

Economic Review

December 2008



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Economic projections for Belgium – Autumn 2008

Introduction

Since the end of the summer of 2008, the economic outlook for the next 18 to 24 months has deteriorated very rapidly, both worldwide and for the euro area and Belgium. The financial tensions which emerged in mid 2007 developed into a financial crisis which was exceptionally serious in its scale, duration and geographical spread, and in the diversity and size of the financial players involved. The effects of contagion on the real economy multiplied and became significantly more severe, halting the growth of activity in most of the advanced economies and causing commodity prices to plummet. As the financial shocks are having an impact via various channels – tighter credit conditions, falling stock markets and capital losses, slackening global demand and deteriorating confidence – on households, non-financial corporations and credit institutions alike, and the absorption of these shocks generally has a prolonged effect on activity and demand, the weakness of economic activity is likely to persist for several quarters.

The Eurosystem therefore updated its biannual projections in a context in which the most negative risks identified six months earlier at the time of the previous exercise had largely materialised. According to the results for the euro area published in the ECB's December 2008 Monthly Bulletin, there will be negative activity growth in 2009 while inflation is projected to decline as a result of both the fall in oil prices and the sharp slowdown in activity. Although the uncertainty inherent in any forecasting exercise is particularly great in the present situation, the risks are still tending towards a sharper downturn in activity.

In the first three quarters of 2008, the deceleration in GDP growth in Belgium was not as marked as in the major European countries. However, towards the end of the year

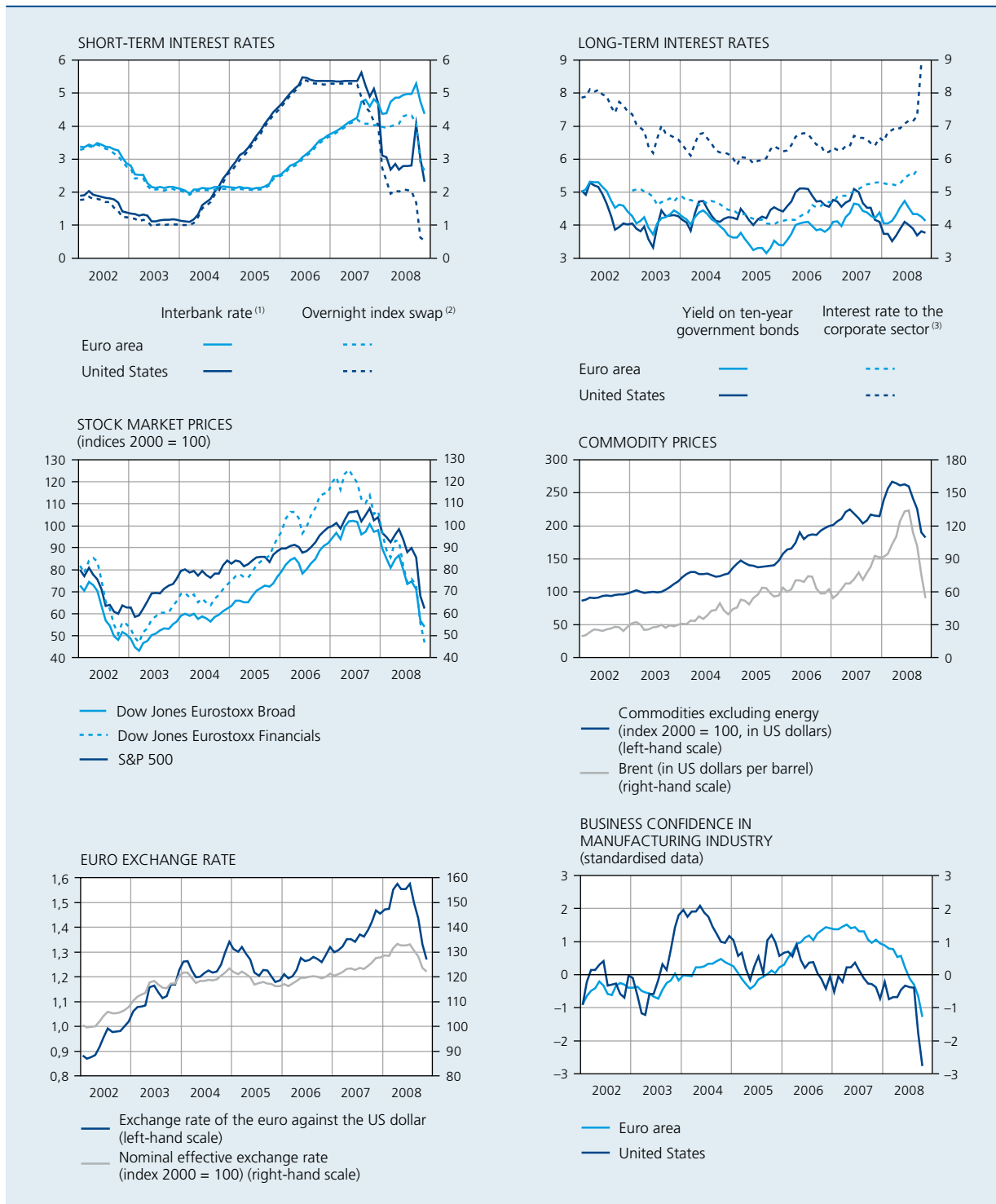
and in 2009, activity is likely to be affected by the deteriorating conditions. This context makes it probable that the decline in inflation which began in August 2008 will continue. Coinciding with the publication of new projections for the euro area, this article offers a brief update of the results for the Belgian economy⁽¹⁾. Compiled as part of the joint Eurosystem exercise, these results incorporate the information available on 20 November 2008. As is usual in the case of public finances, these projections take account only of measures formally approved by the authorities, particularly for the 2009 federal budget, on which sufficient detail is available.

1. International environment and assumptions

For more than a year, the advanced economies of Europe and North America had already been in a cyclical slowdown phase when in mid September 2008 the financial crisis suddenly worsened. Despite action by governments and monetary authorities seeking to restore confidence in the financial institutions, risk aversion on the financial and capital markets became much more acute. In consequence, the fall in stock market prices – down by 25 p.c. in Europe between July 2007 and August 2008 – accelerated strongly, reaching a total of 45 p.c. in mid November. The widening of interest rate margins which had begun a year earlier also intensified significantly. This loss of confidence spread very rapidly, affecting not only the money market but also government bonds – particularly those of emerging countries – and corporate bonds.

(1) The previous version of the economic projections for 2008 and 2009 was presented in more detail in the spring, in the June 2008 issue of the Bank's Economic Review.

CHART 1 DEVELOPMENTS ON THE FINANCIAL, PROPERTY AND COMMODITY MARKETS
(monthly averages)



Sources : Bloomberg, EC, ECB, Federal Reserve, ISM, Standard & Poor's.

(1) Interest rate on non-collateralised three-month interbank deposits (Euribor for the euro area, Libor for the United States).

(2) Fixed rate paid to the party receiving the variable rate (Eonia for the euro area, actual federal funds rate for the US), in a three-month interest rate swap.

(3) For the euro area, rates on bank loans to non-financial corporations (MIR survey); for the United States, yield on corporate bonds with a BAA rating (Moody's).

The financial market developments seriously depressed the economic outlook, while they in turn were fuelled by the deterioration in the economic environment. Thus, business and consumer confidence indicators, which had been falling since 2007, virtually collapsed from September 2008, in both the United States and the euro area. Foreign trade has also lost much of its dynamism in recent months. In this context, the stagnation or decline in activity seen in the advanced economies during 2008 is set to continue for several more quarters. Mainly owing to the effect of international trade, the economic slowdown is also spreading to the emerging economies, whereas they had acted as an engine of growth since the beginning of the millennium. Some of those countries are also seriously affected by the drying up of capital inflows in the form of direct investment or loans, while commodity producers are being hit by the slump in prices on the international markets.

The deteriorating global demand outlook has reversed the trend in commodity prices. Thus, having doubled between the end of 2003 and the end of 2006, and risen further by 2.5 times in 2007 and early 2008 to peak at 145 dollars per barrel of Brent in mid July, oil prices plummeted to well below 60 dollars in mid November, thus wiping out the increase recorded since the beginning of 2007. The pattern was similar for other commodities. The euro's depreciation against the dollar by almost 20 p.c. between April and mid November 2008, following an almost constant appreciation since 2002, mitigated the fall in commodity prices to some extent.

Taking account of the easing of the inflationary pressure resulting from commodity price movements and the sharp deceleration in activity, the central banks of the leading economies have considerably relaxed their monetary policy stance since the summer of 2008, including via a coordinated reduction in the key interest rates. In the United States, the Federal Reserve continued the process of reducing the target federal funds rate which it had initiated in September 2007, cutting it to 1 p.c. The Bank of England slashed its key rate by 200 basis points to 3 p.c., while the ECB Governing Council reduced the rate of the main refinancing operations in two stages by a total of 100 basis points. When the forecasts were concluded, that rate stood at 3.25 p.c.⁽¹⁾

The recent movement in commodity prices and exchange rates and the easing of monetary policy should be viewed in the context of the sharp deterioration in the economic climate, and will only have a gradual effect in bolstering activity and demand. In the current circumstances, the restructuring of the financial sector – via a reduction in debt levels and recapitalisation of banking

institutions – and the evaporation of business and consumer confidence are likely to depress the economic outlook for quite some time.

Thus, the IMF now expects the leading advanced economies to see a contraction in GDP around the end of 2008 and in early 2009, and a very modest growth revival in the second half of 2009; this is a scenario on which most forecasters agree. For countries outside the euro area, the volume change in GDP is projected to be negative in 2009 in the United States and the United Kingdom, with falls of 0.7 and 1.3 p.c. respectively. Those economies are particularly hard hit by the property market correction and the credit squeeze. The growth prospects were also downgraded for the emerging economies. They are still robust in China and India, but the adjustment was sharper for Brazil and Russia, owing to the slump in income from commodities and the drying-up of the capital markets. The financial crisis is also spreading its contagion to some exposed European economies outside the euro area.

Overall, the volume growth of global GDP is set to slow from 5 p.c. in 2007 to 3.7 p.c. in 2008 and 2.2 p.c. in 2009, the weakest growth since 1993. A corresponding slowdown in world trade is also forecast, with expansion of only 2.1 p.c. in 2009.

In view of the sluggishness of the global economy and the tighter financing conditions, the euro area is also expected to experience a period of generally feeble growth up to the end of 2009. The decline in GDP seen in the second and third quarters of 2008 is likely to persist until the beginning of next year, giving way to a fragile recovery.

All components of demand are likely to contribute to the weakening of activity. Externally, export growth will suffer as a result of the lack of dynamism in world trade. In the euro area, corporate investment is set to fall in 2009 owing to the weakness of demand, the erosion of profit margins and the rising financing cost. Investment in housing is projected to maintain the decline which began in 2008, owing to the downturn in the property market in a number of countries. Finally, having been curbed by the recent surge in inflation, private consumption is expected to feel the effect on household disposable income of the deterioration in the labour market, which will be reflected, in particular, in higher unemployment in 2008 and 2009. Moreover, the decline in the value of financial assets and – in certain countries – property, plus the general climate of uncertainty will also depress household spending in 2009.

(1) On 4 December 2008, at its meeting in Brussels, the Governing Council reduced the key rate to 2.5 p.c.

TABLE 1 GDP GROWTH FORECASTS FOR THE MAIN ECONOMIC AREAS

(percentage changes compared to the previous year, in volume)

	2007	2008	2009	<i>p.m.</i> 2009 Projections April 2008
	Actual	Projections		
World	5.0	3.7	2.2	3.8
of which:				
United States	2.0	1.4	-0.7	0.6
Japan	2.1	0.5	-0.2	1.5
United Kingdom	3.0	0.8	-1.3	1.6
China	11.9	9.7	8.5	9.5
India	9.3	7.8	6.3	8.0
Russia	8.1	6.8	3.5	6.3
Brazil	5.4	5.2	3.0	3.7
<i>p.m.</i> World trade	7.2	4.6	2.1	5.8

Source: IMF (World Economic Outlook – Update, 6 November 2008).

While the vigour of demand and activity had caused inflation to accelerate sharply in 2007 and early 2008, the rapid deterioration in the economic environment is likely to bring an appreciable easing of inflationary pressures. It is primarily fostering a decline in prices of commodities, particularly oil. According to the assumptions used in the Eurosystem projections, in 2009 those prices are expected to rise slightly above the level to which they had dropped by mid November 2008, but – at an average of 67 dollars per barrel – they will still be well below the figures recorded in 2007 and during much of 2008. On

the domestic front, the continuing sustained rise in labour costs, caused in particular by the cyclical weakness of productivity gains, will be more than offset by the erosion of corporate profit margins.

All in all, according to the Eurosystem projections, having reached 2.6 p.c. in 2007, GDP growth in the euro area is forecast at between 0.8 and 1.2 p.c. in 2008 and between -1 and 0 p.c. in 2009. Inflation is projected to rise from 2.1 p.c. in 2007 to between 3.2 and 3.4 p.c. in 2008, before subsiding to between 1.1 and 1.7 p.c. in 2009.

TABLE 2 EUROSISTEM PROJECTIONS

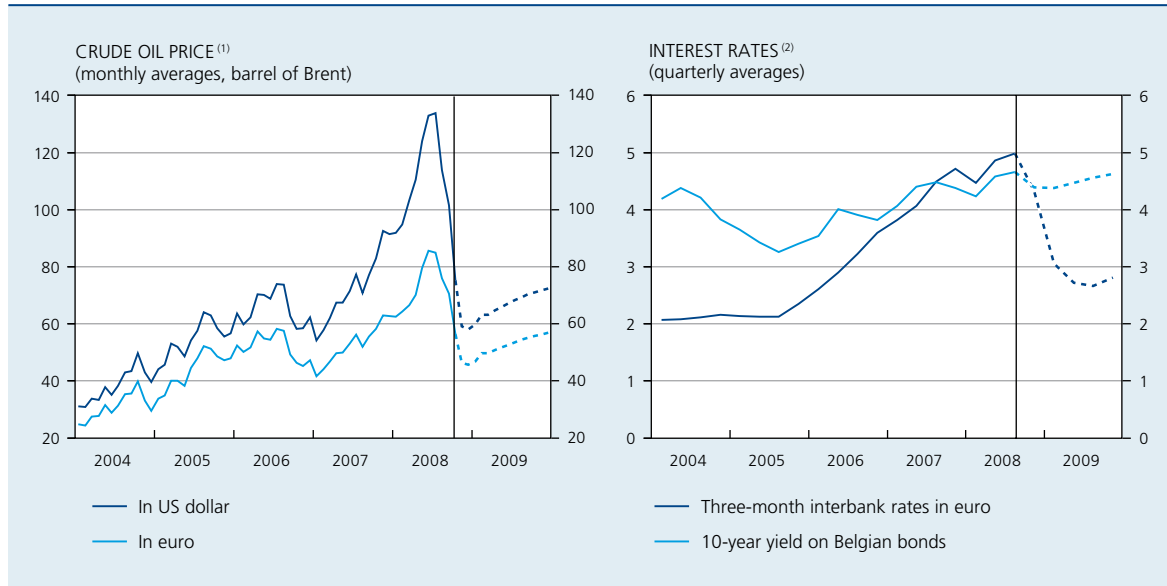
(percentage changes compared to the previous year)

	Euro area			<i>p.m.</i> Belgium		
	2007	2008	2009	2007	2008	2009
Inflation (HICP)	2.1	3.2 / 3.4	1.1 / 1.7	1.8	4.6	1.9
GDP in volume	2.6	0.8 / 1.2	-1.0 / 0.0	2.6	1.4	-0.2
of which:						
Private consumption	1.6	0.1 / 0.5	-0.3 / 0.7	2.0	0.8	0.0
Public consumption	2.3	1.9 / 2.3	1.3 / 1.9	2.3	1.8	1.8
Investment	4.2	0.2 / 1.2	-6.0 / -3.0	6.1	4.8	-0.9
Exports	5.9	2.4 / 3.4	-1.4 / 1.0	3.9	2.4	-0.1
Imports	5.4	2.0 / 3.0	-1.9 / 1.1	4.4	4.0	0.3

Sources: ECB, NBB.

Box – Eurosystem assumptions

ASSUMPTIONS CONCERNING THE MOVEMENT IN OIL PRICES AND INTEREST RATES



Source : ECB.

(1) Actual figures up to October 2008, assumption from November 2008.

(2) Actual figures up to the third quarter of 2008, assumption from the fourth quarter of 2008.

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

- The interest rates are based on market expectations. As an annual average, three-month interbank deposit rates in euro are forecast to fall from 4.7 p.c. in 2008 to 2.8 p.c. in 2009. That presupposes some normalisation of the spreads which have developed in relation to the ECB key rate since August 2007. Yields on ten-year Belgian government bonds are projected at 4.5 p.c. in 2008 and 2009. In relation to these benchmark yields, it is also assumed that the cost of financing corporate and household investment will be raised by an additional 75 and 106 basis points respectively.
- Bilateral euro exchange rates are kept constant at their mid November 2008 level, namely 1.27 US dollar to the euro.
- In accordance with the movement in implicit prices reflected in forward contracts, international market prices for a barrel of Brent are expected to average 67.3 dollars in 2009, against 99.9 dollars in 2008.
- The growth of Belgium's export markets in real terms, measured as the weighted total of the volume of imports of the trading partners, including those in the euro area, is likely to decline from 5.4 p.c. in 2007 to 3.2 p.c. in 2008 and 0.8 p.c. in 2009.
- The export prices of euro area competitors are forecast to increase by 2.3 p.c. in 2008 and 1.7 p.c. in 2009.
- As is usual according to the Eurosystem conventions, the figures for public finances take account of the macroeconomic environment and budget measures which have already been announced and have been specified in sufficient detail.



ASSUMPTIONS UNDERLYING THE EUROSISTEM PROJECTIONS

	2007	2008	2009
	(annual averages)		
Three-month interbank rates in euro	4.3	4.7	2.8
Ten-year bond yields in Belgium	4.3	4.5	4.5
Euro exchange rate against the US dollar	1.37	1.46	1.27
Oil price (US dollar per barrel)	72.7	99.9	67.3
	(percentage changes)		
Export markets relevant to Belgium	5.4	3.2	0.8
Competitors' export prices	0.2	2.4	3.8
of which: competitors on the euro area markets	1.1	2.3	1.7

Source: ECB.

2. Activity, employment and demand

In Belgium, the slowdown in activity which had begun in mid 2007 owing to the weakening of foreign demand was less pronounced than in the euro area. According to the NAI's official estimates, though real quarterly GDP growth was weak, at 0.3 and 0.1 p.c. respectively in the second and third quarters of 2008, it still remained positive, in contrast to what happened in the euro area. In particular, domestic demand remained relatively buoyant at the beginning of the year, the main impetus coming from business investment.

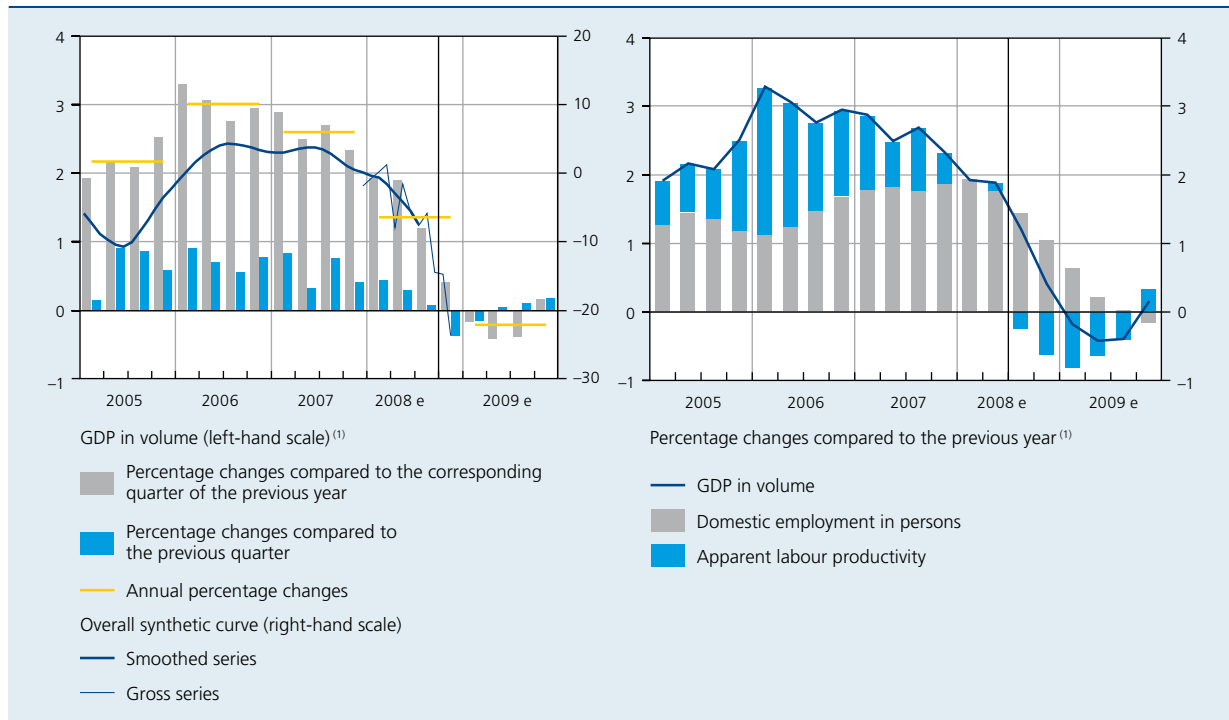
However, the very rapid fall in the business survey indicator and the consumer confidence indicator in recent months has shown that the deterioration in the international economic situation and the worsening financial crisis will have a more widespread impact on the economy. In Belgium as in the euro area, activity is expected to contract towards the end of 2008 and in early 2009, giving way to a very weak recovery in the ensuing quarters. Thus, the annual average rate of volume GDP growth is expected to drop from 2.6 p.c. in 2007 to 1.4 p.c. in 2008 and -0.2 p.c. in 2009.

In this context, net job creation which had been a significant factor supporting the Belgian economy in the last three years is expected to decelerate in 2009, declining from an annual average of over 65,000 between 2005 and 2008 to less than 8,000 in 2009. This figure actually

reflects the expansion achieved during 2008 since, according to the projections, the number of persons in work is likely to fall by almost 8,000 units between the fourth quarter of this year and the end of 2009.

Expressed as the percentage change, the annual average growth of domestic employment in persons is forecast to fall from 1.8 p.c. in 2007 to 1.5 p.c. in 2008 and 0.2 p.c. in 2009. In the latter year, employment growth will therefore outpace GDP growth. There are various reasons why employment is less responsive to cyclical fluctuations. First, in some branches of activity, employment is not very sensitive to cyclical movements. That applies, for example, to the health sector and personal services. The service voucher system is also expected to continue expanding in 2009, though at a more modest pace than in previous years. Next, even in sectors which are sensitive to the business cycle, employment exhibits a degree of inertia. The main factor here is the time and cost entailed in making staff redundant, or in recruiting staff during a recovery period. Also, firms begin by adjusting the number of hours worked, especially by cutting overtime or resorting to temporary lay-offs, while maintaining their workforce if possible. Thus, the expected increase in the number of persons in work corresponds to a 0.3 p.c. reduction in the volume of labour in 2009. Apparent productivity per hour worked is set to stagnate in 2008 and in 2009; expressed per worker, it is actually likely to show a slight fall, following an average rise of 1.1 p.c. during the period 2000-2007.

CHART 2 GDP, BUSINESS SURVEY INDICATOR AND EMPLOYMENT
(seasonally adjusted data)

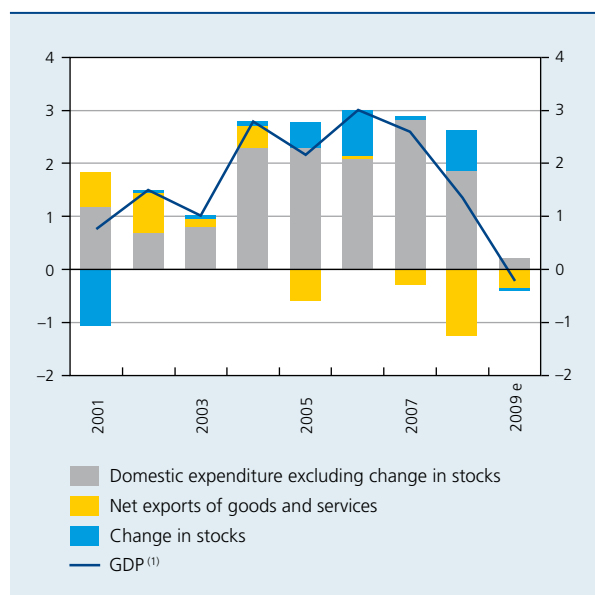


Sources: NAI, NBB.
(1) Calendar adjusted data.

Although the labour force is expected to grow more slowly in 2009 than during the period of sustained activity expansion between 2005 and 2008, that growth will still outstrip the rise in the number of persons in work. Thus, the unemployment rate is forecast to rise from 6.6 p.c. in the fourth quarter of 2008 to 7.1 p.c. in the fourth quarter of 2009, after having recorded a fall of 2.1 percentage points over the four preceding years. As an annual average, the unemployment rate will increase from 6.7 p.c. in 2008 to 6.9 p.c. in 2009.

The repercussions of the global financial crisis are felt via various channels, and ultimately affect all the main expenditure categories. In this way, having been the main engine of GDP growth between 2004 and the first half of 2008, domestic demand will virtually stagnate in 2009. That is likely to reduce demand for imports so that the contribution of net exports to GDP growth should be only slightly negative, in contrast to 2008, though that improvement will not be due to any expansion of exports.

CHART 3 MAIN EXPENDITURE CATEGORIES
(calendar adjusted volume data, contribution to the change in GDP, unless otherwise stated)



Sources: NAI, NBB.
(1) Annual percentage changes.

TABLE 3 GDP, EMPLOYMENT AND MAIN CATEGORIES OF EXPENDITURE

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

	2006	2007	2008 e	2009 e
GDP ⁽¹⁾	3.0	2.6	1.4	-0.2
Total domestic employment in persons	1.4	1.8	1.5	0.2
Total volume of labour ⁽²⁾	1.5	2.0	1.4	-0.3
Real disposable income	2.5	2.8	-0.3	1.5
<i>Components of expenditure⁽¹⁾</i>				
Final consumption expenditure of individuals	2.1	2.0	0.8	0.0
Final consumption expenditure of general government	0.1	2.3	1.8	1.8
Gross fixed capital formation	4.8	6.1	4.8	-0.9
Housing	7.9	1.3	0.8	-0.5
Government	-10.6	3.4	-4.4	7.5
Business	5.6	8.5	7.4	-1.9
<i>p.m. Domestic expenditure excluding change in stocks⁽³⁾</i>	2.1	2.8	1.9	0.2
Change in stocks ⁽³⁾	0.9	0.1	0.8	-0.1
Net exports of goods and services ⁽³⁾	0.1	-0.3	-1.3	-0.3
Exports of goods and services	2.7	3.9	2.4	-0.1
Imports of goods and services	2.7	4.4	4.0	0.3

Sources: NAI, NBB.

(1) In volume.

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

(3) Contribution to the change in GDP.

In fact, the volume of exports is set to fall by 0.1 p.c. in 2009, compared to an increase of 2.4 p.c. in 2008. The deterioration in the global economic climate is therefore probably the first channel through which the financial crisis will affect the Belgian economy, via the marked slowdown in foreign demand, taking account of Belgium's very open economy. According to the assumptions used in this exercise, the decelerating expansion of export markets which began in 2008 will become still more marked, since growth will total only 3.2 p.c. this year and 0.8 p.c. in 2009. That is the weakest annual expansion since 1993, well below the average growth of 7.5 p.c. recorded between 2004 and 2007.

Having been curbed in 2008 by the slight fall in real disposable income due mainly to higher inflation, private consumption is not forecast to rise in 2009, mainly owing to the stock market slide and the ensuing rise in the savings ratio. The fall in share prices since the beginning of 2008, amounting to around 45 p.c. in Belgium as in most other European financial centres, has in fact led to a 15 p.c. reduction in the net financial assets of households. Even though the wealth effects have so far been

relatively moderate in Belgium, a drop on that scale would depress private consumption for the next two to three years by 1.5 percentage point, as there is no likelihood of any immediate upturn. That effect will largely materialise in 2009, so that, in parallel with stagnating consumption, the savings ratio will rise from 12.7 p.c. in 2008 to 14.3 p.c. in 2009, as households set aside a larger part of their income for the rebuilding of their assets. The sharp deterioration in consumer confidence since September 2008 should be viewed in this context, although it is also a more general reflection of the fear of worsening economic conditions and labour market prospects.

In these bleak circumstances, business investment is forecast to fall by 1.9 p.c. in 2009, following more than four years of vigorous expansion right up to 2008, a year in which investment grew by an estimated 7.4 p.c. In addition to the weakening of demand for exports and consumption, there are similarly cyclical pressures depressing operating margins and hence the internal financing capacity of companies. Furthermore, external finance has also become more expensive owing to both the increase in the rates charged on loans and the higher cost of

raising finance by issuing shares or bonds. These developments are also due to the stronger risk aversion caused by the financial crisis.

The widening of interest margins on mortgage loans is contributing to the expected 0.5 p.c. decline in investment in housing in 2009. However, this deceleration was already apparent in 2007, coinciding with a steady easing of price rises on the secondary property market.

