, which was still showing a deficit of 0.6 p.c. of GDP in 1994, recorded a budget surplus from 1996 onwards which actually came to 0.7 p.c. of GDP in 2001. Subsequently, the surplus declined to 0.2 p.c. of GDP in 2003. The French Community managed to eliminate almost the whole of its deficit, which came to just over 0.2 p.c. of GDP in 1994, so that in 2003 it recorded only a very small deficit. Much the same happened in the Walloon Region : the deficit of just under 0.2 p.c. of GDP in 1994 was subsequently cut significantly. By 2003 the Walloon Region was showing only a small deficit. Finally,

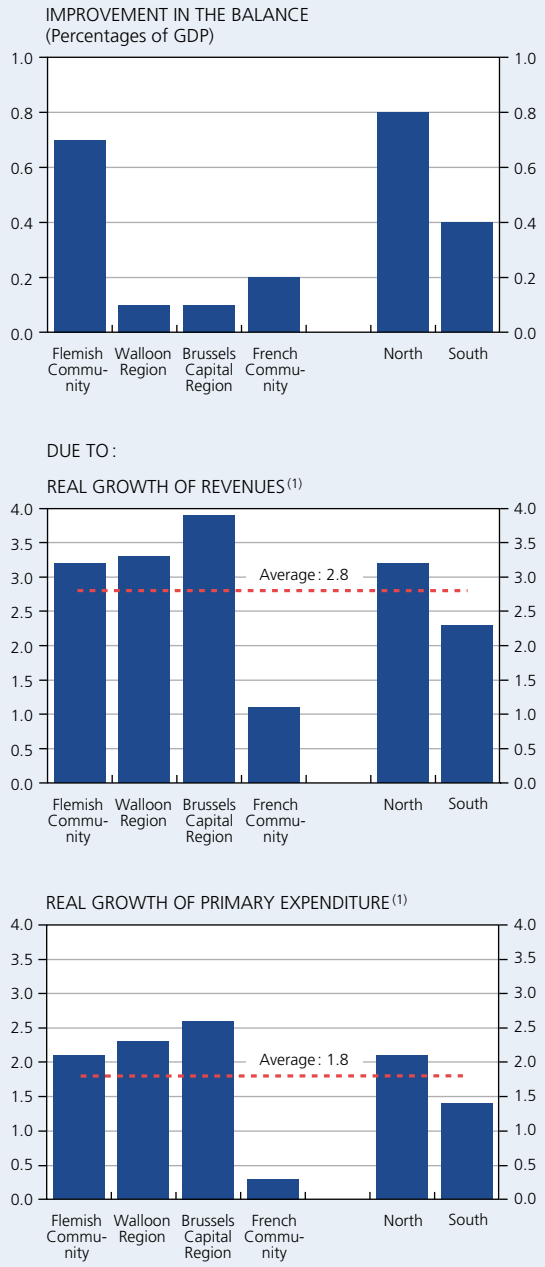
CHART 10 FINANCING REQUIREMENT (–) OR CAPACITY OF THE COMMUNITIES AND REGIONS

(Percentages of GDP)



Source : NAI.

CHART 11 MOVEMENT IN THE BALANCES, 1994-2003



Sources : NAI, NBB.
(1) Deflated by the national consumer price index.

the Brussels Capital Region succeeded in converting its deficit into a surplus, which reached a peak in 2000. A small surplus was recorded in 2003.

The gradual improvement in the balances is due to the fact that revenues grew faster than expenditure. For the communities and regions as a whole, revenues increased by an average of 2.8 p.c. per annum between 1994 and 2003, whereas primary expenditure grew by 1.8 p.c.

In the Flemish community, the Walloon Region and the Brussels Capital Region, the real growth of revenue and primary expenditure was higher than average. In contrast, during this period, the French Community saw only a slow increase in its revenues, and the real growth of primary expenditure averaged only 0.3 p.c.

In the north, the real increase in revenues came to 3.2 p.c. between 1994 and 2003, despite the tax cuts introduced at the end of this period. This relatively favourable trend in resources during that period provided scope for relatively rapid real growth of primary expenditure, at 2.1 p.c., and also led to a relatively substantial improvement in the balance, amounting to 0.8 p.c. of GDP. In the south, where real revenues grew by 2.3 p.c., the improvement in the balance of 0.4 p.c. of GDP was only possible because the real growth of primary expenditure came to just 1.4 p.c.

4.2 Budget coordination between the federal government and the communities and regions

In a federal state, it is logical that each entity contributes towards the attainment of the budget targets applicable to general government. In view of this need for budget coordination, the "Government Financing Requirements" unit was created by the Finance Act within the High Council of Finance. Every year, this unit issues an opinion formulating recommendations both for general government and for each of the communities and regions.

On the basis of these opinions, budget targets were fixed until 2005 under the cooperation agreement of 15 December 2000 (1). The basic philosophy behind these targets is that all the entities must at least achieve a balanced budget by 2010 at the latest. (2) For the Flemish Community, that entails a gradual reduction in its surplus. The other entities which were still recording deficits must eliminate them.

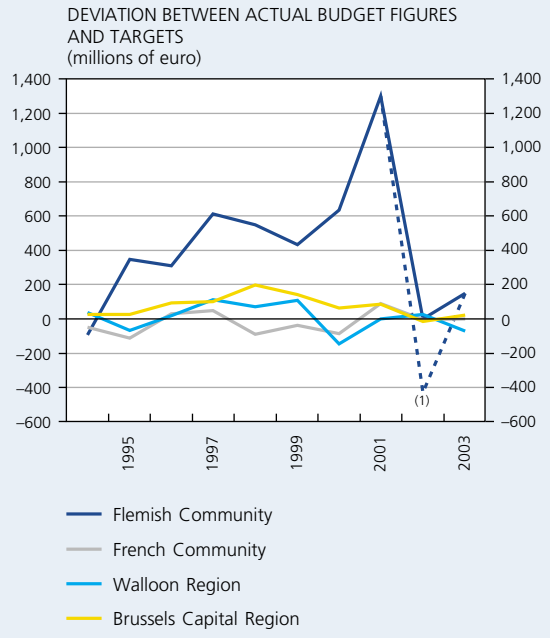
To check whether the communities and regions have met the targets set in the successive cooperation agreements, the targets are compared with the budget balances determined subsequently, as calculated by the High Council of Finance. (3)

(1) The cooperation agreement of 15 December 2000 was subsequently amended by the decisions of the Consultation Committees of the federal government and the governments of the communities and regions dated 21 March 2002, 22 September 2003 and 16 December 2003. These adjustments were mainly of a technical nature.

(2) For the regions, a small surplus is recommended, equivalent to the amount spent on loans and participating interests.

(3) The definitions used for this purpose by the High Council of Finance up to 2001 are different from the ESA balances as calculated by the National Accounts Institute and used in the other tables.

CHART 12 ATTAINMENT OF THE AGREED BUDGET TARGETS



AVERAGE DEVIATION 1994-2003

	In millions of euro	In p.c. of revenues
Flemish Community	381.7	2.4
French Community	–20.0	–0.4
Walloon Region	9.8	0.3
Brussels Capital Region	75.3	5.2

Sources : HCF, NBB.
(1) Taking account of the balances of all the institutions which, according to the ESA, should be consolidated with general government.

Between 1994 and 2001 the Flemish community systematically beat the target – sometimes by a substantial margin. However, the picture is less clear-cut for 2002. Under the agreement of 21 March 2002 between the federal government and the communities and regions, it had been decided that the examination of the actual budgets would in future be based on the ESA methodology. For 2002, a transitional system taking account of the balances of certain institutions which, under the ESA, are consolidated with general government was applied. The balance thus calculated for the Flemish Community conformed to the agreed target. However, the agreement also stipulated that the communities and regions should not take decisions causing a deterioration in the balances of the other institutions which are consolidated with general government. Owing partly to the negative balances of those institutions, the negative deviation between the balance of the Flemish Community, according to the ESA, and the target came to 428 million euro in 2002. However, the budget outcome in 2003 was once again better than agreed.

Up to the year 2000, the French Community repeatedly failed to achieve the targets. In contrast, in 2001 it outperformed the budget target, while in 2002 and 2003 the targets were more or less exactly met. Although the Walloon Region succeeded in meeting its targets most of the time, a negative deviation in relation to the target was recorded in 2000, for instance, and in 2003. The results for the Brussels Capital Region have been systematically better than the target. The average positive deviation actually totalled 5.2 p.c. of the region's revenues between 1994 and 2003. At the end of this period, i.e. in 2002 and 2003, the balances achieved were very close to the targets.

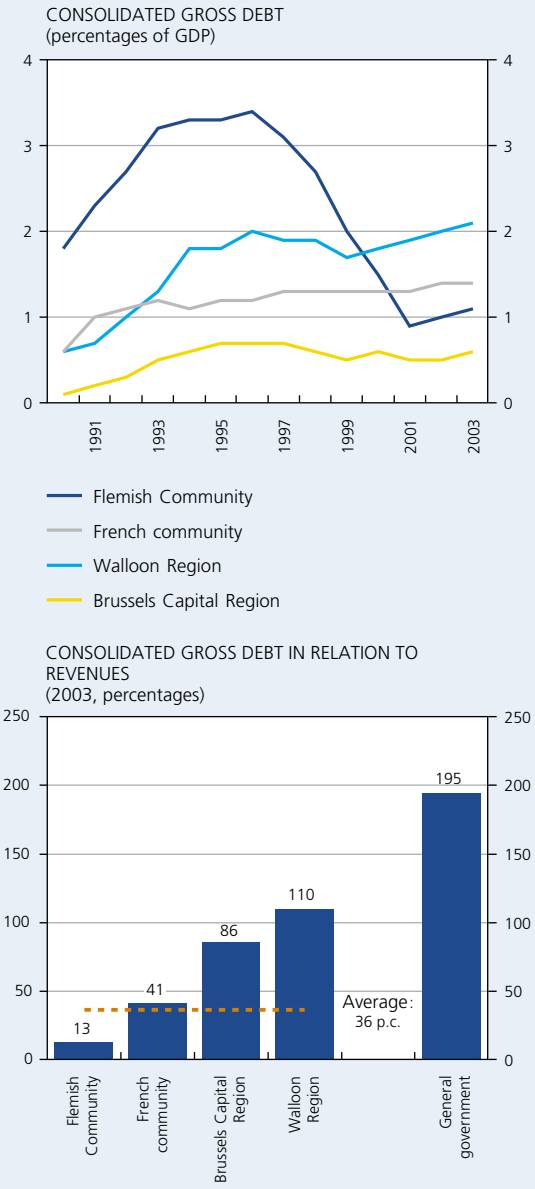
4.3 The debt of the communities and regions

As already stated, the debt of the communities and regions represents only a small part of the general government debt. Having risen from 3.2 p.c. of GDP in 1990 to 7.4 p.c. of GDP in 1996, this debt has since pursued a favourable trend. In 2003 the debt of the communities and regions totalled 5.2 p.c. of GDP.

This downward trend in relation to GDP is attributable to the Flemish Community, which succeeded in reducing its debt, mainly as a result of the surpluses achieved between 1996 and 2001. Its debt therefore declined from 3.4 p.c. of GDP in 1996 to 1.1 p.c. of GDP in 2003. Thus, the debt of the Flemish Community fell below the levels recorded by the French Community (1.4 p.c. of GDP) and the Walloon Region (2.1 p.c. of GDP). The debt of the Brussels Capital Region came to 0.6 p.c. of GDP in 2003.

One way of expressing the relative size of the debt is to consider it in relation to revenues. This reveals large variations in the relative size of the debt between the entities. For the Flemish Community, the debt is very small since this ratio was only 13 p.c. in 2003. For the French Community, too, the ratio is relatively low (41 p.c.). In the Brussels Capital Region the debt is relatively greater : in 2003 the ratio came to 86 p.c. Finally, in the Walloon Region the debt represented 1.1 times the annual revenues in that year. However, all these debt ratios are far lower than the level of 195 p.c. confronting general government – i.e. mainly the federal government.

CHART 13 CONSOLIDATED GROSS DEBT OF THE COMMUNITIES AND REGIONS



Sources : NAI, NBB.

5. Projections

This section contains projections regarding the movement in the revenues of the communities and regions up to 2010. Assuming that all the entities at least achieve a balanced budget in 2010 – in accordance with the targets set by the High Council of Finance[1] – the permissible increase in primary expenditure can be deduced.

5.1 Revenue projections

Such an exercise is only possible on the basis of a whole range of assumptions regarding future developments. The main one concerns the real growth of gross national income averaging 2 p.c. between 2004 and 2010.[2] It is also assumed that the movement in personal income tax will be the same in the three regions. Finally, the calculations are based on the assumption that the rise in own tax revenues and other revenues will correspond to GDP growth[3]. The share of these revenues is particularly substantial in the Brussels Capital Region. However, the possibility of developments deviating from this assumption cannot be ruled out, especially as the regions have greater fiscal autonomy under the Lambermont Agreement. If the movement in the parameters differs from the assumptions, the results will of course also be different. The projections presented here are therefore intended purely as an illustration.

On the basis of these assumptions, the Finance Act funds will increase by an average of 1.8 p.c. per annum during this period. However, the increase varies for the individual entities. For the Flemish Community (1.9 p.c.) and the Brussels Capital Region (2.2 p.c.) this revenue growth will be greater, while it will be less for the French Community (1.5 p.c.) and the Walloon Region (1.6 p.c.).

These divergences are due to various factors. As already stated, the formula for allocating the resources transferred to the communities in respect of VAT will gradually change, all other things being equal, in favour of the Flemish Community and to the detriment of the French Community. For the allocation of the supplementary funding granted under the Lambermont Agreement, there will in fact be a gradual switch to the proceeds of personal income tax.

There is also the effect of the "negative term". This refers to the reduction in the personal income tax transferred to the regions to offset the new tax transfers to the regions since 2002. The change in this negative term is linked to

(1) For the regions, a small surplus is recommended equal to the amount of expenditure in the form of loans and participating interests. For the French Community, allowance is made for the achievement of a surplus of 100 million euro by 2010, as specified in its debt reduction plan (decree of 19 December 2002).

(2) These calculations are also based on the assumption of an average annual increase of 1.75 p.c. in the national consumer price index, and on the population forecasts of the National Statistical Institute and the Federal Planning Bureau. For the number of pupils per community, the ratios were taken as those applicable in 2004. On the basis of the change in the number of pupils over the past decade and the expected demographic trend, however, there is a possibility that the trend in the number of pupils will be slightly more favourable in the French Community than in the Flemish Community.

(3) With the exception of the allowances for getting the unemployed back to work – for which nominal amounts apply – and the allowances for foreign students, which are only adjusted in line with inflation.

TABLE 6 PROJECTIONS FOR PRIMARY EXPENDITURE GROWTH, 2004-2010 : COMMUNITIES AND REGIONS

	Flemish Community	French Community	Walloon Region	Brussels Capital Region	North	South	Total
Change in the balance (percentages of GDP) (1) . .	–0,2	0,1	0,1	0,0	–0,2	0,1	0,0
Real growth of revenue (2) . .	1,9	1,5	1,6	2,0	1,9	1,6	1,8
of which :							
Finance Act funds	1,9	1,5	1,6	2,2	1,9	1,5	1,8
Real growth of primary expenditure (2)	**2,3**	**1,4**	**1,3**	**2,1**	**2,3**	**1,4**	**2,0**

Sources : HCF, NAI, State revenue and resources budget, NBB.
(1) Change necessary to achieve HCF targets for 2010.
(2) Deflated by the national consumer price index (assumption : 1.75 p.c.).

91 p.c. of GNI growth ; the compensation for the radio and television licence fee is only linked to inflation. Since the initial amount of the personal income tax transferred is linked to the real growth of GNI and the inflation rate, and the negative term arrived at by deducting this initial amount increases more slowly, the amount ultimately granted to the federated entities will increase faster than GNI. This effect is particularly favourable to the Brussels Capital Region ; the reason is that the negative term is relatively large there, since the supplementary taxes transferred to the regions in 2002 were greater there, in relative terms, than in the other regions.

Finally, there is the effect of the solidarity allowance. The Finance Act stipulated that, in real terms, the amount of this allowance depends on the difference in level between the personal income tax paid per capita in each region. Since this projection assumes that the movement in personal income tax will be the same in the three regions, that implies that there will be no increase in the real amount of the solidarity allowance. That is in contrast to the rest of the part of personal income tax allocated, which will increase by slightly more than GNI in real terms. Since, for the Walloon Region, this solidarity allowance represents over a quarter of the revenues provided under the Finance Act, (1) that will substantially reduce the real increase in those revenues.

As a result of all these factors, the Finance Act funds will increase by an average of 1.9 p.c. per annum in the north between 2004 and 2010, while in the south the increase will be only 1.5 p.c..

5.2 Projected growth of primary expenditure

On the basis of the approach adopted, it is possible to deduce that the real growth of primary expenditure for all the communities and regions can average 2 p.c. per annum between 2004 and 2010. That figure corresponds exactly to the assumption made for the growth of GDP at constant prices and the real GNI growth over the same period. In other growth scenarios, too, the increase in expenditure would continue to correspond to the expansion of economic activity.

For the Flemish Community, primary expenditure can grow by 2.3 p.c. in real terms. Since revenue growth will be very slightly less than GDP growth, this relatively strong rise is attributable to the scope available to the Flemish Community for reducing its surplus. For the Brussels Capital Region, primary expenditure can grow by 2.1 p.c. per annum in real terms, corresponding to the expected increase in Finance Act funds. In contrast, for the French Community and the Walloon Region, primary expenditure can grow by only 1.3 and 1.4 p.c. in real terms. This is due to the relatively weak revenue growth of these entities combined with the need for a further reduction in their deficits. To sum up, for the period 2004-2010, real growth of primary expenditure totalling 2.3 p.c. per annum is possible in the north, while in the south the increase will be only 1.4 p.c.

(1) In 2003 the solidarity allowance came to 27 p.c. of the personal income tax transferred to the Walloon Region (after deduction of the negative term). For the Brussels Capital Region, the figure was 17 p.c.

Conclusion

The past decade has seen a systematic improvement in the financing balance of the communities and regions, mainly as a result of the strong revenue growth. During the transitional period which ended in 1999, the special mechanisms provided under the Finance Act contributed towards a very steep increase in the funds allocated in respect of personal income tax. For the communities and regions as a whole, the rise in expenditure equalled that recorded by general government.

As regards the part of personal income tax allocated to the communities and regions, the gradual switch to an allocation formula based on the proceeds of the personal income tax collected in each entity caused the Finance Act funding to rise faster in the north than in the south of the country. This enabled the north to implement substantial tax cuts recently, while the tax reforms introduced in the south of the country had a much smaller impact. Since revenues have grown faster than expenditure over the past ten years in each entity – with expenditure rising by more in the north than in the south of the country – all the communities and regions succeeded in achieving an improvement in their financing balance.

In order to achieve the target of a balanced budget in 2010, set by the High Council of Finance, the increase in expenditure for the communities and regions as a whole must not outpace GDP growth. The permissible expenditure growth will probably not be the same for each individual entity. In the north, expenditure can increase by slightly more than in the south, partly because the north has scope for gradually reducing its surplus, while in the south the deficits – albeit small – need to be eliminated.

Trend in the financial structure and results of firms in 2003

David Vivet

Introduction

Every year, in the fourth quarter's 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 taking place 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 annexes to the annual accounts. This year, a further addition is being made: for the first time, the results of an internal business failure prediction model are presented. By detecting the financial risks at an early stage, this model sheds new light on the true financial position of Belgian firms.

This article is in three sections. Section 1 describes the methodology and sample used. Section 2 presents an extrapolation of the trend in the main profit and loss account items. Finally, section 3 contains a financial analysis of Belgian corporations; that analysis is supplemented by the interpretation of the results of the failure model.

1. Methodology and constant sample

1.1 Characteristics of the data used and construction of the constant sample

Since the end of the 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. However, each year the nature of the data available for the last financial year examined, in the present case 2003, raises two methodological questions.

First, the population of annual accounts relating to 2003 is incomplete. The reason for this situation is that many sets of annual accounts are filed late or do not pass the arithmetical and logical checks carried out by the Central Balance Sheet Office. For example, as regards the year 2002, the proportion of accounts not filed or not capable of inclusion in the analysis by 31 August 2003 totalled 28 p.c.,[1] or almost 75,000 sets of accounts. Since these problems mainly concern small firms, these missing accounts represented 12 p.c. of the value added of all non-financial corporations: a small proportion, but nonetheless significant.[2]

(1) P.m.: by 31 December 2003, this figure had fallen to 5 p.c.

(2) It is also necessary to note that, each year, a number of firms fail to file annual accounts despite the statutory obligation. The percentages given inevitably disregard those firms.

TABLE 1 FINANCIAL PROFILE OF FIRMS ACCORDING TO THE TIME TAKEN TO FILE THEIR ANNUAL ACCOUNTS [1]

(2002, medians)

	Annual accounts filed before 31 August 2003	Annual accounts filed after 31 August 2003
Liquidity in the broad sense	1.22	1.11
Degree of financial independence	30.62	23.23
Return on equity	5.37	4.44

Source : NBB.

(1) The financial ratios are defined in Annex 2. Their implications are also explained in section 3 of the article.

Second, the firms whose annual accounts are available late are in a structurally less favourable situation than the others. For the 2002 financial year, table 1 demonstrates the significant differences between firms according to the time of filing their annual accounts : firms which filed their accounts after 31 August 2003 are significantly less liquid, less solvent and less profitable. [1] In all probability, the data currently available for 2003 therefore present an over-optimistic view of reality.

Being subject to this double bias, the 2003 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 2002-2003 consists of firms which filed annual accounts for both 2002 and 2003, and which 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 the 2002 financial year were filed before 31 August 2003 ;
- the annual accounts relating to the 2003 financial year were filed before 31 August 2004.

The method consists in extrapolating the 2003 results on the basis of the trends found in the constant sample : the 2003 figures are obtained by taking the final figures for 2002 and applying the rates of change recorded in the sample. It is therefore assumed that the trends seen in the constant sample are representative of the trends occurring in the population as a whole. As verified in previous editions of the article, the estimates may be called satisfactory in that, in the vast majority of cases, they provide an accurate representation of the direction and scale of the real movements.

1.2 Classification of the firms by size and branch of activity

Non-financial corporations form a heterogeneous population within which widely divergent trends may be recorded. The tendencies detected by the 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 usually varies according to whether the firm is large or small. Also, firms are subject to cyclical movements specific to each branch of activity, and these are generally reflected in the movement in the 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 exceeding more than one of the following limits :
  - annual average number of employees : 50 ;
  - annual turnover excluding VAT : € 6,250,000 ;
  - balance sheet total : € 3,125,000. [2]

Firms which do not exceed these criteria, i.e. SMEs, can draw up their annual accounts in an abbreviated 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 the accounts not only of large firms but also of a significant number of SMEs. For example, in 2002, of the 16,000 sets of full-format accounts filed, there were thus almost 7,500 sets of accounts relating to SMEs, i.e. 47 p.c. 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 filed but on strict compliance with the Companies Code criteria. SMEs filing full-format accounts are thus no longer included in the population of large firms, but are placed in the SME category. [3]

The distinction according to the branch of activity is based on the NACE-BEL nomenclature of activities, used in most of the statistics comprising a branch breakdown in Belgium. The composition of the branches of activity considered is shown in Annex 1.

(1) The time taken to file the annual accounts is also one of the explanatory variables used in the failure prediction model presented below : the greater a firm's delay in filing its annual accounts, the higher the risk of failure estimated by the model.

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

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

1.3 Representativeness of the constant sample

The constant sample for 2002-2003 is shown in table 2. It contains 134,493 firms, or 57 p.c. of the total number of sets of annual accounts filed in 2002. As in previous years, the level of representativeness measured in relation to the balance sheet total was considerably higher, being close to 81 p.c. The reason is that the representativeness is traditionally greater for large firms than for SMEs. In the sample for 2002-2003, the cover rate for large firms is thus over 17.5 points in terms of the number of firms and 22.3 points in terms of balance sheet total. Large firms in fact have a natural tendency to submit their annual accounts more promptly; in addition, they are the focus of special attention on the part of the Central Balance Sheet Office, which makes sure that it obtains a high level of representativeness as quickly as possible in terms of value added. Moreover, essentially owing to the predominance of large firms, manufacturing industry has a higher cover rate than non-manufacturing branches. Finally, the representativeness of the constant sample has increased noticeably in the past two years. This improvement is due to the provisions of the programme law of 8 April 2003, which introduced administrative fines for firms which were late in filing their annual accounts. Those fines came into force with effect from annual accounts for the year ending 31 December 2002, and have had a clear impact on the promptness with which accounts are filed.

TABLE 2 COMPOSITION AND REPRESENTATIVENESS OF THE CONSTANT SAMPLE 2002-2003

	Firms in the 2002-2003 sample	All non-financial corporations in 2002	Representativeness of the sample, in p.c.
Number of firms	**134,493**	**235,880**	**57.0**
Large firms	6,378	8,627	73.9
SMEs	128,115	227,253	56.4
Manufacturing industry	13,596	21,828	62.3
Non-manufacturing branches	120,897	214,052	56.5
Balance sheet total (millions of euro) (1)	**676,713**	**838,213**	**80.7**
Large firms	578,941	682,117	84.9
SMEs	97,772	156,096	62.6
Manufacturing industry	162,337	184,024	88.2
Non-manufacturing branches	514,376	654,189	78.6

Source : NBB.

(1) For firms in the constant sample, the balance sheet total taken into account is the 2002 figure.

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

2.1 Cyclical context and movement in the main components of the profit and loss account

In 2003, activity in Belgium once again made hesitant progress, up to the beginning of the second half year. Overall, GDP grew by 1.3 p.c. in real terms, after rises of 0.7 and 0.9 p.c. respectively in 2001 and 2002. This was the longest period of weak growth since the early 1980s. In contrast to the previous year, household spending was a major factor bolstering growth, while the gross fixed capital formation of firms contracted once again. At the same time, the contribution to growth made by net exports of goods and services became negative, owing to the marked acceleration of imports. Compared to the euro area as a whole, Belgium proved relatively resilient; however, both areas recorded similar cyclical profiles, namely virtual stagnation of activity in the first half year and a clear recovery from the third quarter.

In this context, the total value added created by non-financial firms, i.e. the difference between sales revenues and the cost of goods and services supplied by third parties, totalled almost € 130 billion (at current prices) in 2003. Between 2002 and 2003, total value added thus increased by 3.4 p.c., the best result for three years.

The value added created by a firm enables it to cover its operating expenses, with any surplus recorded as a net operating profit. That represents the income generated by the firm's commercial and industrial activity. Staff costs make up the bulk of the operating expenses : in 2003, they represented almost 60 p.c. of value added. Compared to 2002, they have increased at the very modest rate of 1.5 p.c., the smallest rise since 1996. After staff costs, by far the most important operating expenses consist of depreciation, which represented 17.5 p.c. of value added in 2003. Depreciation contracted for the second consecutive year in 2003, reflecting the lower level of investment by firms. Largely owing to the trend in staff costs and depreciation, total operating expenses were therefore practically static, with growth of just 0.4 p.c.

In contrast to previous years, the growth of value added therefore far outpaced the rise in operating costs. Following these contrasting movements, the net operating result of non-financial corporations as a whole grew by almost 23 p.c. to total € 21.2 billion. A rise on that scale had not been seen since 1997. The movements in value added and net operating results can also be compared with the movement in the business survey indicator

TABLE 3 MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

	Percentage changes compared to the previous year					Millions of euro	Percentages of value added
	1999	2000	2001	2002	2003 e	2003 e	2003 e
Value added	**3.9**	**7.6**	**2.1**	**1.5**	**3.4**	**129,716**	**100.0**
Staff costs (–)	5.0	6.0	3.9	3.2	1.5	77,277	59.6
Depreciation, downward value adjustments and provisions (–)	3.6	10.2	5.2	–2.0	–4.3	24,102	18.6
Other operating expenses (–)	–2.7	11.4	7.8	–2.2	5.0	7,175	5.5
Total operating expenses	*4.2*	*7.3*	*4.4*	*1.6*	*0.4*	*108,554*	*83.7*
Net operating result	**2.7**	**8.7**	**–10.6**	**0.7**	**22.6**	**21,162**	**16.3**
Financial income (+)	10.8	38.6	5.4	24.5	6.8	50,041	38.6
Financial charges (–)	6.9	33.1	4.6	38.8	3.1	44,346	34.2
Financial result	*44.2*	*73.7*	*9.4*	*–42.2*	*47.6*	*5,695*	*4.4*
Ordinary result	**7.9**	**19.5**	**–5.8**	**–11.3**	**27.2**	**26,857**	**20.7**
Exceptional result [1] (+)	–	–	–	–	–	3,814	2.9
Net result before tax	**19.7**	**4.3**	**–10.1**	**–26.9**	**66.3**	**30,671**	**23.6**
Taxes on profits (–)	10.4	11.5	–0.2	–4.9	7.3	6,606	5.1
Net result after tax	**22.5**	**2.3**	**–13.1**	**–34.5**	**95.8**	**24,065**	**18.6**

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

(chart 1). These three variables traditionally follow parallel trends. This proved to be the case once again in 2003 : the strong and widespread recovery in business confidence, manifest from the third quarter of 2003 (and sustained in 2004), is linked to the stronger growth of value added and net operating results.

In line with the overall trend during the past decade, financial income grew faster than financial expenses. [1] The financial result therefore increased again to reach almost € 5.7 billion. The exceptional result came to € 3.8 billion, and was generated mainly by substantial gains on fixed assets in the telecommunications sector. Finally, owing to their increased profitability, firms paid more taxes on their profits in 2003, after two years of decline. After aggregation of all the components of the profit and loss account, non-financial corporations made a net profit after tax of € 24 billion, 96 p.c. more than in 2002. If confirmed by the final figures, this almost doubling of profits – though admittedly achieved after two years of steep decline – will represent a historical record.

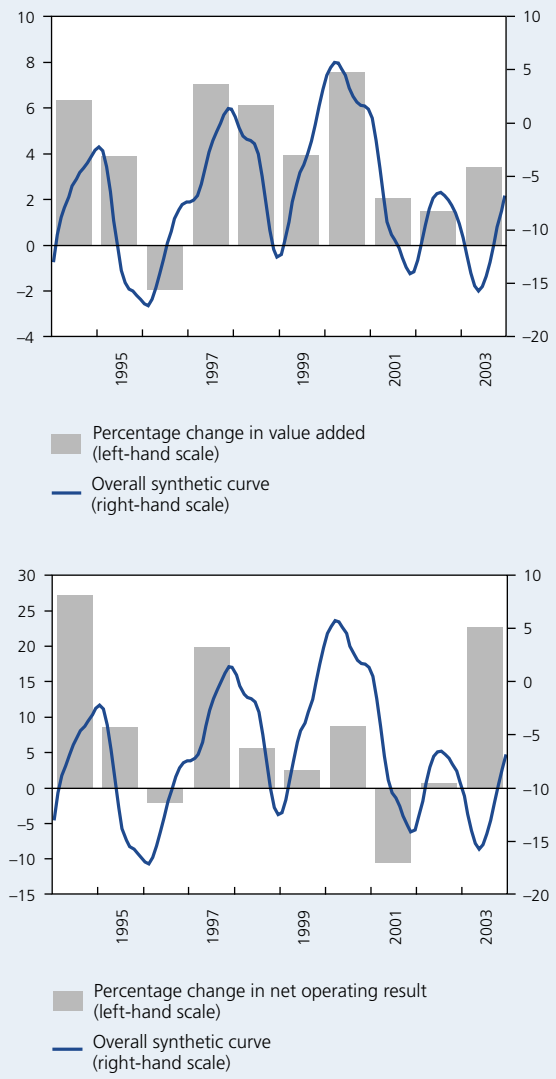
(1) The faster growth of financial income is due mainly to the ever greater proportion of firms' balance sheets represented by financial assets. Financial assets cover financial fixed assets and interest-bearing current assets (including cash investments and liquid resources).

2.2 Results by branch of activity

In manufacturing industry, the growth of value added came to 2.5 p.c. in 2003 (table 4). For the second consecutive year, it fell short of the growth seen in the non-manufacturing branches. This modest growth is due mainly to the euro's appreciation against the dollar, which penalised the export industries, and to the fierce international competition, particularly that from the low-cost countries. The branches hardest hit by this trend were chemicals, where growth was weak, and metal manufactures, where activity contracted once again. The agri-food industry is one of the few branches to have enjoyed significant growth, owing to the buoyancy of retail food sales.

In contrast to value added, the net operating result of manufacturing industry increased strongly, as in 2001, recording 15 p.c. growth. This performance was due mainly to more or less static staff costs, brought about by the job losses and restructuring which affected the majority of branches. To a lesser extent, the weak growth (1.4 p.c.) of depreciation also contributed to the rise in the operating result. Finally, mention should be made of the worrying situation facing the textile industry and the timber industry, two medium-sized manufacturing

CHART 1 VALUE ADDED, NET OPERATING RESULT AND BUSINESS SURVEY INDICATOR



Source : NBB.

branches. Following a further, marked contraction in activity, the year 2003 brought a sharp deterioration in operating results in both these branches. In particular, the textile industry has undergone multiple restructurings in the past two years.

In the non-manufacturing branches, the increase in value added, showing a marked acceleration compared to 2001 and 2002, came to almost 4 p.c. This stronger growth is attributable in part to trade and telecommunications, which benefited from more buoyant household consumption, among other things. Construction also made a contribution here : after stagnating in 2002, the activity of the branch recovered in 2003 following the revival of investment in housing, particularly in the refurbishment sector.

Having contracted in 2002, the operating result of the non-manufacturing branches expanded by over 26 p.c. This was the largest increase for more than ten years. Apart from the growth of value added, the main reason for this rise was the sharp fall in depreciation in a number of branches, including business services, transport, and posts and telecommunications. Overall, the decline in depreciation costs came to over 7 p.c. ; this situation reflects the low level of investment in both 2002 and 2003 (cf. below). The movement in staff costs, where the increase was 2.1 p.c., which was outstripped by the growth of value added, also contributed to the rise in the net operating result. Finally, in a number of branches, namely the wholesale trade, transport, real estate activities and construction, 2003 was synonymous with the restoration of net operating profit growth. Only the hotel and restaurant branch, where the operating result was down for the third consecutive year, failed to recover, owing mainly to the lack of dynamism in its activity.

3. Movement in the 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, in particular, are borrowed. (1)

The financial ratios are presented both in global form and as a median. The globalised ratios are obtained by dividing the sum of the numerators by the sum of the denominators for all firms. 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 – hence – 50 p.c. of firms have a lower ratio. The two measures are complementary as they are used for different purposes. 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 examined, regardless of size. (2)

(1) Since the concepts addressed cannot be explained in detail in this article, the reader is requested, if necessary, to consult the reference works on the subject. For the analysis of the annual accounts in Belgium, see in particular : Institute of Auditors (1994), Lurkin P., Descendre N. and Lievens D. (1990) and Ooghe H. and Van Wymeersch C. (2003).

(2) As a microeconomic measure, the median was preferred to the simple mean. In the analysis of non-financial corporations, the median in fact has the advantage of being more robust than the mean, as it is practically unaffected by incidental fluctuations in a small number of observations.

TABLE 4 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 2003
	2002	2003 e	2002	2003 e	
Manufacturing industry	**1.1**	**2.5**	**15.2**	**15.0**	**33.9**
of which :					
Agricultural and food industries	4.9	5.1	33.8	31.2	4.5
Textiles, clothing and footwear	–0.8	–11.4	1.1	–41.3	1.6
Timber	–20.3	–4.8	–61.6	–77.1	0.4
Paper, publishing and printing	1.1	–0.4	8.5	17.8	2.6
Chemicals	4.3	0.8	33.5	11.5	9.0
Metallurgy and metalworking	2.8	0.2	51.3	51.7	4.5
Metal manufactures	–4.4	–1.3	–2.3	11.4	6.8
Non-manufacturing branches	**1.7**	**3.9**	**–5.2**	**26.5**	**66.1**
of which :					
Retail trade	9.2	8.7	4.2	34.3	8.5
Wholesale trade	–3.1	9.0	–24.9	19.8	12.8
Horeca	5.3	0.9	–3.1	–18.5	1.7
Transport	0.6	3.9	–76.0	3.1	7.4
Posts and telecommunications	4.5	4.7	85.9	59.2	5.3
Real estate activities	4.1	2.9	–3.8	5.9	3.0
Business services	2.7	2.7	11.8	14.5	12.0
Energy and water (1)	–0.6	–17.3	0.9	31.3	3.8
Construction	–0.1	3.2	–10.0	9.8	6.3

Source : NBB.

(1) The large reduction in value added in the energy and water branch in 2003 is due to the electricity sector : under the law of 11 April 2003, the Electrabel and SPE companies in fact transferred to the Synatom company the management of the provisions formed for dismantling nuclear power stations. Since Synatom is part of manufacturing industry and therefore does not belong to the energy and water branch, the reduction in value added associated with that transfer was not directly offset in the branch.

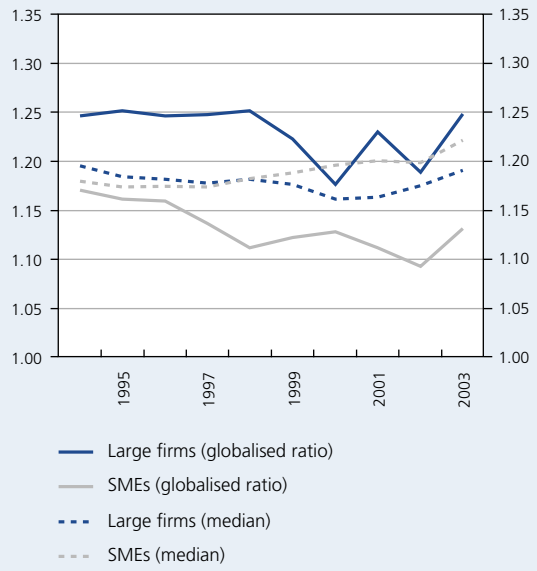
3.1 Liquidity

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

In 2003, the globalised ratio was 1.25 for large firms and 1.13 for SMEs (chart 2). In both categories of firms, after contracting in 2002 liquidity improved in 2003, indicating that the balance sheet maturities were more evenly balanced. The median ratio proved very stable for both categories of firms ; at the very most, it has shown a slight tendency to improve in the past few years. Although the liquidity of Belgian firms is fairly steady according to chart 2, it must be said that 39 p.c. of firms have liquidity which, in the broad sense, is less than 1, i.e. negative net working capital.

The situation of firms with precarious liquidity can be ascertained from an examination of overdue debts to the tax authority and the NSSO, mentioned in the annex to the annual accounts. Delayed payments to these two preferential creditors are in fact frequently synonymous with an acute cash flow crisis for a firm ; they also serve as

CHART 2 LIQUIDITY IN THE BROAD SENSE



Source : NBB.

"warning lights" for the commercial court investigators in their work of detecting firms in difficulty.[1] Overdue debts to the tax authority and the NSSO are also one of the central elements in the model for predicting the failure of firms, presented later on in the article.

In 2003, over 16,500 firms (of which 95 p.c. were SMEs) reported overdue debts to the tax authority and the NSSO, amounting to a total of € 1.1 billion (chart 3). There were varying trends in the debt pattern. On the one hand, the number of firms affected has been falling steadily since 1999. This must be seen as the impact of the prevention measures implemented by the commercial courts in the past few years. On the other hand, the total volume of overdue debts grew substantially in SMEs in 2001 and 2002, as a result of the adverse economic situation. However, that increase gave way to a fall in 2003, as some of the firms concerned managed to recover or – conversely – went out of business. In the case of large firms, the recovery in 2003 was due to just one company, active in passenger transport.

(1) For an exhaustive list of the business failure "warning lights", see De Boitselier J. (2003).

Table 5 shows details of the overdue debts to the tax authority and the NSSO by branch of activity. While the manufacturing branches contain a proportion of firms concerned which is comparable to that in the non-manufacturing branches, the debt level in relation to the balance sheet total is greater in the latter, where SMEs represent a greater percentage of activity. If both criteria are taken into account, the branches most affected in 2003 are construction, the timber industry, hotels and restaurants, trade and transport, while chemicals, energy, real estate and business services were relatively unscathed.

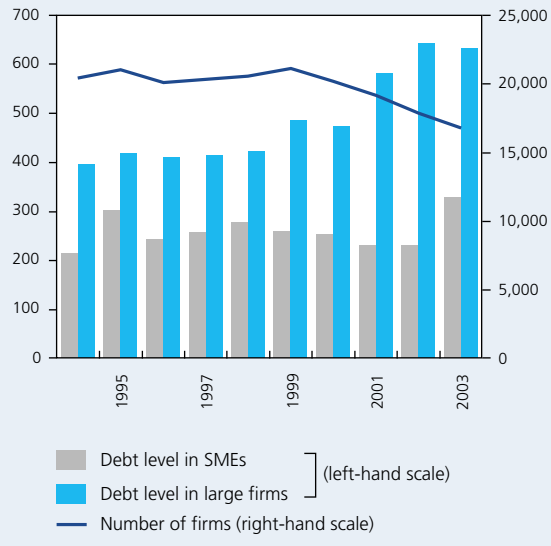
3.2 Solvency

Solvency concerns the ability of firms to honour all their short-term and long-term commitments. This article examines it via 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 do little to depress profits; also, if necessary, new debts can be easily contracted on favourable terms. The degree of financial independence can also be

CHART 3 OVERDUE DEBTS TO THE TAX AUTHORITY AND THE NSSO

(Euro millions, unless otherwise stated)



Source : NBB.

TABLE 5 OVERDUE DEBTS TO THE TAX AUTHORITY AND THE NSSO, BY BRANCH OF ACTIVITY

	Percentage of firms concerned		Debt level as p.c. of the balance sheet total	
	2002	2003	2002	2003
Manufacturing industry	**7.3**	**7.1**	**0.06**	**0.07**
of which :				
Agricultural and food industries	7.0	6.2	0.06	0.08
Textiles, clothing and footwear	6.6	6.0	0.09	0.13
Timber	8.3	8.2	0.23	0.28
Paper, publishing and printing	7.3	7.1	0.12	0.16
Chemicals	5.4	5.4	0.01	0.01
Metallurgy and metalworking	8.1	8.7	0.13	0.17
Metal manufactures	7.6	7.7	0.09	0.09
Non-manufacturing branches	**7.0**	**6.5**	**0.12**	**0.13**
of which :				
Retail trade	8.2	7.9	0.25	0.27
Wholesale trade	6.4	5.8	0.29	0.29
Horeca	11.7	11.3	0.46	0.49
Transport	7.1	7.0	0.18	0.44
Posts and telecommunications	10.7	9.7	0.01	0.00
Real estate activities	3.6	3.0	0.15	0.10
Business services	6.3	5.8	0.03	0.04
Energy and water	8.1	9.0	0.01	0.02
Construction	7.9	7.8	0.38	0.40

Source : NBB.

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.

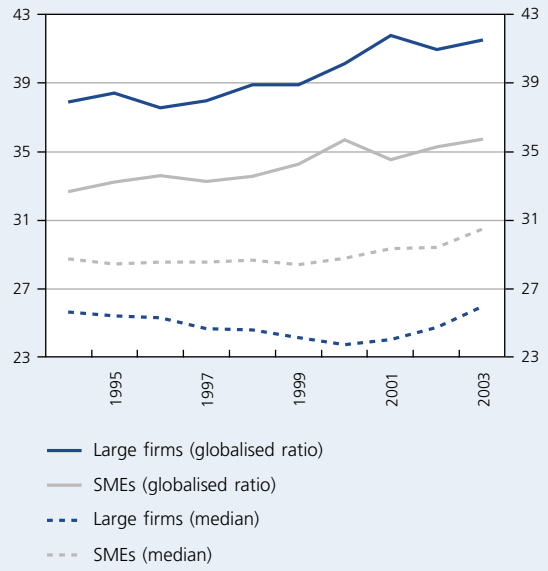
In 2003, globalised financial independence came to 41.5 p.c. for large firms and 35.7 p.c. for SMEs, for which it is traditionally lower (chart 4). In both categories of firms, the ratio followed an upward trend during the last decade, leading to an improvement of around three points. The median ratio also recorded a modest increase in recent years, and this was confirmed in 2003. As in the case of liquidity, the healthy and stable image offered by the globalised ratio and the median ignores the disparities between firms. For example, over 15 p.c. of Belgian companies have negative financial independence, which means that the losses carried forward exceed the capital invested by the shareholders.

The degree of financial independence and its converse, the degree of indebtedness, provide a picture of the general balance sheet equilibrium. Although this picture is necessary in order to diagnose solvency, it is not sufficient in itself since it does not permit assessment of the firm's ability to repay its debts, nor of the level of charges which the debts entail. These two concepts are addressed below.

By measuring the percentage of the 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. [1] The converse of the ratio indicates the number of years which it would take to repay all the debts at a constant cash flow. The information supplied by that ratio supplements that offered by the financial independence ratio, as a high level of indebtedness can be mitigated by a substantial repayment ability, and vice versa.

(1) The English term "cash flow" is commonly used nowadays to mean the net flow of cash generated by the firm, i.e. the difference between incoming revenue and outgoing expenditure. The cash flow, which thus represents the firm's self-financing capability, is of fundamental importance for the firm's development : in particular, the firm can use its cash flow to distribute dividends, repay its debts or finance new investments.

CHART 4 DEGREE OF FINANCIAL INDEPENDENCE
(Percentages)



Source : NBB.

After several years of decline, the globalised cover ratio improved in both large firms and SMEs, reaching 10.7 in the former and 10.3 in the latter in 2003. These levels are still relatively low compared to those recorded at the end of the 1990s : while firms steadily gained more financial independence, the same was not true of their repayment capacity. Table 6 reveals the differences between the branches of activity. While manufacturing industry has heavier debts than the non-manufacturing branches, it is also better able to repay its debts. Taking both criteria into account, the most solvent branches in 2003 were energy & water and chemicals. Some branches also present a contrasting picture, such as posts and telecommunications (low financial independence, high repayment capacity) and business services (high financial independence, low repayment capacity).

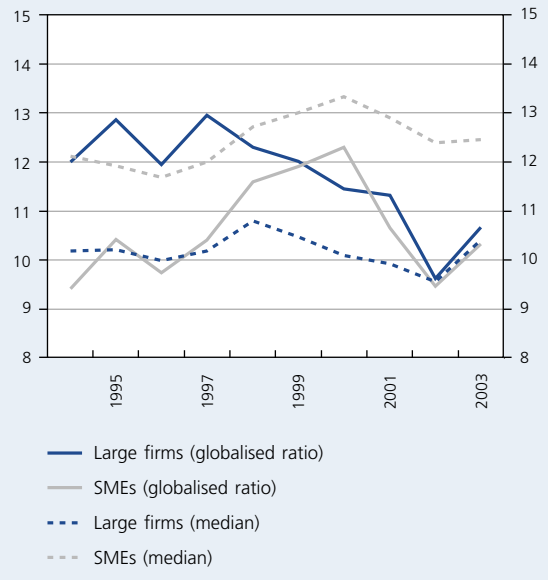
The average interest charges on the financial debts can also be used to assess the cost of recourse to borrowing. In 2003, those charges came to 4.7 p.c. for large firms and 7.5 p.c. for SMEs, in globalised terms (chart 6). For both categories of firms, the downward trend which began in 2002 continued in 2003, following a further fall in market interest rates. Taking a long-term view, debts have become significantly less expensive : between 1994 and 2003, average interest charges fell by 3.1 points for large firms and 2.2 points for SMEs. Furthermore, the interest charges paid by large firms are structurally lower than those for SMEs. In fact, for the same method of financing, SMEs generally have to pay a risk premium because the lenders consider their financial profile to be less sound. In addition, SMEs make more use of cash advances, which are a more expensive form of credit. The difference between the two categories of firms varies little over time, and stood at 2.7 points in 2003.

3.3 Profitability

Profitability concerns the firms' ability to generate profits. It can be assessed, in particular, on the basis of the average net return on a firm's own capital. Also known as the return on equity (ROE), this figure expresses the net profit after tax as a percentage of the equity capital. The ratio therefore indicates the return received by the shareholders after deduction of all expenses and taxes. Over a sufficiently long period, the return on equity has to exceed the return on a risk-free investment in order to provide shareholders with a premium to compensate for the higher risk incurred (risk premium).

In 2003, the globalised return on equity came to 8.1 p.c. for large firms and 3.7 p.c. for SMEs (chart 7). As is evident from the chart, this ratio is somewhat sensitive to the economic situation. Thus, the 1993 recession was followed by

CHART 5 DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW
(Percentages)



Source : NBB.

TABLE 6 DEGREE OF FINANCIAL INDEPENDENCE AND DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW, BY BRANCH OF ACTIVITY

(Percentages)

	Degree of financial independence (1)			Cover ratio (1)		
	2001	2002	2003	2001	2002	2003
Manufacturing industry	**34.7**	**33.1**	**34.9**	**12.9**	**12.2**	**12.9**
of which :						
Agricultural and food industries	31.5	25.4	25.8	7.6	11.0	10.0
Textiles, clothing and footwear	36.1	39.3	39.9	13.1	16.3	8.7
Timber	36.0	33.3	32.7	15.7	11.5	9.1
Paper, publishing and printing	33.4	32.4	31.4	25.6	10.2	17.6
Chemicals	40.8	39.7	47.2	16.2	16.3	18.4
Metallurgy and metalworking	36.8	36.5	35.0	11.5	7.4	9.7
Metal manufactures	28.7	27.2	28.3	11.3	13.0	10.9
Non-manufacturing branches	**42.0**	**41.8**	**42.1**	**10.6**	**8.7**	**9.9**
of which :						
Retail trade	28.9	31.0	29.7	7.8	8.1	7.8
Wholesale trade	31.1	31.4	31.7	7.6	6.8	8.7
Horeca	22.8	22.4	24.6	11.3	8.5	10.1
Transport	31.0	28.5	27.2	7.5	8.2	6.8
Posts and telecommunications	23.9	21.9	32.2	19.3	20.2	33.2
Real estate activities	35.8	35.3	37.2	5.9	5.8	6.7
Business services	53.4	53.5	53.4	10.6	6.1	6.6
Energy and water	56.9	53.3	51.4	31.6	27.4	20.9
Construction	24.7	25.2	26.8	9.7	9.2	10.4

Source : NBB.
(1) Globalisation.