3. Prices and costs

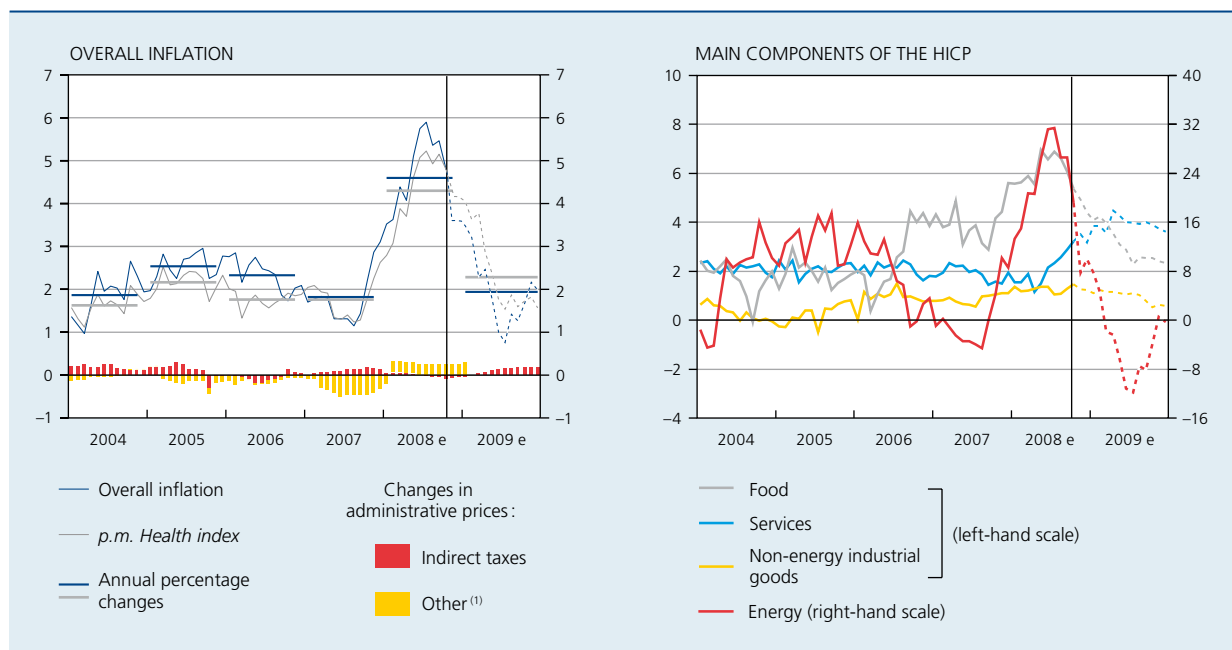
Inflation has eased in Belgium, having risen rapidly from October 2007 and peaked at 5.9 p.c. in July 2008, when it was 1.9 points above the level for the euro area. This fall should continue during the closing months of the year and for much of 2009. Measured by the HICP, overall inflation is thus estimated at an average of 1.9 p.c. in 2009, compared to 4.6 p.c. in 2008. The health index, which is used as the reference for the indexation of wages and social benefits, is expected to increase by 4.3 p.c. in 2008 and 2.3 p.c. in 2009.

Just as the energy and food components of the consumer price index were the source of rising inflation in recent months, they are also the reason for its decline. On the

one hand, the basis effects caused by increases in food prices will gradually fade away as commodities are not expected to increase further in price, in contrast to 2007. Also, according to the assumptions used in this exercise, oil prices should remain steady in 2009 at around 67 dollars per barrel, well below the price prevailing for much of 2008. Consumer prices of energy are therefore projected to fall by 3.6 p.c. in 2009, in contrast to the rise of over 20 p.c. recorded in 2008. The rise in electricity and gas distribution and transport charges has also contributed significantly to this increase, whereas the government's decision to raise excise duty by reactivating the ratchet system is expected to have only a limited impact in 2009.

However, the decline in overall inflation is partly offset by the faster increases in service prices. For this component, which represents around 37 p.c. of the consumer price index, inflation went up from 1.5 p.c. in the first five months of 2008 to 3.2 p.c. in October. According to the projections, it is set to average 3.9 p.c. in 2009. A more detailed breakdown shows that various factors are contributing to this rise. First, indirect effects due to energy and food price increases are gradually working their way through in transport, tourism and catering services, for which these products are major inputs. Next, the movement in the prices of certain services such as rents and

CHART 4 INFLATION
(HICP, percentage changes compared to the corresponding period of the previous year)



Sources: EC, NBB.

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

TABLE 4 PRICE AND COST INDICATORS
(percentage changes compared to the previous year)

	2006	2007	2008 e	2009 e
Total HICP	2.3	1.8	4.6	1.9
of which: energy products	7.3	0.2	20.6	-3.6
GDP deflator	2.3	2.4	2.2	3.0
Labour costs in the private sector:				
Unit labour costs	1.5	3.1	3.8	3.2
Hourly labour costs	3.1	3.7	3.5	3.3

Sources: EC, NAI, NBB.

some government-regulated charges generally mirror inflation. Finally, and more generally, a fairly widespread acceleration in inflation has been evident since September 2008 for the other service components, possibly on account of the increase in labour costs.

The change in unit labour costs in the private sector is estimated respectively at 3.1 p.c. in 2007, 3.8 p.c. in 2008 and 3.2 p.c. in 2009, compared to an annual average rise of 0.7 p.c. during the period 2002-2006. This steep increase is due both to the fall in labour productivity – already appreciable in 2007, owing to the marked expansion of employment in the private sector, and further reinforced in 2008 and in 2009, as a result of the prolonged weakness of economic activity – and to the continuing sustained rise in hourly labour costs.

The accelerating pace of the increase in hourly labour costs in 2007 and in 2008 occurred in the context of the persistent pressure on certain labour market segments, in the wake of the economic boom. In addition, two temporary factors – namely the earlier payment of the holiday allowance on termination of a contract of employment, and the payment of redundancy allowances in connection with the restructuring of large companies – accentuated the rise in hourly labour costs in 2007, by a total of around 0.6 percentage point. Although these factors have the opposite effect on the movement in labour costs in 2008, that is not enough to offset the greater impact of indexation.

For 2009, the 3.3 p.c. increase in hourly labour costs assumed for the purpose of this exercise essentially corresponds to the expected effect of indexation, which takes some time to react to the 2008 acceleration in inflation measured by the health index. This assumption is in line with that made by the Secretariat of the Central Economic Council, taking account of the adjustment to the outlook

for growth and inflation in recent months. It does not in any way anticipate the outcome of the current negotiations between the social partners.

4. Public finances

According to the latest information, public finances are expected to end the year 2008 with a deficit of 0.9 p.c. of GDP. In the macroeconomic context described above, that deficit would reach 1.7 p.c. of GDP in 2009.

These projections take account of the impact of the various measures taken by the government in response to the financial crisis, such as the provision of funds for financial institutions in the form of capital injections or loans, and the provision of guarantees. The funding of these measures by the Belgian government increased the consolidated gross public debt by 6.1 p.c. of GDP. The slightly negative impact of these measures on the overall balance in 2008 is expected to disappear in 2009 since, according to the estimates, revenue from interest, dividends and fees paid for the provision of guarantees will then slightly exceed the additional interest charges payable by the government. However, these numbers disregard the indirect effects of the financial crisis, such as the repercussions on economic activity and the level of interest rates, and it is assumed that no guarantees will be invoked.

Expressed as a percentage of GDP, public revenues are projected to rise from 48.1 p.c. in 2007 to 48.5 in 2008, dropping to 48.3 p.c. in 2009. Nevertheless, in 2008 they will reflect the downward influence of various structural measures, as well as the disappearance of a range of non-recurring measures which had increased revenues in 2007. However, this impact is more than offset by the fact that earned incomes, which are taxed at a relatively higher

TABLE 5 GENERAL GOVERNMENT ACCOUNTS ⁽¹⁾
(percentages of GDP)

	2006	2007	2008 e	2009 e
Revenues	48.7	48.1	48.5	48.3
of which: fiscal and parafiscal revenues	43.8	43.3	43.6	43.1
Primary expenditure	44.4	44.5	45.7	46.3
Primary balance	4.3	3.5	2.8	2.1
Interest charges	3.9	3.8	3.7	3.8
Financing requirement (–) or capacity	0.3	–0.3	–0.9	–1.7
<i>p.m. Effect of non-recurring measures</i>	0.8	–0.2	–0.4	0.1
Consolidated gross debt	87.8	83.9	87.8	87.6

Sources: NAI, NBB.

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

rate, are projected to grow significantly faster than GDP in nominal terms. What is more, owing to the rising inflation, payroll tax will increase faster than earned incomes. In 2009, fiscal and parafiscal revenues are projected to contract significantly in relation to GDP. That is due mainly to various structural measures passed by the federal government and affecting personal income tax, and to the increase in the tax reduction granted by the Flemish Region. However, this fall will be partly offset by the proceeds generated by measures which the government has taken on account of the financial crisis.

Primary expenditure, which came to 44.5 p.c. of GDP in 2007, should increase to 45.7 and 46.3 p.c. of GDP respectively in 2008 and in 2009. The real trend growth of primary expenditure will be slightly higher than the trend growth of GDP in those two years. Expenditure on health care and pensions, in particular, is projected to rise substantially.

The borrowing requirement estimated at 1.7 p.c. of GDP for 2009 is a particularly marked deviation from the balanced budget targeted by the government for this year. There are various reasons for this divergence. First, the general government budget assumes economic growth of 1.2 p.c. in 2009, i.e. a far more optimistic scenario than the macroeconomic outlook described above. Consequently, the projected revenues fall well short of the figure anticipated in the general government budget, especially as tax revenues are estimated taking into account a less favourable basis for 2008. Furthermore, according to the ESCB methodology, the projections disregard budget measures for which details are not yet available. That applies, for instance, to the possible levies

on electricity producers and to much of the revenue to be generated by the measures designed to combat tax evasion and social security fraud. Finally, the government assumes that the communities and regions and the local authorities will together record a surplus of 0.4 p.c. of GDP in 2009, whereas the estimates suggest that they will show a deficit of 0.1 p.c. of GDP.

A break in the downward trend in the debt ratio is expected in 2008. At the end of this year, the government debt would total 87.8 p.c. of GDP, or around 4 percentage points above the level recorded at the end of 2007. This increase is due to loans taken out by the Belgian State to finance the injections of capital into financial institutions and the loans granted to them. In 2009, the public debt ratio would fall again, although much more slowly than in previous years owing to the relatively low nominal GDP growth and the expanding borrowing requirement.

5. Assessment of the risk factors

While the spring projections for Belgium estimated GDP growth at 1.5 p.c. in 2009, the Bank now expects activity to contract by 0.2 p.c. The exceptionally large scale of this adjustment is similar to the adjustment to the corresponding projections for the euro area. It reflects the general and very rapid deterioration in the economic outlook since the end of September 2008. The forecasts produced by various institutions at the end of the summer still expected GDP to grow by more than 1 p.c. in 2009. In view of the recent developments, all institutions are now expecting GDP to contract in late 2008 and early 2009, with a subsequent very weak recovery.

The scenarios for a marked worsening of the financial crisis and its spread to the real economy, mentioned among the potential risks when the previous exercises were published, have therefore largely materialised. Nevertheless, the uncertainty surrounding the current forecasts still seems to be very considerable, though the risk of a sharper downturn in activity is dominant. Indeed, past experience of banking and financial crises in various countries has shown that their effects may be substantial and long-lasting.

For the moment, it is uncertain whether the worst of the crisis is already – or almost – over, particularly as regards the increased cost of funding sources or the fall in stock market prices. Non-financial corporations and households could also face credit restrictions. The scale of the effects of the crisis on economic activity and world trade

is another major factor of uncertainty. The slump in business and consumer confidence, but also the plummeting commodity prices on the international markets, indicate that there is now a widespread impact on the expectations of economic agents as regards activity, demand and incomes. The restoration of a degree of macroeconomic stability is therefore a primary requirement for a recovery in economic activity.

Variations between inflation forecasts are largely attributable to the assumptions made regarding oil prices. In view of the recent sharp fall in those prices, the latest inflation forecasts for 2009 are generally lower, down to around or below 2 p.c. In the short term, a more marked slowdown in activity would cause the inflationary pressures to ease further via an additional fall in commodity prices or a more marked erosion of corporate margins.

TABLE 6 COMPARISON OF THE FORECASTS FOR BELGIUM
(percentage changes compared to the previous year)

	GDP in volume		Inflation ⁽¹⁾		Budget balance ⁽²⁾		Date of publication
	2008	2009	2008	2009	2008	2009	
NBB – Autumn 2008	1.4	-0.2	4.6	1.9	-0.9	-1.7	December 2008
<i>p.m. Spring 2008</i>	1.6	1.5	4.1	2.3	-0.3	-0.8	June 2008
NAI	1.6	1.2	4.7	2.7	n.	n.	September 2008
EC	1.4	0.1	4.7	2.5	-0.5	-1.4	3 November 2008
OECD	1.5	-0.1	4.6	1.9	-0.7	-1.3	25 November 2008
Belgian Prime News	1.6	1.3	4.5	2.4	-0.4	-0.7	September 2008

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

(2) Percentages of GDP.

Annex

PROJECTIONS FOR THE BELGIAN ECONOMY: SUMMARY OF THE MAIN RESULTS

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

	2005	2006	2007	2008 e	2009 e
Growth (calendar adjusted data)					
GDP in volume	2.2	3.0	2.6	1.4	-0.2
Contributions to growth:					
Domestic expenditure, excluding change in stocks	2.3	2.1	2.8	1.9	0.2
Net exports of goods and services	-0.6	0.1	-0.3	-1.3	-0.3
Change in stocks	0.5	0.9	0.1	0.8	-0.1
Prices and costs					
Harmonised index of consumer prices	2.5	2.3	1.8	4.6	1.9
Health index	2.2	1.8	1.8	4.3	2.3
GDP deflator	2.4	2.3	2.4	2.2	3.0
Terms of trade	-0.3	-0.7	0.5	-3.0	1.1
Unit labour costs in the private sector	0.9	1.5	3.1	3.8	3.2
Hourly labour costs in the private sector	2.4	3.1	3.7	3.5	3.3
Hourly productivity in the private sector	1.5	1.6	0.6	-0.3	0.1
Labour market					
Domestic employment (annual average change in thousands of persons)	54.8	58.1	77.4	67.5	7.9
Total volume of labour ⁽¹⁾	0.9	1.5	2.0	1.4	-0.3
Harmonised unemployment rate ⁽²⁾ (p.c. of the labour force) ...	8.5	8.3	7.5	6.7	6.9
Incomes					
Real disposable income of individuals	0.4	2.5	2.8	-0.3	1.5
Savings ratio of individuals (p.c. of disposable income)	12.6	12.9	13.7	12.7	14.3
Public finances⁽³⁾					
Overall balance (p.c. of GDP)	-2.6	0.3	-0.3	-0.9	-1.7
Primary balance (p.c. of GDP)	1.6	4.3	3.5	2.8	2.1
Public debt (p.c. of GDP)	92.1	87.8	83.9	87.8	87.6
Current account					
(according to the balance of payments, p.c. of GDP)	2.6	2.0	1.7	-2.0	-1.4

Sources: EC, DGSEI, NAI, NBB.

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

(2) Adjusted series (Eurostat).

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

Ten years of monetary union in retrospect

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S. Ide

Introduction

Ten years ago, on 1 January 1999, stage three of Economic and Monetary Union (EMU) was launched in Europe. Initially, eleven countries joined, namely Belgium, the Netherlands, Luxembourg, Germany, France, Austria, Spain, Italy, Portugal, Ireland and Finland. On that date they successfully introduced a new common currency: the euro. A new central bank was also set up, the ECB, which together with the national central banks of the participating countries forms the Eurosystem. Together they took on the task of formulating and implementing the single monetary policy of the euro area, the main objective of which, according to the Maastricht Treaty, is to maintain price stability. Since then, Greece, Slovenia, Malta and Cyprus have also become members of the monetary union, and Slovakia will join on 1 January 2009. From that date, around 330 million Europeans will use one and the same currency.

The expectations were extremely ambitious. The single monetary policy was to bring price stability for the countries which adopted the euro, whereas in previous decades those countries had encountered high inflation and unstable exchange rates, albeit in varying degrees. Fiscal policy was also aimed at macroeconomic stability: the principles had been laid down in 1997 in the Stability and Growth Pact. The introduction of the euro would also encourage the process of economic integration in Europe and in some ways it would be the culmination of the single market established in 1993. The lower transaction costs and the elimination of uncertainty over exchange

rates would help to promote trade between the Member States. Combined with greater price transparency expected to result from the single currency, that would also lead to increased competition on the product markets, making them more efficient. The euro would also play a key role in the integration of the financial markets, which had remained highly fragmented precisely because of the existence of separate national currencies. Finally, the euro could be the catalyst for structural reforms on the labour and product markets, particularly since the efficiency of those markets is a major factor in the smooth operation of monetary union. In the end, these various elements were to promote economic growth, employment and the standard of living in Europe, as well as increasing convergence and cohesion between the Member States.

But not everyone endorsed these ambitious – perhaps even over-ambitious – expectations. There were also many eurosceptics, who argued that the countries adopting the euro failed, or struggled, to satisfy the criteria for an optimum currency union (Mundell, 1961). Under those criteria, it is not in fact sufficient for countries to be closely integrated with one another in order to benefit from a monetary union. There must also be adequate adjustment mechanisms, such as efficient markets, a sufficiently mobile labour force or the existence of transfers between countries, enabling them to absorb the repercussions of asymmetric shocks. In the opinion of the eurosceptics, the convergence criteria laid down by the Maastricht Treaty were too one-sided in their focus on nominal convergence (low inflation, participation in the EMS without devaluation and low long-term interest rates) and sound

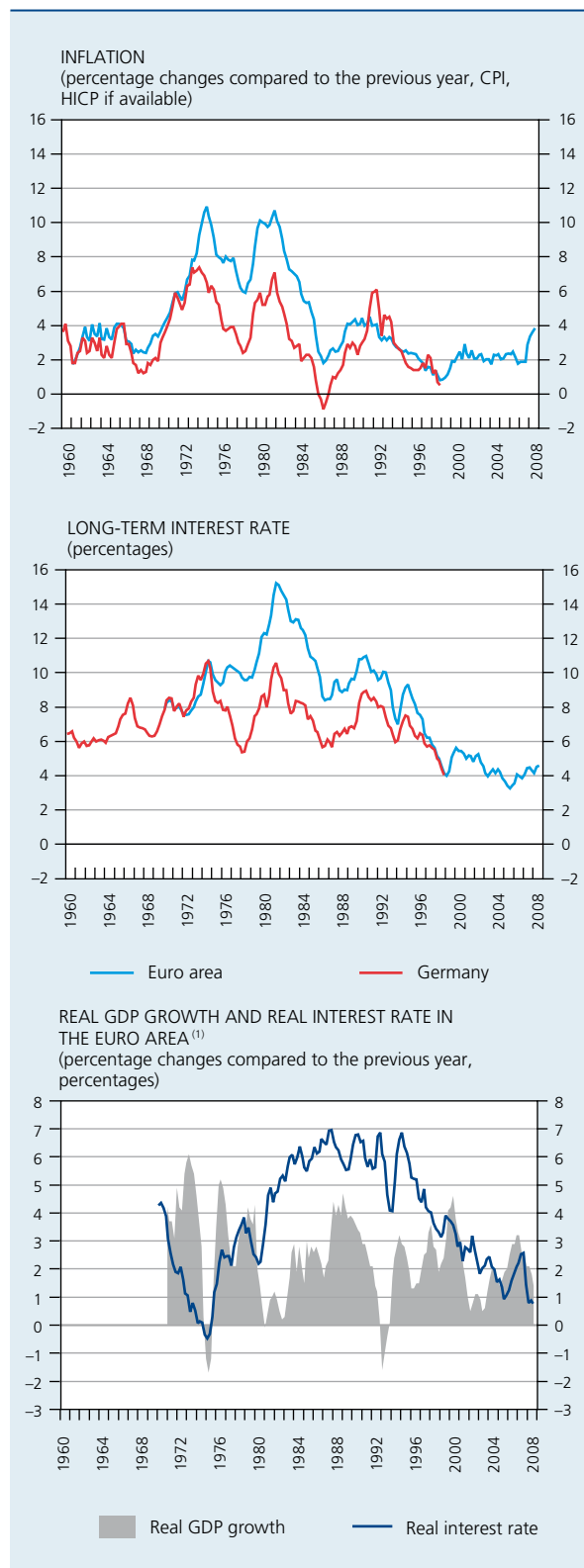
public finances (the limits of 3 and 60 p.c. respectively for the budget deficit and the public debt, which will be discussed below). According to these critics, the euro would inhibit the economic development of the countries which adopted it, and would ultimately lead to higher unemployment⁽¹⁾. According to some of them, the euro was therefore destined to be short-lived. Partly on the basis of similar arguments, several EU Member States at that time (Denmark, the United Kingdom and Sweden) decided not to introduce the euro, even though some of them satisfied the criteria for joining. The United Kingdom and Denmark still have the option of not adopting the euro, while all the new Member States which joined the EU at the time of its 2005 enlargement are expected to introduce the single currency sooner or later.

This article looks back over ten years of monetary union and examines to what extent the introduction of the euro fulfilled the most ambitious expectations. It takes a brief look at several facets: for an exhaustive and detailed account, the article refers to in-depth studies conducted recently on the occasion of the tenth anniversary of the euro⁽²⁾. The rest of the article is structured as follows. Sections 1 and 2 deal respectively with monetary and fiscal policy. Section 3 assesses the euro's international role, and in particular whether it has genuinely helped to strengthen trade, price convergence and financial integration. Section 4 considers developments concerning economic activity, employment and the standard of living in the euro area. Section 5 addresses the problem of the differences between countries and analyses the operation of the adjustment mechanisms in the monetary union. Finally, section 6 lists a number of challenges for the future.

1. Monetary policy: low inflation and success in anchoring inflation expectations

The first ten years of monetary union featured a historically very high level of price stability in the euro area. Between January 1999 and October 2008, inflation in the euro averaged 2.2 p.c. per annum, well below the levels seen in the preceding four decades. Inflation had been considerably higher, especially in the 1970s and 1980s. This is a good result, to say the least, even compared to the figures for Germany, which was the country with the greatest monetary stability during the four decades prior to monetary union.

CHART 1 INFLATION AND LONG-TERM INTEREST RATES IN GERMANY AND IN THE EURO AREA



Sources: OECD, Thomson Financial Datastream.

(1) Difference between long-term nominal interest rate and annual inflation rate.

(1) Cf. for example the article by Paul Krugman published in *The Economist*, 31 August 1996.

(2) Cf. for example ECB (2008a) and EC (2008).

By providing price stability, monetary policy helps to create the conditions for sustainable economic growth. Indeed, price stability ensures that not only long-term nominal interest rates but also real interest rates are low. If inflation expectations are firmly anchored, monetary policy can in fact be less restrictive, *ceteris paribus*, than if it needs to regain control over inflation expectations. If uncertainty over future inflation has dissipated, investors are also more readily disposed to lend financial resources for longer periods, and that reduces the inflation risk premium contained in long-term interest rates. In the 1970s and 1980s the opposite had happened: rising inflation had exerted a disproportionate influence on long-term interest rates, so that they increased in real terms: on average, the increase was greater in the countries which eventually formed the euro area than in Germany, precisely because German monetary policy was more credible. Moreover, it was not until 1998 that long-term interest rates in the euro area converged almost entirely towards German rates, whereas inflation itself had already previously fallen to a level comparable to that in Germany. Therefore, since 1999, real interest rates in the euro area, in accordance with what growth models suggest, have again tended to hover in the region of real growth, as had been the case in the early 1970s.

Price stability also benefits the real economy in that it reduces the resources necessary for adjusting prices and wages. This price adjustment process in fact entails administrative expenses connected not only with the actual adjustment but also with the collection of all the information essential for calculating the new prices. Owing to these costs, the process is not continuous but tends to display some inertia, and is often unsynchronised, so that inflation also leads in the short term to changes in prices and wages in real terms⁽¹⁾. The signals given by more fundamental changes in relative prices are therefore blurred, distorting the allocation of resources. Inflation may also lead to the application of simple price and wage indexation rules, since those rules can attenuate, at least in part, the frictions mentioned above. Nonetheless, being excessively rudimentary such indexation rules have the disadvantage of being themselves a source of price and wage distortion in some circumstances, and hence a source of macroeconomic instability. In principle, price stability makes the use of such mechanisms less attractive.

(1) The inertia and unsynchronised character of price adjustments in the euro area was demonstrated, in particular, by the research findings of the Eurosystem's Inflation Persistence Network (IPN), summarised in regard to price setting by Álvarez et al (2006) and by Dhyne et al. (2006).

Box 1 – The single monetary policy during the financial crisis

This box describes how the single monetary policy reacted to the challenges presented by the banking crisis both in supplying the money market with liquidity and in determining the appropriate monetary policy stance. More particularly, it shows that without the introduction of the euro even a fairly symmetrical shock such as the financial crisis would have had a more divergent impact in the various Member States on variables closely linked to monetary policy, such as money market liquidity, interest rates and exchange rates. Without the euro, the banking crisis would therefore have been more difficult to manage and would have caused greater macroeconomic volatility in the various Member States than it has at present.

Since the financial turbulence erupted in August 2007, the collapse of confidence between commercial banks has hampered the smooth operation of the interbank market. Banks with surplus liquidity are no longer prepared to lend to those facing a liquidity deficit. As the tension mounted, the Eurosystem was therefore forced to adapt the system of liquidity provision to banks and increasingly assume the role of intermediation normally performed by the interbank market. Initially, it was sufficient to be flexible in applying the existent principles of liquidity provision in euro. At the beginning of the reserve maintenance periods, in particular, a policy of abundant allotment was therefore pursued in the weekly main refinancing operations, more fine-tuning operations were conducted according to market conditions, and the average refinancing term was extended⁽¹⁾.

As the crisis grew worse in September and October 2008, the Eurosystem did more to perform this role of intermediary: partly by supplying even more liquidity to meet the banks' growing demand for reserves, and partly

(1) For more details on this subject, see Aucremanne et al. (2007) and NBB (2008).



by accepting more deposits from the banks. To that end, on 8 October 2008 the ECB Governing Council decided that the weekly main refinancing operations would be conducted at a fixed rate, whereas the central key rate had hitherto served as the minimum bid rate, and that the bids would be fully allotted at that rate. The corridor formed by the rates on the standing facilities was also reduced from 200 to 100 basis points. These measures reduce both the uncertainty for the banks and the intermediation costs, and will remain in force for as long as necessary, and in any case at least until the end of the first reserve maintenance period in 2009. On 15 October 2008 it was also decided to apply the same fixed rate, namely the rate of the main refinancing operations, and to continue to fully allot the bids until the end of the first quarter of 2009 in the longer term refinancing operations (i.e. 1 month, 3 month and 6 month), and to extend considerably the list of eligible assets for use as collateral in the Eurosystem credit operations.

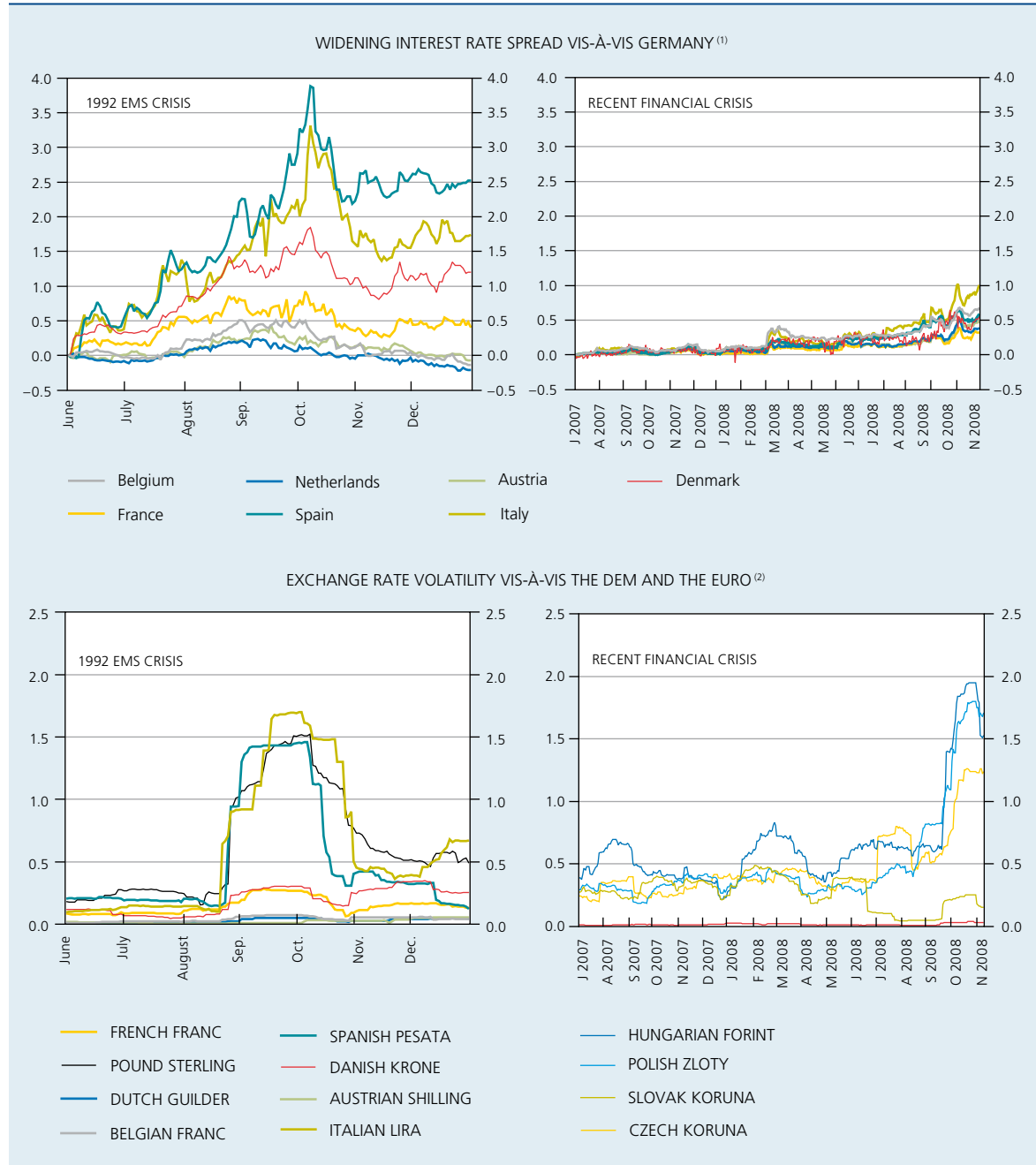
In addition, as part of a coordinated move by five central banks, liquidity in currencies other than the euro was granted against collateral classed as eligible assets by the Eurosystem. That had already been done in the case of the US dollar since 12 December 2007. Meanwhile, both the volume and the maturity of loans granted in US dollar have increased. Since 13 October 2008, these injections of liquidity have also been effected at a fixed rate and the bids have been met in full. Since 20 October 2008, the Eurosystem has also supplied liquidity in Swiss franc. Finally, a number of central banks in the Eurosystem, including the National Bank of Belgium, supplied emergency liquidity assistance to certain banks in both euro and US dollar.