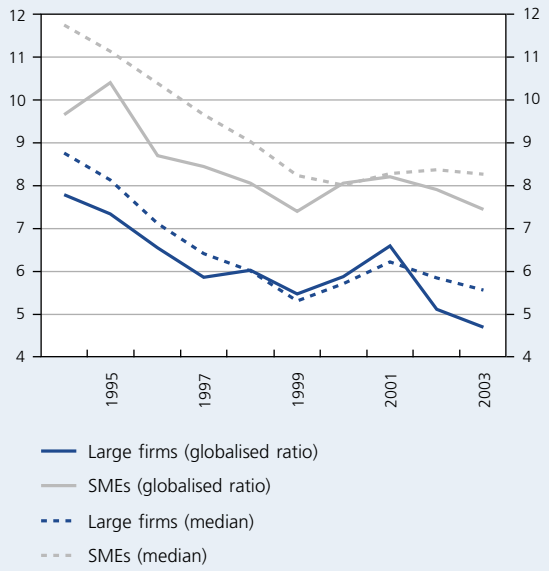
a phase in which profitability improved steadily up to the end of the 1990s. From 2000 to 2002, following the economic slowdown, the ratio was seriously eroded in large firms, and actually collapsed in SMEs where profitability was zero in 2002. In a context of still hesitant economic activity but with a marked recovery from the third quarter, profitability bounced back in 2003. This restored profitability was due mainly to control over operating costs (staff costs and depreciation) and financial expenses.

The globalised profitability of large firms can be compared with the yield available on government bonds. In 2002, for the first time since 1994, the profitability of large firms had fallen below the benchmark bond yield, which has itself been declining throughout the past decade. In 2003, the profits recovery combined with a further fall in the yield on government bonds once again provided shareholders with a substantial risk premium. From the investor's pint of view, an investment in equities therefore became attractive once again. This comparison must, of course, be treated with caution as, for one thing, equities and government bonds are different financial instruments; also many large firms are not listed on the stock market.

Overall, during the past three years the profitability of manufacturing industry exceeded that of the non-manufacturing branches, for both large firms and SMEs (table 7). In 2003, in the case of large firms, the most profitable branches in the Belgian economy were telecommunications, electricity, paper and the agri-food industry. Furthermore, the profitability of the first two branches was sustained at high levels throughout the period of sluggish activity experienced by the Belgian economy. Conversely, in five branches, large firms had negative profitability in 2003, namely in textiles, timber, metallurgy, hotels & restaurants and transport. As regards SMEs, the very poor performance recorded by non-manufacturing branches as a whole in 2002 was due to very heavy losses in telecommunications and business services (especially IT activities and technical consultancy).

CHART 6 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS

(Percentages)



Source : NBB.

have both undergone a sharp correction since then, and in 2003 they reached their lowest level since the mid 1990s.

Firms invest in intangible fixed assets, as well as tangible assets. In this regard, the annex to the annual accounts permits appraisal of the firms' involvement in research and development.[1] Such an appraisal is quite important : it is commonly acknowledged that research and development activities boost the growth potential of firms and hence of the economy as a whole.[2]

In 2003, around 630 non-financial corporations spent money on research and development representing a total of over € 2.2 billion (chart 10). The ten companies investing most heavily in R&D account for three-quarters of that figure. Driven by the pharmaceuticals industry (with an additional contribution from the technology industries), that expenditure grew at a very sustained rate until 2001. After stabilising in 2002, it increased again in 2003. At the same time, the number of firms involved declined once again, as many firms were no longer willing or able to invest in innovation, in view of the economic context of recent years.

3.4 Investment

The amount which firms devote to investment can be assessed by the rate of investment, which is the ratio between acquisitions of tangible fixed assets and the value added for the year. In 2003, the globalised investment rate stood at 19.7 p.c. for large firms and 28.6 p.c. for SMEs (chart 8); these figures are in line with the downward trend of recent years, apparent in most branches of the Belgian economy. After reaching a peak in 2000, the investment rate fell to its lowest level since the mid 1990s. The median ratios also continued to fall : Belgian firms in general experienced a fundamental trend towards lower investment.

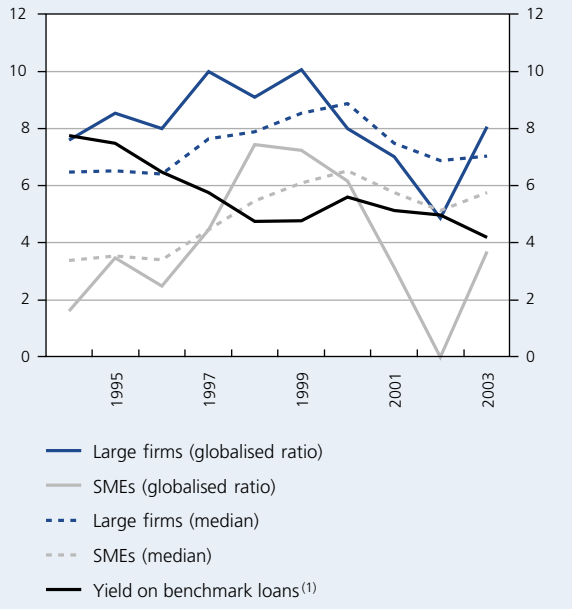
In manufacturing industry, the investment rate can be compared to the capacity utilisation rate, which is in fact one of the fundamental determinants of investment. Chart 9, which shows how the two variables have moved in parallel since 1994, demonstrates the positive link between them. After reaching a peak in 2000, they

(1) The information is available only for firms filing full-format accounts. Research and development costs should be understood as the cost of research, manufacture and development of prototypes, products, inventions and know-how useful in the firm's future activities (Royal Decree of 30 January 2001 implementing the Companies Code, Article 15).

(2) As regards the link between innovation and growth potential, cf. Van Cayseele P., Peeters C., Webers H. and Van Herck J. (2001), who offer an empirical analysis based on the annual accounts of Belgian firms.

CHART 7 RETURN ON EQUITY AND YIELD ON BENCHMARK LOANS

(Percentages)



Source : NBB.

(1) Average yield on 10-year bonds.

TABLE 7 RETURN ON EQUITY AFTER TAX BY BRANCH OF ACTIVITY

(Percentages)

	Large firms (1)			SMEs (1)		
	2001	2002	2003	2001	2002	2003
Manufacturing industry	**6.2**	**6.5**	**9.3**	**3.8**	**2.4**	**4.8**
of which :						
Agricultural and food industries	–0.2	12.6	12.0	3.5	4.3	5.1
Textiles, clothing and footwear	10.2	12.0	–0.7	3.3	0.0	0.0
Timber	11.6	2.4	–14.8	3.2	1.9	3.3
Paper, publishing and printing	38.2	5.4	21.4	2.0	–0.5	2.6
Chemicals	6.5	8.4	9.9	3.2	1.8	8.3
Metallurgy and metalworking	2.9	–7.6	–2.2	6.6	5.6	5.7
Metal manufactures	–1.8	–6.4	6.6	2.7	–1.5	3.1
Non-manufacturing branches	**7.2**	**4.5**	**7.8**	**3.1**	**–0.3**	**3.5**
of which :						
Retail trade	1.6	5.0	4.7	2.9	5.2	6.0
Wholesale trade	5.9	0.4	4.2	5.9	6.9	7.3
Horeca	10.9	–4.2	–2.7	–3.8	–3.5	5.0
Transport	–3.2	–10.7	–1.9	10.7	3.6	2.6
Posts and telecommunications	13.4	12.8	41.7	–944.3	–73.3	6.2
Real estate activities	5.8	6.5	6.6	2.5	1.6	3.1
Business services	6.3	3.7	4.0	1.0	–2.6	–0.9
Energy and water	16.7	15.2	17.4	10.1	7.7	7.0
Construction	10.0	6.0	8.5	7.4	5.7	7.1

Source : NBB.
(1) Globalisation.

3.5 Financial risks

3.5.1 Development of a business failure prediction model

In order to assess the financial risks incurred by firms, the National Bank has developed an internal business failure prediction model. A summary of the methodology was published in the Economic Review for the 1st quarter of 2004. (1) The model developed by the Bank uses information available from the annual accounts filed with the Central Balance Sheet Office. On the basis of the annual accounts for a given year, this model analyses the differences in the financial profile between two types of firm : non-failing firms and firms failing in the course of the subsequent three years. The chosen definition of failure is based on a legal criterion : any firm in a situation of bankruptcy or judicial composition is regarded as failing ; other firms are regarded as non-failing.

The model was developed for the population of firms filing full-format accounts and was applied for the purposes of this article to firms employing more than five workers. The econometric technique used is logistical regression. The main attraction of the model is that it summarises all aspects of a firm's financial situation in a single figure : the risk score L. Most of the explanatory variables were constructed in the form of financial ratios ; non-financial variables, such as age, size, or time taken to file the annual accounts, were also tested. A number of competing models were estimated on a sample of firms, then validated on all the annual accounts filed between 1991 and 1998.

The model ultimately adopted, which contains eight explanatory variables, is presented in table 8. The coefficients measure the variation in the risk score L when the variable to which they are attached changes by one unit, all other things being equal. For example, if the cash flow/borrowings ratio increases by 0.1, the score L falls by 0.29. The higher the score L, the more the model considers the

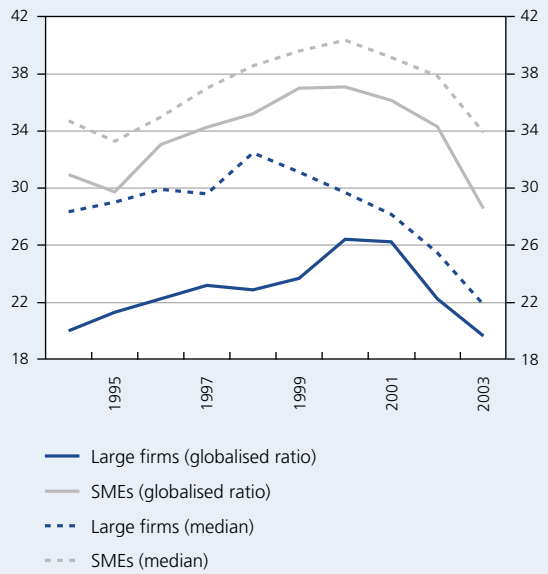
(1) Cf. Coppens F., Hermesse A. and Vivet D. (2004).

firm to be at risk. The table shows that the signs of the coefficients are as one would expect: when liquidity, solvency or profitability increase, the risk declines, and vice versa. Apart from the traditional coefficients, the table also mentions standardised coefficients which indicate the explanatory power of each variable: the higher a standardised coefficient in absolute terms, the greater the contribution made by its associated variable in explaining the risk. (1) The variables in the model are also presented in order of that contribution.

The majority of the model variables concern liquidity and solvency issues. This is closely connected with the laws on bankruptcy and judicial composition, where the central question concerns the cessation of payments. As regards liquidity, it should be noted that overdue debts to the tax authority and the NSSO are the dominant variable in the model. The importance of this variable in the diagnosis of liquidity has already been highlighted. As regards solvency, the degree to which borrowings are covered by cash flow (variable 2) has significantly greater explanatory capability than the degree of financial independence (variable 8); as one would expect, the model therefore incorporates the logic whereby being in debt is less serious than being unable to repay one's debts. The model also contains a profitability variable (variable 3), a dimension which naturally plays a role in corporate financial health. Finally, a non-financial variable, the time taken to file the annual accounts, is included.

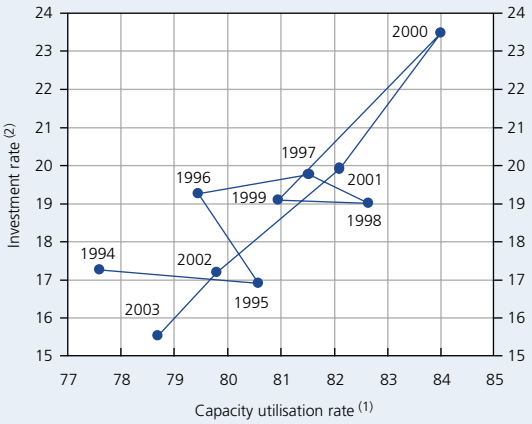
CHART 8 INVESTMENT RATE

(Percentages)



Source: NBB.

CHART 9 INVESTMENT RATE AND CAPACITY UTILISATION RATE IN MANUFACTURING INDUSTRY



Source: NBB.
(1) Annual average.
(2) Globalised for manufacturing firms in general.

The longer a firm takes to file its accounts, the more it is considered to be at risk. The model therefore penalises firms which lack transparency and punctuality.

3.5.2 Risk classes

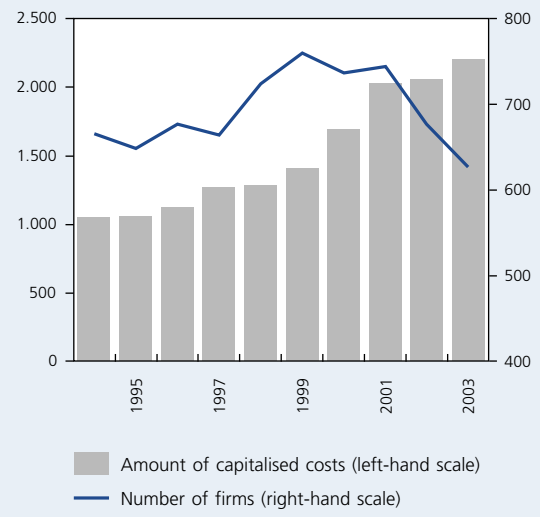
Risk classes were defined on the basis of the risk score estimated for each firm and known instances of failure. These classes divide firms into homogenous risk zones on the basis of the percentage of firms actually failing. This resulted in four classes corresponding to intervals in the risk score L:

- class 1: $L < -0.84$: healthy firms, with practically zero risk of failure within three years;
- class 2: $-0.84 \leq L < 0.21$: neutral firms, where the probability of failure within three years is comparable to the average;
- class 3: $0.21 \leq L < 1.10$: firms in difficulty, where the probability of failure within three years is 3 to 4 times higher than average;
- class 4: $1.10 \leq L$: firms in great difficulty, where the probability of failure within three years is more than 10 times higher than average.

(1) The standardised coefficients are obtained by means of a regression containing the same explanatory variables, but standardised. For a given variable X_i, the standardised variable X_i^* is equal to $\frac{X_i - \overline{X}}{S_X}$, where $\overline{X}$ is the mean of the variable and S_X its standard deviation. The standardised variables have two interesting properties: their mean is always equal to zero and their standard deviation is always 1. The coefficients attached to them thus measure the effects of changes in terms of a standard deviation, and therefore have the advantage of being independent of the unit used to measure the variables. As a result, the respective impacts of the variables are directly comparable.

CHART 10 CAPITALISED RESEARCH AND DEVELOPMENT COSTS (1)

(Euro millions, unless otherwise stated)



Source : NBB.
(1) Acquisitions for the year, including capitalised production costs.

This classification of the firms must be used with caution. For one thing, only a tiny proportion (between 1.5 and 2 p.c. depending on the year) of the firms examined will actually go bankrupt or apply for judicial composition. The classification should therefore be viewed as an indication of financial health rather than a true prediction of failure : firms in classes 3 and 4 are not necessarily destined for bankruptcy, but they are prone to serious financial problems. Bankruptcy aside, those problems are liable to lead to delay in repaying debts or paying suppliers, redundancies, restructuring or cessation of activity. Another important point is that a number of Belgian firms in difficulty are part of multinational groups which are prepared to provide financial support, at least temporarily. Moreover, the classification is an incomplete assessment of the firms' economic situation, as it is based only on analysis of the annual accounts. Other important aspects, such as management quality, the competitive environment, the economic situation and development prospects are therefore disregarded. (1) Thus, the classification must be viewed as a strictly financial assessment of the firms at a particular moment.

3.5.3 Trend in financial risks

As pointed out in the first section of the article, the annual accounts filed late come from firms whose financial profile is less favourable overall. These filing delays are particularly significant in the case of firms in classes 3 and 4, which are therefore decidedly under-represented in the annual accounts currently available for the 2003 financial year. Tests conducted on previous years show that the trend in risks observed in the constant sample is not systematically representative of the real trends, particularly in the case of SMEs. That is why there will be no comments here on the level of risk until 2002. In order to provide an initial impression of the latest tendencies, the trends apparent in the constant sample are also presented, but separately. These estimation difficulties should be viewed in perspective : as the model estimates the risks of failure in the next three years, the 2002 situation covers the period 2003-2005.

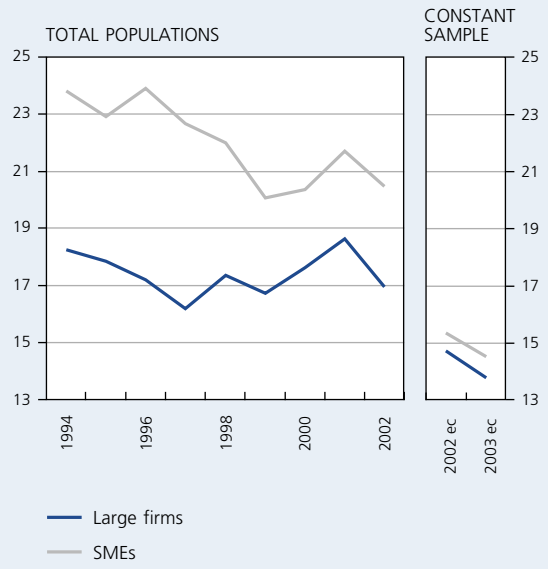
(1) It is hard to see how such qualitative variables could be taken into account in a statistical study covering several thousand firms.

TABLE 8 BUSINESS FAILURE PREDICTION MODEL

	Coefficients	Variables	Standardised coefficients
L =	–1.3		
	+27.1	Overdue debts to the tax authority and the NSSO / Total assets	(+1.24)
	–2.9	Cash flow / Borrowings	(–0.66)
	–3.4	Gross profit before tax and debt servicing / Total assets	(–0.60)
	+2.3	Debts to credit institutions / Debts at up to one year	(+0.47)
	+17.1	Debt servicing / Total assets	(+0.34)
	+0.5	Time taken to file annual accounts (number of days)	(+0.20)
	–0.2	Current liquid assets / Short-term borrowed capital	(–0.19)
	–0.4	Equity capital / Total assets	(–0.17)

Source : NBB.

CHART 11 PERCENTAGE OF FIRMS IN CLASSES 3 AND 4



Source : NBB.

In 2002, the proportion of firms in classes 3 and 4 came to just under 17 p.c. for large firms and 20.5 p.c. for SMEs (chart 11). One in five Belgian firms therefore faces serious financial problems. Those firms employ a total of 217,000 workers, including 85,000 in class 4. After rising significantly in 2000 and 2001, the risks subsided in 2002 in both large firms and SMEs. This trend continued in 2003 for companies in the constant sample. In the long term, the two categories of firms followed slightly divergent trends : while the vulnerability of SMEs has shown a marked fall since 1994, that of large firms has remained fairly stable.

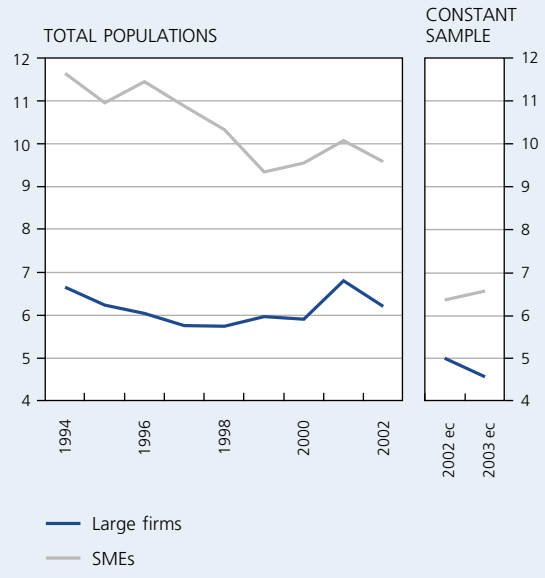
In line with the bankruptcy statistics, the proportion of vulnerable firms is structurally higher for SMEs than for large firms. Moreover, as may be seen from chart 12, this difference is due almost exclusively to the proportion of firms in great difficulty (class 4). In 2002, while 6.2 p.c. of large firms were in great difficulty, the figure was as high as 9.6 p.c. for SMEs. Moreover, in the constant sample the percentage of SMEs in class 4 increased slightly in 2003, in contrast to that for large firms which continued the downward trend that had begun in 2002.

Overall, the financial risk of the non-manufacturing branches is structurally higher than that of manufacturing industry, in terms of both the percentage of firms in classes 3 and 4 and the percentage of jobs concerned (table 9). Although their risk level is different, the two groups of firms have nevertheless followed similar trends in recent years, namely a gradual increase in the risks until 2001, followed by a decline in 2002.

In the light of the data gathered in the other sections of this article, it is not surprising to find that textiles and timber are by far the most vulnerable two manufacturing branches. In 2001, almost a quarter of firms and jobs in these branches were at risk of failure. While this proportion did fall slightly in 2002, it still remained very high compared to the other branches. In contrast to the other branches of the Belgian economy, metallurgy in the broad sense suffered a further increase in the risk in 2002, especially in the case of SMEs. Finally, chemicals and paper, publishing and printing are the most robust manufacturing branches in terms of financial health.

In the non-manufacturing branches, while energy & water and transport are healthy branches, the risks of failure are particularly high in trade, hotels and restaurants, real estate and business services. In business services, the large firms found in classes 3 and 4 include in particular staff selection and supply agencies, which have been especially hard hit by the economic uncertainty of recent years, and firms providing IT services, which have suffered from the general decline in enthusiasm for information and communication technologies. The table also reveals the specific features of telecommunications : in this highly concentrated branch, alongside dominant, healthy large

CHART 12 PERCENTAGE OF FIRMS IN CLASS 4



Source : NBB.

TABLE 9 FINANCIAL RISKS BY BRANCH OF ACTIVITY

	Percentage of firms in classes 3 and 4			Percentage of jobs concerned		
	2000	2001	2002	2000	2001	2002
Manufacturing industry	**18.1**	**19.5**	**18.9**	**12.7**	**13.7**	**13.0**
of which :						
Agricultural and food industries	21.1	20.6	18.4	16.1	20.9	12.2
Textiles, clothing and footwear	23.9	27.3	26.9	18.0	23.3	18.7
Timber	24.2	24.5	22.1	21.1	25.5	22.0
Paper, publishing and printing	14.0	18.6	15.9	12.6	14.5	9.9
Chemicals	15.5	18.4	15.7	13.2	8.9	7.6
Metallurgy and metalworking	13.9	14.2	16.4	10.7	10.8	14.2
Metal manufactures	18.6	18.5	19.3	8.4	10.1	13.2
Non-manufacturing branches	**20.3**	**21.6**	**20.0**	**14.9**	**17.4**	**14.8**
of which :						
Retail trade	23.5	24.6	22.8	15.1	23.4	15.1
Wholesale trade	24.4	25.8	22.8	20.0	21.1	17.6
Horeca	27.9	29.1	28.1	15.3	19.1	19.3
Transport	12.5	12.7	11.4	12.2	9.1	6.7
Posts and telecommunications	29.5	30.0	27.6	3.4	4.2	2.3
Real estate activities	22.0	23.1	24.0	22.0	22.0	23.5
Business services	19.4	21.0	20.0	20.3	23.2	22.7
Energy and water	4.7	11.6	2.2	0.1	2.4	0.2
Construction	16.3	17.8	16.9	13.8	13.8	13.0

Source : NBB.

firms there are many relatively small firms in (serious) difficulty; this generally concerns relatively recent newcomers on the market whose profitability has so far been meagre and which have a high debt ratio, mainly because of the substantial investment entailed in setting them up.

Conclusion

In 2003, the trend in activity in Belgium was once again hesitant up to the start of the second half year. Overall, GDP grew by 1.3 p.c. in real terms, following a rise of 0.7 p.c. in 2001 and 0.9 p.c. in 2002. This was the longest period of weak growth since the beginning of the 1980s. In that context, the total value added created by non-financial corporations increased by 3.4 p.c. in nominal terms, the best result for three years. At the same time, operating costs were more or less static, owing to the very restrained rise in staff costs (due in particular to the job losses in industry) and the further fall in depreciation (reflecting the low level of business investment in both 2002 and 2003). In contrast to what happened in previous years, the growth of value added therefore far outpaced the rise in operating costs. As a result of these contrasting trends, the net operating profit for firms as a whole increased by almost 23 p.c., to total € 21.2 billion. Such a large increase had not been seen since 1997. Once again, the financial and exceptional results were decidedly positive. After aggregation of all the profit and loss account items, non-financial corporations made a net profit after tax of € 24 billion, 96 p.c. higher than in 2002. If this is borne out by the final figures, this virtual doubling of profits – though admittedly following two years of sharp decline – would represent a historical record.

Overall, firms saw an improvement in their financial situation in 2003, after clearly suffering from the economic malaise which had prevailed in 2001 and 2002. As regards solvency, apart from the further small increase in financial independence, the ability of firms to repay their debts improved, after several years of decline. The cost of the debt level in terms of interest charges on financial debts also continued the decline which had begun in 2002, following a further fall in market interest rates. Profitability,

which had been severely eroded in large firms from 2002 to 2002, and had actually collapsed in SMEs, bounced back in 2003. The main reason for this recovery lies in control over operating costs (staff costs and depreciation) and financial expenses.

Finally, the results of a failure prediction model were presented for the first time. By making it possible to place firms in risk classes, the model sheds new light on the true financial position of Belgian firms. The proportion of firms in difficulty came to 17 p.c. for large firms and 20.5 p.c. for SMEs. These firms employ 217,000 workers, including 85,000 in the most vulnerable risk class. Following a marked rise in 2000 and 2001, the risks of failure subsided in 2002, in both large firms and SMEs. This trend towards better health continued in 2003 for the companies in the constant sample, especially the large firms. Overall, the financial risk of the non-manufacturing branches is structurally higher than that of manufacturing industry, in terms of both the percentage of firms in difficulty and the percentage of jobs concerned. The healthiest branches are chemicals, transport, and energy & water, while the most vulnerable branches are textiles, timber, trade, hotels and restaurants, real estate and business services.

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Annex 1

SECTORAL CLASSIFICATION

	NACE-BEL code
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
Posts and telecommunications	64
Real estate activities	70
Business services	72-74 (1)
Energy and water	40-41
Construction	45

(1) Except 74151 (management of holding companies).

Annex 2

DEFINITION OF THE RATIOS

	Item numbers allocated	
	full format [1]	abbreviated format
1. 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		
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 calculating 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 calculating the ratio:		
12-month financial year		
5. RETURN ON EQUITY		
Numerator (N)	70/67 + 67/70	70/67 + 67/70
Denominator (D)	10/15	10/15
Ratio = N/D*100		
Condition for calculating the ratio:		
12-month financial year		
10/15 > 0 [2]		
6. INVESTMENT RATE		
Numerator (N)	8169 + 8229 – 8299	8169 + 8229 – 8299
Denominator (D)	70/74 – 740 – 60 – 61	70/61 + 61/70
Ratio = N/D*100		
Condition for calculating the ratio:		
70/74 – 740 – 60 – 61 > 0 (full format) [2]		
70/61 + 61/70 > 0 (abbreviated 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 2003

P. Heuse
Ph. Delhez

Introduction

Introduced in the 1996 financial year, the social balance sheet contains a consistent set of data on various aspects of employment in firms. This article presents the provisional results of the social balance sheet for 2003, obtained from the social balance sheets submitted before 9 September 2004. Where appropriate, these provisional results are compared with the final results obtained for the years 1997 to 2002. The results presented in this article concern all firms which, as at 31 December, had completed a financial year of a standard twelve-month duration and whose social balance sheet met the criteria concerning homogeneity, quality and consistency defined in the methodology for constituting populations of firms for the years 1997 to 2002, contained in Annex 1.

The first part of the article comments on the developments recorded between 2002 and 2003 in the social balance sheets of a reduced population of firms, the same for both years; the method of constituting the population (section 1.6) and the population's characteristics (section 2) are detailed in Annex 1. The use of a constant population permits analysis of the movement in a range of variables between the years 2002 and 2003, whereas comparison with the complete data relating to the year 2002, covering a much larger population, would introduce a bias which would distort the conclusions. However, the use of a constant population also imposes limits on the interpretation of what is happening. By definition, the firms in this population must have filed social balance sheets of adequate quality covering a twelve-month financial year ending on 31 December for two successive years. That automatically excludes new companies and bankrupt companies from the scope of the analysis, possibly causing some discrepancies between the changes observed in the reduced population and those recorded in the total population. However, the adoption of this approach is justified in view of the excessive length of time required to obtain the information for all the firms and the safeguards offered by the representativeness of the reduced population.

The data in table III of the social balance sheet concerning the use of measures promoting employment were not analysed. Apart from the fact that the list is not entirely up-to-date, the comparison of the data content with the administrative statistics collected by agencies such as the NEMO and the NSSO suggests that they are not representative of the actual use of those measures. The analysis focuses on the movement in variables such as employment, labour costs and training, observed for all firms in the reduced population. As in other years, the tables in annexes 3 to 9 offer detailed data by branch of activity[1] (based on the breakdown supplied in Annex 2). In the majority of cases, these tables supply retrospective data for the years 1997 to 2002, as well as the movement recorded between 2002 and 2003.

The second part of the article places the analysis of the social balance sheets in a regional perspective. The methodology used to allocate the firms between the regions is specified at the beginning of this second section. Since the population used for the analysis of the 2003 figures is smaller than for the other years, the results were liable to be insufficiently representative at regional level. The year 2003 was therefore disregarded. The year 1997 was also

(1) It must be stressed that the results obtained for hotels and restaurants and for agriculture are probably less representative of real developments in those branches, owing to the high proportion of workers employed by self-employed persons who are not required to submit a social balance sheet.

omitted owing to the smaller number of social balance sheets of adequate quality relating to that year. The analysis presented in the second part of the article therefore puts in perspective the results recorded in the social balance sheets for 1998 to 2002. Annexes 10 to 12 contain a large part of the data used for this regional analysis.

1. The social balance sheet 2003

1.1 Employment

1.1.1 General characteristics of the trend in employment

The year 2003 brought a fairly sharp fall in the number of workers employed in the firms in the reduced population, with the total declining by 10,773 units, a fall of 0.8 p.c. However, the end-of-year change was smaller: –6,374 units, or –0.5 p.c. between 31 December 2002 and 2003, signalling a slackening of the pace of job losses. It should be remembered that these movements reflect only the change in the workforce recorded by firms in the reduced population, which is constructed according to the constant sample principle. They therefore take no account of jobs created in new firms, or of job losses resulting from firms going out of business during the 2002 and 2003 financial years.

This contraction in the volume of employment is due essentially to developments taking place in large firms, where the number of persons employed declined by 7,313 units between December 2002 and December 2003, and in medium-sized firms where the reduction totalled 1,730 units. In contrast, employment in small firms expanded by 2,674 units, the bulk of the increase being recorded in firms with fewer than 10 FTEs.

The decline in the number of workers employed was particularly substantial in industry, where jobs thus continue to be lost. In contrast to the movement observed for firms as a whole, the rate of contraction in employment there actually accelerated during the year: thus, over 11,000 jobs disappeared in this branch of activity between December 2002 and December 2003, against 9,800 on average during the year. The large-scale switch to part-time working, up by over 13 p.c., although admittedly starting from a low average level, was not enough to curb the decline in the workforce. The cyclical downturn in employment was also particularly noticeable in the financial services and insurance branch, which accounts for over 90 p.c. of the job losses recorded in the financial, real estate and business activities branch, or around 2,500 workers. At the end of the year, the other branches of activity recorded a net increase in employment. The rise came to around 0.2 p.c. in trade, transport and communications (despite a marked fall in transport and communications) and 0.7 p.c. in construction. In agriculture, it reached 1.8 p.c. It was the other services branch that saw the largest increase, at 2.4 p.c. This was due to an increase in employment totalling over 6,000 units in the health and social work branch, while there was a slight decline recorded in social, community and personal services.

The volume of employment expressed in FTEs, rather than the number of workers employed, makes it easier to assess the volume of labour used in the economy, since it takes account of the shorter working hours of part-time workers. The level of employment expressed in FTEs declined by 1 p.c. during 2003, whereas employment expressed in the

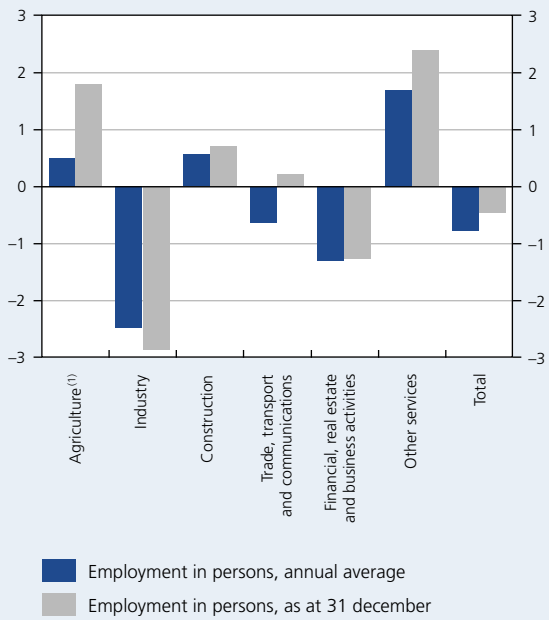
TABLE 1 DEVELOPMENTS IN EMPLOYMENT BETWEEN 2002 AND 2003
(Reduced population)

	In persons			In FTEs	Hours worked
	Full-time	Part-time	Total		
Annual average					
Units	–25,314	14,541	–10,773	–12,318	–
Percentages	–2.3	4.8	–0.8	–1.0	–1.0
As at 31 December					
Units	–25,012	18,638	–6,374	–8,716	–
Percentages	–2.3	6.1	–0.5	–0.7	–

Source: NBB (social balance sheets).

CHART 1 DEVELOPMENTS IN EMPLOYMENT BETWEEN 2002 AND 2003: BREAKDOWN BY BRANCH OF ACTIVITY

(Percentage changes, reduced population)



Source: NBB (social balance sheets).
(1) Data not very representative.

number of persons was down by 0.8 p.c. The volume of hours worked was down by a similar proportion to employment in terms of FTEs. Following a very sharp contraction between 2000 and 2002, the annual average working hours per FTE thus stabilised at slightly below 1,550 hours in 2002 and 2003, whereas the figure was still as high as 1,585 hours in 2000 and around 1,600 in 1997.

Part-time employment continued to expand between 2002 and 2003, with the number of employees working shorter than standard hours increasing by 18,638 units at the end of 2003 compared to the previous year, a rise of 6.1 p.c. At the same time, the number of full-time workers declined by over 25,000 units, or 2.3 p.c.

This expansion in part-time employment was observed for both male and female workers, at rates of 13 and 4 p.c. respectively. In the financial and insurance services branch, the number of men working part-time increased by almost 1,000 persons, representing a rise of around 38 p.c. In industry (2,600 persons) and in construction (420 persons), the rise was close on 25 p.c. or higher. In transport and communications, it was around 20 p.c. (2,300 workers) and in trade it was 10 p.c. (1,000 persons). Only the agriculture and other services branches recorded a decline, though a very small one, in the number of men working part-time. However, part-time employment is still essentially a female phenomenon, as will become apparent later.

In firms filing full-format accounts, the increase of nearly 7,200 units in the male part-time workforce between 31 December 2002 and 2003 seems to correspond mainly to persons switching from full-time to part-time working. Examination of external staff movements, where only the full-format balance sheets indicate the profile of workers recruited or those whose contract ended during the year, in fact shows that the number of male part-time workers recruited was less than the number leaving these firms: they recorded net departures of male part-time workers totalling around 300 units. Conversely, in the case of female workers, one third of the increase in part-time employment recorded between 31 December 2002 and 2003 is attributable to the recruitment of new part-time workers.

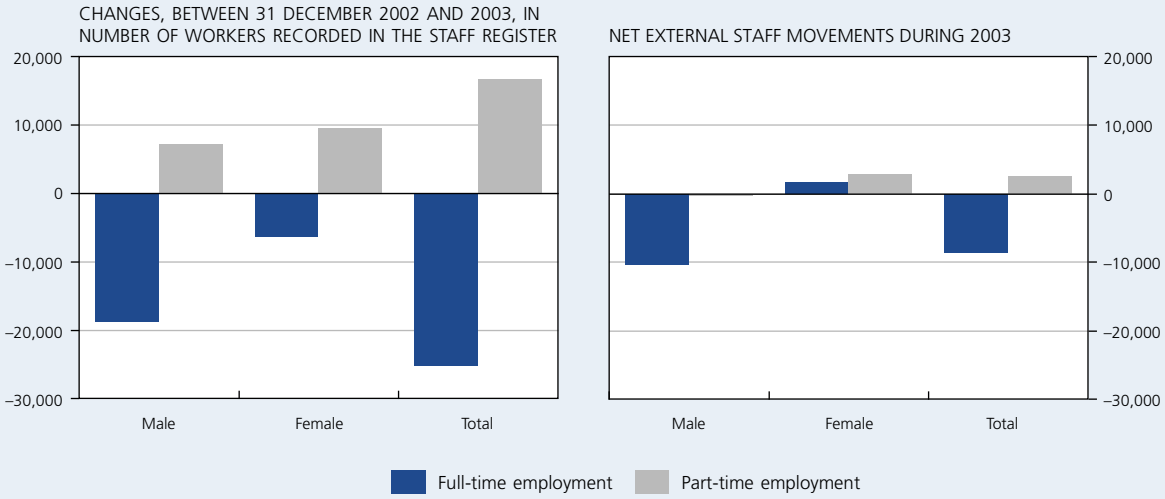
The large number of males switching from full-time to part-time work is due partly to the success of the time-credit scheme, particularly for workers over the age of 50 years. This caused a further rise in the male part-time employment rate of almost 14 p.c. between 2002 and 2003, while the figure had already risen by almost 50 p.c. between 1997 and 2002. During the same period, the female part-time employment rate increased from 41.2 p.c. in 1997 to 46.9 p.c. in 2002; the increase recorded between 2002 and 2003 came to 3.7 p.c. in firms in the reduced population.

Overall, in 2003, 23.8 p.c. of workers employed by firms in the reduced population worked part-time, compared to 22.3 p.c. a year earlier. During the same period, the average contractual working hours of part-timers increased from 60 p.c. of full-time hours to 61.4 p.c. The number of additional jobs created by sharing the volume of work among a larger number of workers by using part-timers therefore increased more slowly than part-time employment: in 2003 this figure represented 9.8 p.c. of employment in the reduced population, against 9.6 p.c. in 2002.

The profile of part-time workers revealed by the social balance sheets is therefore rather different from that of full-time workers. Altogether, women represented over 38 p.c. of workers employed in firms in the reduced population in 2003, but they accounted for almost 80 p.c. of part-time workers and only 26 p.c. of full-time workers. In households where both partners work, it is in fact still the women who perform the essential household duties. The same applies to single parent families, where

CHART 2 DEVELOPMENTS IN EMPLOYMENT DURING 2003 IN FIRMS FILING FULL-FORMAT ACCOUNTS: BREAKDOWN BY SEX AND TYPE OF WORKING ARRANGEMENT

(Persons, reduced population)



Source: NBB (social balance sheets).

the adult is a woman in the majority of cases. Moreover, the employers' aim of achieving greater flexibility in the volume of labour is doubtless also a factor in the over-representation of women among part-time workers, owing to their more recent entry into the labour market. Also, flexible forms of employment contract, such as

TABLE 2 PART-TIME EMPLOYMENT BETWEEN 1997 AND 2003

(Percentages)

	Part-time employment rates as at 31 December			Average contractual working hours of a part-time job compared to a full-time job (1)	Additional jobs created by use of part-time workers (2)
	Male	Female	Total		
Total population					
1997	5.7	41.2	18.5	55.6	8.9
1998	6.3	42.9	19.9	56.0	9.5
1999	6.8	43.6	20.7	56.5	9.9
2000	7.1	43.9	20.7	56.4	9.9
2001	7.4	45.4	21.8	56.9	10.4
2002	8.3	46.9	23.3	57.8	10.7
Reduced population					
2002	7.4	46.6	22.3	60.0	9.6
2003	8.4	48.3	23.8	61.4	9.8
p.m. Percentage change	*13.9*	*3.7*	*6.6*	*2.2*	*2.3*

Source: NBB (social balance sheets).

(1) Calculated on the basis of item "100", average number of workers.

(2) Difference, in percents, between the actual number of jobs (sum of full-time and part-time jobs) and the number of jobs which would have been necessary to achieve the same volume of labour using full-time workers only.

TABLE 3 PROFILE OF FULL-TIME AND PART-TIME WORKERS IN 2003

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

	Full-time workers	Part-time workers	Total
By sex			
Male	73.9	21.8	61.5
Female	26.1	78.2	38.5
By employment contract			
Permanent contracts	95.7	89.6	94.3
Temporary contracts (1)	4.3	10.4	5.7
By occupational status			
Manual workers	46.7	35.4	44.0
Clerical workers	50.8	63.4	53.8
Management staff	1.7	0.4	1.4
Other	0.8	0.8	0.8

Source : NBB (social balance sheets).

(1) Fixed-term contracts, replacement contracts and contracts concluded for a specific project.

fixed-term contracts, replacement contracts or contracts concluded for a specific project concern proportionaly more part-time workers than full-time workers : 10 p.c. of part-timers have this type of contract, as opposed to just 4 p.c. of full-time workers. Finally, 63 p.c. of part-time workers are clerical staff and only 35 p.c. manual workers ; for full-time workers, the figures are 51 and 47 p.c. respectively.

1.1.2 Developments in employment in firms filing full-format accounts

The changes in employment as at 31 December, as indicated in table 1, actually conceal large-scale staff turnover. Taking firms in the reduced population as a whole, 404,000 new employment contracts were concluded in 2003, whereas around 407,000 contracts were terminated. More than two-thirds of these changes occurred in firms filing full-format accounts : those firms took on 265,000 new people during 2003, whereas around 271,000 workers left them in the same period. The full-format social balance sheets make it possible to analyse staff turnover by sex (as was done in the previous section, to find our about changes in male and female part-time working), by type of contract and also by standard of education. In addition, they provide a breakdown of staff departures according to the reasons for termination of the contract.

As in 2002, net staff departures in firms filing full-format accounts mainly concerned the lowest skilled workers, having a certificate of primary or secondary education, although the net departures were on a smaller scale than in the previous year. These net departures of low-skilled workers were not offset by net recruitment of highly skilled workers, which was also on a smaller scale than in 2002.

Analysis of net staff movements by standard of education since 1999, the year immediately following the start of the last economic cycle which began in the fourth quarter of 1998, reveals an increase in net recruitment up to 2000, followed by a slowdown in 2001 and net departures in 2002. The movement recorded between 2002 and 2003 suggests that the cycle has bottomed out where employment is concerned, and that there could be an increase in employment once again in 2004.

Since 1999, workers with only a certificate of primary education have benefited little from the cyclical upturn, as 2000 was the only year in which net recruitment of very low skilled workers was recorded. While the certificate for completion of secondary education offers a better chance of entry into the labour market, workers with this standard of education were also discarded once the cycle reached its peak. On the other hand, net recruitment of skilled workers who had completed higher education or university degrees was recorded during each year of the period under review, although the scale of that recruitment did vary according to the economic situation.

TABLE 4 STAFF RECRUITMENT AND DEPARTURES IN 2003

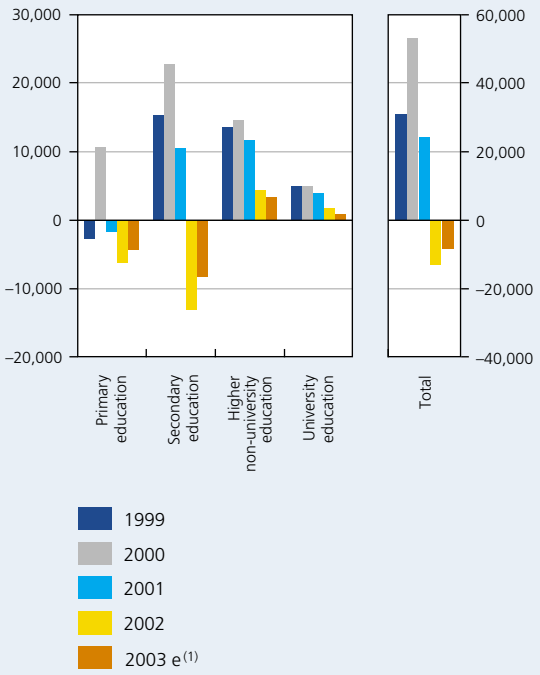
(Units, reduced population)

	2002	2003
Recruitment		
Total	378,220	404,233
of which : Full-format accounts	253,867	264,678
Departures		
Total	379,426	406,968
of which : Full-format accounts	263,196	270,687
Net recruitment		
Total	–1,206	–2,735
of which : Full-format accounts	–9,329	–6,009

Source : NBB (social balance sheets).

CHART 3 NET EXTERNAL STAFF MOVEMENTS IN FIRMS FILING FULL-FORMAT ACCOUNTS SINCE THE TURNING POINT IN THE CYCLE IN THE FOURTH QUARTER OF 1998: BREAKDOWN BY STANDARD OF EDUCATION

(Units, total population)



Source: NBB (social balance sheets).

(1) The results for 2003 were calculated by taking the change recorded between 2002 and 2003 for the reduced population and applying it to the value recorded for the total population in 2002.

In 2003, 271,000 ends of contract were recorded in firms in the reduced population filing full-format accounts, representing an increase of 2.3 p.c. against 2002. Of these departures, retirement was given as the reason for terminating the contract in almost 6,000 cases in 2003, an increase of 15 p.c. against the previous year. There was also a noticeable increase in early retirement, up by around 10 p.c. between 2002 and 2003. Together, these two reasons account for 6 p.c. of departures recorded in 2003 against 5.5 p.c. in 2002. Conversely, there was hardly any increase in the number of redundancies, up by 1.6 p.c., as – apart from retiring their staff – firms preferred to adapt the volume of labour by not renewing fixed-term contracts (133,000 contracts terminated, a rise of 9.4 p.c.). There was a marked decline in contracts terminated for other reasons, mainly natural wastage, which represented only 27 p.c. of staff departures, against 30 p.c. in 2002.

1.1.3 Staff structure according to type of employment contract

Although the decline in employment recorded between 31 December 2002 and 2003 affected firms in different ways depending on their size and their branch of activity, it did concern all types of employment contract. The number of contracts concluded explicitly or implicitly for a fixed term declined by almost 3,500 units, namely a fall of 1,312 units (–2 p.c.) in the case of fixed-term contracts, 1,968 units (–12.1 p.c.) for replacement contracts and 191 units (–11.9 p.c.) in the case of contracts concluded for a specific project. During the same period, the number of permanent contracts declined by around 3,000 units, or 0.2 p.c. of the total.

However, these movements are still marginal in view of the relative proportions of these various contracts, so that the staff structure remained more or less unchanged between 2002 and 2003 in firms in the reduced population. Workers on permanent contracts continue to represent the bulk of the workforce overall, or 94.3 p.c., against 94 p.c. a year earlier, despite the slight fall in their number. The proportion of fixed-term contracts dropped from 4.7 to 4.6 p.c., and replacement contracts were down from 1.2 to 1 p.c. Contracts concluded for a specific project are still the exception: in both 2002 and 2003, they represented just 0.1 p.c. of the workforce.

The renewed fall in the percentage of temporary contracts, which are concluded explicitly or implicitly for a fixed term, recorded between 2002 and 2003, is in line with the trend apparent in the total population since 1999, the year in

TABLE 5 STAFF DEPARTURES IN FIRMS FILING FULL-FORMAT ACCOUNTS: BREAKDOWN BY REASON FOR LEAVING

(Reduced population)

	Percentages of the total		Units
	2002	2003	2003
Retirement	2.0	2.2	5,947
Early retirement	3.5	3.8	10,174
Redundancy	17.9	17.7	47,888
End of temporary contract(1)	46.3	49.2	133,183
Other reason	30.3	27.2	73,495
Total	100.0	100.0	270,687

Source: NBB (social balance sheets).

(1) Fixed-term contracts, replacement contracts and contracts concluded for a specific project.

TABLE 6 WORKERS RECORDED IN THE STAFF REGISTER : BREAKDOWN BY TYPE OF EMPLOYMENT CONTRACT

(Data as at 31 December, reduced population)

	Percentages of the total		Units, changes between 2002 and 2003
	2002	2003	
Permanent contracts . .	94.0	94.3	–2,903
Fixed-term contracts . .	4.7	4.6	–1,312
Replacement contracts	1.2	1.0	–1,968
Contracts concluded for a specific project	0.1	0.1	–191
Total	100.0	100.0	–6,374

Source : NBB (social balance sheets).

which this figure peaked at 7.3 p.c. Since that year, the proportion of temporary contracts has fallen almost continuously : in all, the decline has totalled around 1 percentage point since 1999. All branches of activity recorded a decline, though in varying proportions. Thus, such contracts were down by over 3 percentage points in agriculture (1), 2 points in the other services branch (owing to a sharp fall in the case of health and social work), 1.8 points in financial, real estate and business activities, and 1.4 points in industry. The fall was more moderate in trade, transport and communications (–0.5 point) and in construction (–0.6 point), a branch with a particularly small percentage of temporary contracts.

While the management of fixed-term contracts is an important instrument for adjusting the resources of firms, particularly in a period when economic activity is slowing down or speeding up, the use of temporary agency workers also makes it easy to adjust the volume of labour to suit production requirements. Moreover, an increase in temporary work is one of the first signs of a revival in economic activity, owing to its flexibility of use.

The social balance sheet only collects information on the use of temporary work in the case of firms filing full-format accounts. However, in 2003, the volume of hours worked by temporary workers recorded in the 4,655 firms in the reduced population using temporary work represented over 40 p.c. of the total volume of labour recorded by Federgon, the federation of temporary work agencies. The information obtained from the social balance sheets can therefore be regarded as sufficiently representative for the purposes of the analysis.