Regarding the determination of the monetary policy stance, a distinction should also be made between the initial phase of the financial turbulence and the worsening of the crisis in September and October 2008. At first, the upside risks to price stability caused by the rising cost of commodities, the risk of second-round effects and the derailment of inflation expectations predominated, especially since at that time there was little sign that the financial turbulence would have a major impact on the real economy. That situation prompted the ECB Governing Council to raise its key rate by 25 basis points to 4.25 p.c. on 3 July 2008. When the crisis deepened in September 2008 it became clear that the financial turbulence would have severe repercussions on the real economy. The upside risks to price stability therefore began to subside, partly as a result of the slump in commodity prices but also because the economic prospects for the euro area were rapidly deteriorating. At the same time, inflation expectations were also revised downwards. In this context, the key rate was cut on 8 October and 6 November, by 50 basis points on each occasion. It should also be noted that the 8 October reduction in the key rate was a joint move coordinated with other central banks. On 4 December, the ECB Governing Council decided to cut its key rate by a further 75 basis points.

By acting so firmly and – in contrast to what would have happened before 1999 – so uniformly for all euro area banks, the Eurosystem effectively limited the direct effects of the banking crisis and avoided worse. In addition, the easing of monetary policy in October and November applies to all euro area Member States, implying that everywhere the crisis is prevented from spreading to the real economy. In the past, the countries where the credibility of monetary policy was weakest had always come under greater pressure in the event of a severe deterioration in economic and/or financial conditions. That was even the case where, in principle, a symmetrical effect would seem more probable. Thus, when the German mark appreciated against the US dollar, that always exerted downward pressure on the bilateral exchange rates of other EMS participants in relation to the German mark and upward pressure on the yield spread with respect to Germany. At the time of the EMS crisis in 1992, when the German mark had also appreciated strongly against the US dollar, there had been very significant movements of this type, particularly in the case of Spain and Italy. Conversely, the Netherlands and Austria, whose monetary policy had in practice long been linked to that of Germany, were hardly affected, and the same applied to Belgium and France. During the summer of 1993, the EMS again came under pressure, with consequences for the Belgian franc and the French franc. However, the chart depicts the 1992 EMS crisis because that provides a particularly good illustration, being larger in scale than the 1993 crisis.



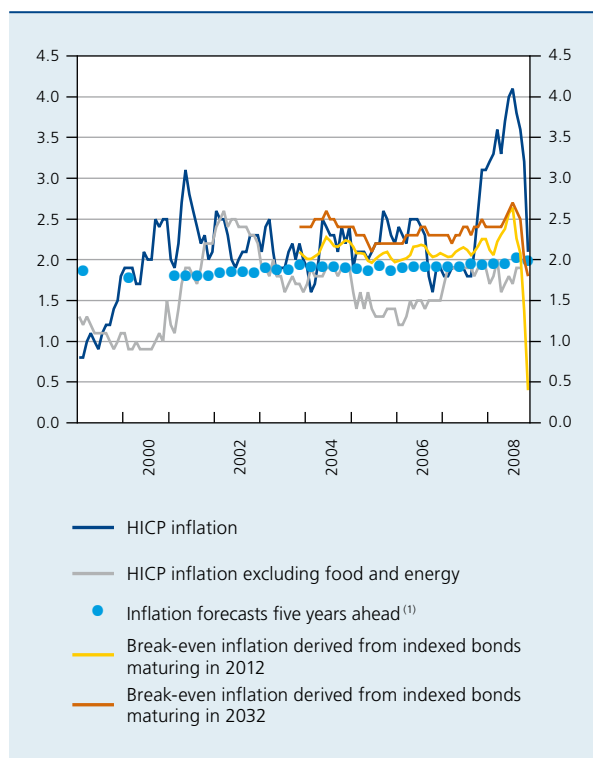
LONG-TERM INTEREST RATES AND EXCHANGE RATES DURING PERIODS OF FINANCIAL TURBULENCE



Given the existence of the single currency, neither the euro's strong appreciation - until recently - against the US dollar nor the credit crisis have affected the bilateral exchange rates of the various countries in the monetary union. However, the recent worsening of the financial crisis has again increased the spread in long-term interest rates in relation to Germany. Yet in view of the size of the shock which the financial system now faces, that increase can be called fairly small, e.g. in comparison with the 1992 EMS crisis. Of course, that is due to the disappearance of the exchange rate premium and the positive effect of monetary union on the default risk premium, so that the current long-term interest rate spreads are attributable largely to differences in liquidity premiums. Without the euro, it is also very likely that the pressure would have affected not only high inflation countries but also countries – often small Member States – with a relatively large financial sector, such as the Netherlands, Ireland, Belgium and Luxembourg. Conversely, for the new EU Member States, the recent worsening of the credit crisis has had a considerable impact on exchange rates and on the long-term interest rate spread in relation to the euro. This situation is relatively similar to what used to happen to countries in the euro area. Thus, the Hungarian forint, the Polish zloty and the Czech koruna recently became far more volatile, one possible reason being, of course, the underlying fundamentals of those economies. Finally, it seems that in view of Slovakia's imminent accession to the euro area, the Slovak koruna was barely affected.

This implies that the existence of the monetary union prevented the effects of the credit crisis from being further accentuated by the additional tension which that crisis would have caused in the various Member States if the euro had not been introduced.

CHART 2 INFLATION AND INFLATION EXPECTATIONS IN THE EURO AREA
(percentage changes compared to the previous year)



Sources: ECB, EC, Thomson Financial Datastream.
(1) ECB Survey of Professional Forecasters.

It should also be pointed out that, during the period of monetary union, inflation has on average slightly exceeded the upper limit of 2 p.c. in the definition of price stability. In fact, the ECB Governing Council defined price stability as a rise in the HICP of the euro area of less than but close to 2 p.c. in the medium term. Such an upward deviation was recorded mainly in 2008, owing to the strong surge in the prices of crude oil and other commodities such as food. However, in recent months inflation has subsided, dropping to 2.1 p.c. in November 2008. Since such price increases, which are largely of external origin, are difficult to foresee and, moreover, have an almost immediate impact on inflation, it is difficult for monetary policy to counteract them. If it nevertheless attempted to do so, that would cause unwelcome variability in the monetary policy instrument, namely short-term interest rates, and in domestic activity. It is precisely in order to permit a more gradual response by monetary policy that the definition of price stability is explicitly geared to the medium term. This makes it possible to accommodate the first-round effects of fluctuations in commodity prices, at least so long as the medium-term outlook for price stability is unimpaired. Inflation also exceeded the upper limit of 2 p.c. on other occasions as a result of large increases in oil prices, or when adverse weather conditions or livestock diseases had a serious impact on food prices, or when increases in indirect taxation or essentially administrative price rises caused inflation to accelerate.

In this connection, one could point out that the HICP excluding energy and food has remained below 2 p.c. on average. However, this alternative inflation yardstick takes asymmetric account of the effects of globalisation. Thus, it disregards the upward impetus of the energy and food components of the HICP while incorporating the downward pressure exerted by cheaper imports from low-cost countries. The fact that the globalisation process is accompanied by two effects working in opposite directions indicates that it mainly causes changes in relative prices, rather than determining the fundamental trend in inflation. Of course, such relative price changes may have a short-term effect on inflation, and the apparent impact may vary over time, depending on which of the two forces is dominant at a particular moment. While monetary policy may accommodate such first round effects, it does shape the subsequent pattern of inflation by adjusting demand to the supply in the economy and by anchoring inflation expectations at a level compatible with price stability.

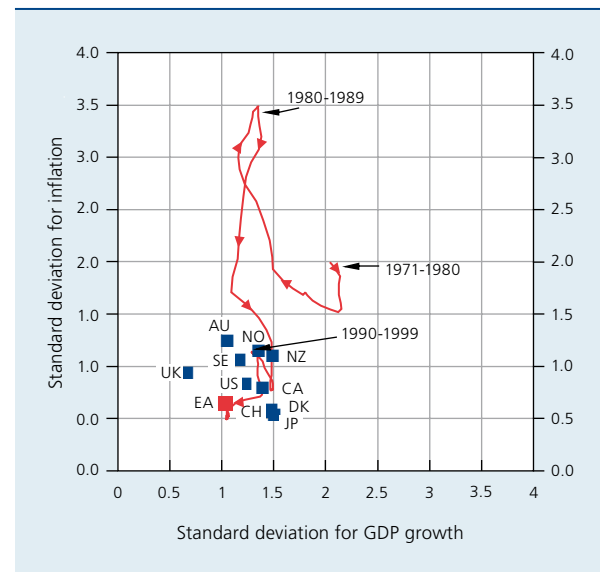
The ECB Governing Council has always stressed the forward-looking nature of monetary policy and the importance of firmly anchored inflation expectations. Whenever there was a danger of inflation expectations being derailed, as in the first half of 2008, the Governing Council was extra vigilant and, when it saw the need, also made use of the monetary policy instrument to anchor those expectations. As a result, inflation expectations have been remarkably stable in the past ten years, both on the basis of expectations measured by surveys of professional forecasters or those derived from financial instruments, even though inflation itself exceeded the upper limit of 2 p.c.

It is equally important to stabilise inflation expectations when there are signs of an excessive fall. In May 2003, the Governing Council clarified the definition of price stability by adding “less than *but close to* 2 p.c.”, thus introducing a safety margin, particularly in case of a risk of deflation. More recently, the attenuation of the upside risks to price stability following the strong contraction in demand triggered by the credit crisis caused the ECB Governing Council to cut its key rate on 8 October and 6 November 2008, by 50 basis points on each occasion. Furthermore, the key rate was slashed again by 75 basis points on 4 December, bringing it to 2.50 p.c.

(1) The clear preference among investors for liquid assets has depressed nominal bond yields whereas it has driven up the yields on indexed bonds. On balance, the divergent movement in liquidity premiums on each of these segments drives down break-even inflation, which is independent of actual inflation expectations. Under normal circumstances, the impact of liquidity premiums on break-even inflation is small and is dominated by an upward effect attributable to the inflation risk premium. The existence of such a positive premium, which may also vary over time, implies that price stability is not immediately threatened when break-even inflation edges above 2 p.c. That premium also explains why break-even inflation tends to be higher in the long term than in the short term.

CHART 3 MACROECONOMIC VOLATILITY

(standard deviation in percentage points for the period 1998-2007 and for a series of moving 40-quarter periods for the euro area)



Sources: Fagan, Henry and Mestre (2005); OECD; Thomson Financial Datastream.

(cf. also box 1). Declining inflation expectations are doubtless a factor here. Yet it must be said that, in the present circumstances, the fall in break-even inflation derived from indexed bonds considerably overestimates the actual decline in inflation expectations⁽¹⁾.

One might ask whether the high level of price stability was achieved at the cost of major fluctuations in economic activity. That does not appear to have been the case, as the standard deviation of both inflation and real growth was very low during the period 1998-2007, pointing to a widespread decline in macroeconomic volatility. That volatility was noticeably greater in the euro area in the 1970s, 1980s and 1990s than in the years of EMU. In theory, such a decline in volatility may be due to more effective conduct of monetary policy, lower variance in the shocks affecting the economy, or a combination of the two. These two elements cause an inward shift in the ‘efficiency frontier’, i.e. the curve which – given the size of the shocks and the structure of the economy – represents the optimum macroeconomic performance. It is clear that the curve shifts inwards in case of minor shocks. In switching from a totally discretionary policy, where the monetary authority always retains a free hand, to a policy whereby the monetary authority is required to respect its set targets, monetary policy gains better control of inflation expectations. The latter thus become an additional stabilising factor, which is totally non-existent under a

purely discretionary policy (cf. for example Clarida, Gali and Gertler, 1999).

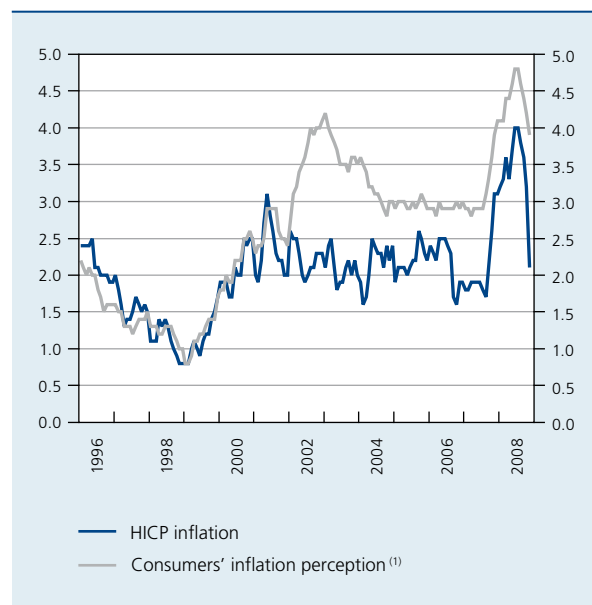
The fact that monetary policy in the euro area is based on a clear strategy, namely a quantitative definition of price stability and an analytical framework in which the risks to price stability are systematically subjected to economic and monetary analysis, works in the same direction. Such a framework means that the monetary policy stance can be revised according to the shocks affecting the economy, but it also means that the revised stance must always conform to the set strategy. In addition, it implies that the transparency and communication in regard to the strategy pursued and the resulting Eurosystem decisions are vital. That is not only because it is appropriate in a democracy for an independent institution to be accountable. By steering expectations, transparency and communication also promote the effectiveness of monetary policy. It is therefore no surprise that the Governing Council decisions have always been explained in detail, which has in turn helped the financial markets to anticipate those decisions better.

The fact that a similar decline in macroeconomic volatility has been seen in other advanced economies may indicate that monetary policy is not necessarily the source of this phenomenon. Nonetheless, that does not entirely call into question the role of monetary policy since the conduct of monetary policy has probably changed in those countries, too (cf. for example Ahmed, Levin and Wilson (2004) on sources of macroeconomic stability in the US). Thus, a number of countries have introduced a strategy of inflation targeting, which also imposes a clear objective for the central banks. Moreover, between 1998 and 2007 the macroeconomic situation was actually slightly more stable in the euro area than in most other economies. The shocks accompanying the turbulence currently hitting the financial markets are an important test for monetary policy, particularly in regard to its ability to ensure macroeconomic stability in less favourable circumstances.

There is a serious downside to the euro's success in regard to price stability. Since the banknotes and coins were introduced in January 2002, the euro has often been associated with higher prices, and perceived inflation as measured by the EC's consumer survey has deviated substantially from actual inflation. It is not that the switch to the euro had no effect in pushing up prices, but all the studies on the subject show that those price rises were confined to certain sectors and that, ultimately, the effect on the general price level was relatively small since, according to the European statistical institute (Eurostat, 2003), it is most likely between 0.12 and 0.29 percentage points. Such a deviation between inflation and inflation

CHART 4 INFLATION IN THE EURO AREA: REALITY AND PERCEPTION

(percentage changes compared to the previous year)



Source: EC.

(1) Balance of replies to the EC survey, converted to an inflation indicator comparable to the HICP according to the standardisation procedure described in Aucremanne, Collin and Stragier (2007).

perceptions was not found at the time in the EU countries which had not adopted the euro, namely Denmark, the United Kingdom and Sweden. Moreover, this perception gap has proved very persistent in the euro area, but since mid 2007 perceived inflation has again tended to move in line with actual inflation. The surge in inflation recorded in the second half of 2007 and the first half of 2008 did not in fact have any disproportionate impact on perceived inflation, and the recent fall in inflation is also faithfully reflected. Finally, there are few signs that these inflation distortions have had any significant effect on private consumption, wage setting or inflation expectations which, as mentioned earlier, have remained firmly anchored since January 2002.

2. Fiscal policy

Sound public finances are one of the conditions required for price stability and sustainable economic growth. On that basis, agreements have been concluded at EU level in order to guarantee sound public finances.

The Treaty establishing the European Community included reference values for the budget balance and the public debt. They were clarified and quantified by the Maastricht

Treaty, ratified in 1992. In principle, the budget deficit must not exceed 3 p.c. of GDP while the public debt must not exceed 60 p.c. of GDP, except in cases where the debt ratio is falling sufficiently to approach that reference value at a satisfactory pace. Only Member States meeting these criteria were allowed to join the monetary union.

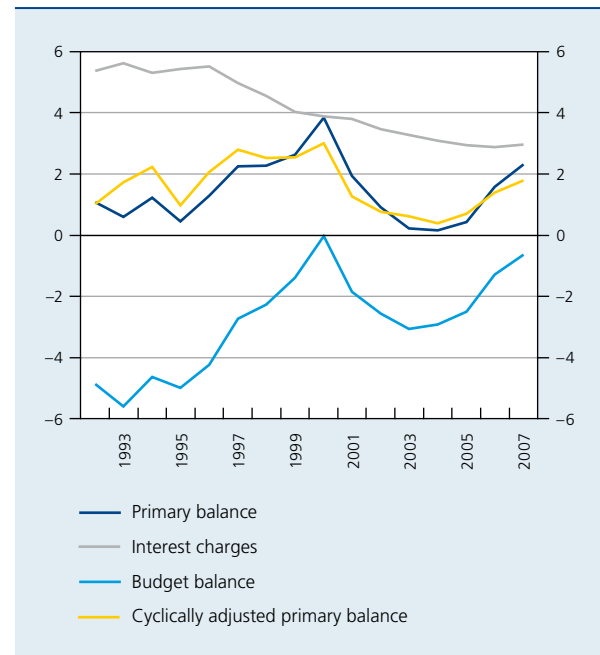
Under the excessive public deficit procedure, the Treaty also introduced a mechanism for correcting deviations from these reference values, to ensure the continuation of budget discipline after the monetary union was formed. Rules on fiscal discipline and the accompanying preventive and corrective procedures were supplemented and clarified by the Stability and Growth Pact adopted in 1997. Thus, Member States were to endeavour to achieve budgets which were more or less in balance or showing a small surplus in the medium term. Since the reform of the Stability and Growth Pact in 2005, there have been different national medium-term budget targets to take account of the diversity of situations in the Member States. Such fiscal positions should enable the Member States to accumulate margins to cope with normal fluctuations in business activity via the operation of the automatic stabilisers.

2.1. Budgetary developments before and during Stage 3 of EMU

The budget balance and public debt criteria which Member States must respect in order to qualify for membership of the monetary union have undeniably helped to improve the situation of public finances. That improvement was evidently achieved mainly in the run-up to EMU Stage 3. During that preparatory phase, the candidate countries had to make a substantial effort to consolidate their finances in order to satisfy the set criteria. For the Member States which joined the monetary union in 1999, the convergence criteria were assessed on the basis of the 1997 figures.

In the early 1990s, almost all the eleven Member States forming part of the first wave of countries joining EMU had a budget deficit in excess of the reference value of 3 p.c. of GDP, whereas in 1997 that was no longer the case in any of those countries. In the years which followed the launch of the euro, the budget position of the euro area initially continued to improve, and a balanced budget was recorded in 2000. That was achieved thanks to the favourable economic situation at the end of the previous decade and the exceptionally large proceeds generated by the sale of UMTS licences in various countries (0.6 p.c. of GDP in 2000, for the euro area). During the ensuing period of weak economic activity, the budget balance

CHART 5 BUDGETARY DEVELOPMENTS IN THE EURO AREA ⁽¹⁾ BEFORE AND DURING EMU STAGE 3
(percentages of GDP)



Source: EC.

(1) Before 1995 excluding Cyprus, Spain, Malta and Slovenia; before 1998 excluding Cyprus and Malta; from 1998 on the basis of the 15 Member States currently belonging to the euro area.

deteriorated to a deficit of 3 p.c. of GDP in 2003. There followed a new period of consolidation during which the budget deficit was gradually reduced, falling to 0.6 p.c. of GDP in 2007.

The improvement in the euro area's budget balance since the early 1990s is very largely attributable to the steady reduction in interest rates and the accompanying decline in interest charges. In the early 1990s, interest expenses still represented around 6 p.c. of GDP, whereas since 2005 they have stood at around 3 p.c. of GDP.

During the years preceding EMU Stage 3, the positive effect of the decline in interest expenses on public finances was considerably augmented by the strong growth of the primary balance. The cyclically adjusted primary balance of the euro area – the profile of which provides a good indicator of the fiscal policy stance – increased by 2.5 p.c. of GDP during the period 1992-1998. Thus, almost all countries belonging to the first wave of membership recorded an improvement. Failure to respect the Maastricht criteria would in fact have precluded them from joining the monetary union. The efforts to consolidate public finances were essentially based on measures designed to boost revenues.

Since the launch of EMU Stage 3, fiscal policy has been eased considerably. In 1999 and 2000, the cyclically adjusted primary balance of the euro area continued to grow, but then followed a U-shape: the relaxation recorded in the period 2001-2004 gave way to renewed consolidation of fiscal policy. However, in 2007 the cyclically adjusted primary balance was still slightly below its 1999 level.

2.2 Application of the Stability and Growth Pact

Since the Stability and Growth Pact came into force ten years ago, a number of countries have achieved a budget position which is more or less in balance or in surplus. Conversely, other countries have failed to do so. Thus, the targets laid down in the annual stability programmes of those countries have not generally been met, notably because they were based on over-optimistic macroeconomic assumptions, but also owing to the lack of consolidation efforts, the necessary political will often being absent.

The result was that, during the cyclical slowdown at the beginning of this millennium and in the ensuing years, the budget deficits of many euro area countries (Germany, France, Greece, Italy, Netherlands and Portugal) persistently exceeded the budget target of 3 p.c. of GDP. The Ecofin Council therefore decided to initiate the excessive deficit procedure against those countries. It proved impossible to reach agreement on the practical application of the correction mechanism intended to encourage more budget discipline. The Stability and Growth pact – considered by some to be an excessively tight straitjacket – therefore came under criticism, so that it was reformed in 2005. This reform made the rules on budget discipline more flexible since the budgetary effort can be geared more closely to the general macroeconomic situation – but it also made them more complex and significantly expanded the scope for interpretation by the Ecofin Council.

During the years which followed the reform of the Stability and Growth Pact, all the Member States recording an excessive deficit succeeded in reducing their budget deficit below 3 p.c. of GDP. However, that improvement was achieved in an economic boom period. It was mainly public revenues that increased considerably – notably as a result of the collection of exceptional revenues. Some countries, however, made insufficient use of these “good years” to achieve structural improvements in their fiscal policy. Thus, many Member States which have not yet attained their medium-term budget target failed to respect their commitment under the reformed pact to achieve an annual improvement in their structural balance of 0.5 p.c. of GDP. Consequently, some of those

countries are still dangerously close to the budget limit of 3 p.c., which is restricting their room for manoeuvre and preventing the use of the “automatic stabilisers” in less favourable economic circumstances.

However, in the context of the current financial crisis it would be desirable to have such room for manoeuvre in the budget. In that connection, the Ecofin Council decided, on 7 October 2008, that the application of the Stability and Growth Pact should also reflect the current exceptional circumstances, namely those caused by the present crisis. Nevertheless, leaving aside the impact of the crisis, it is important that the Member States continue to aim at structurally sound public finances.

It cannot be said that the application of the Stability and Growth Pact has been entirely satisfactory in the past ten years. The original aim, namely that all Member States should achieve budget positions which were structurally in balance or in surplus, was not attained either by the euro area as a whole or by many of its member countries. The long-term sustainability of public finances has therefore still not been achieved, in view of the impact of population ageing.

2.3 Medium- and long-term fiscal challenges

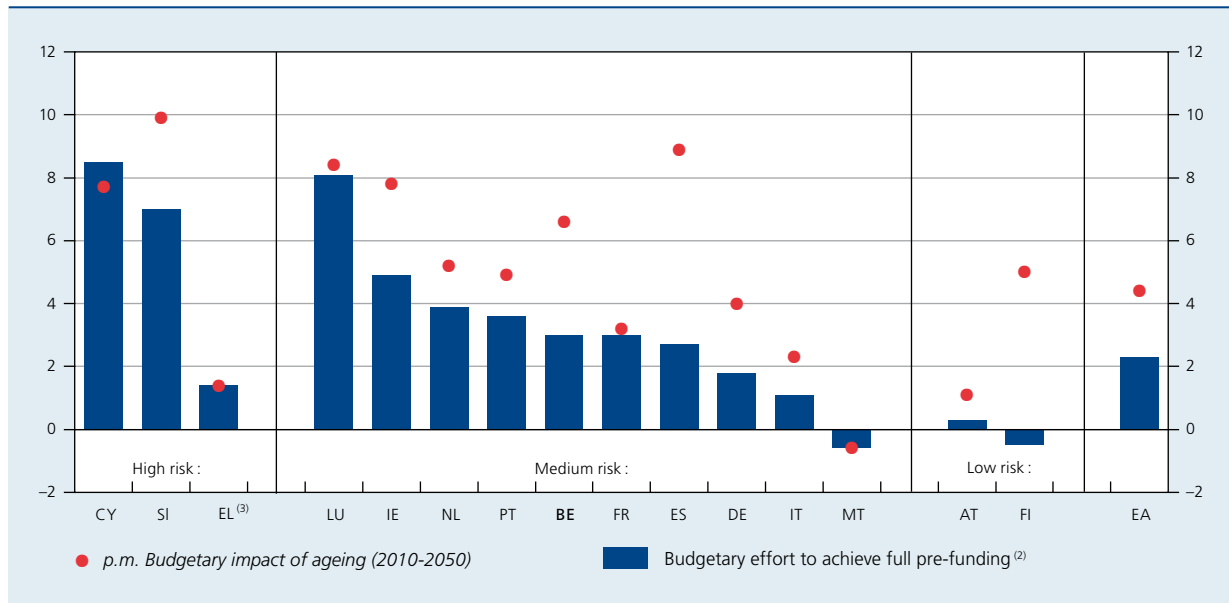
According to the latest estimates by the European Commission and the EU's Economic Policy Committee, as a result of demographic changes in the decades ahead, age-related public spending in 2050 is likely to be 4.4 p.c. of GDP above its 2010 level. In the context of ageing it is therefore important to ensure the sustainability of public finances.

The European Commission calculates a number of indicators to assess the sustainability of public finances. For instance, the S2 sustainability indicator measures the permanent adjustment to the primary balance necessary to bring it to a level where the intertemporal budgetary constraint⁽¹⁾ can be respected. In other words, if that adjustment to budgetary policy is made today, no further adjustments will be required at a later date when the full impact of the budgetary cost of ageing is felt. Where a budgetary effort of this type is made, the costs relating to population ageing are therefore fully pre-funded.

In 2007, according to the S2 indicator, the sustainability deficit came to 2.3 p.c. of GDP in the euro area, though this average masks substantial differences between Member States. The European Commission divided the EU

(1) The intertemporal budgetary constraint stipulates that the discounted value of future primary balances must correspond to the current value of the public debt.

CHART 6 SUSTAINABILITY OF PUBLIC FINANCES IN THE CONTEXT OF AGEING ⁽¹⁾
(percentages of GDP)



Source: EC.

(1) The risk category breakdown was proposed by the European Commission and confirmed by the Ecofin Council.

(2) On the basis of the S2 sustainability indicator, which measures the permanent adjustment to the primary balance necessary to bring it to a level where the intertemporal budgetary constraint can be respected without recourse to further adjustments at a later date (i.e. the public debt corresponds to the discounted value of the future primary balances).

(3) For Greece, the sustainability indicator is based on the budgetary cost of ageing excluding pensions and expenditures relating to the elderly, which implies that this indicator underestimates the sustainability deficit.

Member States into three risk categories (high, medium and low risk). This breakdown was confirmed by the Ecofin Council. It shows that Cyprus, Greece and Slovenia face the highest sustainability risk. Conversely, only two countries – Finland and Austria – have a low sustainability risk. The other euro area countries, including Belgium, present a medium sustainability risk.

In order to meet the challenge of population ageing, it is necessary to devise a coherent strategy. Achieving sound public finances, which means a steady reduction in the public debt, is crucial here. Increased participation in the labour market, higher productivity and the reform of the pension and health systems are also vital elements of this strategy.