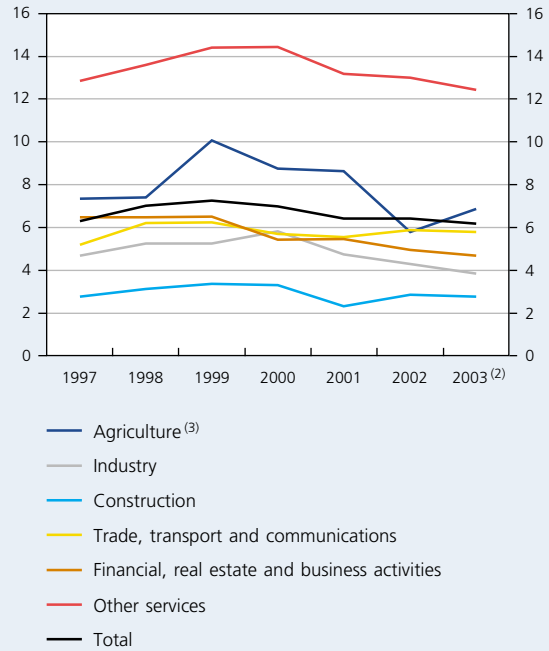
(1) Results not very representative.

Between 2002 and 2003, the number of hours worked by temporary workers in firms filing full-format accounts in the reduced population increased by 1.7 p.c. Taking account of a slight increase in the annual average working hours per temporary FTE (from 1,875 hours to 1,881 hours), the number of temporary workers increased by around 350 FTEs or 1.4 p.c. The proportion of temporary workers in total employment expressed in FTEs in firms in the reduced population thus increased from 2.6 p.c. in 2002 to 2.7 p.c. in 2003. This increase breaks the downward trend recorded since 2000, a year in which temporary workers had represented 3 p.c. of the FTE employment.

The expansion in the volume of temporary work was not uniform in all branches of activity. Financial, real estate and business activities actually recorded a fall of almost 6 p.c. In construction, a sector where the use of temporary workers on sites has only been permitted since 1 January 2002, the decline reached 3.5 p.c., against just 0.4 p.c. in other services. However, these three branches represented together

CHART 4 PROPORTION OF TEMPORARY CONTRACTS (1) : BREAKDOWN BY BRANCH OF ACTIVITY

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



Source : NBB (social balance sheets).

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

(2) The results for 2003 were calculated by taking the change recorded between 2002 and 2003 for the reduced population and applying it to the value recorded for the total population in 2002.

(3) Data not very representative.

TABLE 7 TEMPORARY WORK IN FIRMS FILING FULL-FORMAT ACCOUNTS

(Reduced population)

	2002	2003
In percentage of the total		
Number of FTEs	2.6	2.7
Hours worked	3.1	3.2
Costs	2.2	2.3
In units		
Number of FTEs	27,772	28,157
Hours worked (thousands)	52,068	52,954
Hours worked per FTE	1,875	1,881
Costs per hour worked (euro)	21.59	22.15
In percentage of temporary work recorded by Federgon		
Number of FTEs	42.2	42.7
Hours worked	40.3	40.8

Sources : Federgon, NBB (social balance sheets).

less than 20 p.c. of the hours worked by temporary workers in user firms forming part of the reduced population in 2003. The biggest users are still the industrial sector, which in itself accounts for over half of the volume of temporary work, and the trade, transport and communications sector, which represented almost 30 p.c. of the total. In these two branches, the volume of labour performed by temporary workers increased by 2 and 4.6 p.c. respectively.

While the volume of labour increased by 1.7 p.c., the cost of using temporary workers went up by 4.4 p.c. for user firms as a whole. The hourly price of employing these workers therefore increased by 2.6 p.c., coming to 22.15 euro in 2003.

1.2 Developments in labour costs

The labour costs relating to all the workers recorded in the staff registers of firms in the reduced population increased by 1.6 p.c. between 2002 and 2003. Over the same period, employment expressed in FTEs contracted by 1 p.c. and the average number of hours worked per FTE remained unchanged, so that labour costs per FTE and per hour of work increased to a very similar degree, by 2.6 and 2.7 p.c. respectively, a rise similar to that recorded for temporary agency workers.

(1) Results not very representative.

The annual average cost per FTE thus increased from 44,874 euro in 2002 to 46,044 euro in 2003. Over the same period, the average hourly cost increased from 28.98 euro to 29.76 euro. The rise in hourly costs was smaller for full-time workers, at 2.5 p.c., than for part-time employment, for whom the increase was 4.8 p.c. In 2003, the hourly cost of a part-time worker therefore represented 88.2 p.c. of the cost of a full-time worker, against 86.2 p.c. in 2002. However, as already noted in the past, these divergent movements are not due to any unexpected increase in the cost of part-time workers but to a change in their characteristics. The expansion of part-time employment, which now concerns a larger percentage of skilled workers and, via the extension of the time credit scheme, older workers who are better paid than the average worker, is having structural effects, though these are difficult to quantify.

The increase in the hourly costs per FTE was more modest in large firms, at only 2.6 p.c., than in small and medium-sized firms, where it came to 3.1 p.c. Among the branches of activity, the steepest increases were recorded in agriculture (4.9 p.c.)[1], and in the other services branch (3.7 p.c.). In the latter branch, the rise mainly reflects the increase in hourly costs recorded in health and social work, where the net expansion in the volume of labour expressed in hours, namely 1.9 p.c., was accompanied by a sharp rise in labour costs reaching almost 6 p.c. In trade, transport and communications, hourly costs increased by 3.2 p.c. In industry and in the financial, real estate and business activities branch, the increase came to 2.7 and

TABLE 8 LABOUR COSTS RELATING TO WORKERS RECORDED IN THE STAFF REGISTER

(Annual averages, reduced population)

	2002	2003	Percentage changes between 2002 and 2003
Per FTE, in euro	44,874	46,044	2.6
Per hour worked, in euro			
Per full-time worker	29.58	30.31	2.5
Per part-time worker	25.50	26.74	4.8
Total	28.98	29.76	2.7
Hourly cost of a part-time worker in p.c. of a full-time worker	86.2	88.2	–

Source : NBB (social balance sheets).

2.5 p.c. respectively. Construction recorded the smallest increase, at less than 2 p.c.

1.3 Developments in training

Since the 2002 financial year, the social balance sheet has contained two sections on training. In principle, the first – which has been included from the start – deals only with formal training, i.e. training provided on premises reserved for that purpose in the firm or outside. It therefore excludes on-the-job training, mentoring and self-training, for example. The method of recording persons receiving training, and the hours and costs of training, is clearly defined in a methodological note available for firms on the Central Balance Sheet Office website[1]. The second section is intended to identify the level of training, guidance and mentoring activities granted in accordance with the Law of 5 September 2001 aimed at improving the employment rate of workers. It is still difficult to assess the quality of the information contained in this second section, which was only applicable for the second year in 2003. Nonetheless, the social balance sheet once again represents a unique source of information on this question.

During 2003, 4,172 firms or 10.3 p.c. of the reduced population completed the items in the section on formal training for workers. This percentage has been rising steadily since the social balance sheet was introduced. Taking the total population, it increased from 6.7 to 7.3 p.c. between 1997 and 2002; this represented around 5,200 firms in 2002.

This increase reflects the fact that firms are paying greater attention to training for their staff, as well as to the transfer of information on their training policy. The biennal central agreement concluded at the end of 1998 had in fact set a quantitative target for workers' vocational training, in order to encourage initiatives. The target figure for the training budget of firms as a whole was set at 1.9 p.c. of the labour costs in 2004. Intermediate targets had been set, namely 1.4 p.c. for 2000 and 1.6 p.c. for 2002. The 1.9 p.c. target was repeated at the time of the Employment Conference in September and October 2003, where it was also agreed that an effort would be made to provide training for an additional 60,000 workers each year between now and 2010, so that, by that date, one in two workers would attend training every year.

To meet these targets, the training policy has to be unaffected by cyclical fluctuations: vocational training has to be encouraged regardless of whether activity is buoyant or slack. Quite obviously, that is not yet happening: the training policy is still too sensitive to the economic situation. Training budgets are cut when there is a slowdown in activity, because they are probably seen as a cost control instrument which will not come to much harm in the short term, but it subsequently takes a long time for these budgets to be restored to their previous level.

The funds allocated to vocational training in the reduced population declined once again between 2002 and 2003. Overall, the fall came to 3 p.c. Expressed as a percentage of labour costs, training costs dropped from 1.26 p.c. in 2002 to 1.20 p.c. in 2003. Starting from a level of 1.34 p.c. of labour costs in 1998, an increase of just over 0.1 percentage point a year would have been needed to meet the target of 1.9 p.c. set for 2004, but the reduction recorded since 2001 negated the efforts previously made. The percentage represented by training costs in the labour costs of the reduced population in 2003 is comparable to the figure recorded for the total population in 1997. One factor here might be that firms have greater access to training schemes which are subsidised, and therefore less expensive. All the same, the other training indicators also came to an abrupt halt after 2000, and there is now a substantial cumulative shortfall in participation in training.

In the reduced population, 37.6 p.c. of workers had access to training in 2003, representing around 515,000 workers. This number is lower than in 2002, but as employment has also fallen the participation rate has remained virtually unchanged. However, this is not in line with the target pronounced at the Employment Conference.

After declining between 2000 and 2002, the number of hours of training expressed as a percentage of the total hours worked also remained more or less static between 2002 and 2003. On that date, time spent on training represented 0.83 p.c. of the hours worked in firms in the reduced population. The average time spent on training came to around 31 hours per person trained in 2003, at an average cost of 1,336 euro per trainee.

The section on training, guidance and mentoring activities records the number of persons aged over 50 years receiving allowances for halving their working hours and spending the time thus made available on training new recruits in their firm or branch of activity. In 2003, 327 firms in the reduced population, or less than 1 p.c. of the total, completed this section, against 276 a year earlier. The number of trainers recorded increased sharply, rising from 5,125 in 2002 to 6,075 in 2003, as did the number of persons receiving this informal type of training,

(1) http://www.nbb.be/BA/F/pdf/Mesures_d_emploi. pdf

TABLE 9 VOCATIONAL TRAINING

	Training firms (in p.c. of the total number of firms)	Number of trainees (in p.c. of employment as at 31 December)	Hours of training		Training costs	
			(in p.c. of the total hours worked)	(average per trainee, in hours)	(in p.c. of labour costs)	(average per trainee, in euro)
Total population						
1997	6.7	29.6	0.68	34.0	1.22	42.9
1998	7.5	33.3	0.75	32.9	1.34	44.3
1999	7.9	34.9	0.75	31.1	1.30	44.2
2000	7.6	35.2	0.86	35.3	1.41	42.8
2001	7.1	35.7	0.84	33.3	1.35	43.9
2002	7.3	35.1	0.79	31.3	1.26	45.8
Reduced population						
2002	10.0	37.6	0.83	31.2	1.26	43.9
2003	10.3	37.6	0.83	31.2	1.20	42.8
p.m. Percentage changes	*2.2*	*0.1*	*0.5*	*0.2*	*–4.5*	*–2.5*

Source : NBB (social balance sheets).

up from 21,758 to 26,123 workers over the same period, which represented 1.9 p.c. of the total workforce in 2003. Conversely, the volume of hours of training given by these workers aged over 50 years declined slightly so that, on average, each of them devoted only 116 hours of work to these activities in 2003, against 138 in 2002.

2. Regional breakdown of the social balance sheets

This article addresses the analysis of the social balance sheets from a new angle, based on a breakdown of firms filing a social balance sheet according to the region where they are located. The methodology for this breakdown is detailed in section 2.1. The other sections deal in turn with the analysis of the structure of employment, working hours and labour costs, types of employment contracts and, finally, training policy, according to the region where firms are located.

Since the population used for the 2003 analysis is smaller than for previous years, owing to the reduced number of social balance sheets submitted before 9 September 2004, the results for this year were liable to be insufficiently representative at regional level. The year 2003 was therefore disregarded in this analysis. Similarly, the year 1997 was omitted because there were too few social balance sheets of adequate quality for that year. The analysis presented in this part therefore puts in perspective the results recorded in the social balance sheets for the years 1998 to 2002.

2.1 Methodology used

The method used for the regional breakdown consisted in allocating the whole of the social balance sheet of each firm to the region in which it recorded the greatest number of jobs, on the basis of the data collected by the NSSO in its data file of establishments compiled as at 30 June in the year in question.

For firms whose registered office and place(s) of business are located in the same region – i.e., single-region firms – the allocation to a region poses no particular problems. In 2002 there were 70,615 of these single-region firms, representing 98.5 p.c. of all firms filing a social balance sheet of adequate quality for that year. These are generally fairly small companies : on average, they employ fewer than 20 workers, while firms established in more than one region employ 460 workers on average.

For the multi-region firms, i.e. those located in more than one region, all the items on the social balance sheet were attributed to the region in which the firm records the largest number of jobs. This method was preferred to one based on a proportional allocation formula whereby the items on the social balance sheet of multi-region firms would be divided between the regions where they have

their registered office and places of business. It is easy to calculate such an allocation formula for jobs on the basis of the data collected by the NSSO, or for wages on the basis of the tax statistics, in line with the NAI's method for compiling the regional accounts. On the other hand, it is not possible at present to define a relevant allocation formula for a range of other variables, particularly the gender, working arrangements or type of contract of the workers. Similarly, there is no information available which would allow to breakdown vocational training or the number of temporary workers among the firm's various places of business. However, the behaviour of the firms on these issues may vary considerably from one region to another according to the specific characteristics of each establishment, the training supply and the availability of temporary agency workers.

Altogether, a choice between several regions was made for 1,067 multi-region firms in 2002. Of these, the companies with the majority of their jobs in Flanders totalled 535, and they accounted for 26.2 p.c. of workers employed by firms filing a social balance sheet and located exclusively or mainly in Flanders. In Wallonia and Brussels, the number of multi-region firms totalled 221 and 311 units respectively, representing 16.1 and 42 p.c. of the workers recorded in the social balance sheets of firms attributed to those two regions. In the 2002 financial year, the multi-region firms employed an average of 270 workers in Wallonia, 407 in Brussels and 570 in Flanders.

TABLE 10 REGIONAL BREAKDOWN OF FIRMS FILING A SOCIAL BALANCE SHEET IN 2002 (1)

(Total population)

	Number of firms	Number of workers recorded in the staff register	Labour costs
Brussels			
Units (2)	9,305	301,552	15,108
In p.c. of the total	13.0	16.4	20.5
of which :			
Single-region firms	96.7	58.0	53.4
Multi-region firms	3.3	42.0	46.6
Flanders			
Units (2)	44,566	1,161,960	45,386
In p.c. of the total	62.2	63.3	61.6
of which :			
Single-region firms	98.8	73.8	70.7
Multi-region firms	1.2	26.2	29.3
Wallonia			
Units (2)	17,811	372,560	13,218
In p.c. of the total	24.8	20.3	17.9
of which :			
Single-region firms	98.8	83.9	80.4
Multi-region firms	1.2	16.1	19.6
Belgium			
Units (2)	71,682	1,836,072	73,711
In p.c. of the total	100.0	100.0	100.0
of which :			
Single-region firms	98.5	73,2	68.9
Multi-region firms	1.5	26,8	31.1

Source : NBB (social balance sheets).

(1) Results based on a majority breakdown, which consists in allocating the social balance sheet of a firm to the region in which it records the largest number of jobs.

(2) Labour costs : millions of euro.

TABLE 11 REGIONAL REPRESENTATIVENESS ACCORDING TO THE EMPLOYMENT CRITERION IN 2002

(Units, unless otherwise stated)

	Number of employees				Representativeness [1] (p.c. of the total)
	In the social balance sheets [2]			In the national accounts [5]	
	Majority breakdown [3]	Proportional breakdown [4]	Difference		
	(1)	(2)	(3) = (2) – (1)	(4)	(5) = (2) : (4)
Brussels	301,552	308,988	7,436	420,059	73.6
Flanders	1,161,960	1,093,429	–68,531	1,559,783	70.1
Wallonia	372,560	433,655	61,095	621,024	69.8
Total	1,836,072	1,836,072	0	2,600,866	70.6

Sources : NAI, NBB (social balance sheets).

(1) Based on the proportional breakdown.

(2) Total population.

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

(4) The proportional breakdown consists in allocating all the items of a firm's social balance sheet between the regions where the firm is established, according to the number of jobs recorded there.

(5) Employment in the private sector : employment recorded in the total economy (S1) less employment in the public sector (S13). Moreover, this concept excludes employees in the branches L "General government", M "Education" and P "Domestic services".

This approach to the regional analysis naturally introduces distortions in the employment breakdown. According to the national accounts, which use a proportional breakdown entailing the allocation of employment recorded in a firm between the regions where it has establishments according to the NSSO data, the Flemish region has 1,093,000 jobs, or 69,000 fewer than according to the majority allocation method used in this article. Conversely, employment in Wallonia recorded in the national accounts is 61,000 units higher than that obtained on the basis of the majority allocation, while for the Brussels region the national accounts record 7,000 additional jobs. These divergences are due largely to the fact that firms active throughout Belgium are attributed to Flanders, which covers 44 p.c. of the territory but comprised 58 p.c. of the Belgian population as at 1 January 2004. Conversely, others are allocated to the Brussels region because their registered office is located there, and that is the central location for many services and therefore workers.

These distortions, due to the uneven distribution of the territory, population and economic activity of the country between the three regions, calls for certain reservations regarding the interpretation of the results. That is why the charts and tables in this section distinguish between multi-region firms and single-region firms for each of the regions. It is therefore still possible to compare the specific regional characteristics of firms operating in only one of the country's three regions without these results being influenced by those of the large multi-region firms which are often active in all three regions.

Altogether, the 71,682 firms in the total population employed 1,836,072 workers in 2002, representing 71 p.c. of the number of employees in the private sector recorded in the national accounts. At regional level, after adjustment for the distortions resulting from the majority breakdown, the degree of representativeness came to 74 p.c. in Brussels, and to 70 p.c. in Flanders and in Wallonia. The slightly lower figures recorded in the Flemish and Walloon regions are possibly due to the absence of any obligation to submit a social balance sheet in the case of small non-profit organisations employing fewer than 20 FTEs, and self-employed persons with paid staff, who are probably more numerous there.

2.2 Structure of regional employment

The regional breakdown of the social balance sheets reveals certain economic characteristics specific to each of the regions.

In regard to single-region firms, Brussels is notable for a large concentration of activity in the branches "financial, real estate and business activities" and "trade, transport and communications", each of which represents 30 p.c. of total employment. Workers employed in the other services branch represent a quarter of the workforce and

those employed in industrial firms another 10 p.c., while construction is still a marginal sector of activity (3.6 p.c.) and agricultural employment is – not surprisingly – virtually non-existent. In some respects, the breakdown by branch of activity of the Flemish and Wallonian single-region firms is fairly similar: trade, transport and communications represent 25 p.c. of employment there; the "construction" and "financial, real estate and business activities" branches represent 8 to 10 p.c. of the total, and agriculture less than 1 p.c. On the other hand, industrial employment represents 34 p.c. of the total in Flanders, against just 28 p.c. in Wallonia, while the other services branch represents 21 p.c. of Flemish employment and 28 p.c. of Wallonian employment. While the community, social and personal services branch is of equal relative importance in the two regions, the health and social work sector is proportionally more important in Wallonia.

The breakdown of employment by branch of activity in multi-region firms partly reflects the distortions resulting from the regional breakdown method applied to the social balance sheets. Over half of the workers in multi-region firms located mainly in Brussels are active in the financial, real estate and business activities branch, mainly because the headquarters of banks and insurance companies are concentrated in the capital. The fact that the largest firms active in trade and in transport and communications are allocated to Flanders accounts for the high density (53 p.c.) of Flemish multi-region employment in that branch, whereas in Wallonia, less than 30 p.c. of jobs are recorded in that sector. Conversely, industry accounts for 43 p.c. of multi-region employment in Wallonia, against just 22 p.c. in Flanders. The construction branch there is also relatively more developed, as is the financial, real estate and business activities branch, though the difference is less marked.

It is in single-region firms located in Brussels that the male/female breakdown of employment is the most balanced: women represent around 44 p.c. of employees here, whereas in Flanders and in Wallonia, they account for no more than 40 p.c.; the same applies in multi-region firms as a whole. For them, the Brussels region also differs from the other two regions by having a slightly higher proportion of female workers, namely 39.6 p.c., against 36 and 35.3 p.c. respectively in Flanders and Wallonia. The proportion of female workers in Brussels is partly due to the large number of service activities concentrated there. Moreover, those activities have expanded considerably in recent years, thus tapping the available labour supply which consists mainly of women.

2.3 Working hours and labour costs

In Belgium, the annual working hours per FTE averaged 1,550 hours in 2002. However, if this variable is considered at regional level, marked differences emerge: the average working hours are highest in single-region firms located mainly in Brussels, where they total 1,606 hours.

TABLE 12 STRUCTURE OF REGIONAL EMPLOYMENT IN 2002

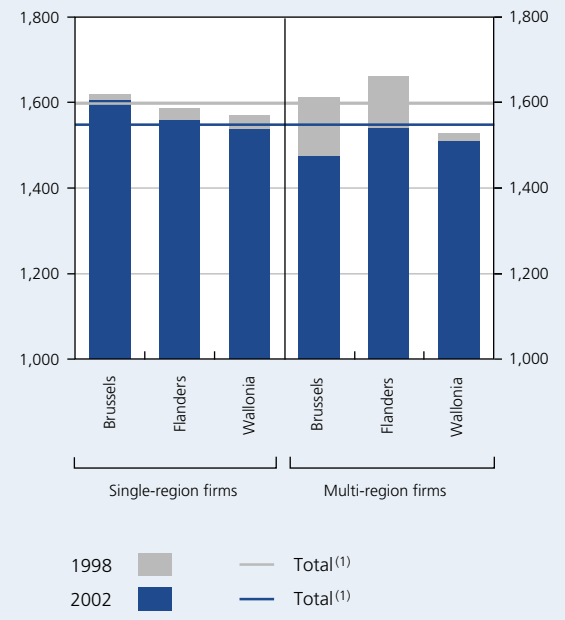
(Percentages of the total, total population)

	Single-region firms			Multi-region firms			Belgium
	Brussels	Flanders	Wallonia	Brussels	Flanders	Wallonia	
By branch of activity							
Agriculture (1)	0.1	0.7	0.6	0.0	0.0	0.0	0.5
Industry	10.8	33.7	28.0	7.4	22.2	43.3	27.2
Construction	3.6	8.4	10.4	5.0	3.9	8.7	7.3
Trade, transport and communications	30.7	25.2	25.1	29.9	53.3	26.3	30.7
Financial, real estate and business activities	30.0	10.7	7.7	55.4	13.7	16.0	15.8
Other services	24.8	21.3	28.1	2.3	6.9	5.7	18.6
By sex							
Male	56.0	61.5	60.4	60.4	64.0	64.7	61.2
Female	44.0	38.5	39.6	39.6	36.0	35.3	38.8

Source: NBB (social balance sheets).
(1) Data not very representative.

CHART 5 WORKING HOURS PER FTE

(Annual averages, total population)



Source : NBB (social balance sheets).
(1) Single-region and multi-region firms in the three regions.

In Flemish single-region firms, the figure is 1,557 hours, or about twenty hours more, on average, than for their counterparts in Wallonia. Average working hours are generally shorter in multi-region firms, where the annual figure is 1,542 hours in Flanders, 1,511 hours in Wallonia and only 1,475 hours in Brussels.

These divergences are due to structural differences in the economic fabric of each region. Thus, the annual average working hours in multi-region firms located mainly in Brussels are longer than those recorded in the other regions for industry and construction, and the same for the trade, transport and communications branch. On the other hand, they are significantly shorter than the figure recorded in Wallonia and longer than the Flanders figure in the other services branch. In particular, the working hours are shortest in the financial, real estate and business activities branch which accounts for over half the personnel employed in Brussels multi-region firms.

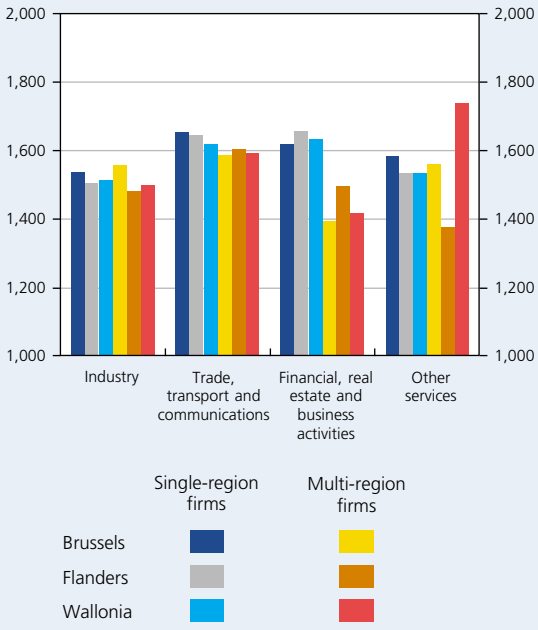
In single-region firms, the differences between the three regions are only minor at branch of activity level. The relative importance of each branch therefore explains most of the divergences apparent at overall regional level.

Since 1998, a reduction in annual average working hours has been seen in all categories of firms, but it was considerably greater in multi-region firms located mainly in Brussels and in Flanders, where the decline totalled 8.5 and 7.2 p.c. respectively, whereas the reduction was less than 2 p.c. in Wallonian multi-region firms. Overall, for the country as a whole, the decline came to 3.1 p.c.