3. The role of the euro as an international currency and a driver of economic integration

3.1 The international role of the euro

The Eurosystem does not directly encourage the international use of the euro, as it considers that use of the

euro beyond the borders of EMU should be the result of a market mechanism. Nevertheless, a report on the subject is produced annually (cf. for example ECB, 2008b). In fact, the international use of the euro can be regarded as an indicator of success and credibility, and it may also have implications for the economies of the euro area itself, in addition to the – relatively limited – impact of the seigniorage income (Bini Smaghi, 2008). Thus, monetary analysis should always take account of the euro's international role, as portfolio adjustments may blur the signals given by movements in monetary aggregates in regard to risks to price stability.

The latest report on the euro's international role highlights three key trends. First, since the creation of EMU, the euro has gained in importance on the international markets, though some stagnation has been evident in recent years. Thus, between 2001 and 2005, there was steady growth in the use of the euro for invoicing trade with countries outside the euro area. In 2006, the proportion of exports denominated in euro actually exceeded 50 p.c. for most countries, while for imports the situation was less clear-cut. In 2007, the euro represented around 25 p.c. of global foreign exchange reserves, against less than 20 p.c. in 1999, with a larger share in the reserves

of industrialised countries than developing countries. The share of the euro in the stock of international debt securities (i.e. debt securities issued in a currency other than that of the borrower) was around 32 p.c. in 2007, compared to only 20 p.c. in 1999. Secondly, the euro's international success is also based on euro area residents, since they own a large proportion of the assets issued outside the monetary union but denominated in euro. Finally, the euro's role is geographically concentrated around the euro area. Thus, in 2005 the euro accounted for some 57 p.c. of the foreign exchange reserves of countries bordering the euro area, a percentage in stark contrast to the global average mentioned above.

3.2 Trade integration and price convergence

The advent of the euro as a single currency significantly reduced the costs of cross-border trade in the monetary union. The euro eliminated the costs of converting national currencies and the costs of hedging exchange rate risks as exchange rate volatility and the associated uncertainty have disappeared. All other things being equal, the reduction in transaction costs associated with international trade has a positive effect on trade volumes. However, membership of a monetary union has a greater impact than one would expect from just those two factors, as illustrated by the groundbreaking article by Rose (2000). This author suggests that two countries belonging to a monetary union conduct up to three times as much trade as two countries which do not share a common currency. Although the effects which Rose estimated were considered rather large by subsequent studies, it is clear that the creation of a monetary union does indeed tend to boost the volume of trade within it. In fact, by joining a monetary union, each national authority enters into a long-term commitment which may encourage firms to focus more on the international market.

The many studies analysing the euro's impact on international trade present widely varying results, since they are based on very different data and econometric techniques. However, a consensus is emerging on the fact that the introduction of the euro has probably stimulated trade within EMU, by as much as 10 p.c. according to some estimates. According to Berger and Nitsch (2008), the advent of the euro did not have any significant impact on bilateral trade in the euro area, as trade integration in Europe is a gradual process which has been going on for several decades. Factors other than the simple introduction of the euro, such as the gradual liberalisation of the markets in goods and services in the single market, have also encouraged trade

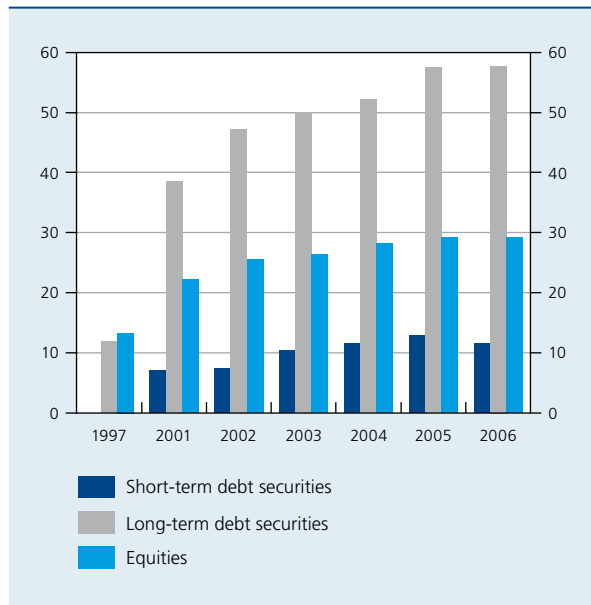
integration so that it is difficult to identify an unambiguous "euro" effect.

More recently, research (cf. for example Muùls and Pisu, 2007) has focused mainly on *how* the euro has influenced trade rather than *what percentage* of additional trade has been generated. The studies reveal that the euro has mainly helped to reduce the fixed costs of exporting, making exports worthwhile for smaller, less productive firms as well. This widens the range of products offered rather than their volume, thus enhancing welfare for consumers who appreciate a wider choice of products.

Increased trade integration has brought strong price convergence in the euro area, but according to most studies that was essentially achieved before the advent of the euro (cf. for example Rogers, 2007), namely around 1993. For both tradable and non-tradable goods, price dispersion is lower in the euro area than in the EU. Conversely, price dispersion in the euro area is fairly similar to that in the United States as regards tradable goods, while it is lower for non-tradable goods. The early price convergence indicates that, as in the case of trade integration, other developments such as the harmonisation of tax systems and smaller differences in the conduct of monetary policy in the future monetary union countries had already promoted price convergence even before the introduction of the euro.

3.3 Financial integration

The monetary union cannot be considered a lasting success until all the national financial markets have become highly integrated. While a highly integrated financial system helps to improve the efficiency of payments in the monetary union and stimulates competition in financial services, it also offers macroeconomic advantages. In fact, it permits the more effective and coherent transmission of the single monetary policy, so that the latter has fewer asymmetric effects in the EMU Member States. Moreover, monetary union residents are able to spread the risks more judiciously, and are able to allocate their savings surpluses and deficits more efficiently. In fact, in a monetary union with a high degree of financial integration, consumption patterns do not need to be adapted in response to idiosyncratic shocks, since the impact of those shocks can be neutralised via the international financial markets (risk sharing). Although in principle cross-border financial integration tends to enhance welfare and is therefore desirable, it also embodies a danger in that it amplifies the risks of financial contagion. The turbulence which has recently exposed a number of banks, and therefore indirectly many consumers, to the

CHART 7 CROSS-BORDER HOLDINGS OF SECURITIES IN THE EURO AREA ⁽¹⁾

Source: ECB.

(1) Percentage share of cross-border holdings of securities issued by euro area residents in the total portfolio.

problems facing foreign players or subsidiaries is a highly topical example.

The extent to which euro area nationals hold assets issued in other euro area countries has risen steadily since the creation of monetary union. This diversification applies particularly to long-term debt securities: in 2006, over half of the securities portfolio held by EMU nationals consisted of assets issued in other EMU Member States, whereas the figure was only 13 p.c. in 1997. Since the advent of monetary union, the geographical allocation of equities has also become more diversified, even though it is still far more limited than in the case of long-term debt securities. In contrast, in the case of short-term debt securities, investors are more inclined towards the national market.

The current state of financial integration in the euro area varies greatly according to the market segment concerned. Moreover, the markets most closely linked to monetary policy and endowed with the least fragmented infrastructure are more closely integrated.

The money market therefore exhibits a very high degree of integration, facilitated in particular by Eurosystem initiatives such as the establishment of an interbank payments settlement system (TARGET) and a system permitting the

cross-border use of collateral in the open market operations conducted by the Eurosystem (CCBM). The small interest rate differentials on the unsecured interbank market between Member States bear witness to the high degree of integration on this market, although there is still room for progress in other money market segments such as that for short-term debt securities. However, since the financial turbulence erupted in August 2007, spreads between money market rates in the various EMU member countries have steadily increased. Since the financial crisis deepened in September and October 2008, the interbank market has become more or less paralysed. That is due more to a change in risk perception on the part of the banks in each Member State, rather than a reversal of the process of money market integration. Moreover, similar developments have occurred on other money markets, including those of the United States and the United Kingdom.

Yield differentials on the government bonds of various Member States have widened significantly in recent months, owing to differences in liquidity premiums and, to a lesser extent, risk premiums. The widening of these spreads is not symptomatic of a setback in the process of integration, and the government bond market remains particularly highly integrated. Nevertheless, in the case of the corporate bond market the integration process is hampered by the coexistence of multiple clearing and settlement infrastructures. The absence of a common framework for the settlement of transactions is also felt on the equity market where, despite modest progress in the integration process, the existence of different clearing and settlement systems causes a significant increase in the price of cross-border transactions. The implementation of TARGET2-Securities, which aims to create a common platform for the settlement of transactions, is therefore essential for the continuing integration of the bond and equity markets.

In contrast to wholesale and capital market related banking, the retail market is highly fragmented. It is national players that dominate the local markets, so that competition is relatively limited and the interest rates charged vary greatly from one country to another even though the products concerned are comparable. Thus, the dispersion of interest rates on consumer credit has increased considerably since 2003, and the standard deviation is now around 135 basis points. While the dispersion is much smaller in the case of mortgage lending rates, the standard deviation in this case was still 30 basis points following some slight convergence since 2003. Part of the reason for these divergences is that the underlying products are not totally homogenous, but this also indicates that the retail market is still highly fragmented.

Although the creation of the Single Euro Payments Area (SEPA) in 2008 removed a major obstacle for banks engaged in cross-border activities, there are still other impediments along the road to retail market integration. In view of the differences in the current legislation – particularly regarding the mortgage lending market, which is especially important for retail banks – the banks find it more difficult to offer financial services beyond their national borders. Nonetheless, the present financial crisis may act as a catalyst, encouraging standardisation of the rules governing the retail market. For example, harmonisation of the system of deposit guarantees in EMU could remove this barrier to competition and thus stimulate international activities.

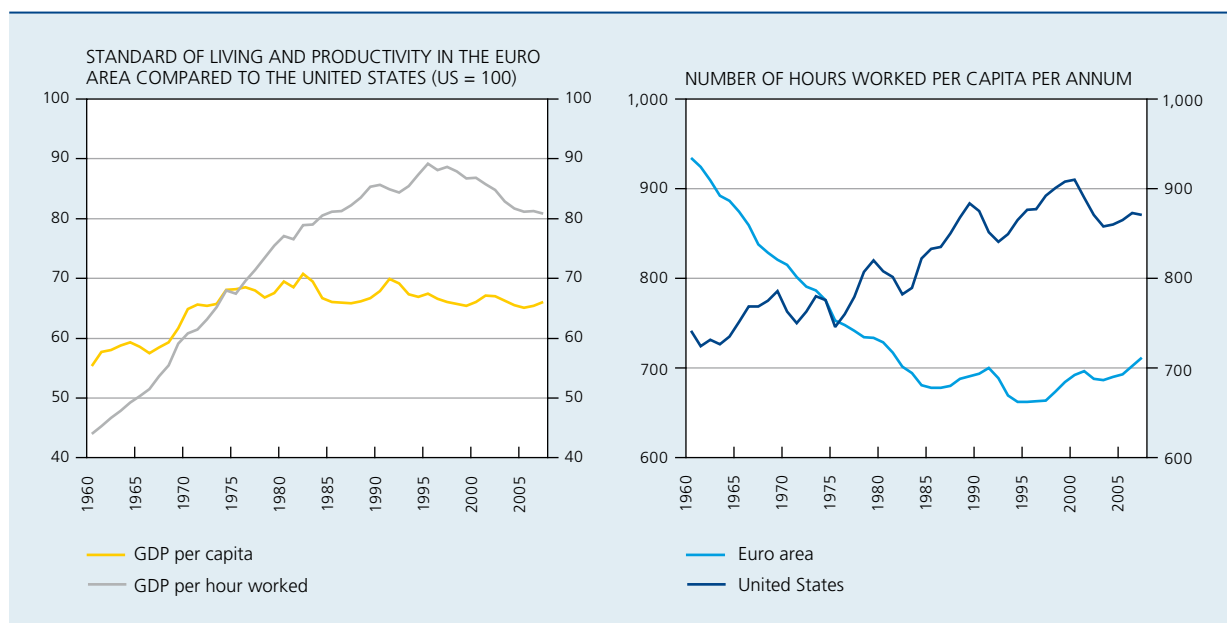
Furthermore, proximity to the customers plays a key role on the retail market, so that cross-border mergers and acquisitions are an important way of achieving a high degree of integration. Owing to differences in legislation, however, the banks have more difficulty in conducting such operations, and competition on the European market therefore remains limited. In addition, the national authorities sometimes display some reticence, generally tacit, regarding such operations. At the same time, the formation of cross-border banking groups requires harmonisation of banking sector supervision, preferably on a European scale, a need which is heightened further by the turbulence currently afflicting the financial markets.

4. Flagging potential growth curbs the rise in the standard of living

The standard of living in the euro area is significantly lower than in the United States or the Scandinavian countries. There has been little change in that situation since the start of monetary union. Thus, in the euro area GDP per capita adjusted for purchasing power variations is around 35 p.c. below that in the United States. In relation to the Scandinavian countries the difference is 20 p.c. However, the difference is far less marked in regard to productivity in terms of GDP per hour worked. A strong tendency to catch up in fact reduced the productivity gap in relation to the United States to just over 10 p.c. in 1995. However, since 1995 productivity has risen less fast in the euro area than in the United States.

The large differential in terms of GDP per capita and productivity in the euro area makes it clear that the number of hours worked per capita has been a key factor influencing the European standard of living. In the euro area, that number has in fact declined steadily, even though the trend was reversed in 1995. In contrast, in the United States the number of hours worked per capita had continued to rise until recently. This difference could indicate a greater structural preference for leisure in Europe (Blanchard, 2004). That opinion appears to be corroborated to some extent by the continuing decline in the number of hours worked per employee in Europe, while

CHART 8 STANDARD OF LIVING, PRODUCTIVITY AND NUMBER OF HOURS WORKED, PER HEAD PER ANNUM



Sources : The Conference Board and Groningen Growth and Development Centre, Total Economy Database (September 2008).

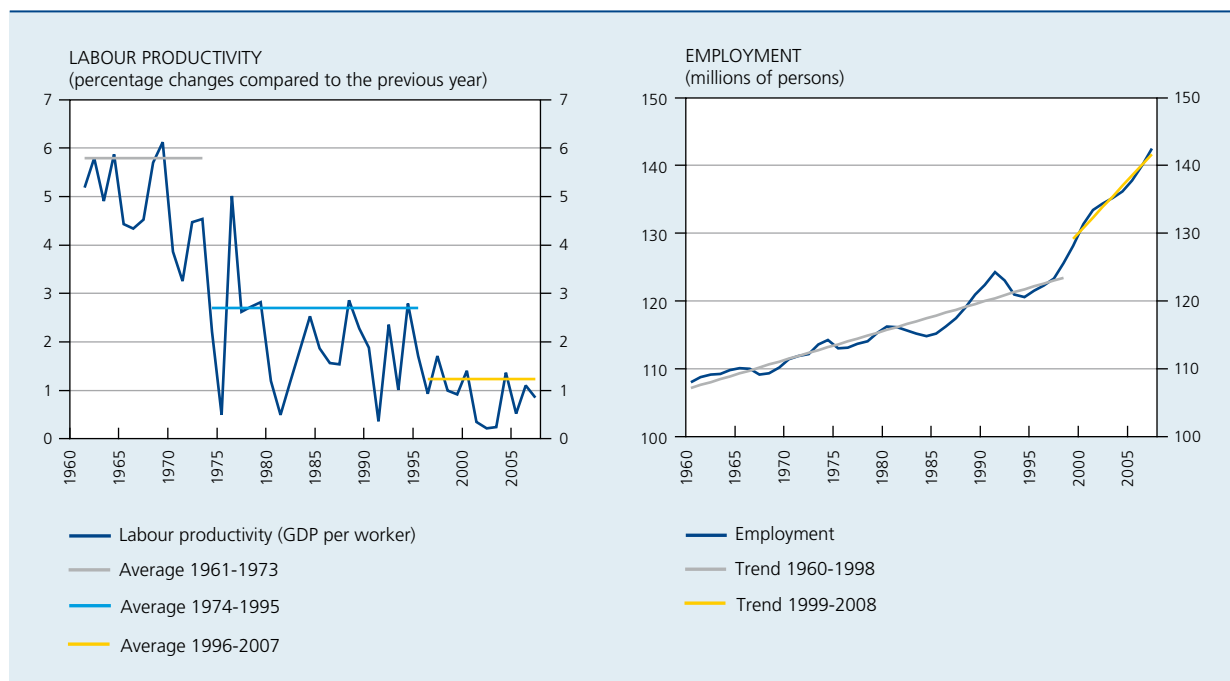
that was no longer the case in the United States after 1980. However, it should be noted that the reduction in the number of hours worked is due not only to working time but also to the number of workers in the population. The question is also whether the greater preference for leisure is genuinely structural, i.e. firmly embedded in European habits. The lower propensity to work may also be due to various factors, such as the heavy burden of fiscal and parafiscal levies on labour, or institutional characteristics of the organisation of labour, which depress both the supply of labour (because extra work is insufficiently rewarded) and demand for labour (because the production factor labour is expensive).

However, the number of hours worked per capita has increased in the euro area since the second half of the 1990s. The effect of the particularly dynamic job creation, certainly during the period of monetary union, far exceeded that of the further decline in working time. Over 15 million jobs have been created in the euro area since the start of monetary union, thanks in particular to structural labour market reforms and wage moderation. This demonstrates that a monetary policy geared to price stability does not hamper job creation. This success in job creation may have weaker productivity growth as its corollary. Thus, during the period 1997-2007 productivity per worker increased by an average of 1.2 p.c. That

is not only below the figure recorded previously, but is also lower when compared to the productivity growth in the United States, which came to 2.1 p.c. over the same period. *Ceteris paribus*, the increased mobilisation of previously inactive workers, most of whom are low skilled, exerts downward pressure on average productivity. However, studies also reveal that the relative slowing of productivity is due almost exclusively to the sectors producing ICT, and particularly to those using ICT, especially trade and financial services (Van Ark *et al.*, 2003). In the euro area, extensive and efficient use of ICT may have been impeded by structural rigidities, such as a rather inflexible labour market and obstacles hampering market access. That is why new measures are needed to strengthen competition and improve market efficiency. That applies particularly to the service sector. Such measures would also foster the continued deepening of the single market.

In 2000, in order to reinforce the EU's productive potential, the European Council launched the Lisbon strategy which emphasises the need for structural reforms in Europe. Relunched in 2005 following an in-depth assessment, this strategy focuses on two elements vital to a sustainable rise in the standard of living, namely labour market participation and productivity growth. That is why a series of specific targets were set, to be attained by 2010.

CHART 9 LABOUR PRODUCTIVITY AND EMPLOYMENT IN THE EURO AREA



Sources: The Conference Board and Groningen Growth and Development Centre, Total Economy Database (September 2008).

Thus, the employment rate (defined in relation to the population of working age) is to be increased to 70 p.c. Although, as indicated earlier, the employment rate has risen strongly since the advent of monetary union, the shortfall in relation to the target is still around 4 percentage points. A target was also defined for expenditure on research and development, namely 3 p.c. of GDP. In fact, that expenditure is currently below 2 p.c. of GDP in the euro area, and the gap has not diminished in recent years. It is considerably higher not only in the United States but also in Sweden and Finland, where the 2006 figures came to 3.73 and 3.45 p.c. of GDP respectively.

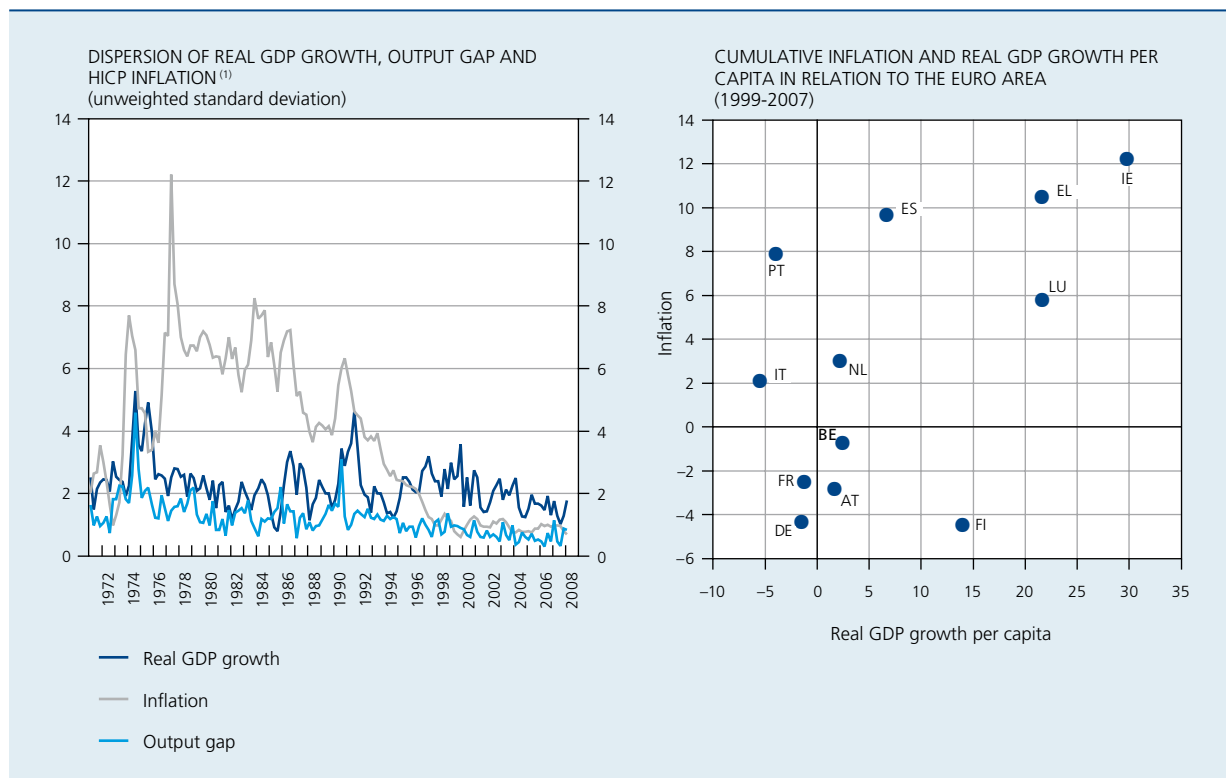
Overall, the progress achieved in terms of structural reforms over the past ten years has been inadequate, despite the undeniable improvement in labour market participation and employment. As a result, the euro area's growth potential has not been strong enough. Further efforts are therefore needed to achieve the set targets by 2010. That could alleviate the budgetary challenges connected with population ageing. Moreover, reforms aimed at increasing the flexibility of prices and wages could promote greater efficiency in the adjustment mechanisms operating in a monetary union (cf. the next section). The

current downturn in the business cycle certainly does not downgrade the priority of this reform programme, and must not be used as an excuse for not getting on with it.

5. The euro area countries, united but different

The divergences in economic development between the EMU Member States were the focus of much attention from the start. Some people believe that the 'one size fits all' monetary policy cannot be right for all EMU Member States if there are wide divergences between them. Those Member States can no longer use their own monetary and exchange rate policies to correct undesirable economic developments. The statement that this deprives them of an effective monetary policy instrument is clearly only true if the exchange rate is not in itself a source of undesirable volatility. However, box 1 demonstrates that this was sometimes the case in the past, especially in a crisis situation. It therefore seems that the single monetary policy is an advantage rather than a handicap in the current, unusually severe financial crisis.

CHART 10 GROWTH AND INFLATION DIFFERENTIALS IN THE EURO AREA



Sources : OECD, Thomson Financial Datastream.
 (1) Output gap based on the Hodrick-Prescott filter.

Since 1999, inflation and growth differentials between euro area countries have been relatively small by historical standards. That is particularly true of inflation differentials, indicating the extent to which monetary union has led to nominal convergence. During monetary union, the inflation dispersion has not declined further, but studies have shown that inflation differentials in the euro area are comparable in size to those seen between the various regions of the United States (Angeloni and Ehrmann, 2005). The profile of the growth differentials is less clear. The dispersion of the output gap has tended to diminish since the 1970s, indicating that the differences in position in the business cycle have moderated and that the cycle tends to be increasingly synchronised between the various countries, making it easier, in principle, to conduct monetary policy. Nonetheless, the growth differentials are substantial, although some decrease has been seen in recent years. Discrepancies in trend or potential growth, which may be due to structural factors, therefore seem to be considerable. That tallies with the finding that some countries persistently record inflation or economic growth above or below the average. This is reflected, in particular, by the high cumulative inflation and growth differentials of the period 1999-2007. Growth and inflation in Spain, Ireland and Greece persistently exceeded the figures recorded in the euro area as a whole, whereas the opposite applied in Germany. The Italian and Portuguese economies suffered from an adverse combination of above average inflation but below average growth. Belgium was close to the average for the euro area in terms of both inflation and growth during the period 1999-2007 (cf. also box 2).

However, growth and inflation differentials in a monetary union are not necessarily a problem. Thus, several euro area countries initially had low per capita GDP, so that they were in a catching up or real convergence phase. This applied to Greece, Ireland, Spain and Portugal. It is therefore normal and even desirable to see that marked differences – which go with the process of real convergence – in productivity growth between the tradable goods sector and the non-tradable goods sector, generate considerable positive inflation differentials in those countries. In principle, the opposite applies to Germany and to other countries with high per capita GDP, such as Belgium. The size of this type of growth and inflation differentials should diminish as real convergence progresses, but the differentials could increase again if the new EU Member States adopt the euro before they have attained a sufficiently high degree of real convergence. This ‘Balassa-Samuelson’ effect only accounts for part of the persistent differentials in the euro area, mainly because the variations in the productivity trends are not proportionate to the inflation

differentials recorded. For example, Portugal ceased to record strong growth during the period 1999-2007, but still had high inflation.

It is hard to prevent the existence of some divergences, since euro area Member States are bound to encounter asymmetric shocks, and mutual shocks may have more or less asymmetric effects in certain cases, depending on the structural characteristics of the Member States, e.g. in terms of dependence on oil, the degree of openness or the geographical structure of foreign trade. All these factors can cause growth and inflation differentials which are more cyclical in character. In principle, they should have diminished in scale, taking account of the greater synchronisation of the economic cycles of the euro area Member States. Nonetheless, those cyclical differences have played a role, e.g. in the case of Germany, the Netherlands, Spain and Ireland. However, it is not always easy to distinguish between the cyclical element and the part relating to real convergence, since the two present the same apparent characteristics, with growth and inflation differentials moving in the same direction. It also seems that these divergences have been amplified by factors specific to the initial years of monetary union. Thus, Germany appears to have joined the monetary union with a serious handicap in terms of competitiveness, while the Netherlands was in the opposite situation. In countries such as Spain and Ireland, demand was strongly stimulated in the initial years of monetary union, because the effect of interest rate convergence mentioned earlier was more marked there. In fact, the disappearance of risk premiums and the decline in long-term interest rates not only stimulate potential growth via the fall in the cost of capital, but also exert a sustained and almost immediate effect on domestic demand, more particularly on the property market.

In principle, such divergences should not persist if the adjustment mechanisms act quickly. Moreover, inflation differentials may in some cases reflect the operation of an adjustment mechanism. In fact, in a monetary union, inflation differentials lead to comparable variations in the real effective exchange rate in relation to the other Member States. Overheating of the economy is therefore counteracted by a loss of competitiveness, while low inflation should improve the competitiveness of countries whose performance is more modest. This balancing mechanism will be all the more efficient if there is wage and price flexibility in the countries belonging to the monetary union, since that permits a relatively faster adjustment between countries. In the short term, increased wage and price flexibility may augment the inflation differentials but help to reduce the growth differentials and the persistence of the inflation differentials. The findings of the

Eurosystem Inflation Persistence Network (IPN) indicate that prices are adjusted less frequently in the euro area than in the United States (cf. in particular Dhyne *et al.*, 2006 and Álvarez *et al.*, 2006), bearing witness to a high degree of price rigidity in the euro area. The findings of the Eurosystem Wage Dynamics Network suggest a high degree of wage rigidity, though the research by this network is still on-going. This all goes to show the sluggishness of the adjustment mechanisms and the need to strive for appropriate wage and price setting, taking due account of the underlying fundamentals.

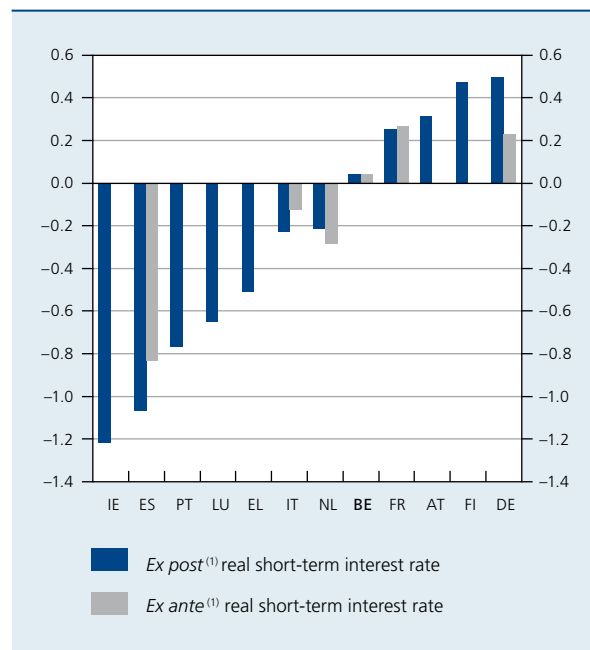
The competitiveness channel outlined above may also be thwarted by the real interest rate channel, which operates in the opposite direction. The latter channel refers to the fact that, in the case of a single nominal interest rate, the real interest rate is lower (higher) in countries with strong growth (weak growth) as a result of the higher (lower) inflation. It tends to generate some persistence in the differentials and to restrain convergence. Although the real interest rate channel may dominate the competitiveness channel in the short term, after a time the latter should, in principle, prevail. Indeed, an inflation differential of a given size may have a persistent effect on the real interest rate, but that is unlikely to increase over time. Conversely, the same inflation differential has a cumulative impact on competitiveness so that the competitiveness channel is strengthened over time.

Fiscal policy may also reduce the divergences in the euro area. In that regard compliance with the Stability and Growth Pact may play a role, because as the sustainability of public finances becomes more secure, scope becomes available for the operation of the automatic stabilisers. Finally, the risk-sharing mechanism described above may also attenuate the impact of the divergences. In principle, that reduces the need to rely on the efficiency of the other adjustment mechanisms or the intervention of the national authorities. Recent empirical data show a considerable increase in risk-sharing (Giannone and Reichlin, 2006), illustrating the importance of financial market integration in the euro area.

The operation of the real interest rate channel and the competitiveness channel is described below.

It was mainly in Spain and Ireland that the real interest rate channel played a significant role, at least when measured as the *ex post* real short-term interest rate. In addition, it is in these countries that the real interest rate showed the sharpest fall at the start of monetary union. These factors contributed to the sustained rise in asset prices, the direct consequence being that wealth effects

CHART 11 REAL SHORT-TERM INTEREST RATE
(average differential in relation to the euro area during the period 1999-2007, percentage points)

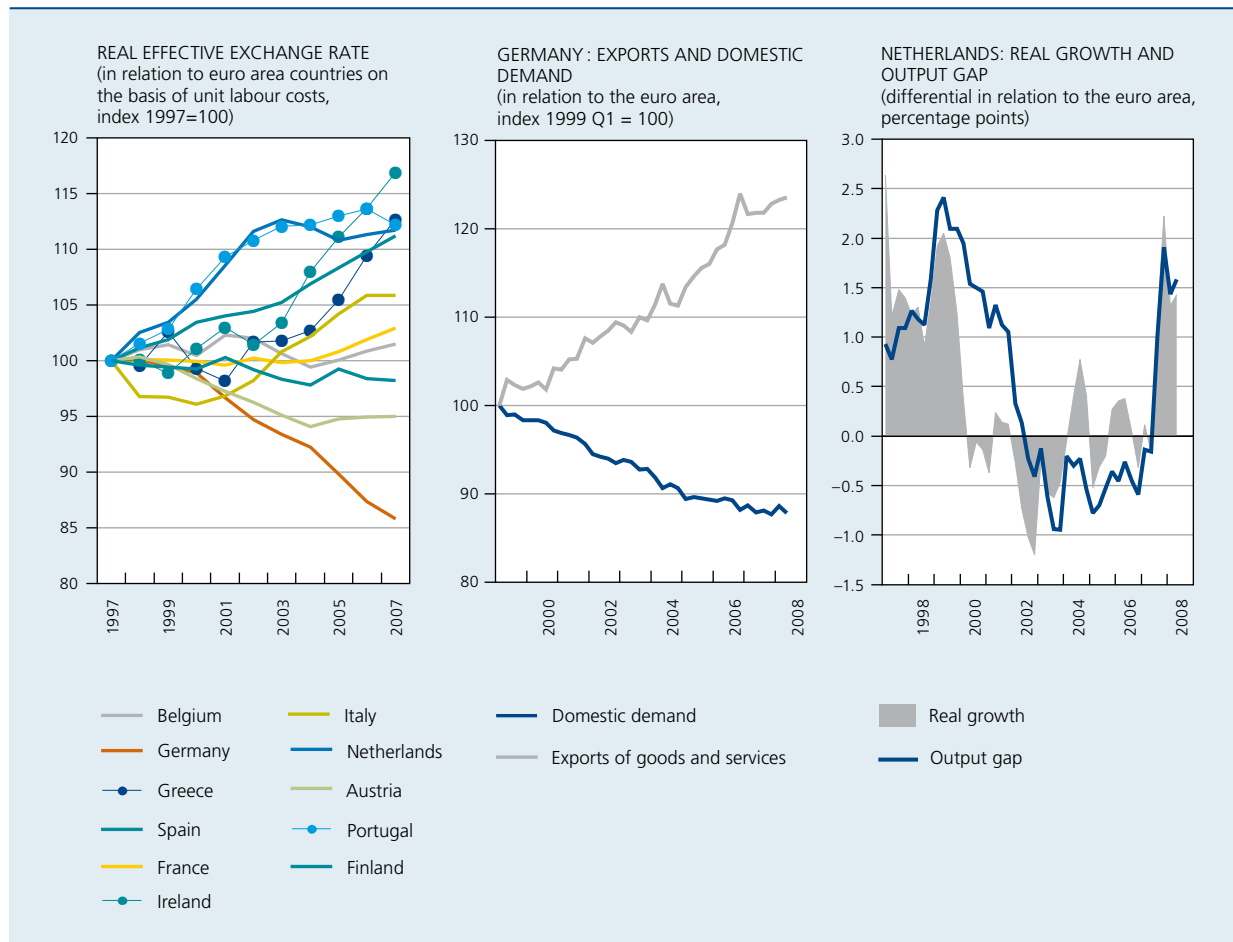


Sources: Consensus Economics, OECD.
(1) The *ex post* and *ex ante* real interest rates were calculated as the difference between the short-term interest rate and observed inflation and expected inflation, respectively.

further reinforced the expansionary effect of interest rates. The growth and inflation differentials seen in these two countries are therefore not due solely to a catching-up process. Moreover, the overheating which was a feature of these two economies in the past is today creating a greater downside risk, as the easing of property prices entails additional risks for both the financial sector and the real economy.

However, the importance of the real interest rate channel needs to be qualified. To measure the impact of inflation differentials on investment and consumption decisions, it is necessary to take account of the *ex ante* real interest rate since that is what determines the intertemporal behaviour of the economic agents. In the euro area, the differences between *ex ante* real interest rates are less than between *ex post* rates, at least in countries for which they could be estimated. Furthermore, it is not easy, *a priori*, to know whether the appropriate inflation figure to use is the one for the country in question or that for the euro area as a whole, because national inflation is less relevant for economic agents engaging in international activities than it is for consumers. The real interest rate channel could therefore become less important as a result of greater economic integration.

CHART 12 REAL EFFECTIVE EXCHANGE RATE AND RELATIVE GROWTH PERFORMANCE IN GERMANY AND THE NETHERLANDS



Sources: EC, OECD, Thomson Financial Datastream.

The competitiveness channel is the main adjustment mechanism giving rise to convergence. Its operation can be illustrated by two examples, namely Germany and the Netherlands.

Germany was at a competitive disadvantage when joining the monetary union in the wake of reunification. That disadvantage severely depressed economic activity in Germany, and the country had to contend with weaker growth, especially from 2001. Competitiveness was restored by wage moderation, which in turn brought inflation down below the level in the euro area as a whole. The resulting increased competitiveness was reflected in sustained export growth, but dampened domestic demand. The latter may also have been curbed by the real interest rate channel, while the excellent export performance achieved in recent years was enhanced by the fact that global demand is relatively concentrated on products which predominate in German manufacturing, such as investment goods and cars. From 2007, domestic demand

in Germany moved more or less in parallel with that in the euro area. The very marked wage moderation in Germany also came to an end recently. These two factors tend to show that the adjustment process is reaching its end, although admittedly it has taken several years.

Well before 1999, the Netherlands formed a *de facto* monetary union with its main trading partner, Germany, and therefore ceased to use the exchange rate as an adjustment mechanism. *A priori*, there appeared to be few risks in participating in EMU. However, the Netherlands experienced a strong economic boom in the late 1990s, which was further reinforced by a wealth effect due to the soaring equity and property markets. The resulting labour market scarcity drove up wages and prices, generating a much larger rise in unit labour costs than in the main trading partners, and hence a loss of competitiveness. This factor therefore triggered the correction. From 2002-2003, the Dutch economy cooled rapidly and for several years it actually underperformed the euro area.

However, the differences in the pattern of inflation and unit labour costs are not always due to this balancing mechanism. They are sometimes themselves the source of the divergences. Thus, they are a problem if they are due to an unsuitable national policy, structural inefficiencies or defective adjustment mechanisms. Policy-makers recently paid particular attention to the divergent trends in unit labour costs. The reason for their concern lay in the negative effect of a deterioration in competitiveness on the general economic situation, and the potential impact on inflation of an excessively rapid increase in wages. The movement in labour costs may cause problems, especially in countries where pay increases are not linked sufficiently to productivity gains, and where the current account balance records a growing deficit. In the context of the strong surge in inflation in the second half of 2007 and the first half of 2008, the ECB Governing Council repeated on several occasions that the second-round

effects resulting from the increased price of energy and food must be avoided at all costs, in setting both prices and wages. In that regard, it was said that the indexation mechanisms heighten the risk of triggering a price-wage spiral, and may cause a loss of competitiveness and a decline in employment. On the other hand, responsible wage developments which do not compromise the smooth operation of the monetary union should be based on productivity developments and the competitive position, while taking account of the still high level of unemployment in the euro area.

6. The challenges ahead

Ten years after its introduction in Europe, the single currency can be considered a huge success. Price stability, and more generally macroeconomic stability and increased

Box 2 – Belgium in the monetary union

The transition to, and Belgium's participation in, EMU may generally be considered a success. Belgium had already formed a *de facto* monetary union with Germany since 1990, when it was decided to peg the Belgian franc to the German mark. Following the EMS crisis in mid 1993, the fixed exchange rate policy has rarely come under stress and interest rates have gradually converged, so that the transition to monetary union entailed no real upheaval. In Belgium, the macroeconomic framework was adapted in anticipation of membership of the monetary union, in particular by the 1996 law on employment promotion and the safeguarding of competitiveness, which aims to align the movement in private sector wages with that in the three main trading partners. Belgium also made efforts in consolidating its public finances, although it must be said that, as in the euro area in general, insufficient use was made of the favourable phases in the business cycle to achieve structural improvement. Also, Belgium is a particularly integrated economy, having regard to its high degree of openness and the geographical structure of its foreign trade, over 70 p.c. of its trade being with euro area countries.

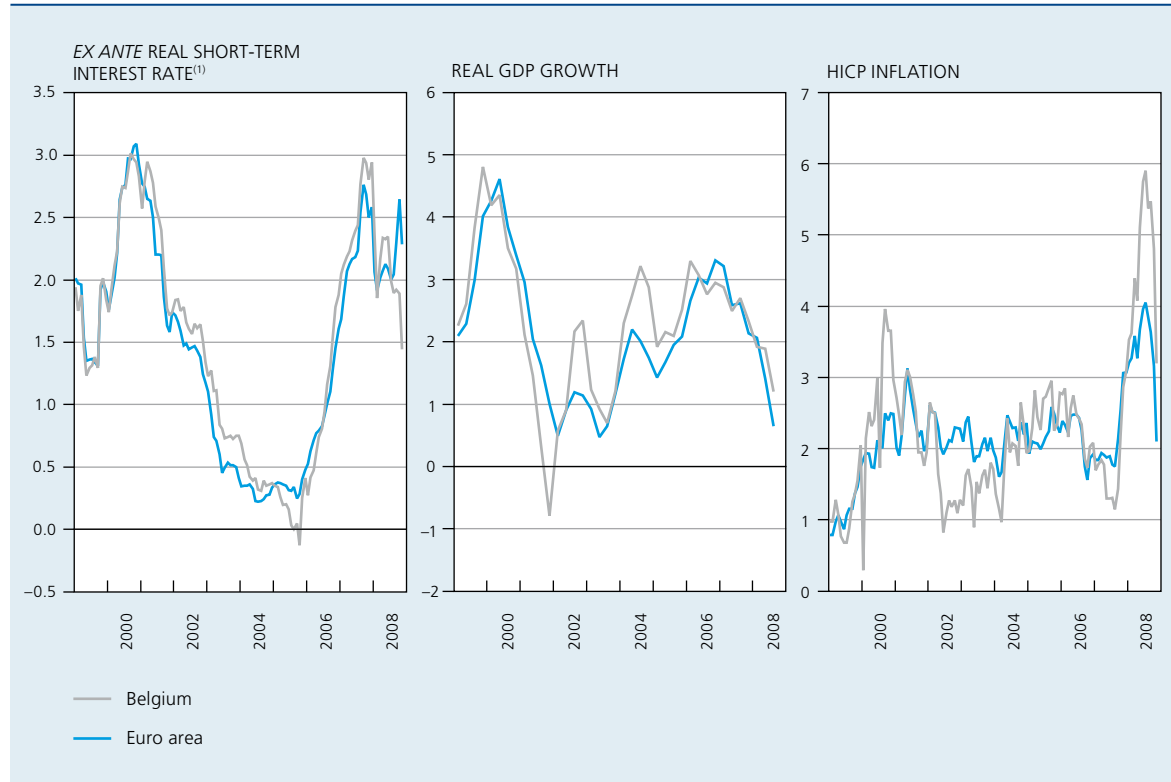
During the period 1999-2007, real short-term interest rates in Belgium generally followed the pattern for the euro area as a whole, since inflation differentials were narrow and short-lived. Of all the EMU countries, Belgium is the one with the smallest real interest rate differential in relation to the euro area as a whole, indicating that the real interest rate channel was certainly not a source of divergences. What is more, since Belgium is closely integrated with the euro area countries, the business cycle is very similar to that of the euro area. From this angle, too, the single monetary policy can be considered appropriate to Belgium. Finally, the competitiveness of the Belgian economy measured on the basis of the real effective exchange rate deflated by unit labour costs is still relatively well preserved in relation to the euro area as a whole, with the exception of Germany, a major trading partner for Belgium. In that regard, it must be said that the 1996 law gives priority to the relative movement in labour costs in relation to the three main neighbouring countries.

However, the large positive inflation differential seen in 2008 (averaging 1.2 percentage points over the first ten months of the year) indicates a need for vigilance. Up to now, this difference has been due mainly to the movement in prices of energy and food. It therefore raises a series of questions concerning, in the first place, price formation and competition in those two sectors, although a range of objective factors could be invoked to explain why inflation in Belgium is so sensitive to fluctuations in crude oil prices, particularly the lower excise duty on



REAL SHORT-TERM INTEREST RATES, ECONOMIC GROWTH AND INFLATION

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



Sources: EC, Thomson Financial Datastream.

(1) Three-month interbank rate minus expected inflation, percentages.

petroleum products and the higher proportion of such products in Belgian household consumption expenditure. Creating efficient and competitive product markets in the energy sector, too, therefore presents a considerable challenge for the national policy makers. At the same time, even if it was not triggered by indexation, the surge in inflation illustrates the potential risks inherent in this mechanism. In fact, if the movement in real wages cannot quickly neutralise the whole of the undeniable upward influence which indexation exerts on wage setting in the current circumstances, the higher rate of inflation will become more permanent, representing an additional threat to business competitiveness and ultimately weighing on economic activity and employment. After the summer, the movement in prices of non-energy industrial goods and services also made a positive contribution to the inflation differential in relation to the euro area, clearly underlining the risk of a more persistent acceleration in inflation.

integration are just a few examples of an impressive array of achievements. Even during the period of turbulence which the financial markets are currently undergoing, the benefits of the single monetary policy have been obvious. The provision of liquidity by the Eurosystem enabled the financial system to continue to function even when confronted by the most serious crisis since the 1930s. Moreover, in contrast to the period preceding monetary

union, these injections of liquidity were conducted in the same way for all euro area banks. In the absence of a single currency and a single monetary policy, a crisis on this scale would undoubtedly have engendered greater macroeconomic volatility owing to the combined effects of the wide divergence of interest rates and strong exchange rate fluctuations, as was systematically the case in the past in periods of crisis. All the same, the results for these

ten years of monetary union are not entirely positive, and there are still some serious challenges to address.

Tackling the financial crisis remains a major challenge for monetary policy in the short term. Since the crisis arose in the banking sector, the monetary policy transmission mechanism is not currently operating as it would under more normal circumstances. With the downside risks to economic growth, the inflationary risks have also greatly diminished. In this context, sufficient scope developed for the Governing Council to cut the ECB's key interest rate in October, November and December 2008. In any case, it remains crucial that inflation expectations remain compatible with price stability, i.e. below but also close to 2 p.c. in the medium term.

Regarding fiscal policy, since the creation of monetary union insufficient use has been made of favourable phases in the business cycle to secure sustainable consolidation of public finances, despite the considerable progress made during the preparatory phase preceding EMU. It seems appropriate to allow the automatic stabilisers to operate during the current downturn in the economic cycle. However, the consolidation of public finances remains a structural priority, in view of the long-term challenges ahead, such as population ageing.

In the past ten years, the potential growth of the euro area has been mediocre, and that has depressed the standard of living. A new impetus is therefore required in regard to structural reforms on the product and labour markets, to permit full implementation of the Lisbon strategy for growth and jobs. By eventually improving the economy's growth potential, these reforms will enhance prosperity and augment the capacity to tackle the budgetary challenges. In addition, more flexible markets will make the whole of the euro area more resilient to shocks and increase the efficiency of the adjustment mechanisms in EMU while reducing unwelcome divergences in terms of movements in wages, prices and competitiveness.

The Treaty on European Union provides that all EU Member States – except for those with an opt-out – will

eventually join EMU on condition that they meet the convergence criteria. In view of the varying stages of real convergence in the new Member States, that could increase the heterogeneity of the euro area. Up to now, the successive enlargements of EMU have shown that participation does not present an insurmountable obstacle for countries with a lower standard of living, but the success of the euro's adoption by the new Member States will also depend to a large extent on the efficiency of their respective adjustment mechanisms. What is more, enlargement will also complicate the decision-making process in the Eurosystem.

Finally, the current financial crisis is evidence of the challenges which will have to be met in order to preserve financial stability. Many of those challenges are international in character. In regard to European unification, it is apparent that, because of financial integration, the surveillance of the systemic risks in particular now extends beyond national borders. There is therefore a need to reinforce the European dimension and to aim at a more integrated approach to both regulation and surveillance.

It is also important to ensure that financial integration, which is not yet very far advanced in the retail banking sector, is not relegated to the back burner by the current crisis. In the first ten years of EMU, notable progress has been achieved here, particularly as a result of the consolidation of financial institutions and infrastructures on a European scale. That progress has been accompanied by economies of scale and has helped to offer households and businesses a wide range of financing and investment opportunities, thus augmenting the economy's growth potential. Moreover, there can be no doubt that the increased integration has fostered the more coherent transmission of monetary policy. Since financial integration is beneficial, it is important to distinguish it from the excessive risk-taking behaviour seen on the financial markets, the primary cause of the current financial crisis, and to conduct a policy favourable to financial integration while setting proper limits on excessive risk-taking.

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Review of the IMF's lending framework

C. Janssens
E. Vincent *

Introduction

Since the IMF's inception, there have been several major changes in the world economy of relevance for its lending operations. Advanced countries stopped borrowing from the Fund in the 1980s when more fragile middle-income emerging markets became the biggest IMF borrowers. More importantly, globalisation and financial deepening broadened the range of channels through which real and financial shocks could affect individual economies and spill over to other countries. Cross-border flows and rising financial linkages changed the profile of risks that members face, inter alia, by deepening vulnerabilities, amplifying the effects of various shocks, and transmitting them more quickly across national borders. Meanwhile, the ability to influence private creditors diminished as bonds largely replaced loans, implying that private creditors were less subject to regulatory suasion. As a result, IMF members' needs to borrow from the Fund have changed, as reflected in a change in the size and duration of financing arrangements.

The growing magnitude of private financing flows and the emergence of capital account crises made the signalling effect of the Fund's financing increasingly important. Short-term balance of payments pressures experienced by some members were perceived to be the result of «speculative» capital flows, resulting from rapid shifts in market perceptions or from misunderstandings of policies by markets. At the same time, the massive capital movements that triggered capital account crises dwarfed the amounts that the Fund could deploy. These factors gave prominence to the Fund's signalling role and the catalytic effect of IMF financing.

Similar developments have also been observed during the financial crisis that began in 2007. The scale of the problems in some countries affected by the crisis led the Fund to grant exceptional amounts of financial assistance at short notice. Also, the magnitude of the financing requirements prompted the Fund to call upon other sources of financial support in addition to its own assistance.

From time to time, the Fund has adapted its financial toolkit in response to a changing world and the evolving needs of its membership by redesigning, creating or terminating individual facilities and adapting its financing policies. To illustrate this, for instance, the Compensatory Financing Facility (CFF) has gone through several cycles of liberalisation and tightening with developments in world commodity markets and as the Fund has tried to strike the right balance between financing and conditionality. Other examples of how the Fund has adapted its array of financial facilities to new circumstances are the Supplemental Reserve Facility (SRF) and the Contingent Credit Line (CCL). The SRF was adopted at the height of the Asian financial crisis in 1997 to lend to countries with large short-term financing needs stemming from a sudden collapse of market confidence. Shortly after the establishment of the SRF, the Fund set up the CCL as a precautionary line of defence against the spread of capital-account-driven crises. Due to a lack of demand by potential users, the CCL was nevertheless wound up at the end of 2003.

More recently, in light of worsening global economic conditions, the IMF has introduced some modifications to one of its concessional lending facilities, the Exogenous Shocks Facility (ESF) to better meet the needs of its low-income members. Furthermore, it set up a new non-concessional Short-Term Liquidity Facility (SLF), which is

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designed to help members facing exceptional balance of payments difficulties arising from external market developments despite strong underlying fundamentals and domestic policies.

Consequently, after over 50 years of evolution, the Fund now has at its disposal a large arsenal of financial facilities⁽¹⁾, which are the result of its efforts to keep its relevance in a changing world. Nevertheless, lending instruments and policies have often been created and adapted on an ad hoc basis with specific balance of payments difficulties in mind. As a result, eligibility criteria, access policies and the charges and maturities schedules of the Fund's lending instruments are often not mutually aligned, leading to a complex web of facilities and policies.

The IMF is therefore currently reviewing its lending instruments and access policies as one of the priority efforts underway to refocus and modernise its work in the context of its ongoing overall strategic review. The purpose of this paper is to provide an input into this discussion.

The paper is structured as follows. Section I gives an overview of the Fund's current lending facilities and the policies governing them. Section II details the issues concerning the Fund's lending framework. More specifically, this section illustrates how some of the Fund's lending facilities may have lost their relevance, that gaps could be perceived in the current lending framework and why the framework itself seems fragmented and overly complex. These issues can affect the credibility of the Fund's lending framework and hence the perceived legitimacy of the institution. Note that the discussion on the appropriateness of quotas⁽²⁾ as a metric on which to base access to Fund resources falls outside the scope of this paper. Finally, in section III, some options are proposed to address the issues raised in section II. Three possibilities are put forward: (i) a multi-facility framework, with one facility for each type of balance of payments need, (ii) a single flexible facility and (iii) a dual framework, consisting of two facilities.

1. The Fund's current lending framework : overview

The Fund's lending framework currently consists of two concessional and seven nonconcessional lending instruments. This paper will only consider the Fund's facilities in the General Resources Account (GRA), i.e. the IMF's non-concessional facilities, which are subsequently discussed in this section.

From its early history, IMF credit has been made available in tranches. A purchase in the *first credit tranche* involves the use of IMF credit of not more than 25 p.c. of quota. The upper credit tranches refer to any use of IMF credit beyond the first credit tranche. Resources drawn in the credit tranches can be used to meet any balance of payments need. The IMF has a more liberal attitude to making resources available in the first credit tranche than in the upper credit tranches, provided that the member is making reasonable efforts to solve its balance of payments problems. Access to the upper credit tranches is normally provided under a *Stand-By Arrangement (SBA)*, which is designed to help countries address short- to medium-term actual or potential balance of payments needs. SBAs have existed since 1952 and have provided the bulk of IMF funding.

In 1963, the Fund established the *Compensatory Financing Facility* in response to fluctuations in the prices of primary commodities that afflicted many countries in almost every region around the globe. The main purpose of compensatory financing is to ensure timely financing for members that are experiencing balance of payments difficulties resulting from either a sudden shortfall in export earnings or an increase in the cost of imported cereals.

The *Extended Fund Facility (EFF)* was established in 1974 as a vehicle aimed at overcoming actual or potential balance of payments difficulties resulting from macro-economic and structural problems. The creation of the EFF reflected an increasing recognition that balance of payments problems could have structural origins and thus could require both an extended period of adjustment and policy changes that would strengthen the productive and export base of the economy.

In 1982, the Fund developed the policy on *emergency assistance* for natural disasters, and just over a decade later adopted similar procedures for post-conflict cases. The *Supplemental Reserve Facility (SRF)* was established in late 1997. The purpose of the SRF is to provide assistance to members that are experiencing exceptional balance of payments difficulties due to a large, short-term financing need resulting from a sudden and disruptive loss of market confidence, reflected in pressure on the capital account and the member's reserves. SRF resources are provided under Stand-By or Extended Arrangements in addition to credit tranche or EFF resources.

(1) For the sake of simplicity, the paper refers collectively to the various policies on the use of Fund resources as "facilities", while this term normally only refers to those policies on the use of Fund resources that fall outside the credit tranches.

(2) A member's quota is the capital subscription, expressed in SDRs, that a country must pay to the IMF on joining. Up to 25 p.c. is payable in SDRs or other acceptable reserve assets and the remainder in the member's own currency. Quotas, which reflect members' relative size in the world economy, are normally reviewed and adjusted, if necessary, every five years.

The SRF is not subject to explicit access *limits*, in contrast to the SBA and the EFF. In fact, access by a member to the Fund's resources in the credit tranches and under Extended Arrangements is subject to a limit of 100 p.c. of quota on an annual basis and 300 p.c. cumulatively. There is also a separate "global" limit of 100 p.c. of quota annually and 300 p.c. cumulatively which applies to overall access by members to the Fund's general resources (i.e. to aggregate access across all GRA facilities and policies)⁽¹⁾. These access limits serve several purposes. They give members confidence about the degree of financial support that the Fund is normally prepared to provide, and encourage an appropriate balance with each member's adjustment policies, and other sources of financing. The annual limit helps to ensure that members do not exhaust their total potential access to the Fund more rapidly than would be warranted by the nature and size of shocks, while the cumulative limit reduces the risk of the Fund's resources being exhausted, so that members are not treated on a first-come-first-served basis. The access limits also reduce the risk of members finding themselves unable to repay the Fund, thereby safeguarding IMF resources. Access limits have important financial implications for IMF programme countries since they determine the amount of Fund credit that is subject to surcharges and set an important threshold beyond which access decisions are subject to greater scrutiny.

Access can indeed exceed these limits in "exceptional circumstances" (i.e. under "the exceptional circumstances clause"). As the Fund expected that the vast majority of cases where exceptional access could be considered would be in capital account crises, an *exceptional access framework* was designed in 2003 with these cases in mind. This framework defines four substantive criteria⁽²⁾, procedures for early consultation with the Board, additional information disclosure requirements to raise the burden of proof and *ex-post* evaluations of programmes that apply for exceptional access in capital account crises.

However, on the occasion of the 2004 review of the exceptional access framework, it was decided that these criteria and procedures should be applied to all requests for exceptional access, i.e. for both capital and non-capital account cases. There nevertheless remains an important distinction differentiating the treatment of capital from non-capital account crises. In fact, in capital account cases, the four substantive criteria must be met in order for exceptional access to be approved under the exceptional circumstances clause. Moreover, in cases of exceptional access in capital account crises, there is a strong presumption that access will be provided using resources under the SRF, where the conditions for this facility apply⁽³⁾. This presumption was strengthened in 2003 and again in

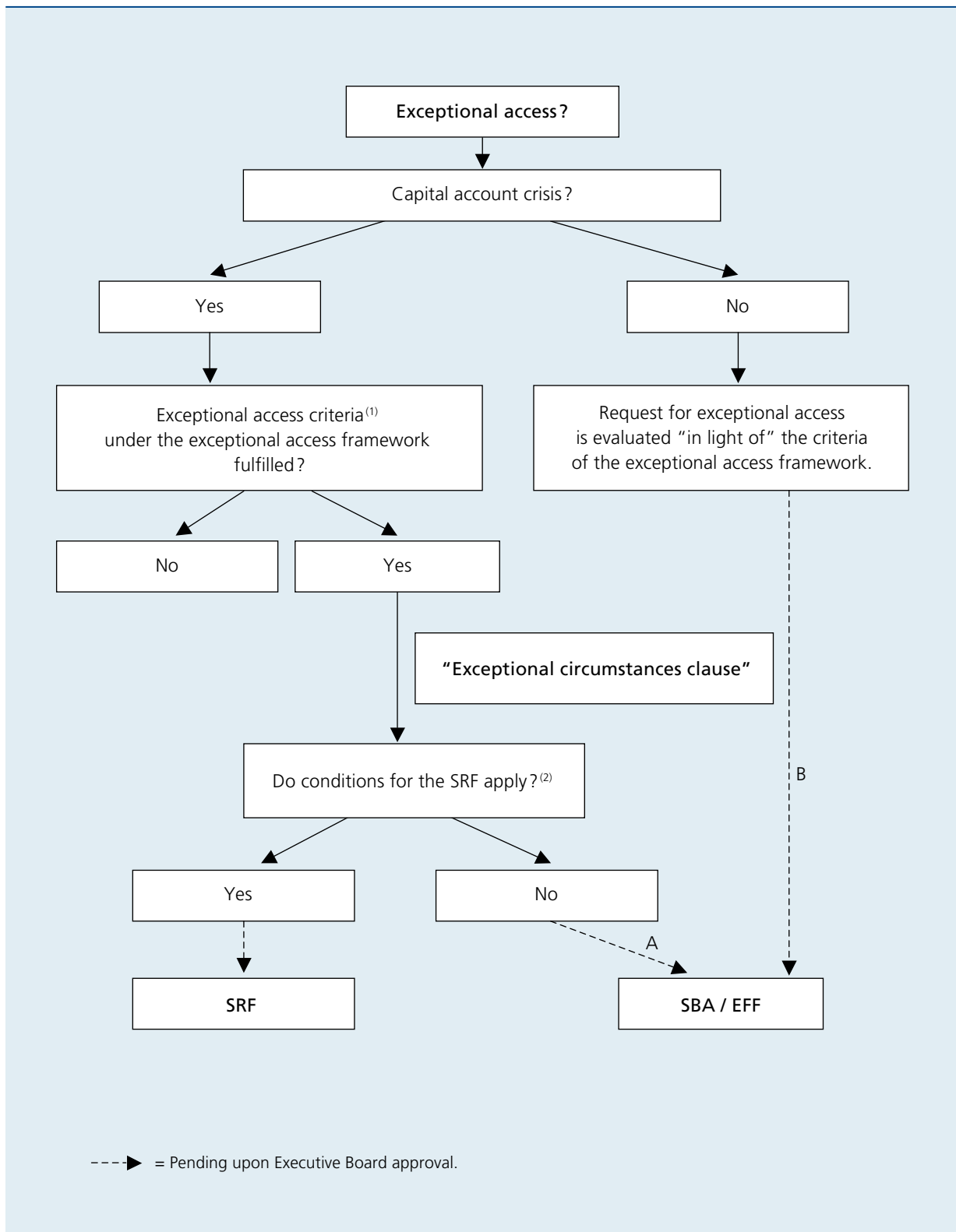
2004. Notwithstanding, it should be noted that the SRF Decision acknowledges that not all capital account crises can be resolved within the short SRF maturity.