The preponderance of financial and insurance services in economic activity in Brussels also influences the average cost of labour. This branch of activities is the one which, on average, records the highest hourly costs in the whole economy, except for the energy and water branch. The costs came to 45 euro per hour worked in 2002, against an average of 28.7 euro taking all branches of activity together. Thus, the hourly costs are highest in Brussels multi-region firms, at almost 40 euro, against approximately 31 euro in multi-region firms located mainly in the other two regions. Among the single-region firms, Brussels is once again the place where hourly costs are highest, at 31.7 euro per hour, compared to 26.9 and 24.6 respectively in Flanders and Wallonia.

CHART 6 WORKING HOURS PER FTE IN 2002 IN THE MAIN BRANCHES OF ACTIVITY

(Annual averages, total population)



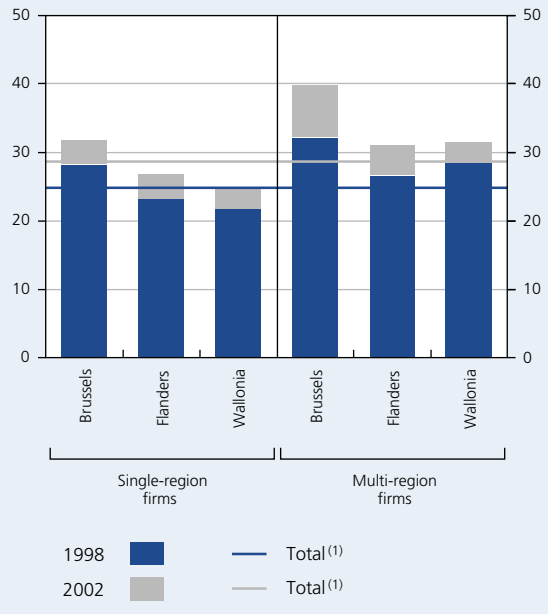
Source : NBB (social balance sheets).

As regards labour costs per hour worked, the regions are ranked in the same order in the various branches of activity in the case of single-region firms, in contrast to the results for working hours. These costs are still lowest in firms based in Wallonia and highest in Brussels. While the differences are fairly minimal between the various regions in industry, they are greater for the branches "trade, transport and communications" and "other services". The difference is greatest in the financial, real estate and business activities branch, where hourly costs in Brussels in fact come to 39 euro, against around 30 in Flanders and only 28 in Wallonia.

While hourly labour cost levels differ from one region to another, the movements recorded between 1998 and 2002 are relatively uniform. On average, the increase came to just over 15 p.c. In Flanders, this rise was slightly steeper since it came to 16 p.c. for both single-region and multi-region firms. Elsewhere, the rate of increase was more moderate, except in multi-region firms located mainly in Brussels, where hourly labour costs rose by 24 p.c. – though starting from a level which was already higher.

CHART 7 LABOUR COSTS PER HOUR WORKED

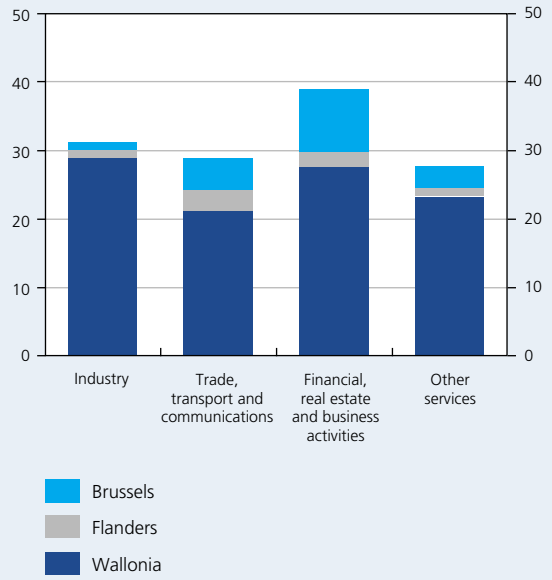
(Annual averages, total population)



Source : NBB (social balance sheets).
(1) Single-region and multi-region firms in the three regions.

CHART 8 LABOUR COSTS PER HOUR WORKED IN 2002 IN THE MAIN BRANCHES OF ACTIVITY IN SINGLE-REGION FIRMS

(Annual averages, total population)



Source : NBB (social balance sheets).

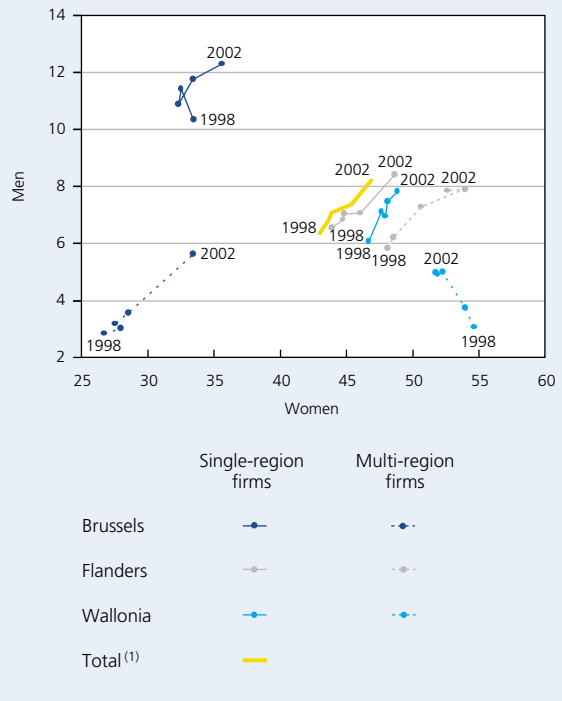
2.4 Type of employment contracts

Part-time employment has been gaining in importance for many years now. Traditionally more common among women, it has also become recently more popular with male workers. In this regard, the behaviour of single-region firms based in Flanders and in Wallonia has been fairly similar since 1998, so that the part-time employment rates, both male and female, were the same at around 8 p.c. for men and 48 p.c. for women in 2002. While multi-region firms based mainly in Flanders followed a similar trend than the latter, those located mainly in Wallonia present an atypical picture : starting from what was admittedly a very high level, the female part-time employment rate declined there, dropping from almost 55 p.c. in 1998 to 52 p.c. in 2002. In contrast, male part-time employment rate, which was very uncommon, increased significantly in these firms.

Finally, firms located in Brussels stand out from the others by the relatively low proportion of female part-time employment recorded there. In 2002, around 35 p.c. of female workers in Brussels' single-region firms worked part-time, and fewer still in multi-region firms, whereas the national average was almost 47 p.c. Conversely, male part-time employment represented over 12 p.c. of the

CHART 9 CHANGES IN MALE AND FEMALE PART-TIME EMPLOYMENT RATES BETWEEN 1998 AND 2002

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



Source : NBB (social balance sheets).
(1) Single-region and multi-region firms in the three regions.

male workforce in single-region firms in Brussels, whereas the figure was less than 8.5 p.c. in all other categories of firms.

While part-time employment is not noticeably more common in single-region firms located in Wallonia than in those operating in Flanders, the former make greater use than the latter of more flexible employment contracts, namely temporary contracts in the case of workers recorded in the staff register, and temporary agency work contracts for outside staff.

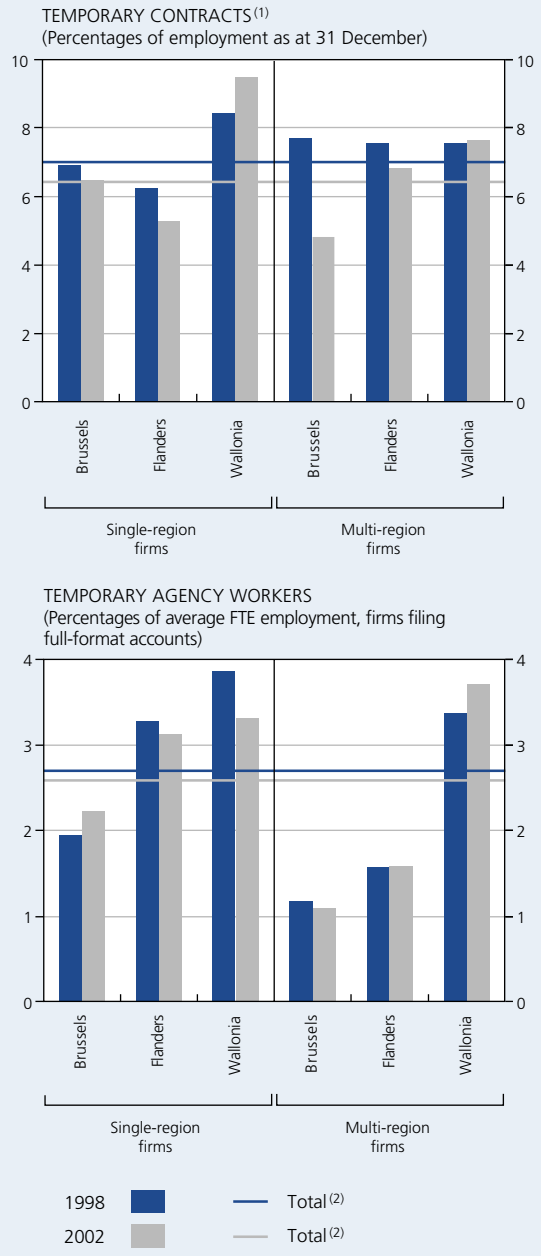
In firms operating exclusively in Wallonia, temporary contracts (i.e. fixed-term contracts, replacement contracts and contracts concluded for a specific project) represented 9.5 p.c. of the workers recorded in the staff register in 2002, whereas the figures were 6.5 and 5.3 p.c. respectively in single-region firms in Brussels and Flanders. Moreover, while this proportion declined there between 1998 and 2002, it increased by one percentage point in Wallonian firms.

Temporary employment contracts are also more common in multi-region firms based mainly in Wallonia than in the other regions : 7.6 p.c. of workers there are employed under this type of contract, a rate which varied little between 1998 and 2002. In Flemish multi-region firms, a decline of 0.8 percentage point was recorded over that period, whereas in Brussels the proportion of temporary contracts dropped from 7.7 p.c. of the total in 1998 to under 5 p.c. in 2002.

Wallonian firms also make greater use of temporary agency workers. This type of arrangement, initially introduced to cope with a temporary excess workload, is now also widely used as an instrument for selecting new staff, since it transfers to the temporary agency part of the costs of recruitment and enables a firm to avoid taking on workers until they have proved their worth. It should be remembered that only firms subject to the obligation to file full-format accounts are required to provide information on the use of temporary agency workers. In Wallonia, temporary workers represented 3.7 p.c. of employment in terms of FTEs in multi-region firms and 3.3 p.c. in single-region firms in 2002, while the average for Belgium was 2.6 p.c. The level recorded in 2002, although high, is still lower than the figure applicable in 2000, a year in which economic growth was particularly strong. That year, the proportion of part-time workers had exceeded 4 p.c. of employment in terms of FTEs in Wallonia, as well as in the single-region and in the multi-region firms. This intensive use of temporary agency workers in Wallonia must be seen in the context of that region's greater specialisation in industry, particularly in the case of multi-region firms : industry is the branch employing over half of the temporary workers recorded in the social balance sheets as a whole.

Flemish firms make less use of temporary workers, and Brussels firms less still. Many of the multi-region firms located in Brussels in fact belong to the financial sector, which makes little use of temporary work : in all, it represented only just over 1 p.c. of the FTE employment in 2002. In Flemish multi-region firms, this proportion was not much higher, at 1.6 p.c. The reason for this low penetration is the presence of very large firms operating in the transport and communications sector, where the use of temporary agency workers is also uncommon. In single-region firms in these two regions, where economic activity is more diversified, temporary agency workers represent a larger proportion of FTE employment, namely 2.2 p.c. in Brussels and 3.1 p.c. in Flanders.

CHART 10 USE OF FLEXIBLE EMPLOYMENT CONTRACTS
(Total population)



Source : NBB (social balance sheets).
(1) Fixed-term contracts, replacement contracts or contracts concluded for a specific project.
(2) Single-region and multi-region firms in the three regions.

2.5 Training

While the nature of the activity influences the firm's training policy, size is the main factor explaining the differences between companies. There are in fact wide divergences in the level of the training indicators for large multi-region firms and for single-region firms, which operate on a smaller scale.

In 2002, 5,200 firms had provided information on their training policy, or 7.3 p.c. of all companies submitting a social balance sheet. In single-region firms, which employ an average of around 19 FTEs in each of the three regions, this figure was close to 7 p.c. in Flanders and Brussels, but less than 5 p.c. in Wallonia. For comparison, around half of multi-region firms, employing an average of 460 FTEs, gave information on their training efforts in their social balance sheet. In 2001, the proportion of multi-region training firms was the same in Flanders and in Wallonia, whereas Wallonian multi-region firms are, on average, only half the size of their Flemish counterparts. Nevertheless, this difference increased considerably in 2002, as the percentage of training firms increased in Flanders, to 49.7 p.c., but declined sharply in Wallonia, to 46.6 p.c. Nonetheless, this proportion in Wallonia remains above 45.7 p.c.

Expressed as a percentage of the workforce as at 31 December, the proportion of workers trained in multi-region firms is also very similar in the various regions. In this respect, Wallonia has achieved remarkable progress since the proportion of workers attending training increased continuously between 1998 and 2001, rising from 40.5 to 55.3 p.c., before dropping to 53.1 p.c. in 2002. In the other regions, progress was patchier. In Brussels, the participation rate increased from 53 p.c. in 1998 to 62 p.c. in 2000, before dropping back to 55 p.c. in 2002. In Flanders, the increase recorded between 2000 and 2001 was totally wiped out in 2002, a year in which 56.5 p.c. of the workforce had access to training.

In Wallonian single-region firms, the 3.5 percentage point rise in the participation rate between 1998 and 2002 was not enough to make up the shortfall in workers' participation in training, even though this rate hardly increased in the other two regions. In 2002 it came to around 30 p.c. in both Flanders and Brussels, whereas the rate was still just below 20 p.c. in Wallonia.

The fact that single-region firms in Wallonia are lagging behind firms in the same category in Flanders and Brussels does not appear to be due to the difference in economic structure, since – whatever the branch of activity – Wallonian firms record training participation rates which are lower, sometimes significantly lower, than those in the other two regions. Such a shortfall is also seen in terms of the relative duration and costs of training.

CHART 11 VOCATIONAL TRAINING

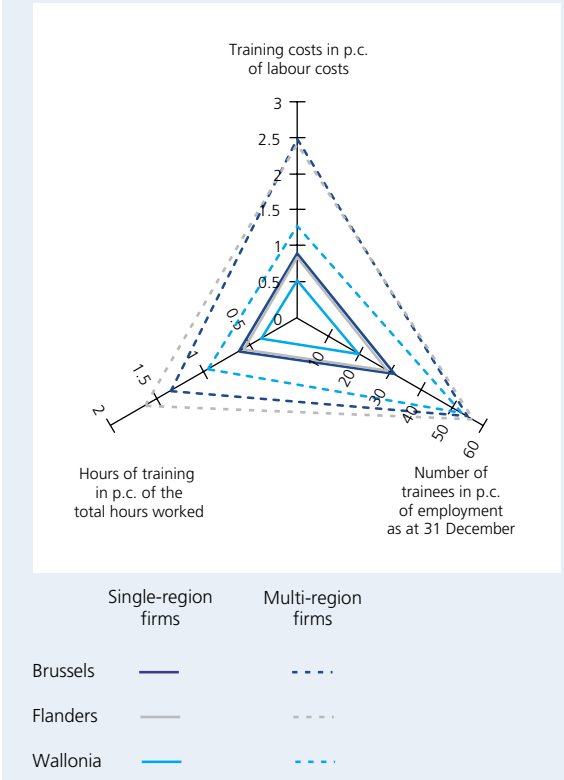
(Total population)

Source : NBB (social balance sheets).

(1) Single-region and multi-region firms in the three regions.

CHART 12 VOCATIONAL TRAINING IN 2002 : REGIONAL DIFFERENCES

(Percentages, total population)



Source : NBB (social balance sheets).

For these last two indicators, Wallonian multi-region firms also achieve considerably lower scores than Flemish and Brussels companies. In the latter case, the differences are probably due partly to the smaller size of the Wallonian firms, as the gap between firms as regards training efforts expressed in hours and budgets is decidedly greater than the discrepancy in participation rates. The branch of activity also plays a key role for these multi-region firms. Firms in the financial services branch (located mainly in Brussels) and those in the transport and communications branch (attributed to the Flemish region) are major consumers of training, whereas industry (the branch of activity which is proportionally more important in Wallonia) spends less on this item.

Thus, according to the indicator of the duration of training, vocational training accounted for 0.95 p.c. of the total hours worked in Wallonian multi-region firms in 2002, against 1.36 p.c. in the Brussels region and 1.62 p.c. in the Flemish region. The gap between Wallonia and the other regions widened considerably between 2001 and 2002. In single-region firms, this indicator was relatively stable in the three regions. The level seen in Wallonia, namely 0.38 p.c. was around two-thirds of the level recorded in the other two regions, of around 0.60 p.c.

The cost indicator remained practically unchanged in Wallonian single-region firms between 1998 and 2002, as it increased by just 4 p.c., whereas over the same period the duration of training in proportion to the hours worked rose by 12 p.c. and the participation rate went up by 21 p.c. The more modest rise in the cost indicator is possibly due to the development of "training vouchers", introduced in Wallonia in 1998, which subsidise part of the training costs of SMEs. A similar subsidy scheme was not introduced in the Flemish region until 2002, so that its effects are probably not yet very apparent in the social balance sheets relating to that year. Overall, in 2002, the training budget represented 0.52 p.c. of the labour costs of Wallonian single-region firms, whereas the figures were 0.84 and 0.87 p.c. respectively in Flemish and Brussels firms. In the latter, the level attained in 2002 is less than 60 p.c. of the 1998 figure, revealing a steady decline in training efforts expressed in budget terms.

In multi-region firms, which are larger, the budget devoted to training is also proportionally higher than in single-region companies : thus, in Flanders and Brussels, training costs represented around 2.5 p.c. of labour costs, whereas Wallonia lagged well behind with a figure of around 1.3 p.c.

Conclusion

Introduced in 1996, the social balance sheet contains valuable information on firms' policies on employment, labour costs and training.

The first part of the article presented the provisional results obtaining by analysing the social balance sheets for the year 2003. Since the social balance sheets for that year are not all available as yet, the study was based on a reduced population, constructed in accordance with the constant sample principle. In this reduced population, employment decreased by 0.8 p.c. in annual average terms in 2003, but the rate of job losses slowed down slightly towards the end of the year. While full-time employment contracted, the number of part-time employees increased once again. In particular, male part-time employment was up by 13 p.c. Analysis of staff turnover, which is only possible for firms filing full-format accounts, indicates that this increase is due mainly to the conversion of full-time contracts to part-time contracts. Net departures of employees with low or medium skills slowed down between 2002 and

2003. Conversely, net recruitment of skilled staff remained below the previous year's level. Employers preferred to use the more socially acceptable ways of implementing staff reductions, as there was hardly any increase in redundancies between 2002 and 2003, in contrast to retirement (including early retirement) and non-renewal of temporary contracts. There was a decline in the number of temporary contracts overall. The number of permanent contracts also fell, but less steeply. The structure of employment by type of contract, where permanent contracts are decidedly dominant, therefore changed little. On the other hand, the use of temporary agency workers increased, thus confirming signs of an improving situation for firms in the reduced population.

Labour costs increased by 1.6 p.c. between 2002 and 2003. Since employment in FTEs was down by 1 p.c. on average and working hours per FTE remained unchanged, the costs per hour worked increased by 2.7 p.c., the rise being more marked in small and medium-sized enterprises than in those of large size.

The training policy continued to reflect the economic uncertainty confronting employers in 2002. The participation rate to training stagnated, as did the percentage of working hours devoted to the acquisition or maintenance of staff skills. The indicator of the financial investment of firms in favour of training, measured by the training budget expressed as a percentage of labour costs, decreased by 4.5 p.c. between 2002 and 2003 and amounts to 1.2 p.c. in 2003. This further decline negates the efforts made here in the late 1990s so that, overall, between 1998 and 2003, there was no progress towards the 1.9 p.c. target set in the 1998 central agreement.

The second part of the article highlighted the specific characteristics of firms operating in the three regions of the country; the social balance sheets were allocated between these three entities on the basis of the region in which the largest number of jobs is recorded. As regards the share of each region in total employment, this approach introduces distortions: for example, large firms established in the three regions of the country are attributed to one region rather than another because their head office handles a range of activities centrally. The social balance sheets were therefore divided according to whether the firms operated in a single region or in more than one. A distinction was thus made between Brussels, Flemish and Wallonian single-region firms and multi-region firms operating predominantly in Brussels, Flanders and Wallonia.

This breakdown revealed the specific characteristics of each group of firms and the more or less large-scale influence of their economic activity on the regional results obtained for working hours or training policy, for example. However, the analysis presented is only an initial approach to the regional characteristics of firms via the social balance sheets. It needs to be developed in greater depth, particularly to gain a better understanding of the reasons for the differences recorded between firms in the three regions.

Thus, the average working hours recorded in the six groups of firms reflect the differences in the structure of activity since, within the individual branches of activity, working hours are relatively uniform in the various regions. That is less true as regards labour costs, at least for single-region firms, since hourly costs are systematically lower in Wallonian firms and higher in Brussels firms, even though the average size of the firms is the same.

As regards training policy, the Wallonian single-region firms are still lagging behind those in the other two regions, despite an improvement in the participation rate. In the case of multi-region firms, the poorer results in Wallonia are probably due in part to the smaller average size of Wallonian firms compared to those in the other regions, and to the preponderance of firms in the industrial sector, which traditionally devotes fewer resources to the training policy than a sector such as financial, real estate and business activities, a branch which accounts for 55 p.c. of the employment of Brussels multi-region firms, and the trade, transport and communications branch which represents over half of the workforce of Flemish multi-region firms.

Annex 1

Methodology for composing the populations of firms for the financial years 1997 to 2003 and characteristics of the reduced population used for the 2003 analysis

The populations of firms used to calculate the results set out in the tables and charts of this article consist of companies whose social balance sheets have passed a list of tests concerning homogeneity, consistency and quality. The methodological principles which determine whether or not the firms are included in the population are the same for the years for which all the accounts are available (namely 1997 to 2002) and for the 2003 financial year where only the accounts submitted before 9 September 2004 were token in consideration.

1. Methodology for the composition of the populations of firms used for analysis

1.1 Duration and closing date of the financial year

In order to ensure the internal consistency of the social balance sheets and the consistency of the period covered by the analysis, firms were only considered if they ended a 12-month financial year on 31 December.

1.2 Exclusion of some categories of firms or activities

The analysis takes no account of firms which – according to the national accounts – belong to the public sector and which mainly come under the branches L "General government" (mainly health insurance funds in the social balance sheet) and M "Education", in order to keep as close as possible to the private sector concept in which firms behave in a more uniform way. In contrast, public enterprises are included in the population in the branches where they pursue their activities.

Private sector firms in the NACE-BEL division 80 "education", and firms which do not pursue any visible activity or whose activities are not clearly defined, and the extraterritorial organisations belonging to the private sector are also disregarded. Temporary employment agencies are also omitted in view of the specific character of this sector and the difficulty of identifying anomalies in their social balance sheets.

Finally, firms employing less than one FTE were left out of the analysis owing to the numerous errors in their social balance sheets.

1.3 Consistency between annual accounts and social balance sheets

To allow comparison between the annual accounts and the social balance sheet of firms obliged to file both these documents, the analysis only takes firms into account if those documents relate to the same population of employees, which means that firms with some of their employees working abroad or not recorded in the staff register (statutory workers in public enterprises, for example) are excluded. In practice, this means that the items recording the workers employed, namely 1003 in the social balance sheet and 9087 in the annual accounts, have to tally. However, a small difference, less than 0.5 FTE, is tolerated.

1.4 Critical thresholds for some ratios

Some firms submit abnormal values for one or more financial year in respect of labour costs per hour or number of hours worked per FTE. Critical values have therefore been set for those ratios. In some cases the thresholds have been made flexible to take account of situations specific to certain branches of activity. Firms which, for any given year, submit results with ratios outside those critical values are removed from the population for that year. On the basis of that criterion, a firm can therefore be excluded for one year but included for the other years.

The average *labour costs per hour* obtained by taking item 1023 divided by item 1013 should be between 10 and 100 euro. For restaurants and cafés, hairdressers, taxis and sheltered workshops, the lower limit is reduced to 7 euro.

The *annual number* of hours worked per FTE, obtained by taking item 1013 and dividing it by item 1003, must not be lower than 800 (except in building and civil engineering, where the limit is reduced to 600 hours) or higher than 2,200 (except in road haulage where this threshold is raised to 3000 hours).

1.5 Adjustments to the training items

At present, the social balance sheet is the only instrument for measuring the training efforts made by firms each year; those efforts are regarded as essential both by the social partners and by the European authorities.

However, year after year, substantial and sometimes actually recurrent anomalies are found in the items relating to training (number of workers trained, hours of training and training costs). To eliminate those errors and still keep the social balance sheet as a whole for the firms for which the anomalies are found, the items relating to training are recorded as zero for those firms while the rest of the social balance sheet is kept intact. Two ratios are used to detect anomalies: the number of hours of training per trainee must not exceed 15 p.c. of the annual number of hours worked per FTE, while the average hourly training costs must not be more than five times higher than the average labour costs per hour. Conversely, no adjustments are made at all to the new items relative to mentoring introduced since the 2002 financial year.

The application of these strict methodological principles for composing the basic populations inevitably reduces the number of firms included in the analysis compared to the total number of firms filing a social balance sheet for each of the years in question, as recorded in the aggregate data published by the Central Balance Sheet Office.

In addition, the sectoral classification of firms used in this article differs from that used by the Central Balance Sheet Office because the activity code in the business register developed by the NSI on the basis of the DBRIS-databank [(1)] was systematically preferred to the code allocated by the Central Balance Sheet Office. However, the resulting reclassifications only concerned a few firms.

Despite the exclusion of a number of firms, necessary in order to ensure that the historical data used were reliable and consistent, the populations used for the years 1997 to 2002 are still amply representative of the total, as regards both the number of firms and the number of workers. The results obtained for those years may be regarded as representative for the entire employed population. However, there is a possibility that the aggregate data may be distorted by one-off events or by legal changes in some major companies. Those anomalies have not been corrected.

1.6 Composition of a constant population for the 2002-2003 analysis

Developments between 2002 and 2003 are measured on the basis of a constant, reduced population. The reason for using a reduced population is the reduced number of firms that had submitted their social balance sheet before 9 September 2004. The use of a constant population is also necessary to measure the changes in certain variables. Comparison of the results obtained on the basis of a reduced population with those based on a full population could introduce a bias and distort the conclusions of the analysis. Consequently, the results presented in this article reflect the developments observed in a stable population and may differ from the picture which emerges after the final closure for the full population. The method adopted implies the loss of the information concerning firms which have not submitted a social balance sheet, either in 2002 (recently established firms or firms taking on their first employee) or in 2003 (social balance sheet filed or processed too late, bankruptcy, merger, takeover, de-merger). Since the Central Balance Sheet Office gives priority to processing the annual accounts of large firms, the results based on the reduced population for 2003 lead to some distortion in favour of the large firms.

(1) The business register developed by the NSI for 2002 (containing a set of administrative information concerning the firms active during a particular year) was taken as the reference source. This means that a firm retains the same activity code for the full seven years of the analysis so long as it is included in the register drawn up by the NSI for 2002. If not, the firm keeps the activity code allocated by the Central Balance Sheet Office for the years in which it is included in the population.

For the analysis of the 2003 results, the reduced population consists of the companies which, on 9 September 2004, had filed a social balance sheet for both 2002 and 2003, and which also satisfied the quality criteria applicable to all firms (see 1.1 to 1.5). In addition, any firms affected by legal changes (merger, takeover, de-merger) were disregarded if they displayed inconsistencies in the staff movements recorded, or if abnormal changes were detected in regard to average labour costs per hour or average annual working hours, indicating incorrect recording of the implications of those legal changes.

At the end of the selection procedure, the reduced population consisted of 40,630 firms which together employed 1,371,916 workers in the year 2003 (see table 2 in annex 1).

The populations of firms for the financial years 1997 to 2002 have a different status from those for 2003. The tables in annexes 3 to 9 therefore contain data in level for the years 1997 to 2002; for 2003, they show mainly percentage changes which reflect developments observed in the firms in the reduced population between 2002 and 2003. In some cases, however, the level of the results for the reduced population is stated for the years 2002 and 2003, so that attention can be drawn to the possible differences between the results obtained in 2002 for the total population and for the reduced population.

2. Characteristics of the reduced population used to analyse the social balance sheets for the financial year 2003

2.1 Representativeness

In 2002, the employees recorded in the staff register of firms included in the reduced population represented 53.3 p.c. of private sector employment as recorded in the national accounts[(1)] and 75.3 p.c. of employees in all firms filing a social balance sheet, although the number of firms included in the reduced population represents only 56.7 p.c. of the total population of firms.

Representativeness according to the employment criterion varies from one branche of activity to another. Expressed as a percentage of the total number of workers employed in the firms of the total population for 2002, the representativeness is lowest in the branches where self-employed persons with paid staff, who are exempted from submitting a social balance sheet, are numerous as well as in branches dominated by small firms, which generally file their annual accounts later. That applies in agriculture, for instance, and in the hotel and restaurant branches. The low representativeness of the energy and water sector is due to the fact that, as an exceptional case, a very big firm is missing from the reduced population because of a change of legal status in 2003.

2.2 Characteristics of the reduced population in 2003

Of the 40,630 firms in the population used to analyse the situation in 2003, 1,120 firms – mainly belonging to the health and social work branch and to financial and insurance services, together employing around 300,000 workers – filed a separate social balance sheet. Also, the 32,121 firms which submitted accounts in the abbreviated format employed 260,313 workers; this corresponded to an average of 8.1 employees per firm, compared to an average of 130.6 employees in the 8,509 firms filing full format accounts. The firms which submitted accounts in the full format therefore represent 20.9 p.c. of the total number of social balance sheets and 81 p.c. of the total number of workers.

For the purposes of the analysis, the firms were classified by branch of activity and by size, the latter measured by the average number of employees expressed in FTEs.

(1) The concept of paid employment in the private sector used here corresponds to employment in the total economy (S1) less employment in the public sector (S13). That concept also omits workers employed in the branches L "General government", M "Education" and P "Domestic services", who are not taken into account in full in the social balance sheets.

TABLE 1 REPRESENTATIVENESS OF THE REDUCED POPULATION IN 2002

	Number of employees			Representativeness of the reduced population	
	In the national accounts [1]	In the social balance sheet of firms in the total population [2]	In the social balance sheet of firms in the reduced population [2]	In p.c. of the national accounts	In p.c. of the total population
	(1)	(2)	(3)	(4) = (3) : (1)	(5) = (3) : (2)
According to the employment criterion					
Agriculture	28,243	8,451	4,916	17.4	58.2
Industry	631,929	498,823	395,818	62.6	79.4
Mining and quarrying	3,049	2,902	2,578	84.6	88.8
Manufacturing industry	603,125	472,692	384,353	63.7	81.3
Energy and water	25,755	23,228	8,887	34.5	38.3
Construction	187,061	133,727	92,648	49.5	69.3
Trade, transport and communications	804,757	564,008	432,028	53.7	76.6
Trade and repairs	451,718	294,699	215,654	47.7	73.2
Horeca	99,338	48,874	25,073	25.2	51.3
Transport and communications	253,701	220,435	191,300	75.4	86.8
Financial services, real estate and business activities	491,664	290,093	214,114	43.5	73.8
Financial and insurance activities	130,699	119,883	90,372	69.1	75.4
Real estate and business activities	360,965	170,211	123,743	34.3	72.7
Other services	451,878	340,970	243,165	53.8	71.3
Health and social work	353,831	301,765	218,966	61.9	72.6
Other community, social and personal service activities	98,047	39,205	24,199	24.7	61.7
Total	**2,595,532**	**1,836,072**	**1,382,689**	**53.3**	**75.3**
According to the criterion concerning the number of firms	**n.**	**71,682**	**40,630**	**n.**	**56.7**

Sources: NAI, NBB.

(1) The concept of paid employment in the private sector used here corresponds to employment in the total economy (S1) less employment in the public sector (S13). Moreover, this concept excludes employees in the branches L "General government", M "Education" and P "Domestic services", who are not taken into account in the social balance sheets.

(2) Item 1001 + item 2002.

Manufacturing industry employs 27.3 p.c. of workers in the reduced population. The health and social work branch and trade each account for roughly 16 p.c. of employees. The transport and communications firms employ 14 p.c. of the workers, the real estate and business activities branch 9 p.c., while construction and financial and insurance services account for 6.8 and 6.4 p.c. respectively. The other branches are of rather minor importance; they each represent under 2 p.c. of the workers taken into account in this study.

The classification of the firms according to the number of employees is based on the average number of workers expressed in FTEs recorded in the staff register in 2002. [1] Small firms with no more than 50 FTEs, i.e. 92 p.c. of the total, accounted for rather more than a quarter of the workers in the reduced population, while medium-sized firms employing 50 to 250 FTEs represent 2,583 companies and almost 290,000 workers, which is 21 p.c. of the total. There were 654 large firms, i.e. those with over 250 FTEs, which employed 720,000 persons in 2003 of whom over 80 p.c. worked in companies with over 500 FTEs.

(1) Item 1003 in the social balance sheet.

TABLE 2 CHARACTERISTICS OF THE REDUCED POPULATION IN 2003

	Number of firms		Number of employees [1] (annual average)	
	Units	In p.c. of the total	Units	In p.c. of the total
Firms filing a social balance sheet	**40,630**	**100.0**	**1,371,916**	**100.0**
of which :				
Firms filing a separate social balance sheet	1,120	2.8	300,860	21.9
Firms filing a social balance sheet as an annex to the annual accounts	39,510	97.2	1,071,056	78.1
of which :				
Firms filing short-format accounts	32,121	79.1	260,313	19.0
Firms filing full-format accounts	8,509	20.9	1,111,603	81.0
Breakdown by sector				
Agriculture	638	1.6	4,940	0.4
Industry	6,816	16.8	385,976	28.1
Mining and quarrying	71	0.2	2,496	0.2
Manufacturing industry	6,705	16.5	374,526	27.3
Energy and water	40	0.1	8,954	0.7
Construction	6,068	14.9	93,164	6.8
Trade, transport and communications	17,245	42.4	429,256	31.3
Trade and repairs	12,830	31.6	218,675	15.9
Horeca	1,785	4.4	24,984	1.8
Transport and communications	2,630	6.5	185,597	13.5
Financial services, real estate and business activities	7,242	17.8	211,299	15.4
Financial and insurance activities	1,295	3.2	87,428	6.4
Real estate and business activities	5,947	14.6	123,871	9.0
Other services	2,621	6.5	247,281	18.0
Health and social work	1,484	3.7	223,251	16.3
Other community, social and personal service activities	1,137	2.8	24,030	1.8
Breakdown by size of firm [2]				
Up to 10 FTEs	27,431	67.5	118,996	8.7
More than 10 to 50 FTEs	9,962	24.5	243,851	17.8
More than 50 to 100 FTEs	1,557	3.8	119,277	8.7
More than 100 to 250 FTEs	1,026	2.5	169,359	12.3
More than 250 to 500 FTEs	352	0.9	132,321	9.6
More than 500 FTEs	302	0.7	588,112	42.9

Source : NBB (social balance sheets).
(1) Item 1001 + item 1002.
(2) Determined on the basis of the number of FTEs (item 1003) in 2002.

Annex 2

LIST OF SECTIONS AND DIVISIONS FROM THE NACE-BEL NOMENCLATURE OF ACTIVITIES USED FOR THE ANALYSIS

Title	Section	Division
Agriculture	A-B	01-05
Industry		
Mining and quarrying	C	10-14
Manufacturing industry	D	15-37
Energy and water	E	40-41
Construction	F	45
Trade, transport and communications		
Trade and repairs	G	50-52
Horeca	H	55
Transport and communications	I	60-64
Financial services, real estate, renting and business activities		
Financial and insurance activities	J	65-67
Real estate and business activities (1)	K	70-74
Other services		
Health and social work	N	85
Other community, social and personal service activities	O	90-93

(1) Excluding temporary work agencies (code NACE-BEL 74,502).

Annex 3

DEVELOPMENTS IN EMPLOYMENT BETWEEN 2002 AND 2003 IN FIRMS INCLUDED IN THE REDUCED POPULATION

	In FTEs			In 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	40	0.9	1.7	67	1.8	–4.2	–3.5	25	0.5	1.8
Industry	–11,427	–3.0	–3.3	–15,131	–4.1	5,288	17.2	–9,842	–2.5	–2.9
Mining and quarrying	–86	–3.4	0.2	–104	–4.2	22	23.5	–82	–3.2	0.4
Manufacturing industry	–11,398	–3.0	–3.4	–15,022	–4.2	5,195	17.2	–9,827	–2.6	–3.0
Energy and water	57	0.7	0.4	–5	–0.1	71	13.5	67	0.8	0.7
Construction	318	0.3	0.6	–168	–0.2	684	20.3	516	0.6	0.7
Trade, transport and communications	–1,013	–0.3	0.0	–5,775	–1.7	3,003	3.0	–2,772	–0.6	0.2
Trade and repairs	1,887	1.0	1.0	–385	–0.3	3,405	5.5	3,021	1.4	1.3
Horeca	84	0.5	0.1	2	0.0	–91	–0.7	–89	–0.4	0.4
Transport and communications	–2,984	–1.6	–1.1	–5,392	–3.2	–312	–1.3	–5,704	–3.0	–1.1
Financial services, real estate and business activities	–3,327	–1.7	–0.9	–5,485	–3.4	2,669	5.2	–2,816	–1.3	–1.3
Financial and insurance activities	–3,416	–4.0	–3.9	–4,880	–6.6	1,937	11.7	–2,944	–3.3	–2.8
Real estate and business activities	90	0.1	1.4	–605	–0.7	733	2.1	128	0.1	–0.2
Other services	3,091	1.6	2.5	1,177	0.9	2,939	2.5	4,116	1.7	2.4
Health and social work	3,314	1.9	3.0	1,495	1.4	2,790	2.5	4,285	2.0	2.8
Other community, social and personal service activities	–223	–1.1	–1.3	–317	–1.8	148	2.3	–169	–0.7	–1.3
Total	**–12,318**	**–1.0**	**–0.7**	**–25,314**	**2.3**	**14,541**	**4.8**	**–10,773**	**–0.8**	**–0.5**

Source : NBB (social balance sheets).

Annex 4

HOURS WORKED BY WORKERS RECORDED IN THE STAFF REGISTER

	Units, per year (total population)								*Percentage changes between 2002 and 2003 (reduced population)*		
	1997	1998	1999	2000	2001	2002					
			Per FTE			Per FTE	Per full-time worker	Per part-time worker	*Per FTE*	*Per full-time worker*	*Per part-time worker*
Agriculture	1,576	1,553	1,572	1,573	1,538	1,545	1,535	854	*0.1*	*–0.2*	*1.7*
Industry	1,538	1,546	1,537	1,534	1,518	1,506	1,505	967	*0.2*	*0.3*	*–0.9*
Mining and quarrying	1,500	1,490	1,516	1,517	1,479	1,487	1,485	863	*0.6*	*0.5*	*9.1*
Manufacturing industry	1,539	1,549	1,539	1,540	1,523	1,510	1,509	966	*0.2*	*0.3*	*–1.0*
Energy and water	1,497	1,498	1,501	1,417	1,415	1,427	1,430	1,005	*–1.1*	*–1.1*	*2.5*
Construction	1,433	1,430	1,469	1,462	1,439	1,428	1,423	920	*0.4*	*0.4*	*0.5*
Trade, transport and communications	1,724	1,709	1,706	1,674	1,638	1,626	1,625	911	*–0.3*	*0.2*	*1.7*
Trade and repairs	1,661	1,660	1,650	1,634	1,627	1,609	1,610	947	*–0.5*	*–0.1*	*–1.5*
Horeca	1,636	1,634	1,620	1,624	1,581	1,590	1,562	659	*–1.9*	*–1.2*	*–1.1*
Transport and communications	1,824	1,790	1,804	1,727	1,660	1,654	1,649	1,061	*0.0*	*0.6*	*10.6*
Financial services, real estate and business activities	1,618	1,628	1,612	1,601	1,588	1,551	1,552	878	*–0.5*	*0.2*	*–1.8*
Financial and insurance activities	1,556	1,573	1,534	1,529	1,500	1,428	1,440	915	*–0.2*	*0.9*	*–4.1*
Real estate and business activities	1,678	1,676	1,676	1,657	1,653	1,645	1,641	860	*–0.9*	*–0.7*	*–0.7*
Other services	1,579	1,567	1,560	1,558	1,536	1,536	1,526	912	*0.1*	*0.0*	*0.6*
Health and social work	1,576	1,563	1,555	1,553	1,530	1,528	1,515	924	*0.1*	*–0.2*	*0.6*
Other community, social and personal service activities	1,610	1,596	1,599	1,595	1,581	1,592	1,584	765	*0.7*	*0.7*	*0.9*
Total	**1,601**	**1,598**	**1,594**	**1,585**	**1,562**	**1,549**	**1,544**	**912**	***–0.1***	***0.2***	***0.5***

Source : NBB (social balance sheets).

Annex 5

BREAKDOWN OF EMPLOYMENT BY TYPE OF CONTRACT AND BY SEX

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

	1997	1998	1999	2000	2001	2002	*2002*	*2003*
	(total population)						*(reduced population)*	
By type of contract								
Permanent contract	93.7	93.0	92.7	93.0	93.6	93.6	*94.0*	*94.3*
Fixed-term contract	4.9	5.4	5.7	5.5	4.9	5.1	*4.7*	*4.6*
Agriculture	5.3	6.3	8.8	7.4	7.5	5.2	*4.6*	*5.9*
Industry	4.1	4.7	4.6	5.2	4.2	3.9	*3.6*	*3.2*
Mining and quarrying	2.9	3.4	4.5	6.1	5.6	5.8	*6.2*	*6.0*
Manufacturing industry	4.1	4.5	4.5	5.1	4.0	3.7	*3.6*	*3.2*
Energy and water	–	8.4	8.7	8.0	7.4	6.2	*4.3*	*3.6*
Construction	2.6	3.0	3.2	3.1	2.1	2.7	*2.1*	*2.1*
Trade, transport and communications	4.2	4.9	5.1	4.6	4.7	5.1	*5.0*	*5.2*
Trade and repairs	3.8	4.4	4.7	5.1	5.6	5.6	*5.8*	*6.0*
Horeca	6.2	7.2	8.1	9.8	8.9	9.7	*8.0*	*9.5*
Transport and communications	4.3	5.0	4.8	2.8	2.5	3.5	*3.7*	*3.5*
Financial services, real estate and business activities	4.6	4.5	5.0	4.7	4.1	4.1	*3.7*	*3.7*
Financial and insurance activities	4.1	4.3	4.9	4.8	4.4	3.5	*3.8*	*3.0*
Real estate and business activities	5.0	4.7	5.0	4.6	3.9	4.5	*3.6*	*4.1*
Other services	8.6	9.2	9.9	9.6	8.3	8.7	*7.7*	*7.5*
Health and social work	8.9	9.4	10.0	9.6	8.2	8.6	*7.5*	*7.3*
Other community, social and personal service activities	6.2	7.2	8.6	9.0	9.0	8.9	*9.4*	*8.6*
Replacement contract	1.2	1.4	1.4	1.3	1.3	1.1	*1.2*	*1.0*
Contract for a specific project	0.2	0.3	0.2	0.2	0.3	0.2	*0.1*	*0.1*
By sex								
Male	63.8	62.9	62.3	63.2	61.9	61.2	*61.9*	*61.5*
Female	36.2	37.1	37.7	36.8	38.1	38.8	*38.1*	*38.5*

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)

	1997	1998	1999	2000	2001	2002	*2002*	*2003*
	(total population)						*(reduced population)*	
Workers recorded in the staff register	96.8	96.4	96.5	96.3	96.6	96.7	*96.6*	*96.4*
Temporary agency workers	2.4	2.7	2.7	3.0	2.7	2.6	*2.6*	*2.7*
Agriculture	3.3	2.9	3.3	2.9	3.7	5.4	*6.7*	*6.6*
Industry	4.0	4.3	4.2	4.8	4.2	4.1	*4.2*	*4.4*
Mining and quarrying	2.8	2.9	2.9	4.1	3.3	3.7	*3.9*	*3.3*
Manufacturing industry	4.0	4.5	4.4	5.0	4.4	4.3	*4.3*	*4.5*
Energy and water	1.6	0.7	0.8	1.2	0.9	0.9	*1.1*	*1.1*
Construction	1.2	1.3	1.5	1.5	1.5	1.2	*1.2*	*1.2*
Trade, transport and communications	2.2	2.7	2.7	2.8	2.7	2.7	*2.4*	*2.5*
Trade and repairs	2.8	3.4	3.2	3.7	3.5	3.4	*3.3*	*3.4*
Horeca	3.0	3.8	4.3	6.1	5.1	4.7	*4.1*	*3.9*
Transport and communications	1.5	1.9	2.0	1.8	1.8	1.9	*1.7*	*1.8*
Financial services, real estate and business activities	1.3	1.6	1.9	2.0	2.0	1.7	*1.7*	*1.6*
Financial and insurance activities	0.5	0.8	1.1	1.2	1.2	0.8	*0.8*	*0.6*
Real estate and business activities	2.3	2.5	2.7	2.8	2.7	2.6	*2.5*	*2.5*
Other services	0.8	0.7	0.9	1.0	0.8	0.8	*0.9*	*0.9*
Health and social work	0.5	0.4	0.4	0.6	0.4	0.4	*0.5*	*0.5*
Other community, social and personal service activities	4.8	4.6	5.8	5.4	5.2	4.7	*5.9*	*5.9*
Workers seconded to the firm (1)	0.8	0.9	0.7	0.7	0.7	0.8	*0.8*	*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

LABOUR COSTS PER FTE [1]

	Euro, per year (total population)						*Percentage changes between 2002 and 2003 (reduced population)*
	1997	1998	1999	2000	2001	2002	
Agriculture	24,995	25,284	26,344	26,656	27,040	28,417	*2.6*
Industry	40,647	43,066	44,183	44,984	46,490	48,724	*2.7*
Mining and quarrying	37,615	37,942	38,998	39,958	41,812	43,949	*3.1*
Manufacturing industry	40,511	41,541	42,761	43,839	45,311	47,316	*3.0*
Energy and water	63,014	79,864	77,816	70,491	74,023	77,462	*–0.4*
Construction	30,753	31,332	32,960	33,664	34,690	35,828	*3.3*
Trade, transport and communications	34,481	35,699	36,932	37,546	38,877	40,593	*2.7*
Trade and repairs	36,059	37,193	37,815	38,304	39,714	41,000	*2.6*
Horeca	23,452	23,865	24,473	24,766	25,170	26,530	*2.9*
Transport and communications	34,077	35,569	37,996	38,561	39,940	42,220	*3.3*
Financial services, real estate and business activities	50,331	51,522	52,538	53,592	55,179	56,156	*2.5*
Financial and insurance activities	58,327	59,122	61,530	62,535	63,947	64,318	*2.1*
Real estate and business activities	42,523	44,811	45,290	46,607	48,599	49,923	*2.5*
Other services	33,187	33,253	33,548	34,083	35,191	37,448	*2.8*
Health and social work	33,558	33,465	33,669	34,229	35,324	37,413	*3.8*
Other community, social and personal service activities	30,039	31,529	32,591	33,029	34,209	37,701	*3.3*
Total	**38,279**	**39,690**	**40,646**	**41,384**	**42,740**	**44,457**	***2.6***

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

Annex 8

LABOUR COSTS PER HOUR WORKED [1]

	Euro (total population)						*Percentage changes between 2002 and 2003 (reduced population)*
	1997	1998	1999	2000	2001	2002	
Agriculture	15.86	16.29	16.76	16.94	17.58	18.40	*4.9*
Industry	26.43	27.85	28.75	29.32	30.62	32.35	*2.7*
Mining and quarrying	25.07	25.46	25.73	26.35	28.27	29.56	*2.5*
Manufacturing industry	26.33	26.83	27.79	28.47	29.75	31.33	*2.7*
Energy and water	42.09	53.30	51.83	49.76	52.30	54.28	*0.7*
Construction	21.46	21.91	22.43	23.03	24.10	25.08	*1.9*
Trade, transport and communications	20.00	20.89	21.64	22.43	23.73	24.96	*3.2*
Trade and repairs	21.71	22.40	22.92	23.45	24.40	25.48	*3.1*
Horeca	14.33	14.60	15.10	15.25	15.92	16.69	*4.8*
Transport and communications	18.68	19.87	21.07	22.33	24.06	25.53	*3.2*
Financial services, real estate and business activities	31.10	31.65	32.58	33.48	34.75	36.20	*2.5*
Financial and insurance activities	37.47	37.59	40.11	40.90	42.62	45.05	*2.3*
Real estate and business activities	25.33	26.73	27.03	28.13	29.40	30.34	*3.4*
Other services	21.01	21.22	21.51	21.87	22.91	24.39	*3.7*
Health and social work	21.30	21.41	21.65	22.04	23.09	24.49	*3.8*
Other community, social and personal service activities	18.66	19.75	20.38	20.71	21.63	23.69	*2.6*
Total	**23.92**	**24.84**	**25.49**	**26.12**	**27.36**	**28.71**	***2.7***

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

Annex 9

VOCATIONAL TRAINING IN FIRMS INCLUDED IN THE REDUCED POPULATION IN 2003

	Number of trainees			Hours of training				Training costs			
	(in p.c. of employment as at 31 December)			(in p.c. of the number of hours worked)	(average per trainee, units)			(in p.c. of labour costs)	(average per trainee, in euro)		
	Total	Male	Female		Total	Male	Female		Total	Male	Female
Agriculture	10.7	7.6	19.8	0.25	32.1	39.8	24.7	0.53	1,329	1,757	911
Industry	43.6	46.2	37.5	1.04	34.9	35.6	31.9	1.41	1,564	1,601	1,396
Mining and quarrying	22.9	22.8	15.7	0.45	29.2	28.2	43.9	0.53	1,070	897	3,644
Manufacturing industry	43.6	46.3	37.5	1.05	35.3	36.0	32.1	1.43	1,575	1,614	1,400
Energy and water	50.1	51.6	42.2	0.70	21.4	21.6	20.7	1.02	1,232	1,249	1,145
Construction	14.0	14.2	11.8	0.25	25.7	25.7	25.0	0.29	782	778	853
Trade, transport and communications	32.5	34.7	27.5	0.84	38.0	41.3	30.6	1.14	1,362	1,555	927
Trade and repairs	24.1	23.7	23.9	0.50	29.3	30.5	27.9	0.59	919	1,048	773
Horeca	7.7	7.1	8.1	0.27	40.7	43.1	38.4	0.20	552	613	495
Transport and communications	45.8	46.0	42.6	1.24	43.3	45.7	33.9	1.78	1,654	1,777	1,172
Financial services, real estate and business activities	39.7	41.4	38.4	0.86	29.8	32.4	26.5	1.59	2,056	2,174	1,905
Financial and insurance activities	55.7	55.9	56.6	1.18	28.0	29.5	26.5	2.32	2,610	2,785	2,422
Real estate and business activities	28.4	31.8	24.6	0.65	32.3	35.7	26.6	0.84	1,288	1,464	1,004
Other services	44.9	34.6	47.8	0.69	18.8	21.4	18.2	0.69	478	599	449
Health and social work	47.7	37.5	49.8	0.73	18.7	21.7	18.1	0.73	473	603	446
Other community, social and personal service activities	19.0	23.1	15.2	0.28	20.4	19.1	22.5	0.33	585	572	609
Total	**37.6**	**37.4**	**38.1**	**0.83**	**31.2**	**35.5**	**24.5**	**1.20**	**1,336**	**1,573**	**963**

Source : NBB (social balance sheets).