In non-capital account cases on the other hand, requests for access above the limits need to be justified "in light of the four substantive criteria». In other words, observance of all criteria is not a requirement in these cases and the Board has the flexibility to grant high access under the exceptional circumstances clause.

(1) Accordingly, the effective limits on credit tranche and EFF access are lower if a member uses Fund resources under another facility, such as emergency assistance or the CFF.

(2) These four criteria include: (i) balance of payments pressure on the capital account resulting in a need for IMF financing that cannot be met within the normal access limits; (ii) a high probability that debt will remain sustainable established on the basis of a rigorous and systematic analysis; (iii) good prospects for the member to regain access to private capital markets while Fund resources are still outstanding and (iv) a strong adjustment programme adopted by the member that provides a reasonable strong prospect of success, including not only the member's adjustment plans but also its institutional and political capacity to deliver that adjustment".

(3) SRF support can only be provided "to a member that is experiencing exceptional balance of payments difficulties due to a large short-term financing need resulting from a sudden and disruptive loss of market confidence reflected in pressure on the capital account and the member's reserves".



(1) (i) balance of payments pressure on the capital account resulting in a need for IMF financing that cannot be met within the limits; (ii) a high probability that debt will remain sustainable established on the basis of a rigorous and systematic analysis; (iii) good prospects for the member to regain access to private capital markets within the time Fund resources would be outstanding and (iv) a strong adjustment programme adopted by the member that provides a reasonable strong prospect of success, including not only the member's adjustment plans but also its institutional and political capacity to deliver that adjustment.

(2) The SRF Decision sets out a very specific circumstance test: SRF support would only be provided "to a member that is experiencing exceptional balance of payments difficulties due to a large short-term financing need resulting from a sudden and disruptive loss of market confidence reflected in pressure on the capital account and the member's reserves."

The chart on the left gives a schematic overview of the Fund's exceptional access policy.

When a member seeks an IMF-supported programme but does not face a pressing balance of payments need, it may treat a Fund arrangement as *precautionary*, i.e. a Stand-By or Extended Arrangement under which the member has indicated its intention not to make purchases. Members may cease to treat an arrangement as *precautionary* at any time and make purchases under it as long as the conditions set by the arrangement have been met. *Precautionary* programmes can provide a valuable service in lending credibility to authorities' policies, while sending a well-calibrated signal to markets.

The table below specifies the modalities of the Fund's current nonconcessional facilities.

Table 1 details the *charges* that are applied to the different Fund facilities. Surcharges are added to the basic rate of charge to strengthen the incentives for members to avoid maintaining large Fund exposure and to encourage early repayment, accordingly preserving the revolving nature of Fund financing. SRF surcharges are time-based – i.e. differentiated according to the period of use – while surcharges in the credit tranches and under the EFF are level-based – i.e. differentiated according to the level of use.

The table also shows the *repurchase modalities*⁽¹⁾ – including predetermined repurchase schedules and the frequency of repurchase instalments⁽²⁾ – for each of the

different Fund facilities. The IMF's repurchase policies are intended to ensure the revolving nature of its resources. The Fund's repurchase policy is guided by its Articles of Agreement, which define fixed repurchase periods for IMF lending (Article V, Section 7(c)) and provide for early repurchases by members as their balance of payments and reserve position improves (Article V, Section 7(b)). A major change to these repurchase policies was introduced in 1997 with the establishment of the SRF. In line with the short-term nature of this type of balance of payments need, the SRF, as the table above shows, incorporates much shorter repurchase periods and features predetermined schedules of repurchase expectations that are legally outside the framework of Article V, Section 7(b). As for purchases in the credit tranches and under the EFF and the CFF, repurchase expectation schedules were introduced in 2000, in the context of the review of IMF facilities. Hence, for most purchases, a borrower is expected to repurchase according to the relevant schedule of repurchase expectations which is earlier than under the schedule of repurchase obligations.

Time-based repurchase expectations can be extended upon request by the member, in which case repurchases fall due according to the original obligation schedule. Waivers are considered by the Board if a member's external position

- (1) When a member draws on the IMF's general resources, it does so by purchasing SDRs or other members' currencies in exchange for its own (domestic) currency. The IMF's general resources are, by nature, revolving: purchases (or drawings) have to be reversed by repurchases (or repayments) in instalments within the period specified for a particular policy or facility.
- (2) Purchase and repurchase schedules and the frequency of instalments together determine the maturity of an IMF lending facility.

TABLE 1 GENERAL TERMS OF IMF FACILITIES IN THE GRA⁽¹⁾

Instrument	Charges				Repurchases		
	Base	Surcharge	Service	Commitment	Expectation	Obligation	Instalments
1. First credit tranche		None		None	2.25 – 4 years	3.25 – 5 years	Quarterly
2. SBA		100 basis points for credit over 200 p.c. of quota;		25 basis points plus 10 basis points for amounts in excess of 100 p.c. of quota	4.5 – 7 years	4.5 – 10 years	Semi-annual
3. EFF		200 basis points for credit over 300 p.c. of quota	50 basis points		2 – 2.5 years	2.5 – 3 years	Semi-annual
4. SRF	Basic rate ⁽²⁾	300-500 basis points initial surcharge rises by 50 basis points after 1 year and each subsequent 6 months ⁽³⁾					
5. CFF		None		None	2.25 – 4 years	3.25 – 5 years	Quarterly
6. Emergency Assistance		None		None	None	3.25 – 5 years	Quarterly

(1) The table does not include the most recently created Short-Term Liquidity Facility (SLF), given the special nature of this facility, involving no Fund arrangement providing a framework for policy monitoring.

(2) The basic rate of charge is the interest charge that is applied to outstanding IMF credit financed from the IMF's general resources. It is set as a portion of the weekly SDR interest rate. Note that emergency loans are subject to the basic rate of charge, although interest subsidies are available, subject to availability, for countries eligible for the Poverty Reduction and Growth Facility, one of the Fund's concessional lending instruments.

(3) SRF resources are provided under Stand-By or Extended Arrangements for access above the access limits applicable to credit tranche or EFF resources.

is not strong enough for it to repay early without undue hardship or risk. Adjustment programmes supported by credit tranche or EFF resources are generally designed on the basis of the obligation schedule for repurchases, so that in most cases members will be in a position to meet repurchase expectations only if their external position is stronger than projected at the outset of the programme. In contrast, adjustment programmes supported by SRF resources are designed on the basis of the repurchase expectations schedule. Whereas under an SBA or EFF the Executive Board can allow a country to repay at the obligation date, without policy-related conditions, a similar decision under the SRF requires the Board to be satisfied with the country's policy stance. Nevertheless, the "policy test" for extensions of SRF repurchase expectations has been interpreted with flexibility.

In order to better align the modalities of the SRF to the diversity in duration of balance of payments needs experienced in capital account crises, the maturity structure of the facility was lengthened in 2003, i.e. when the exceptional access framework was set up. It was decided to extend the maturity of SRF repurchase expectations by one year and that of repurchase obligations by six months. Nevertheless, these are still shorter than under the SBA or EFF.

Finally, the Fund is also discussing the design of a possible new liquidity instrument, tentatively named the *Rapid Access Line (RAL)*. In fact, many emerging markets see an unmet need for insurance against large and volatile capital flows. Fund members, however, have mixed views about some elements of the design of such a facility, making it difficult to reach a consensus for an instrument that would be useful and actually used in practice. In this context, alternative design proposals for the RAL have been put forward under the form of a *Financial Stability Line (FSL)*⁽¹⁾ or *Rapid Liquidity Line (RLL)*⁽²⁾. The FSL would aim to guarantee availability of finance for countries which are in the process of integrating into the international financial markets should there be a sharp reversal in capital flows. The RLL would be geared towards countries already integrated into international financial markets that follow basically sound economic policies to address the problem of capital outflows as a result of turbulence in global capital markets.

In this context and in light of the ongoing financial turmoil, the IMF decided, in October 2008, to create the *Short-Term Liquidity Facility (SLF)*, to complement the Fund's traditional facilities described in table 1 above. This new facility is designed to help members facing short-term, self-correcting balance of payments pressures, providing liquidity support to members with a very strong

policy track record and a sound policy framework. Access under the facility is up to 500 p.c. of quota, available in the form of outright purchases, and limited to three outright purchases per 12-month period. The exceptional access framework nevertheless does not apply for purchases under the SLF as the members concerned are subject only to the substantive and procedural requirements specified in the SLF Decision. The SLF furthermore involves no formal ex-post conditionality, hence the nature of the balance of payments problem and the related pre-qualification framework constitute the key safeguard for the Fund. All this makes the SLF a somewhat "special facility" within the IMF's lending toolkit. Use of the facility is subject to the same charges and surcharges as in the credit tranches.

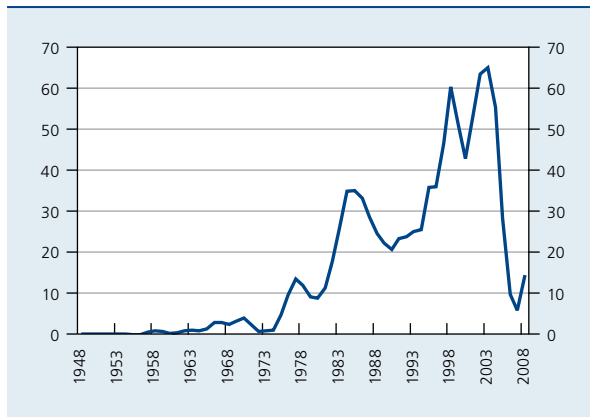
To conclude this section, the chart below charts the evolution, over the last 60 years, of IMF credit outstanding through its various nonconcessional lending instruments.

As the chart shows, the volume of loans provided by the IMF in the GRA has fluctuated significantly over time. For the first few years after the IMF was established in 1947, there was very limited use of IMF credit because most developing countries had emerged from the World War II commodity boom with substantial foreign exchange reserves, and European countries that had access to Marshall Plan funds were discouraged from drawing on IMF resources. Aggregate use of Fund resources picked up during the 1960s, as countries experienced balance of payments difficulties and the Bretton Woods system came increasingly under strain. The collapse of Bretton Woods itself – together with the move to floating exchange rates by the industrialised countries – reduced the demand for IMF resources. However, the number of arrangements and volume of IMF credit outstanding soon picked up again in the aftermath of the 1973 and 1979 oil shocks. The number of arrangements in place peaked during the debt crisis in the first half of the 1980s, but had almost halved by 1989 as these countries emerged from the debt crisis, and private capital flows resumed in the early 1990s. Demand for IMF credit increased again in the first half of the 1990s, when the Fund became involved in helping members' transition from centrally planned to market economies, followed by a series of exceptionally large programmes to deal with capital account crises – beginning with Mexico in 1995 and including the Asian crisis countries, as well as Argentina, Brazil and Turkey. Aggregate use of IMF resources peaked in 1998 and 2003 before plummeting in 2005 owing to early repurchases.

(1) Provided by Executive Directors Bakker and Warjiyo on May 22, 2008.

(2) Provided by Executive Director Nogueira Batista and Senior Advisor to Executive Director Mori on September 8, 2008.

CHART 2 IMF CREDIT OUTSTANDING IN THE GENERAL RESOURCES ACCOUNT, 1948-2008 ⁽¹⁾
(in billions of SDRs)



(1) Data as of end April for 1948-1983, end December for 1984-2007 and November 15 for 2008.

Additional early repurchases further reduced the level of outstanding IMF resources, to below 10 billion SDR⁽¹⁾ until end October 2008. Since then, the IMF has been granting exceptional access loans as the global financial crisis is unfolding. The loans provided to Hungary and Ukraine already raised the amount of credit outstanding to more than 14 billion SDR (situation as of November 15, 2008).

2. The Fund's current lending framework: issues at stake

As illustrated above, the IMF's financial assistance instruments as they exist today are the result of the Fund's efforts to retain its relevance in an ever-changing world. In an attempt to adapt to changing circumstances, the Fund has over the years redesigned its arsenal of lending facilities and fleshed out its financing policies. Nevertheless, lending instruments and policies were often created and adapted on an ad hoc basis with specific balance of payments difficulties in mind. Consequently, eligibility criteria, access policies and the charges and maturities schedules of the Fund's lending instruments are often not mutually aligned. Only once, in fact, did the Fund undertake a comprehensive review of its financial facilities structure as a whole (2000). Since then, the Board has only assessed specific aspects of its lending structure during regular targeted reviews.

As a result, the IMF lacks an integrated lending framework. Due to changes in members' lending needs and to the creation or adjustment of policies and facilities, some of the Fund's instruments may have lost their relevance,

too. Questions have also been raised whether there might be gaps in the IMF's current lending toolkit. Its current lending policies are also often perceived, by both users and markets, as being too complex and fragmented. These issues can affect the credibility of the IMF's lending framework and, ultimately, the perceived legitimacy of the institution.

2.1 Some lending facilities may have lost their relevance

As early as the 2000 review of IMF facilities, it was observed that members make much less use of the Fund's more specialised facilities, which are designed to deal with specific contingencies and events. On that occasion, IMF staff already felt there was a case for the elimination of all the more specialised facilities. This argument was based on a combination of design features and changes in the world economy that have, or perhaps should have, made the instruments fall into disuse. At that time, the Board decided to terminate four special facilities that had gone virtually unused, in an effort to streamline and simplify the Fund's lending structure. Today, the Fund still has one specialised nonconcessional facility, the CFF.

The CFF has been reviewed several times, most recently in 2000 and 2004. Nevertheless, it has not been used since 1999, despite the changes introduced in 2000 and some temporary and exogenous shocks that have affected several members since. Although IMF staff discussed the possibility of CFF access with a number of members concerned, these countries decided to use other options to deal with the shocks. Most of the middle-income countries concerned generally managed to weather the storm through a combination of non-IMF financing, use of reserves, and, in a few cases, greater exchange rate flexibility. As for the low-income members affected by the shocks, several of them resorted to alternative forms of IMF financing, including augmentations under the Poverty Reduction and Growth Facility (PRGF)⁽²⁾ and *Emergency assistance*. Others that might have qualified did not feel a need for an augmentation under the PRGF, while some countries had other financing options on more attractive terms than under the nonconcessional CFF.

(1) The SDR is an international reserve asset, created by the IMF in 1969 to supplement the existing official reserves of member countries. SDRs are allocated to member countries in proportion to their IMF quotas. The SDR also serves as the unit of account of the IMF and some other international organisations. Its value is defined as a basket of key international currencies, consisting of the euro, Japanese yen, pound sterling, and US dollar. The SDR *interest rate* provides the basis for calculating the interest charged to members on regular (nonconcessional) IMF loans, the interest paid and charged to members on their SDR holdings, and the interest paid to members on a portion of their quota subscriptions. The SDR interest rate is determined weekly and is based on a weighted average of representative interest rates on short-term debt in the money markets of the SDR basket currencies.

(2) The PRGF is one of the IMF's concessional lending instruments.

Against this background, the Board had considered terminating the CFF at the time of its 2004 review. However, most Directors were willing to keep it on in its current form until the next review, both to give the facility extra time to prove its usefulness and in recognition that it would take some time to develop and gauge the usefulness of the new financing instruments currently being considered for low-income countries. They suggested that, in the absence of any clear demand for the CFF by the time of the next review, the facility should be dropped. Nevertheless, the CFF has not been reviewed again since 2004.

In 2006, the Fund introduced a new lending instrument, the ESF, which covers exogenous shocks faced by low-income countries, including any event beyond the control of a member's authorities and with a significant negative impact on the economy. In other words, there could be some overlap between the events that the ESF and the CFF were designed to cover. What distinguishes ESF financing is that it is more concessional than under the CFF and is similar to a PRGF arrangement. It also requires a comprehensive economic programme to be drawn up. Nevertheless, instead of creating a new lending instrument, the Fund could also have considered making the circumstances covered by the CFF less restrictive, for instance by redesigning it so it would have covered the cases currently targeted by the ESF. The apparent ineffectiveness of the CFF would have justified this option.

While the CFF has not been used since 1999, the need for Extended Arrangements has also proved to be fairly limited over recent years. Although the EFF is still used by the Fund, most recently in the case of Liberia (a blend with a PRGF arrangement), its value added might have decreased as the IMF has been granting longer and successive SBAs to its members. From the IMF's own viewpoint, it can also be preferable to provide renewed financing with adequate conditionality rather than upfront medium-term assistance. Under the existing EFF policy, the Fund does in fact have less assurance that it will be able to establish active cooperation with the country for solving its medium-term problems. The EFF was furthermore initially designed for members facing protracted balance of payments problems stemming from entrenched first-generation structural distortions. Nowadays, however, almost all adjustment programmes have large structural components. In this context, thought could be given to the value added of the EFF in comparison with the SBA.

2.2 Gaps perceived in the current lending structure

Questions have also been raised as to whether there might be gaps in the Fund's current lending framework.

Part of the criticism relates to the fact that, currently, normal access limits under the IMF's main financing facilities are purely based on a member's actual quota. As the globalisation of financial flows continues, these limits for non-exceptional access are likely to become increasingly low in comparison to members' potential needs. In this context, there have been calls for the normal access limits to be raised and for alternative criteria for determining a country's financing needs and its capacity to repay to be explored. While recognising the potential erosion of the resources available for some members under the current limits for normal access, this issue will not be taken up again in this paper.

Furthermore, gaps have been perceived in the IMF's exceptional access framework.

As illustrated in chart 1, the IMF's exceptional access policy makes an important distinction between the treatment of capital account and non-capital account crises. It should first of all be noted that, in practice, this distinction is not always straightforward and often entails some degree of judgement.

Moreover, since the SRF was designed especially for members in capital account crises with short-term exceptional access needs, the facility is ill-suited for members facing a capital account crisis with more protracted high access needs. Indeed, the SRF Decision explicitly recognises that not all capital account crises might be resolved within the short SRF maturity. But, as IMF staff have repeatedly argued, it is very difficult to determine ex ante the duration of a member's financing needs. Moreover, the experience with capital account crises shows a greater variance in the duration of countries' balance of payments needs than originally expected, indicating that the repayment terms for the SRF may not always be adequate ("A" in chart 1). In a number of recent capital account cases involving exceptional access, the Fund has indeed provided high access in the credit tranches or under an Extended Arrangement, as the concerned member's financing need was deemed medium-term. As a result, while the SRF was intended to serve as the main vehicle for exceptional access in cases involving capital account pressures, such access has increasingly been granted under an SBA or EFF.

To illustrate this, in the first arrangements that included an SRF (Korea (1997), Russia (1998) and Brazil (1998)), all exceptional access was provided under the SRF. In subsequent capital account exceptional access cases, however, the IMF provided (at least part of the) exceptional access on credit tranche terms. The Fund recognised the special nature of these exceptional access cases, including Turkey (2000), Argentina (2001) and Uruguay (2002), where a longer period of continued IMF engagement was deemed consistent with the projected balance of payments needs. A key distinction in these cases has been high levels of public debt, sustained high debt-servicing requirements and the longer time span needed to reinforce solvency. Nevertheless, the way in which they were handled has raised questions about how to make sure that a country is using the best facility on hand to address a particular balance of payments need. The relative cost of the different IMF facilities should provide the right incentives to this end. However, this is not the case at present. Although the duration of the SRF is shorter than that of the SBA or EFF, the surcharge on SRF loans is higher than the surcharge for high access under an SBA or EFF.

There seem to be other gaps in the Fund's exceptional access framework, too. As this framework was designed with capital account crises in mind, the four substantive criteria underpinning the framework have mainly provided guidance and constraints where exceptional access was considered most appropriate, i.e. for capital account crises. On the other hand, the framework has provided less clarity in other cases, since observance of the four criteria is not a requirement in non-capital account crises and the restrictive circumstances test for the SRF precludes use of the facility outside capital account crises and in *precautionary* settings ("B" in chart 1). Indeed, requests for exceptional access outside a capital account crisis have occurred in cases where members had pre-existing high exposure to the Fund, a potential rather than an actual need and in "other exceptional circumstances". In fact, recent decisions to grant exceptional access (Brazil (2003), Argentina (2003), Turkey (2005) and Uruguay (2005)) involved members that were not experiencing pressures in their capital account. Hence, these members' requests for exceptional access were only tested "in light of the four exceptional access criteria" and access was provided under the SBA. For Brazil (2003), it was acknowledged that there was no actual balance of payments need (as required under the first criterion of the exceptional access framework, see footnote 1 in chart 1) and that re-entry to capital markets was not directly applicable since Brazil had such access (third criterion). The country had furthermore indicated that it wanted to treat its arrangement as *precautionary*. Argentina's (2003) debt was considered not to be sustainable in the absence of a restructuring

effort (second criterion) and prospects were not good for regaining access to international capital markets within the period that Fund resources were outstanding (third criterion). In the case of Turkey (2005), the debt sustainability analysis underlined that the country's debt outlook remained highly vulnerable to shocks (second criterion) and re-entry to capital markets was not directly applicable since Turkey had retained market access (third criterion). Likewise with Uruguay (2005), downside risks to debt sustainability were considerable (second criterion) and the country had also already regained market access (third criterion).

In these cases, exceptional access has been granted even though all four substantive criteria were not met. While the exceptional access framework allows for such pragmatism, the Fund's decisions in these cases have led to the perception that exceptional access decisions in non-capital account crises are made on an *ad hoc* basis.

The newly-created SLF is an extreme case in point as it explicitly acknowledges that it might be justified to grant exceptional access to countries that do not necessarily satisfy all criteria stipulated in the exceptional access framework. Indeed, as explained above, the exceptional access framework does not apply when a purchase is requested under the SLF even though the latter can involve access up to 500 p.c. of quota.

Many emerging market economies have perceived yet another gap in the Fund's financing framework as they are calling for a lending instrument that would provide insurance against large and volatile capital flows. Discussions are continuing within the IMF on the desirability and possible design of a new lending facility to accommodate these countries' needs (see section I). It is in this context that the Fund recently decided to establish the new SLF. Nevertheless, the SLF is only available for countries that are well-integrated into global capital markets and with strong macroeconomic positions and records of consistent policy implementation. Moreover, in light of the scale of global capital flows, several emerging market economies find the access limit under the SLF still too low.

Finally, there are indications that middle-income countries, the major IMF borrowers in the credit tranches, are increasingly seeking sources of official financial support outside the Fund. Recent examples include the BIS loans to Argentina in 2007 and 2008, the use of a Deferred Drawdown Option from the World Bank by Colombia, Mexico and Uruguay, recent discussions on a World Bank Development Policy Loan for some EU Member States, bilateral and multilateral – other than from the IMF – financial assistance for some countries during the ongoing

financial turmoil. Thought should be given to whether the IMF ought to have a role to play in these cases and, if so, why the countries concerned have not found an adequate financing instrument within its existing lending framework.

2.3 The Fund's financing framework seems fragmented and overly complex

The IMF's exceptional access framework is an example in case, as illustrated above. It reflects the difficulty of applying rather restrictive rules to accommodate a wide range of circumstances. Frequent "special cases" within the exceptional access framework have undermined the value of clarifying – to both members and markets – the conditions under which exceptional access would be provided. This has prompted criticism that the IMF's access policy and its decisions in crisis situations are unclear and unpredictable. In other words, there seems to be room for improving the quality, predictability and uniformity of the Fund's high access decisions.

Yet another example relates to the Fund's repurchase policy and, more particularly, its policy on time-based repurchase expectations. The decisions to extend repurchase expectations are indeed often presented, and viewed by market participants, as a de facto rescheduling of IMF credit. Confusion about what an extension of repurchase expectations really means leads to questions about the Fund's role in supporting members and to misperceptions regarding its policy of not rescheduling its claims, possibly eroding its preferred creditor status over time. In some cases, decisions on extensions could also be misperceived as signalling approval of a member's policies. Furthermore, the mere existence of two payment schedules – expectations and obligations – can be confusing. This confusion is compounded when a member has outstanding purchases both in the credit tranches and under the SRF, since the repurchase expectations policies are not identical for SRF and other GRA resources, as discussed earlier. Finally, implementation of the policy on time-based repurchase expectations has also raised questions about the appropriate benchmark against which to assess a member's balance of payments when an extension of repurchase expectations is requested, particularly in the case of follow-up arrangements.

The recent decision to establish yet another lending facility at the IMF, namely the SLF, adds to the complexity of the framework. Indeed, the financial assistance envisaged under the SLF could be provided under a traditional SBA, while adding the SLF to the Fund's lending facilities arsenal essentially divides countries into an A-list of nations

that qualify for the SLF without conditionality, and a B-list of other countries.

2.4 In sum ...

As a general conclusion, one could say that the IMF lacks a consistent and comprehensive financing framework. The whole structure of lending facilities and policies needs alignment in terms of eligibility criteria, access, pricing and maturities in order to raise the consistency, predictability and credibility of the lending framework. The relatively broad range of financial facilities, each targeted at very specific balance of payments needs and each governed by specific rules, risks being perceived as too complex by members and markets alike. Furthermore, while some have argued that the multitude of IMF facilities and policies acts as an institutional safeguard, one could argue that overregulation, as illustrated above, can lead to results that are just as arbitrary as those that may result from no regulation. Ill-conceived and over-detailed rules can prevent the IMF from doing justice in particular cases which the rules have not anticipated. All this could hamper the Fund in playing an effective signalling and catalytic role.

In order to address these issues, a comprehensive review of the IMF's lending structure is needed and seems especially timely now. First of all, such a review fits squarely within the Fund's ongoing Medium-Term Strategy, launched in 2005 and aimed at redirecting the role of the IMF amid the challenges of the 21st century. As regards lending, the Medium-Term Strategy recalled the changing circumstances and challenges of today's globalised economy, and its impact on IMF debtor members' financing needs.

Reflection is warranted on whether there is a gap in the Fund's lending structure that cannot be filled by using existing instruments. If it is concluded that there is a convincing case for creating new IMF financing instruments, due regard should be given to their interaction with the Fund's current financing framework in order to avoid a proliferation of lending instruments and any further inconsistencies.

Therefore, as it embarks on a review of its facilities, one of the issues the IMF needs to tackle is whether the present structure of facilities is unduly complex. Indeed, excessive complexity makes the Fund's operations more difficult for both its own members and the public to understand. A new lending framework would need to strike a balance between simplicity on the one hand and the right incentives on the other hand. In other words, it is important to recognise that there may be costs associated with a larger

number of facilities, especially in terms of complication and hence, a lack of transparency vis-à-vis both members and the public at large. At very least, therefore, when it considers setting up new facilities in the future, the IMF should first be satisfied that the problem to be addressed could not be dealt with equally well – or any better – through the existing facilities.

Finally, it should be noted that, in addition to discussions on new lending instruments, the Board is currently also reviewing the IMF's (exceptional) access policy and its overall policy on charges and maturities. In order to ensure consistency within the Fund's lending framework, these issues would also benefit from a thorough review of the Fund's lending structure. Indeed, a piecemeal approach that misses the global picture would risk creating further discrepancies, eroding – rather than enhancing – the reputation of the IMF's lending framework.

3. Towards a coherent lending framework for the IMF

Ideally, the IMF should have an integrated lending framework consisting of facilities and policies that are mutually aligned and consistently implemented. The question remains as to what such a framework should look like. Conceptually, there are three broad options, which are further elaborated below. Note that each of the suggested options is designed so as to prevent unduly large and prolonged use of the Fund's resources. This should

ensure that the monetary character of IMF financing and the revolving nature of its resources are preserved.

A schematic overview of each of the proposed options can be found in the table below.

3.1 A multi-facility framework with one facility for each type of balance of payments need

One option would be to respond to each type of financing need with a different IMF financial facility. This means that there would be a different facility for normal short-term access, normal longer-term access, high short-term access and high longer-term access to the Fund's resources, for both members' actual and potential balance of payments needs. In fact, the Fund's current lending structure is built largely around this idea. The current facilities structure consists of a set of instruments whereby each facility is aimed at a different type of balance of payments need: the SBA for normal short- to medium-term access; the SRF for high short-term access (be it only for capital-account-driven crises); the EFF for normal medium- to long-term access cases; and *precautionary* Stand-By and Extended Arrangements for countries with no immediate balance of payments needs but some financial imbalances and risks to their balance of payments. The lack of explicit policies for longer-term and *precautionary* exceptional access reflects IMF members' divergent views on the desirability of granting exceptional access in these cases.