Annex 10

HOURS WORKED AND LABOUR COSTS, BY REGION (1)

(Total population)

	1998	1999	2000	2001	2002
Annual working hours per FTE (average, units)					
Single-region firms					
Brussels	1,620	1,627	1,619	1,621	1,606
Flanders	1,585	1,581	1,577	1,561	1,557
Wallonia	1,570	1,569	1,562	1,552	1,538
Multi-region firms					
Brussels	1,613	1,613	1,566	1,527	1,475
Flanders	1,662	1,649	1,622	1,566	1,542
Wallonia	1,529	1,544	1,546	1,519	1,511
Total	1,598	1,594	1,585	1,562	1,549
Annual labour costs per FTE (average, euro)					
Single-region firms					
Brussels	45,746	46,075	47,281	48,732	50,982
Flanders	36,720	37,782	38,713	40,181	41,872
Wallonia	34,007	34,843	35,547	36,740	37,869
Multi-region firms					
Brussels	51,758	54,475	56,360	57,660	58,699
Flanders	44,230	45,345	44,293	45,140	47,753
Wallonia	43,377	44,119	44,420	46,928	47,587
Total	39,690	40,646	41,384	42,740	44,457
Labour costs per hour worked (average, euro)					
Single-region firms					
Brussels	28.24	28.31	29.21	30.07	31.74
Flanders	23.17	23.90	24.54	25.75	26.89
Wallonia	21.66	22.21	22.75	23.67	24.62
Multi-region firms					
Brussels	32.10	33.78	35.99	37.77	39.80
Flanders	26.61	27.50	27.30	28.83	30.98
Wallonia	28.36	28.57	28.73	30.90	31.50
Total	24.84	25.49	26.12	27.36	28.71

Source : NBB (social balance sheets).

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

Annex 11

TYPE AND STRUCTURE OF EMPLOYMENT CONTRACTS, BY REGION (1)

(Total population)

	1998	1999	2000	2001	2002
Part-time workers (percentage of employment as at 31 December)					
Single-region firms					
Brussels	20.2	20.4	19.9	21.1	22.5
Flanders	20.2	21.0	21.0	21.7	23.9
Wallonia	21.4	22.6	22.1	23.2	24.1
Multi-region firms					
Brussels	11.3	12.0	12.4	13.1	16.7
Flanders	21.1	21.6	21.6	25.0	24.0
Wallonia	19.8	21.5	21.7	21.0	21.5
Total	19.9	20.7	20.7	21.8	23.3
Temporary workers (2) (percentage of employment as at 31 December)					
Single-region firms					
Brussels	6.9	7.3	7.4	6.1	6.5
Flanders	6.2	6.3	6.3	5.4	5.3
Wallonia	8.5	9.3	9.6	9.1	9.5
Multi-region firms					
Brussels	7.7	7.2	6.2	5.6	4.8
Flanders	7.6	8.0	6.0	6.6	6.8
Wallonia	7.5	8.1	8.8	8.0	7.6
Total	7.0	7.3	7.0	6.4	6.4
Temporary agency workers employed in firms filing full-format accounts (percentage of average FTE employment)					
Single-region firms					
Brussels	2.0	2.2	2.3	2.3	2.2
Flanders	3.3	3.2	3.6	3.2	3.1
Wallonia	3.9	3.7	4.2	3.7	3.3
Multi-region firms					
Brussels	1.2	1.3	1.6	1.5	1.1
Flanders	1.6	1.7	1.7	1.6	1.6
Wallonia	3.4	3.2	4.1	3.8	3.7
Total	2.7	2.7	3.0	2.7	2.6

Source : NBB (social balance sheets).

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

(2) Fixed-term and replacement contracts, and contract concluded for a specific project.

Annex 12

VOCATIONAL TRAINING IN FIRMS: BREAKDOWN BY REGION (1)

(Total population)

	1998	1999	2000	2001	2002
Number of trainees (in p.c. of employment as at 31 December)					
Single-region firms					
Brussels	34.8	31.6	32.3	30.3	31.3
Flanders	27.3	30.3	30.0	27.6	29.7
Wallonia	16.4	16.9	16.8	19.6	19.9
Multi-region firms					
Brussels	53.2	61.1	62.3	58.9	54.9
Flanders	58.9	58.3	56.4	63.2	56.5
Wallonia	40.5	46.5	49.2	55.3	53.1
Total	33.3	34.9	35.2	35.7	35.1
Hours of training (in p.c. of the number of hours worked)					
Single-region firms					
Brussels	0.77	0.69	0.77	0.65	0.62
Flanders	0.56	0.64	0.66	0.63	0.57
Wallonia	0.34	0.33	0.40	0.43	0.38
Multi-region firms					
Brussels	1.63	1.40	1.27	1.43	1.36
Flanders	1.23	1.17	1.68	1.58	1.62
Wallonia	1.12	1.15	1.14	1.25	0.95
Total	0.75	0.75	0.86	0.84	0.79
Training costs (in p.c. of labour costs)					
Single-region firms					
Brussels	1.49	1.22	1.23	0.90	0.87
Flanders	0.85	0.97	0.98	0.90	0.84
Wallonia	0.50	0.50	0.55	0.58	0.52
Multi-region firms					
Brussels	2.93	2.91	2.76	2.75	2.49
Flanders	2.24	1.89	2.50	2.45	2.43
Wallonia	1.56	1.72	1.67	1.70	1.27
Total	1.34	1.30	1.41	1.35	1.26
Firms reporting training activities (in p.c. of the total number firms)					
Single-region firms					
Brussels	8.0	7.3	7.2	6.8	7.1
Flanders	7.7	8.4	8.0	7.2	7.3
Wallonia	4.1	4.4	4.6	4.5	4.8
Multi-region firms					
Brussels	50.3	42.2	43.9	44.6	45.7
Flanders	46.8	48.7	48.5	47.9	49.7
Wallonia	40.0	42.7	47.0	47.6	46.6
Total	7.5	7.9	7.6	7.1	7.3

Source: NBB (social balance sheets).

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

Summaries of articles

Economic projections for Belgium, autumn 2004

Twice a year, in June and December, the National Bank of Belgium publishes the macroeconomic projections for the Belgian economy for the current and the following year. The current projections are an update of the projections for 2004 and 2005 published last June. These projections make up the national component of the broad macroeconomic projection exercise conducted within the Eurosystem; the ECB publishes the aggregated results of this exercise for the euro area economy.

At the current juncture, real GDP growth in the world's leading economies is projected to remain robust in 2005, after having reached a peak in 2004. Compared to June, the Eurosystem has revised its projections for 2004 slightly upwards and still expects an acceleration in 2005, albeit at a more modest pace. Since the actual performance was better than expected, real GDP growth in Belgium has been revised upwards by 0.4 p.p. in 2004; it is now expected to accelerate from 1.3 p.c. in 2003 to 2.7 p.c. in 2004 and to stabilise at 2.5 p.c. in 2005, as the pace of growth is decelerating somewhat. It is still outstripping euro area growth, partly owing to stronger private consumption. Having significantly reduced their savings ratio in 2003 and 2004, individuals will gradually be able to rely on an improvement in their purchasing power, largely due to a better employment outlook. Job creation is expected to total 62,000 jobs over the period 2004-2005 while, following a slight fall in 2004, the unemployment rate is likely to remain unchanged, at 7.8 p.c., in 2005. Also, while exports will continue to benefit from robust external demand, the recovery should gradually extend to business investment in a context of strengthening demand, strong profitability and a sound financial environment. On the whole, economic growth should thus be more balanced. Compared to the June projection, headline inflation is expected to be higher, especially in 2005 when it is likely to accelerate to 2.2 p.c., as a result of the increase in oil prices. Underlying inflation excluding energy, unprocessed food and administrative prices is projected to remain moderate due to limited wage increases and subdued pressures from import prices, notwithstanding the high level of commodity prices. Despite a more favourable economic environment, the general government balance is expected to revert from a surplus of 0.3 p.c. of GDP in 2003 to a deficit of 0.3 p.c. in 2004 and 0.4 p.c. in 2005, mainly owing to the disappearance of one-off measures. The latter projection is nevertheless noticeably more favourable than in June. This difference is explained, inter alia, by the inclusion of the fiscal measures adopted in the 2005 budget of the various entities.

JEL classification: E17, E27, E37, E66.

Key words: Belgium, macroeconomic projections, Eurosystem.

Price-setting behaviour in Belgium : what can be learned from an ad hoc survey ?

The article reports the results of an ad hoc survey on price-setting behaviour conducted in February 2004 among 2,000 Belgian firms. The reported results clearly deviate from a situation of perfect competition and show that firms have some market power. Pricing-to-market is applied by a majority of industrial firms. Prices are rather sticky. The average duration between two consecutive price reviews is 10 months, whereas it amounts to 13 months between two consecutive price changes. This evidence is consistent with the fact that both the price-reviewing process and the act of changing a price entail specific costs. Most firms adopt time-dependent price-reviewing under normal circumstances. However, when specific events occur, the majority will adopt a state-dependent behaviour. Evidence is found in favour of both nominal (mainly implicit and explicit contracts) and real rigidities (including flat marginal costs and counter-cyclical movements in desired mark-ups), in line with the recent macro-literature where the interplay between both types of rigidity is emphasised. The survey results point to a non-negligible degree of non-optimal price-setting, suggesting that informational frictions could also be a source of sluggishness in the inflation process.

JEL classification : D40, E31, L11.

Key words : price-setting behaviour, price rigidity, real rigidity, survey, time-dependent pricing, pricing-to-market

The finances of the communities and regions

Throughout the successive phases of the Belgian state reform, powers were increasingly devolved from federal level to the communities and regions. The present article deals with the revenues and expenditure of the communities and regions. The article also contains an analysis of the changes in the financing balance and debt level. Finally, the results of the projections regarding the movement in community and regional finances are also highlighted. The analysis concerns both the communities and regions as a whole, and the individual federated entities. In order to eliminate the influence of institutional differences and compare more uniform entities, a distinction is also made between the north and south of the country.

The past decade has seen a systematic improvement in the financing balance of the communities and regions. The explanation for this improving trend lies in the fact that the real rate of growth in their primary expenditure was lower than the growth of their revenues. Revenues in fact increased sharply. During the so-called transitional period which ended in 1999, the special mechanisms provided under the Finance Act indeed contributed towards a very steep increase in the funds allocated in respect of personal income tax. As regards the part of personal income tax allocated to the communities and regions, the gradual switch to an allocation formula based on the proceeds of the personal income tax collected in each entity caused the Finance Act funding to rise faster in the north than in the south. Since revenues have grown faster than expenditure over the past ten years in each entity – with expenditure rising by more in the north than in the south of the country – all the communities and regions succeeded in achieving an improvement in their financing balance.

In order to achieve the target of a balanced budget in 2010, set by the High Council of Finance, the increase in expenditure for the communities and regions as a whole must not outpace GDP growth. The permissible expenditure growth will probably not be the same for each individual entity. In the north, expenditure can increase by slightly more than in the south, partly because the north has scope for gradually reducing its surplus, while in the south the deficits – albeit small – need to be eliminated.

JEL classification: H70, H74.

Key words: public finance, fiscal devolution, Belgian administrative reform, Finance Act, communities and regions.

Trend in the financial structure and results of firms in 2003

Each year, in the 4th quarter's Economic Review, the Bank examines the situation regarding the annual accounts of Belgian non-financial corporations. By that time, the Central Balance Sheet Office has already collected a representative number of annual accounts for the preceding year.

The article is in three parts. The first part describes the methodology used and the sample. The second part studies the main developments in the profit account. Finally, the third part contains a financial analysis of Belgian companies; this analysis is completed by the interpretation of the results of the default model developed by the Bank.

The main findings of the study can be summarized as follows. In 2003, the total value added created by Belgian non-financial corporations increased by 3.4 p.c., which is the best result since 2000. At the same time, the operating costs (mainly personnel costs and depreciation) almost stagnated. So, unlike in previous years, value added growth far exceeded the rise in operating costs. As a result, the net operating profit increased by 23 p.c. After taking into account the other elements of the results, and particularly the financial result, which once again was largely positive, non-financial corporations made a net profit after tax of 24 billion euros, representing growth of 96 p.c. If this is confirmed by the final figures, this doubling of the growth rate after two years of steep decline will constitute a historical record.

As far as the financial situation of the companies is concerned, it improved overall in 2003, after having clearly suffered from the weak economic situation in 2001 and 2002. In particular, the return on equity, which had been severely eroded in large companies and actually collapsed in SMEs, recovered strongly in 2003. Finally, a default model developed by the Bank has made it possible to evaluate the financial risks run by Belgian companies. After having reached a peak in 2001, financial risks declined in 2002. This trend continued in 2003, especially in large companies. Yet, according to the model, a large number of companies are distressed: the proportion of companies experiencing problems amounts to 17 p.c. for large companies and 20.5 p.c. for SME's. These distressed companies employ 217,000 workers.

JEL classification: G30, L60, L80, C35, G33.

Key words: firms results, financial structure, bankruptcy prediction, sectoral analysis.

The social balance sheet in 2003

The first part of the article sets out the provisional results of the analysis of the social balance sheets for the year 2003. Since not all the social balance sheets are available for that year as yet, the study is based on a reduced population constructed according to the constant sample principle, comprising 40,630 enterprises employing around 1,372,000 workers in 2003. The main results of the analysis of that reduced population are as follows.

Employment declined at an annual average rate of 0.8 p.c. in 2003, but the rate of job losses slowed down slightly at the end of the year. While the number of full-time workers declined, the number of part-timers increased once again. Net staff departures slowed down between 2002 and 2003, particularly in the case of workers with primary or secondary school level skills. On the other hand, net recruitment of highly skilled staff remained below the levels recorded the previous year. Results confirm that employers have tried to use the most socially acceptable ways of implementing job cuts, as there was only a small rise in redundancies between 2002 and 2003, in contrast to the numbers taking normal or early retirement and the numbers whose fixed-term contracts were not renewed. At the same time, there was little change in the structure of employment by type of contract, where permanent contracts predominate by a long way, as the numbers of both fixed-term and permanent contracts declined. On the other hand, there was an increase in the use of agency workers, providing evidence of the steady improvement in the situation of enterprises in the reduced population.

Staff costs were up by 1.6 p.c. between 2002 and 2003. Since employment in terms of full-time equivalents (FTEs) was down by 1 p.c. on average and the working hours per FTE remained unchanged, costs per hour worked increased by 2.7 p.c.

Regarding the training policy, participation rates stagnated in 2003, as did the percentage of working hours devoted to acquiring skills or keeping them up to standard. The indicator of the amount spent on training declined : it represented just 1.2 p.c. of the wage bill. This renewed fall negates the efforts made here in the late 1990s, so that altogether, between 1998 and 2003, there has been no progress towards the objective of 1.9 p.c. fixed in the 1998 interprofessional agreement.

The second part of the article analyses the characteristics of the enterprises according to their geographical location ; firms operating in only one region were distinguished from those with establishments in more than one region. In the latest case, the social balance sheets were allocated into the three regions of the country according to the one in which the largest number of jobs was recorded by the National Social Security Office. The analysis presented is an initial appraisal of the regional characteristics of firms which have to submit a social balance sheet.

The average working hours recorded in the six groups of enterprises, namely single-region and multi-regional enterprises operating in Brussels, Flanders and Wallonia, reflects the differences in the structure of activity, since working hours within the actual branches of activity are relatively uniform in the different regions. That is less true of staff costs, in any case for single-regional enterprises, as hourly costs are systematically lower in Wallonian enterprises, for each branch of activity, and higher in Brussels enterprises, even though the firms are of the same average size.

As regards the training policy, single-regional Wallonian enterprises are still lagging behind their counterparts in the other two regions, despite the progress made in terms of participation rates. For multi-regional enterprises, the weaker results in Wallonia are probably due in part to the smaller average size of the firms, and the preponderance of industrial enterprises. The latest devote fewer resources to their training policy than the financial, real estate and business services branches, for example, which account for 55 p.c. of the staff employed by Brussels multi-regional enterprises, and than the trade, transport and communications branches which represent over half of the workforce of multi-regional enterprises in Flanders.

JEL classification : M51, M53, J20, J31.

Key words : employment, staff costs, vocational training, working hours employment contract, full-time, part-time, region.

Abstracts of the Working Papers Series

59. "Liberalisation of network industries: Is electricity an exception to the rule?", by F. Coppens and D. Vivet, Document series, September 2004

For quite a long time, network industries used to be regarded as (natural) monopolies. This was due to these industries having some special characteristics. Network externalities and economies of scale in particular justified the (natural) monopoly thesis. Recently, however, a trend towards deregulation of such industries has been observed. This trend started with the successful introduction of competition in the telecommunications sector. The main reason behind this success is that the economies of scale have disappeared as a result of emerging new technologies. The successful deregulation in telecommunications is in line with micro-economic theory, which predicts an increase in efficiency and lower prices when markets are opened up to competition.

The success in the telecommunications sector is often used as an argument for opening up other network industries to competition as well. In this paper the authors analyse whether this reasoning can be transposed to the electricity sector. It is argued that the two sectors, electricity and telecommunications, are similar in that they are both network industries which used to be characterised by economies of scale, and that technological progress might have put an end to this scale effect. There are however certain differences. Firstly, technological progress on the supply side was accompanied by a strong growth in demand in the telecommunications sector. This demand side effect is absent in electricity. Moreover, due to physical characteristics, the electricity sector seems to be more complicated: in order to introduce competition in the sector, it has to be split up into subsectors (production, transmission, distribution and supply). Competition is introduced in production and supply, transmission and distribution remain monopolies. This splitting up creates a new kind of costs, the so-called transaction costs.

The paper is centered around two issues: (i) are the basic assumptions behind the theoretical model of the perfectly free market met in the deregulated subsectors? and (ii) do the transaction costs (partly) offset possible price decreases in competitive segments?

There is no hard evidence that the hypotheses behind the theoretical model are met in the electricity sector, and there are strong indications that these transaction costs might be substantial. Moreover, in addition to the deregulation process, the electricity sector is also subject to other changes such as the internalisation of externalities (see the Kyoto protocol) and the debate on nuclear energy. These elements could exert an upward pressure on prices. Since electricity is ubiquitous, the deregulation process should be closely monitored.

60. "Forecasting with a Bayesian DSGE model: an application to the euro area", by F. Smets and R. Wouters, Research series, September 2004

In monetary policy strategies geared towards maintaining price stability conditional and unconditional forecasts of inflation and output play an important role. The paper illustrates how modern sticky-price dynamic stochastic general equilibrium (DSGE) models, estimated using Bayesian techniques, can become an additional useful tool in the forecasting kit of central banks. First, it shows that the forecasting performance of such models compares well with a-theoretical vector autoregressions. Moreover, it illustrates how the posterior distribution of the model can be used to calculate the complete distribution of the forecast, as well as various inflation risk measures that have been proposed in the literature. Finally, the structural nature of the model allows computing forecasts conditional on a policy path. It also allows examining the structural sources of the forecast errors and their implications for monetary policy. Using those tools, the authors analyse macroeconomic developments in the euro area since the start of EMU.

61. "Comparing shocks and frictions in US and euro area business cycles: a Bayesian DSGE approach", by F. Smets and R. Wouters, Research series, October 2004

The paper estimates a DSGE model with many types of shocks and frictions for both the US and the euro area economy over a common sample period (1974-2002). The structural estimation methodology allows the authors to investigate whether differences in business cycle behaviour are due to differences in the type of shocks that affect the two economies, differences in the propagation mechanism of those shocks or differences in the way the central bank responds to those economic developments. Their main conclusion is that each of those characteristics is remarkably similar across both currency areas.

62. "Voting on pensions: a survey", by G. de Walque, Research series, October 2004

The paper presents a non-exhaustive survey of the literature designed to explain emergence, size and political sustainability of pay-as-you-go pension systems. It proposes a simple framework of analysis (a small open two overlapping generation economy model), around which some variants are displayed. Dictatorship of the median voter is assumed. The text is organized to answer the following questions: (i) do political equilibria with pay-as-you-go pension schemes exist, (ii) why do they emerge, (iii) what are the conditions for the participation constraint of the pension game to be verified, and finally (iv) what is the size of the pension system chosen by the median voter and how is this size influenced by an exogenous (e.g. demographic) shock.

63. "Asymmetric growth and inflation developments in the acceding countries: a new assessment", by S. Ide and Ph. Moës, Research series, November 2004

In the paper, the authors use a structural vector autoregression (SVAR) model in order to study the asymmetry of growth and inflation developments in the acceding countries vis-à-vis the euro area over the years 1995-2003. The model combines two strands of the literature, the explanation in terms of country-specific and euro area shocks, and a further split between supply and demand shocks. The four structural shocks may all create asymmetries vis-à-vis the euro area. It appears that country-specific shocks are the main source of growth or inflation divergence, rather than the distinct way in which acceding countries react to euro area shocks. But whereas country-specific supply shocks are mainly

responsible for growth divergence, country-specific demand shocks are mainly responsible for inflation asymmetry. Hence, a low asymmetry in terms of growth does not necessarily imply a low asymmetry in terms of inflation, although the latter is particularly important for countries aiming to join the euro area. There is some evidence that both asymmetries were on the fall over the last years of the sample.

64. "Economic importance of the Port Autonome de Liège : report 2002", by F. Lagneaux, Document series, November 2004

The paper provides an extensive overview of the economic importance and development of the Port Autonome de Liège, over the period 1997-2002. Focusing on the three major variables of value added, salaried employment and investment, it also provides information about the financial situation of some vital segments in this inland port. In addition, it includes figures with respect to the ongoing growth of several cargo traffic segments and attempts to establish a link between these and the progress of the production in the industries at stake.

The breakthrough of this research – compared to its first edition issued last year – consists of evaluating the indirect effects of the sectors in question in terms of value added and employment. A few refinements have also been made, such as the routine geographical and functional selection of companies according to the cluster they belong to (NACE-Bel code approach), the limitation of administrative work incurred, the review of the company-size analysis, etc. Annual reports data from the Central Balance Sheet have been computed for the calculation of direct effects, the study of financial ratios and the analysis of the social balance sheet. For the estimation of indirect effects, Supply and Use Tables from the National Accounts Institute have been resorted to.

The developments in inland ports are numerous nowadays, as a parallel to the ever congesting road networks and the growing maritime traffic (e.g. increase in containerized shipments). The Port Autonome de Liège is the second largest inland port in Europe and therefore plays an important role in the development of inland waterways and of their traffic. Moreover, as it is the case for the maritime ports, the increase in scale and specialization of the vessels inevitably impacts the operation of this port.

Production, trade and transport are no longer considered as individual, isolated activities, but are integrated within a single system. Therefore, ports have to evolve from mere centres of transport (discharging and loading of vessels) to logistic centres. The Port Autonome de Liège is a very good example of this evolution as it offers high-quality connections with the railways, motorways and the Liège airport. Intermodality is a great asset for the Port Autonome de Liège and is the spearhead of its future.

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

Abbreviations

BIAC	Brussels International Airport Company
BNRC	Belgian National Railway Company
CPI	Consumer Prices Index
EC	European Commission
ECB	European Central Bank
ESA	European System of Accounts
EU	European Union
FPS	Federal Public Service
FTE	Full-time equivalent
GDP	Gross domestic product
GNI	Gross national income
HCF	High Council of Finance
HICP	Harmonised Index of Consumer Prices
IMF	International Monetary Fund
IPN	Inflation Persistence Network

NACE-BEL	Statistical nomenclature of economic activities of Belgium
NAI	National Accounts Institute
NBB	National Bank of Belgium
NCB	National Central Bank
NEMO	National Employment Office
NSI	National Statistical Institute
NSSO	National Social Security Office
OECD	Organisation for Economic Co-operation and Development
PPI	Production Prices Index
SME	Small and Medium-sized Entreprise
VAT	Value added tax

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