TABLE 2 PROPOSED OPTIONS FOR A COHERENT LENDING FRAMEWORK FOR THE IMF

Options	Key characteristics
1. Multi-facility framework	<p>Broadly keep current framework (different facilities for different balance of payments needs), but adjustment of:</p> <ul style="list-style-type: none"> • Exceptional access framework. Two options: <ul style="list-style-type: none"> – minimum changes, introduce time-based surcharge for exceptional access under the SBA/EFF – abolish exceptional access framework, SRF for all exceptional access • Repurchase policy
2. Single flexible facility	<p>One SBA-type facility:</p> <ul style="list-style-type: none"> • Flexibility in maturity with successive arrangements • One surcharge schedule: gradual, level-based ≤ 300p.c. of quota; time-based > 300p.c. of quota
3. Dual framework, consisting of two facilities	<p>Two options:</p> <ul style="list-style-type: none"> • One facility for short-term and one facility for medium- to long-term access; <p>Or, alternatively</p> <ul style="list-style-type: none"> • One facility for normal and one facility for exceptional access

It is clear that, within this model, a specialised nonconcessional facility, designed to deal with specific contingencies or events, adds little value to the system. In this context, there might be a case for removing the CFF, the SLF⁽¹⁾ and the restriction on the use of the SRF for capital account crises only.

In light of the concerns raised in the previous section of this paper, there is also scope for aligning and refining the terms and conditions governing IMF lending. The fragmented nature of the current lending policies could actually create room for “arbitrage across facilities” and for concerns regarding the IMF’s credibility. Indeed, as the Fund’s lending policies often provide room for flexibility to accommodate individual members’ needs, some of its lending decisions have been perceived as arbitrary. This perception may harm the predictability and credibility of the Fund’s lending decisions and ultimately the perceived legitimacy of the institution.

Part of the problems with the Fund’s current financing structure relate to its exceptional access framework, as explained in the previous section. Indeed, the rules underpinning this framework provide less guidance and clarity in non-capital account crises than in capital account cases. Moreover, while short-term high access is provided under an SRF, which was specifically designed for such cases, medium-term exceptional access is provided under an “ordinary” Stand-By or Extended Arrangement. As indicated above, views nevertheless diverge on the need for an explicit policy on exceptional access in these cases for which the exceptional access framework and the SRF were not designed particularly.

Two options could be envisaged in dealing with these issues. The first would entail only minimum changes to the existing lending structure, while keeping the current distinction between capital and non-capital account crises in exceptional access decisions. As is currently the case, the four substantive criteria under the exceptional access framework would need to be met in the event of capital account crises, while for non-capital account cases, the criteria would only provide guidance, leaving the Board flexibility to grant exceptional access under the exceptional circumstances clause. In the same vein, the presumption that the SRF should be used for exceptional access in capital account crises, when conditions for its use apply, would also be preserved. Nevertheless, in order to remove the cost incentive for financing in the credit tranches or under the EFF above the access limits when the use of

shorter-maturity SRF resources would be more appropriate, the surcharges between these two sets of facilities need to be aligned. This could imply the introduction of a time-based surcharge under the SBA and the EFF for credit above the access limits, in line with the modalities of SRF financing. The resultant overall surcharge structure would ensure that a member pays more for exceptional access to the Fund’s resources and the longer these are used, under whatever facility they are granted.

Under a second option, one could consider more comprehensive changes to the Fund’s lending framework. A case could be made for abolishing the exceptional access framework. First, while the exceptional access framework was developed with capital account crises in mind, experience has demonstrated that members have equally needed exceptional access in non-capital account crises. Within this context, it might be reasonable to abolish the current distinction between capital and non-capital account cases. Second, in non-capital account cases, exceptional access has been provided where (several of) the four substantive criteria underpinning the exceptional access framework had not been explicitly met, illustrating the difficulty of applying rather restrictive rules to accommodate a wide range of circumstances. Instead of the current four specific exceptional access criteria, one could envisage the Fund granting exceptional access on the basis of the three criteria guiding all access to GRA financing. These criteria include (i) an actual or potential balance of payments need; (ii) the capacity to repay the Fund, including the strengths of the adjustment programme and (iii) a member’s outstanding use of IMF credit and record in the use of Fund resources.

One could argue, however, that applying “less restrictive criteria” could increase the number of cases potentially eligible for exceptional access, thus raising the risks the IMF faces in terms of potential credit concentration to large borrowers. To address this issue, under such a setting, the terms of the SRF should be used more broadly, i.e. in all cases involving exceptional access. The relatively high surcharges applied under the SRF, increasing with the time that IMF credit remains outstanding, should ensure that the Fund is not exposed to high levels of credit risk for an unduly long time. In order to accommodate more protracted high-access requirements, the maturity of the SRF might need to be adjusted accordingly. Again, the surcharges increasing with the length of time IMF credit remains outstanding should ensure that, in these cases too, unduly long use of the Fund’s resources is prevented. Note also that, if the SRF is used in all cases involving exceptional access to the Fund’s resources, precautionary high access under the SRF would also need to be formalised.

(1) The SLF Decision already incorporates a sunset clause, providing for the expiration of the facility two years after its establishment. At that time the Board can review experience with the facility and determine whether it should continue to exist and whether any design changes are warranted.

Finally, apart from the issues related to the IMF's exceptional access framework, problems regarding its current lending structure have also been observed within the context of its repurchase policy, as explained in section II. In order to address these issues, the practice concerning the Fund's decisions to extend time-based repurchase expectations and the associated publication requirements should be clarified and harmonised across facilities. Nevertheless, a case could also be made for simply abolishing the policy on time-based repurchase expectations. Indeed, Article V, Section 7(b) of the IMF's Articles of Agreement already states that a country must repurchase when its balance of payments need disappears. The effective implementation of this Article renders other repurchase incentives unnecessary. However, under such an approach, a system would need to be in place to encourage members to make voluntary advance repurchases. This could be achieved through adequate reporting to the Board or the publication of information regarding borrowing members' external positions in relation to their outstanding IMF loans. Alternatively (or additionally), a system could be considered involving a Board review of a country's balance of payments and reserve position, at regular intervals after the last drawing, in order to determine whether or not it should be expected to make an early repayment, and if so, at what pace.

3.2 A single flexible facility

At the other extreme, the Fund could opt for a single SBA-type facility that would be applied flexibly. This kind of system is appealing for its simplicity, transparency and because it avoids the difficulty of analysing *ex ante* the type and expected duration of the balance of payments need in question. In order to be workable and to ensure equal treatment, this approach would have to be based on clear rules. Such a system would nevertheless depend to a large extent on the Board's ability to take well-thought-out decisions based on clear principles governing the IMF's financial role and rigorous justification of every individual decision, with due regard to precedents and the merits and requirements of each case.

For a single facility (with a single maturity structure) to be able to address the issue of longer-than-expected financing needs, one could allow for consecutive arrangements. This would be a recognition of the fact that it is difficult to predict the duration of a member's balance of payments need in advance. Furthermore, it would increase countries' ownership of the adjustment programme and give the Fund more leverage in promoting members' adjustment efforts.

Second, a surcharge system, be it time- or level-based, or a combination of both, would need to be contemplated to prevent unduly long and large use of IMF resources. From a theoretical point of view, it could be argued that the rate of charge should not be used to discourage large use of Fund resources. The extent of IMF assistance should be based on the needs of a country: only large needs justify large use. It is the responsibility of the staff and the Board to verify if the amounts requested are in line with actual needs. This view pleads against the use of level-based surcharges and in favour of the sole use of time-based surcharges. This would add greatly to the transparency and simplicity of the surcharge structure. It would of course constitute a breach with current practice and might be conceived as too simplistic to capture the whole range of incentives and disincentives targeted by the current system.

The intuitively most appealing option, therefore, would be a combination of the two approaches. This kind of system would entail a matrix of charges associated with time and amount of resources outstanding. Though richest in its incentive structure, such a combined system may also be deemed too complex and not sufficiently transparent. Alternatively, a surcharge system combining the characteristics of the different graduation schedules that are currently in place, could be envisaged. Indeed, for credit outstanding above the cumulative limit of 300 p.c. of quota, there is a case for a surcharge system in line with that under the SRF. This implies the introduction of a time-based surcharge structure, providing incentives in support of the temporary use of exceptional access. Moreover, this time-based graduation would need to be applied across successive arrangements in one way or another. For credit outstanding below 300 p.c. of quota, a surcharge increasing with the level of IMF credit outstanding, aiming mainly at discouraging excessive use, might be preferred. Such a graduated surcharge starting at a relatively low level of credit would, moreover, allow for a gradual increase in the surcharge and thus reduce the discontinuities arising from one large step at 300 p.c. of quota.

3.3 A dual framework, consisting of two facilities

One could also opt for a dual-facility framework between the two more extreme options described above.

Such a framework could, for example, have a facility for short-term access (an "SBA-type" facility) and a facility for medium- to long-term access to the Fund's resources (an "EFF-type" facility), both also useable on a precautionary basis and for exceptional access to IMF finance. Such an approach could be justified on the basis of the

observation that there appears to be a tendency for countries' balance of payments needs to be either very short or rather long. Under such a framework, surcharges under the facility for medium- to long-term access would, for any level of credit outstanding, be higher than under the facility for short-term access. This should discourage unduly long use of the Fund's resources. To discourage unduly large use of IMF finance, the surcharge under both facilities would rise with the level of Fund credit outstanding.

Alternatively, the Fund could also opt for a framework consisting of a facility for normal access (an "SBA-type" facility) and a facility for exceptional access (an "SRF-type" facility), both of which could also be used on a *precautionary* basis. This approach could be justified on the basis of recent evidence that members' needs for IMF resources is expected to remain concentrated at the two ends of the access spectrum. It is indeed likely that GRA users' needs will either be primarily for signalling purposes (with low access) or for large access associated with a sudden deterioration in capital market conditions (where the need may be for exceptional access). Under this kind of framework, surcharges under the facility for exceptional access would be higher than under the facility for normal access, irrespective of the duration of outstanding IMF loans. This should discourage excessive use of IMF finance. To discourage unduly long use of the Fund's resources, the surcharge under both facilities would rise with the time of Fund credit outstanding.

Conclusion

In an effort to adapt to changes in its environment, the IMF has over the years adjusted its lending framework. Lending facilities and policies have been created, abolished or modified, according to changing global circumstances. Nevertheless, these adaptations have often been made on an ad hoc basis.

This has given rise to some inconsistencies between the Fund's lending facilities. Some of its lending instruments even seem to have lost their relevance. The Fund's more specialised facilities in particular have either not (yet) been used or have been used much less than expected. The use of the EFF has declined as the Fund has been granting longer and successive SBAs. Other concerns are related to perceived gaps in the current lending structure. The SRF, for example, which was designed for members facing capital

account crises with short-term exceptional access needs, is ill-suited for members facing a capital account crisis with more protracted high access needs. Also, the IMF's exceptional access framework was designed for members facing a capital account crisis and has therefore provided less guidance in non-capital account cases. Moreover, some emerging markets have called for a lending instrument that would provide insurance against large and volatile capital flows, while middle-income countries are increasingly seeking sources of official financial support outside the IMF. Finally, the Fund's lending framework is often perceived as being too complex and fragmented (e.g. the exceptional access framework and the repurchase policy).

In order to address these issues, a comprehensive review of the IMF lending framework is direly needed. In fact, the Fund is currently reviewing its lending instruments and access policies in the context of its ongoing overall strategic review. This paper seeks to provide an input into this process and, within this context, suggests three options for modernising the Fund's lending structure. Under the first option, the spirit of the current multi-facility framework would be maintained, with a different facility for each type of financing need. In order to make this new multi-facility framework less complex and more internally consistent than the current set-up, a number of modifications are put forward to the policies governing it. More specifically, in order to better align the Fund's lending facilities and policies, the current exceptional access and repurchase policies would need to be adjusted at the very least.

A second option involves the most far-reaching adjustment of the Fund's lending framework, as it would replace the whole arsenal of IMF facilities with a single, flexible, SBA-type facility. Such a system is appealing for its simplicity, transparency and because it avoids the problem of having to analyse ex ante the type and expected duration of a member's balance of payments needs. On the other hand, in order to be workable and to ensure uniformity of treatment, each lending decision would need to be based on clear rules and with due regard to precedents and the merits and requirements of each case.

As an intermediary solution, the third option suggests replacing the current lending framework with a dual framework. Such a structure would comprise two facilities; one facility for short- and one for medium- to long-term access or, alternatively, one facility for normal access and one for exceptional access to IMF resources.

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Innovation and entrepreneurship : structural determinants of competitiveness

B. Robert

Introduction

In the context of a globalised and increasingly competitive economy, with shifting structural boundaries, innovation is a cornerstone of policy and regarded as the predominant means of sharpening the competitive edge of the European and individual national economies. Stimulation of entrepreneurial spirit is another policy ingredient that is frequently added to it. Innovation and entrepreneurial spirit are thus at the heart of the process of structural reforms fostered by international organisations such as the OECD (Going for Growth) or the EU (Lisbon strategy).

This article aims to examine the complexity of these two essential drivers of economic growth and, in particular, to shed light on innovation as a process involving multiple players and elements of the general economic operating framework. At the same time, it will report on the distinctive characteristics of innovation in Belgium.

In the first section, the article defines innovation and explains its role as a determinant of economic growth. It then proceeds to draw extensively on the results of the fourth Community Innovation Survey (CIS4). That survey, conducted under the aegis of the European Commission (EC), questions European enterprises about their innovation activity and offers an overall view of the innovation process and its various elements. It offers an original view of innovation in Belgium, positioning it in relation to the three main neighbouring countries and the EU.

The second section deals with innovation expenditure, primarily that relating to R&D. The specific measure of innovation according to the CIS, namely the introduction by an enterprise of a product or process which is new for itself or significantly improved, is discussed in the third section, revealing how the size of the enterprise and the branch of activity in which it operates influence both the innovative activity and the various stages of the process. The following section reviews other elements of the innovation process such as the information sources used and cooperation efforts made by the enterprise, the obstacles encountered and the final effects of the innovation for the enterprise.

The last two sections examine the policies which may be adopted to promote innovation. Many policies which affect the general framework of economic activity may influence innovation. Moreover, specific policies may be pursued. The fifth section focuses on public aid for innovation and the question of intellectual property rights. The final section discusses the key role played by entrepreneurship as the catalyst of innovation.

1. Innovation: definition, role and process

1.1 Definition

Innovation often implies new technology, but though innovation usually has a technological aspect, it would be wrong to consider that it comprises that alone, still less

just R&D activities. According to Berkhout et al. (2006), cited by Johansson et al. (2007), innovation needs science, both pure and applied, it needs development of a product in both its technical and social aspects, and it needs entrepreneurship, this last element being crucial.

In line with the OECD's Oslo Manual, which aims to establish guiding principles for the collection and use of data on innovation activities in industry, the CIS defines innovation as the introduction of a product or production process which is new for the enterprise or significantly improved on the basis of technological knowledge. Innovation can therefore be considered primarily as a *process*, often protracted, aimed at applying knowledge; this article will endeavour to explain the various stages of that process.

The innovation process is *complex* and implies multiple interactions between agents from various spheres (enterprises, universities, governments, consumers, etc.). The idea of a linear process leading from R&D conducted in isolation by an enterprise to a patented invention, and then to the development and marketing of a new product exploiting that invention, belongs to the past. Consequently, the increase in R&D expenditure does not automatically lead to an improvement in the innovative performance of an economy, even though there is, broadly speaking, a positive link between these variables.

While innovation has an essential aspect of *newness*, the latter can be assessed at various levels: a product can be new to the firm making it, new to the market on which it is offered, or – in absolute terms – new to the world. An innovation can also be presented in *multiple forms*, just as the innovators do not constitute a homogenous group (Srholec and Verspagen, 2008). It is often technological, based on the R&D carried out by the firm or on absorption of technologies developed elsewhere. Depending on the case, it will aim to improve an existing product or extend the range of products offered by the firm. While some radical innovations, such as the steam engine, are destined to take the economy into a new era, most innovations are more modest and incremental in character. Finally, an innovation may also be largely independent of technology, in cases where an enterprise reviews its method of internal organisation or arrangements with external partners, changes the presentation of its product or alters its strategy for bringing it to the market.

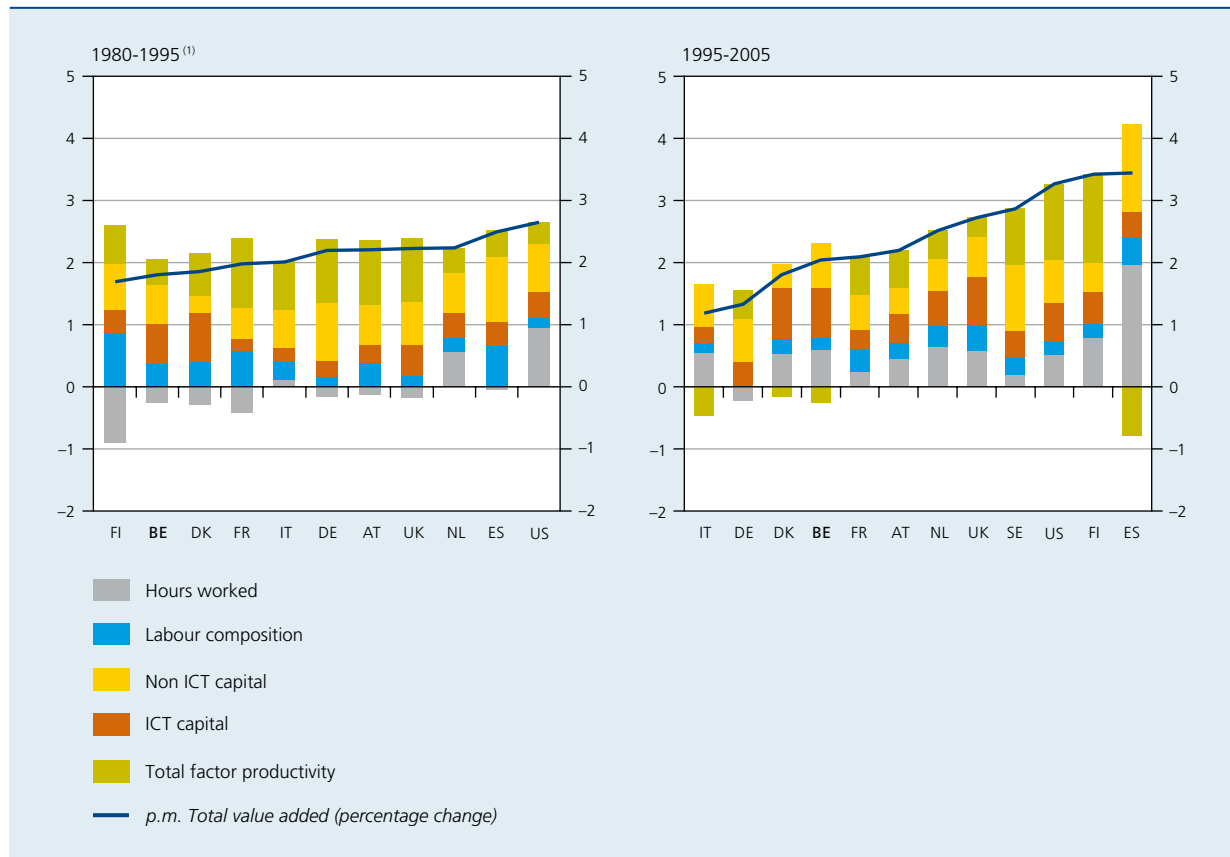
Owing to the length of the process, particularly in the case of R&D activities, innovation comprises a large element of *uncertainty* which is difficult to quantify in advance. That uncertainty is assessed and borne by economic agents presenting the typical characteristics of *entrepreneurs*.

1.2 Role of innovation in productivity and growth

The attention paid to innovation by economic growth theories has varied over time, as is succinctly demonstrated in Box 1. After the Second World War, the sustained growth of the "Thirty Glorious Years" was clearly based on the accumulation of production factors via full employment and extensive capitalisation of the production facilities. In the global economy based on knowledge and information, innovation is now considered the cornerstone of long-term economic growth, in addition to the expansion of the labour force. Development of an economy's innovative potential via technological progress and the training of its human capital should lead to expansion of the range of products offered and improve their quality to make them attractive to external demand and to satisfy new consumption requirements.

Observation of the sources of growth in recent decades in a number of European countries and in the United States confirms the growing importance of innovation. During the 1980-1995 period, economic growth was based largely on the accumulation of non-technological capital, while the contribution of the volume of labour was negative in most of the countries considered. Growth, which was higher overall between 1995 and 2005, also appeared to be more widely dispersed between countries during this period. In the most dynamic countries – except Spain – it was driven by total factor productivity, traditionally associated with technological progress and – more generally – with innovation. In Sweden, the United States and Finland, the countries with the heaviest expenditure on R&D, the annual contribution to economic growth made by total factor productivity averaged between 0.9 and 1.4 percentage point; on the other hand, it was negative in several countries, including Belgium where it was minus 0.3 percentage point. At the same time, the contribution of hours worked often proved to be greater than in the past, reflecting the employment policies; however, it was accompanied by a smaller contribution from the labour composition, possibly because less productive persons were being put to work.

CHART 1 BREAKDOWN OF THE GROWTH OF TOTAL VALUE ADDED, BY VOLUME
(contribution to growth, percentage points, unless otherwise stated)



Source : EU KLEMS database, March 2008.
(1) Data not available for Sweden.

Box 1 – Theoretical basis of the role of innovation in economic growth

During the 20th century, innovation acquired an increasingly important position in explaining economic growth. Although the role of the innovative entrepreneur in the “creative destruction” of activities, the driving force behind economic development, was highlighted by Schumpeter (1911), following the Second World War there was more emphasis on the contribution of the production factors. In this area, the Solow model (1956) is still the indispensable benchmark for breaking down economic growth between capital and labour. These factors, affected by diminishing marginal returns, are linked within a production function featuring constant total returns to scale. Consequently, in the long-term equilibrium, an economy can only continue to prosper via the residual factor – technological progress – which reflects the efficiency with which capital and labour are combined. While innovation plays an essential role in the Solow model, it is regarded as exogenous, “falling out of the sky”. Economic policy therefore aimed primarily to facilitate the transition to long-term equilibrium, particularly via physical capital investment. Investment aid was one of the preferred instruments. ▶

In order to allocate a central role to R&D and innovation, it was necessary to explain their origins. The “endogenous growth” movement which flourished from the latter half of the 1980s as an extension of the Solow model, aimed to satisfy this requirement in order to develop models based on a production function with increasing total returns. These were obtained successively by postulating the presence of externalities in the production of knowledge considered to be a public good (Romer, 1986), or by suggesting the existence of monopolistic returns on innovation (Romer, 1990). Aghion and Howitt (1992) added a Schumpeterian dimension by stipulating that each innovation replaces the previous one, thereby eliminating the existing returns. Since R&D is more or less certain to lead to innovation, a policy of promoting R&D, possibly within large structures favouring economies of scale, and the protection of its results via patents, appeared justified.

However, empirical reality demolished the idea of an automatic link between R&D and economic growth, as in recent decades total factor productivity in the advanced economies has not risen at the same rate as the number of staff allocated to R&D. Even within the “endogenous growth” movement, Jones (1995) considered that the diminishing returns of R&D were attributable in particular to the significance of the “fishing out effect”: the most accessible knowledge has already been discovered.

The conditions and framework surrounding R&D activity are nevertheless just as important as the scale of the effort put in. The “evolutionist” movement, based on hypotheses radically opposed to those of neoclassical theory, stresses the decisive role played by the socio-institutional context. Building on Schumpeter’s analysis, it first focused on the pattern of long waves in economic activity, with no tendency towards long-term equilibrium. These waves mark the progressive adaptation of the technical, economic and socio-institutional spheres to the emergence of major innovations, giving rise to new technological paradigms. In the conceptualisation proposed by Nelson and Winter (1982), economic development and innovation result from the constant introduction of new ideas, including minor ones, by heterogeneous agents driven by the profit motive, and the selection of those agents in a competitive environment. Given the complexity of the interactions thus generated, the evolutionist movement later turned to the study of national innovation systems.

1.3 The innovation process

Innovation uses resources to obtain results, so that an input-output approach may provide an overall picture, in the same way as the European Innovation Scoreboard, although it is not always easy to ascertain whether some elements are inputs or outputs. This Scoreboard⁽¹⁾ establishes the link between the innovation drivers, knowledge creation and innovative entrepreneurship, on the one hand, and the applications in terms of sales and jobs and requests for intellectual property protection, on the other. This article takes as its central theme the following chart based on Crépon et al. (1998), which reveals the various elements of the innovation process, illustrated subsequently with the aid of the CIS4 results⁽²⁾.

Fundamentally, an enterprise will be encouraged to spend money on innovation if it sees opportunities in terms of demand (demand pull) or if the emergence of

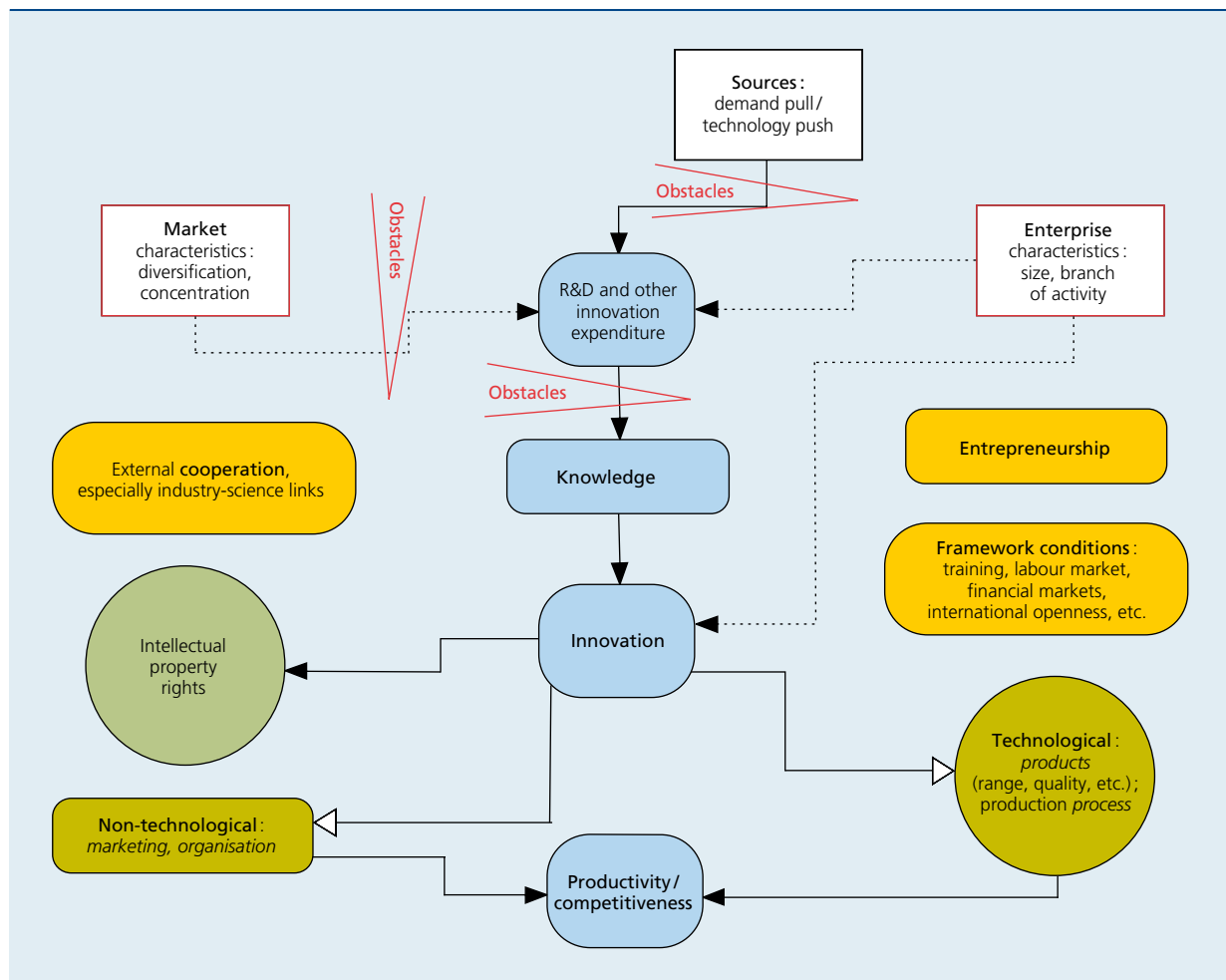
new technologies opens up new horizons (technology push). However, its behaviour is also influenced by more structural characteristics. These concern primarily the enterprise itself, and more specifically its size and branch of activity: a small service enterprise will, in principle, be less inclined to innovate than a large industrial firm. Market conditions are also a factor, particularly the degree of competition.

Starting from the expenditure committed, innovation will produce concrete effects only at the end of a lengthy process, which may entail cooperation with other economic agents and encounter various obstacles along the way. Ultimately, innovation may be measured in terms of patents and other methods of protection, indicating the completion of research efforts; up to a point, these are easy to assess. However, they must be considered as an intermediate result, since a patent does not automatically lead to an innovation, just as an innovation does not have to be based on a patent. A survey such as the CIS is then a way of examining the introduction by a firm of a product or process innovation.

(1) On this subject, see chapter 3 of the Bank’s 2007 Report.

(2) The CIS methodology is detailed in Box 2.

CHART 2 THE INNOVATION PROCESS



Source : Based on Crépon et al. (1998).

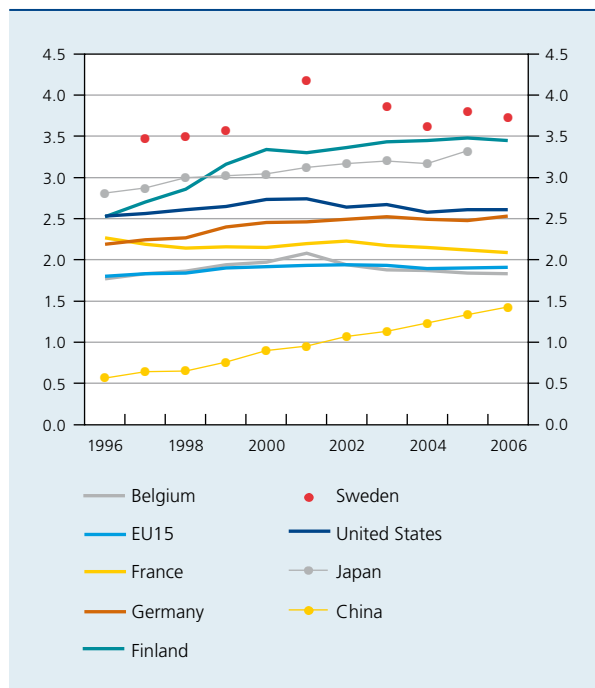
2. R&D and other innovation expenditure

Innovation expenditure has to be considered as investment spending designed to acquire knowledge, essential for the actual introduction of an innovation in the form of a new product or process. Naturally, that expenditure includes both intramural and extramural R&D, but it also covers purchases of machinery, equipment and software, the acquisition of external knowledge or the training of personnel. Although R&D holds an important position in this expenditure, it needs to be understood at its true value. The acquisition of knowledge is not confined to R&D, still less to the total amount which an economy devotes to R&D, since that says nothing about the quality and effectiveness of that expenditure. Nonetheless, R&D remains crucial, if only to augment the ability to absorb new technologies developed elsewhere.

2.1 R&D expenditure

In the innovation policies and the accompanying debate, special attention is paid to the level of an economy's total expenditure on R&D. This is in fact a criterion which is relatively easy to identify and evaluate, and the EU took advantage of that in incorporating in the Lisbon strategy a target of 3 p.c. of GDP which Member States should aim to achieve by 2010. It must be said that the progress made in this regard by the EU in general, and Belgium in particular, is limited. In 2006, the total R&D expenditure of the EU15 and Belgium came to 1.9 and 1.8 p.c. of GDP respectively. The existence of a European R&D deficit in relation to the United States and Japan therefore remains a reality, as does the wide variation in R&D expenditure between EU Member States. Sweden and Finland are still the only two Member States to have achieved, and even

CHART 3 TOTAL R&D EXPENDITURE
(percentages of GDP)



Sources: EC, OECD.

amply exceeded, the figure of 3 p.c. of GDP: in 2006 their R&D expenditure totalled 3.7 and 3.5 p.c. of GDP respectively.

Furthermore, the trend in recent years – though fairly vague – has certainly not been upwards. Expenditure by the EU15 has remained close to the level of 1.9 p.c. of GDP attained in 1999. In Belgium, the changes have been more marked, owing to the heavy concentration of R&D expenditure and hence its vulnerability, particularly to foreign funding. The noticeable rise between 1996 and 2001, from 1.8 to 2.1 p.c. of GDP, was subsequently negated, so that this expenditure amounted to only 1.8 p.c. of GDP in 2006.

Over the same period, American expenditure remained steady around the appreciable level of 2.6 p.c. of GDP, while R&D expenditure in Finland and Japan increased continuously to reach around 3.5 and 3.3 p.c. of GDP respectively in 2005-2006. However, it remains below the level seen in Sweden, where this expenditure has hovered around 3.75 p.c. of GDP for some years. Finally, R&D activities are not immune to globalisation: China's expenditure increased from 0.6 p.c. of GDP in 1996 to 1.4 p.c. in 2006 and now exceeds in absolute terms the annual expenditure of France or Germany.

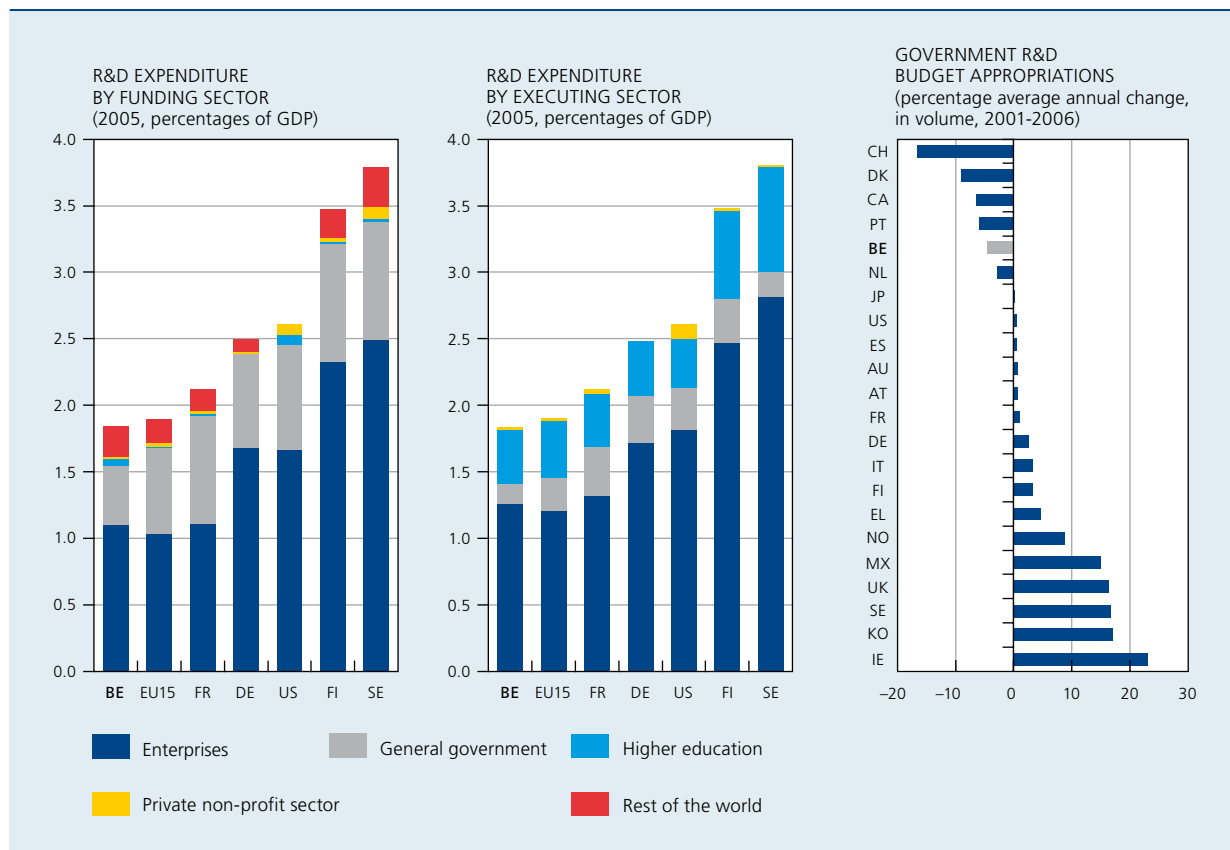
Apart from its overall level, the sectoral structure of R&D expenditure is also important; this may be examined from the funding angle or from the execution angle. The Lisbon strategy also set a target for the source of funding, stating that enterprises should finance at least two-thirds of the expenditure. While the EC highlights the lack of private funding for European R&D, public funding is also deficient, particularly in Belgium, where its contribution is clearly inadequate: it represents just under a quarter of total expenditure, compared to around a third in the EU15 as a whole. More specifically, in 2005 the expenditure funded by the public sector came to 0.45 p.c. of GDP in Belgium, against 0.64 p.c. in the EU15, 0.81 p.c. in France and 0.89 p.c. in Finland and Sweden. Moreover, Belgium is one of the few OECD countries in which government budget appropriations, indicating expenditure intentions, contracted in volume between 2001 and 2006. The public funding deficit is offset in part by a larger contribution from abroad, particularly from the enterprise sector: 0.23 p.c. of GDP, or a level comparable to that of Finland, against 0.17 p.c. in the EU15.

In terms of execution, the Belgian public sector is also lagging behind: it accounts for R&D activities totalling 0.15 p.c. of GDP, compared to 0.25 p.c. in the EU15. However, in relation to the top performing countries, the EU15 and Belgium need to concentrate mainly on enterprises, which are responsible for the great majority of R&D activities. R&D in higher education also needs to be promoted: in Finland and Sweden it amounted to 0.66 and 0.79 p.c. of GDP respectively in 2005, against some 0.4 p.c. in the EU15 and Belgium.

The difference in the level of R&D expenditure between two economies may have a structural explanation – as the propensity for R&D varies significantly between the different branches of activity – or the reasons may be intrinsic. This question was discussed at length in connection with Europe's R&D deficit in relation to the United States. In the light of the work of the group of experts which it had set up, the EC (2007a) was inclined towards a structural explanation, in that the technological industrial branches particularly active in R&D represent a smaller proportion of value added in the EU.

What is the situation in Belgium? Since the Belgian and euro area economies have a similar activity structure, no structural effect is observed; moreover, the level of private R&D expenditure is comparable at just over 1.5 p.c. of GDP. However, structural effects do operate between Belgium and its neighbouring countries, namely an adverse effect in relation to Germany but a favourable effect in relation to France. Thus, if the structure of

CHART 4 E B E



Sources: EC, OECD.

the German economy is applied to the actual intensity of R&D expenditure in the various Belgian branches, Belgium's private R&D expenditure would have come to 1.72 p.c. of GDP between 2001 and 2003, instead of the actual figure of 1.51 p.c. Conversely, a significant intrinsic effect operates in favour of France, which therefore compensates for its adverse structure by a greater intensity of expenditure in the medium- to high-tech industrial branches, more specifically in transport equipment and to a lesser extent in chemicals excluding pharmaceuticals. In the former branch, between 2001 and 2003, private R&D expenditure represented 19.4 p.c. of value added in France, compared to 2.7 p.c. in Belgium; the intensity gap is clear in both aeronautical engineering and car manufacturing, in the latter case manifestly indicating divergences in specialisation (assembly in Belgium, model design in France). Overall, the application of the R&D intensities of the French branches to the Belgian economic structure would have increased private R&D expenditure in Belgium to 1.79 p.c. of GDP.

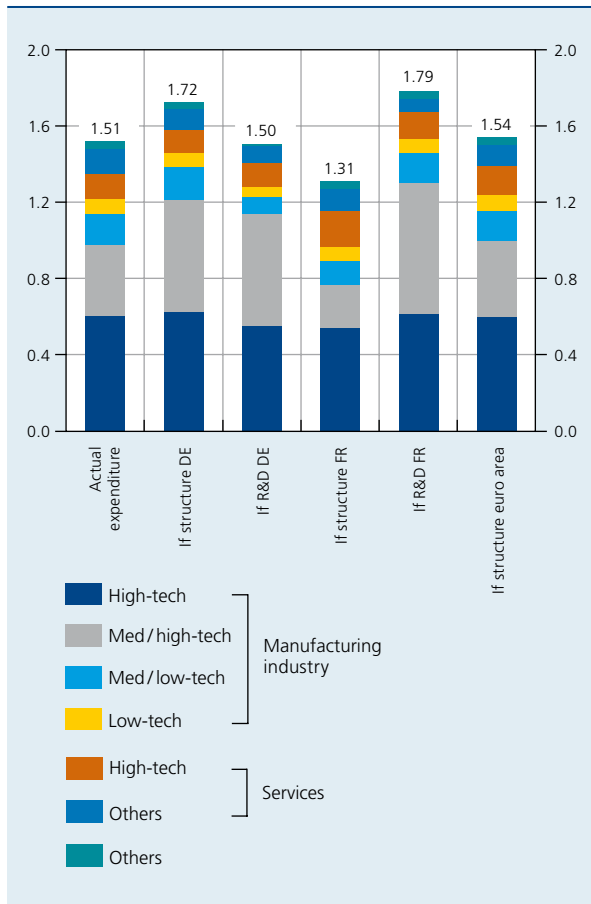
For many countries, the structure of the economy may explain the relative level of private R&D expenditure, as demonstrated by Mathieu and van Pottelsberghe (2008), taking the level in Germany as the benchmark. This is true, for instance, in Finland where the high overall intensity of R&D expenditure is connected with the country's heavy specialisation in a number of technological branches, and in Belgium. Conversely, even taking account of the structure of the economy, a positive intrinsic country effect persists for Sweden, the United States, France and Japan. For the first two countries, the scale of university expenditure on R&D in Sweden and the size of the unified market in the United States, which increases the expected return on R&D expenditure, may be an explanation.

It is evident from the key role of the industrial structure that there is little sense in imposing a national target, except in acknowledging that the long-term aim is effectively to modify the industrial structure. As van Pottelsberghe (2008) also reports, the dispersion of R&D expenditure is just as great between the American states as between the EU countries, but the

CHART 5

INTRINSIC AND STRUCTURAL EFFECTS ON BELGIUM'S R&D EXPENDITURE

(business expenditure on R&D, actual and simulated⁽¹⁾; average 2001-2003, percentages of GDP)



Source: own calculations based on data from EU KLEMS and the OECD (ANBERD).

(1) The amount spent on R&D in Belgian firms is simulated first by taking the structure per branch in Germany, France and the euro area and applying it to the actual intensity of the expenditure of the Belgian branches, and conversely by applying the intensity in foreign branches (not available for the euro area) to the actual structure per branch of the Belgian economy.

United States nevertheless achieves higher average and median results owing to the performance of the most efficient states. Rather than national targets, it might be of more benefit to the R&D of the EU countries to unify the European market, or to promote university research, by developing industry-science links and adopting the European Community patent.

The need for a European vision is particularly clear in the case of Belgium, as demonstrated by Biatour and Kegels (2008). Their results indicate that the private R&D carried out in Belgium has no influence on the total factor productivity of the branches, in so far as it benefits the foreign companies in which it is concentrated. Conversely, Belgium seems to benefit from R&D conducted in neighbouring countries.

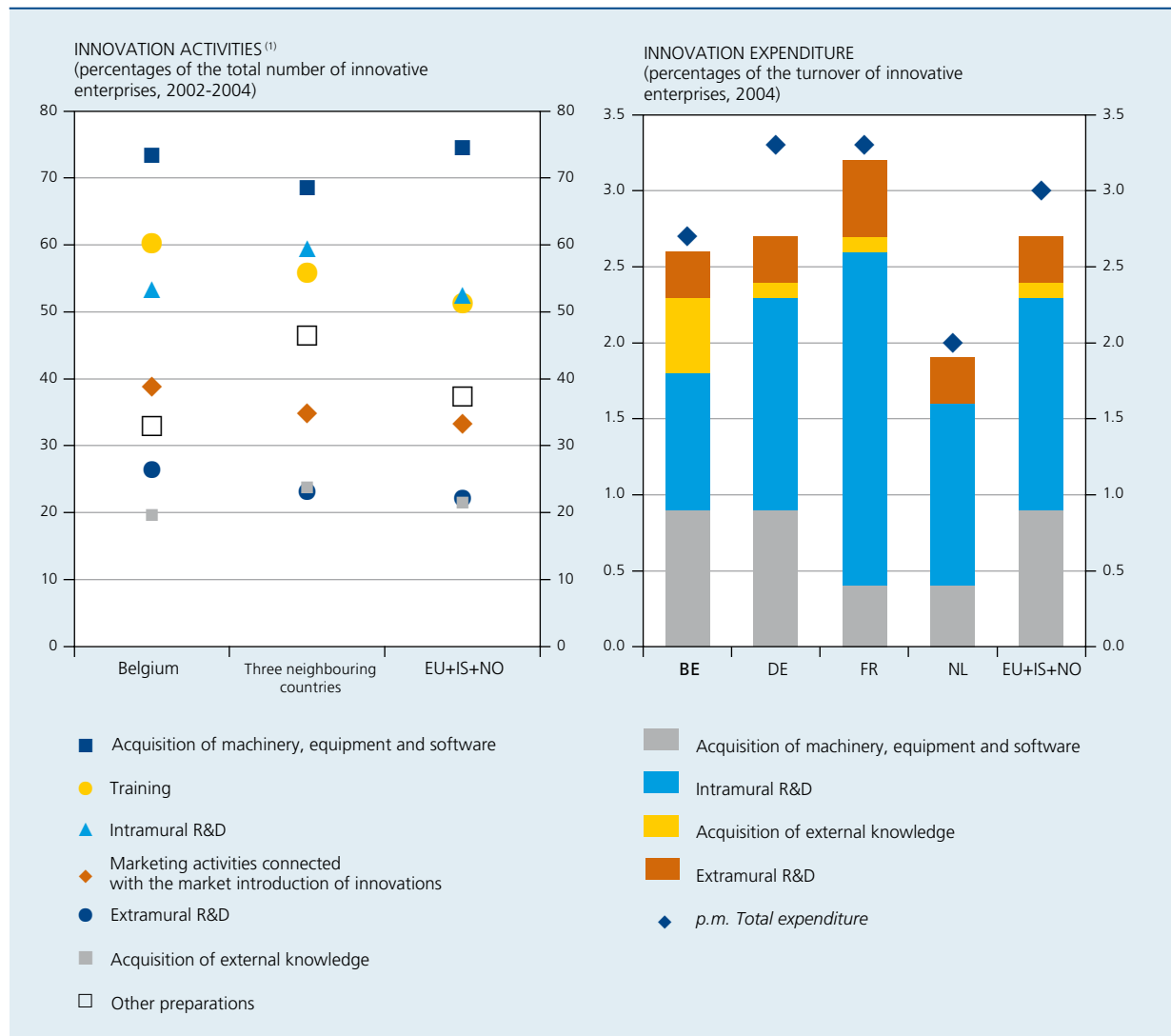
2.2 Innovation expenditure

As already stated, R&D is only one of the options available to firms for acquiring knowledge. According to the results of the CIS4, the acquisition of machinery, equipment and software is the commonest type of expenditure: it concerns 73.4 p.c. of innovative Belgian enterprises, a predominance confirmed in the EU (74.5 p.c.) and in the neighbouring countries (68.5 p.c.). Next come staff training and intramural R&D, cited by just over half of European enterprises. Here, Belgium is notable for a preponderance of the former, in contrast to the neighbouring countries. The least frequent activities are those focusing on aspects outside the enterprise: extramural R&D and acquisition of external knowledge – e.g. in the form of rights or licences to use patented inventions – both cited by 20 to 25 p.c. of enterprises.

The lower priority accorded to intramural R&D in Belgium is even more marked at the level of the amount spent: this represents on average 0.9 p.c. of a firm's turnover, compared to 1.4 p.c. in the EU. The intensity of expenditure is also higher in the three neighbouring countries (1.6 p.c. on average), and especially in France (2.2 p.c.), which is in 2nd place in Europe behind Sweden and ahead of Denmark. While innovative Belgian firms report expenditure on machinery, equipment and software at a level comparable to the EU average (0.9 p.c. of turnover), they compensate in part for their intramural R&D deficit by acquiring external knowledge: with a figure of 0.5 p.c. of turnover, they are in third place in the EU, behind Romania and the Czech Republic. Altogether, innovation expenditure represents 2.7 p.c. of the turnover of Belgian firms, or less than the European average of 3 p.c. – and in particular, less than in Germany and France (3.3 p.c.) –, the difference being due solely to intramural R&D expenditure. However, it is notable that, both in Belgium and elsewhere, total R&D expenditure, i.e. intramural plus extramural, constitutes the largest expenditure item overall.

The dominant type of expenditure naturally depends on the economy's degree of technological development. Thus, it is possible to show a negative link between the intensity of expenditure on machinery, equipment and software and that on intramural R&D as recorded by the CIS4, compatible with the idea that the need for R&D increases when the economy is close to the technological frontier (Aghion, 2006). Firms in the new EU Member States tend to report a relatively higher level of expenditure on machinery, equipment and software, while Belgian firms are in an intermediate position.

CHART 6 INNOVATION ACTIVITIES AND EXPENDITURE



Source: CIS4.

(1) Innovative enterprises pursuing activities in the areas mentioned.

Box 2 – The Community Innovation Survey

The Community Innovation Survey, conducted at regular intervals, questions the enterprises of the 27 EU countries, Iceland and Norway about their innovation activities. The results discussed in this article are those of the 4th survey (CIS4) conducted in 2005 and relating to innovation activities in the period 2002-2004. This survey was conducted via a questionnaire common to all countries; it reviews multiple aspects of the innovation process, as illustrated by chart 2 above. It is based largely on the OECD's Oslo Manual which is, for instance, the source of its definition of innovation, namely "the introduction by an enterprise of a product or process which is new to it or significantly improved". While product or process innovations thus defined may be regarded as technological in character, the CIS, like the Oslo Manual, also addresses non-technological innovations in marketing and organisation. The terms "technological innovation" and "non-technological innovation" are used in that sense in this article. Most of the

questions in the CIS are qualitative; apart from certain descriptive data (turnover and personnel), the quantitative information requested concerns the amount of innovation expenditure or the turnover resulting from product innovations. For Belgium, the survey is conducted at the level of the Regions, the replies then being collated centrally by the Federal Science Policy Office for transmission to Eurostat.

The results presented here are aggregated at country level. In most cases they take the form of a percentage of the number of – innovative and/or non-innovative – firms. In regard to innovation expenditure, they may also be expressed as a percentage of turnover. The analysis naturally focuses on the results for Belgium, usually comparing them with those for the three main neighbouring countries and the average for countries taking part in the survey⁽¹⁾ (the group's composition varies according to the availability of the results). Wherever possible and relevant, the CIS permits the analysis to be refined according to the size and branch of activity of the firms.

Surveys of this type shed a particular, more qualitative light on the innovation process in obtaining the information at source. However, in view of the absence of any obligation to reply and the subjectivity inherent in judging whether a “successful innovation” has been introduced, these results – and especially the country rankings – need to be viewed with caution.

(1) This group of countries is called the EU in this article even though it potentially includes not only the 27 EU countries but also Iceland and Norway.

3. Measures and types of innovation according to the CIS

3.1 Product innovations, process innovations and non-technological innovations

International comparison

According to the CIS4, 51.3 p.c. of Belgian firms are considered innovative, in stating that, in the three years preceding the survey, i.e. between 2002 and 2004, they have introduced a product or process which is new or significantly improved for themselves. This places Belgium in 7th position out of the 29 European countries considered. Only Germany achieves a significantly higher figure, at 65.1 p.c. Medium-sized and large Belgian firms appear particularly innovative, with respective scores of 66 p.c. and 83 p.c.; in these two categories they rank 3rd and 2nd respectively, while their German counterparts still remain ahead. What is more, large, innovative Belgian firms are in first place in Europe for product innovations developed mainly by the enterprise itself or within its own group. For small firms, the ranking broadly corresponds to the overall situation, as these are the most numerous firms.

At the same time, Belgian industry is in 3rd place among European industries, behind Germany and Ireland. Conversely, Belgian firms seem relatively less innovative in

financial activities and in business services which comprise centres of R&D.

This excellent performance is certainly due in part to the presence of numerous multinationals in Belgium. In fact, large innovative Belgian firms belong to a foreign group in almost 55 p.c. of cases, i.e. significantly more than in most European countries.

Profile of Belgian innovative enterprises

Regardless of the country, the profile of innovative enterprises tends to differ from that of other firms. In general, propensity to innovate increases the larger the firm, and is higher in industry than in services. In Belgium, the innovation rate thus stands at 46.5 p.c. for small firms, 66 p.c. for medium-sized ones and 83 p.c. for large firms. At branch level, it exceeds the average of 51.3 p.c. in IT activities and technical advice (63.5 p.c.) and in industry (58.1 p.c.). Next come wholesale trade and financial activities – respectively 48.5 and 47.8 p.c. – and transport and communication (33 p.c.). These results highlight the need to distinguish between R&D and innovation: according to the CIS4 results, firms in the financial branches devote only 0.2 p.c. of their turnover to intramural and extramural R&D expenditure, against an average of 1.3 p.c. in the economy as a whole, and 2.2 p.c. in industry, but the percentage declaring themselves to be innovative is nevertheless similar to the average.

TABLE 1 INNOVATIVE ENTERPRISES⁽¹⁾
(2002-2004)

	Innovation rate (percentages of the total number of enterprises in the corresponding category)			Structure (percentages of the total number of innovative enterprises)		
	Belgium	Three neighbouring countries	EU+IS+NO	Belgium	Three neighbouring countries	EU+IS+NO
Total	51.3	48.1	39.5	100.0	100.0	100.0
10 – 49 employees	46.5	41.5	34.9	71.6	64.5	69.4
50 – 249 employees	66.0	64.1	52.8	22.2	26.8	23.6
250 employees or more	83.0	82.0	70.7	6.2	8.7	7.0
Industry	58.1	54.3	41.5	53.4	55.1	58.8
Services	45.3	42.2	36.9	46.6	44.9	41.2
Membership of a group	60.6	57.3	55.5	53.6	56.0	40.4
of which foreign control	60.3	57.6	55.2	28.6	10.5	11.6
Active on:						
National market	53.2	54.6	45.6	92.9	75.0	75.2
European market	58.9	59.7	51.9	77.2	50.3	51.2
Other market	66.6	66.2	58.5	34.5	32.2	30.3
Product innovators (with or without process innovation)	35.0 ⁽²⁾	31.3 ⁽²⁾	24.5 ⁽²⁾	68.3	65.1	62.4
of which innovators having introduced a product new to the market	20.9 ⁽²⁾	15.4 ⁽²⁾	14.2 ⁽²⁾	40.7	32.0	35.9
Simultaneously technological and non-technological innovators	35.1 ⁽²⁾	33.9 ⁽²⁾	22.2 ⁽²⁾	68.3	70.4	56.3
Solely non-technological innovators	11.5 ⁽²⁾	16.0 ⁽²⁾	12.2 ⁽²⁾	–	–	–

Source: CIS4.

(1) Unless otherwise stated, technological innovators, namely enterprises which have introduced a product or process which is new to them or is significantly improved.

(2) Percentages of the total number of enterprises.

Innovative enterprises are also more likely to belong to a group, including groups under foreign control. Finally, they have a stronger foreign market presence.

Compared to that of neighbouring countries and the EU, the profile of Belgian innovative firms is naturally also influenced by the structural characteristics of Belgian firms, be they innovative or not. In terms of innovation, that is reflected in an adverse bias towards small firms – compared to neighbouring countries – and towards the service branches – compared to the EU. Conversely, Belgium's very open economy creates a positive bias in favour of membership of a group and foreign market activity.

Finally, 71.6 p.c. of Belgian innovative firms have between 10 and 49 employees, and 46.6 p.c. of them are active in the service branches; in both cases, that

figure is relatively higher than in the EU and in the three neighbouring countries. 53.6 p.c. of the firms belong to a group, i.e. considerably more than in the EU (40.4 p.c.), but slightly less than in the neighbouring countries (56 p.c.). More significantly, this group is often under foreign control: that is true for 28.6 p.c. of Belgian innovative firms, compared to just 11 p.c. in the EU and in the three neighbouring countries. This international openness is also reflected in activity: 77.2 p.c. of Belgian innovative firms are active on a foreign market in Europe, compared to only just over half in the three neighbouring countries or in the EU. At the same time, however, they have a stronger focus on the domestic market than elsewhere, at over 90 p.c., compared to three-quarters in the three neighbouring countries or in the EU.

Types of innovation

In all countries except Cyprus, more than half of the innovators – 68.3 p.c. in Belgium – are product innovators, whether or not that is accompanied by a process innovation. Moreover, 40.7 p.c. of Belgian innovators stated that they have introduced a product which is new to the market; however, that finding should be interpreted with caution, since it probably depends on the market's size and especially on its degree of development. Thus, the highest scores for this question tend to be found for the new EU Member States.

Technological and non-technological innovations usually go hand in hand, especially in the most innovative countries according to the CIS. In fact, it is probable that the marketing of a new product is accompanied by a revised marketing strategy, just as the introduction of a new production process prompts a review of the firm's organisation. Yet the proportion of companies introducing solely non-technological innovations is quite considerable, including in countries where technological innovation concerns over 50 p.c. of firms. Though it belongs to this group, Belgium is somewhat lagging behind with only 11.5 p.c. of firms introducing solely non-technological innovations.

3.2 Influence of the firm's size and branch of activity on the innovation process

The influence of the firm's size and the branch in which it operates is not confined solely to whether or not it innovates, but affects the entire process.

Thus, in Belgium, in regard to expenditure on innovation, while innovative firms of all sizes are inclined to acquire machinery, equipment and software in the same proportions, small firms engage in less intramural R&D (47.4 p.c., compared to 79.3 p.c. of large firms) and acquire less external knowledge (15.8 p.c., against 36.5 p.c. of large firms). Moreover, the universities are primarily a source of inspiration for large firms (8.1 p.c., compared to around 3 p.c. for small and medium-sized firms). In general, propensity to cooperate with other players increases significantly with size.

Small firms report fewer innovation projects being abandoned or seriously delayed, probably because they actually carry out fewer projects. However, they do complain more about a lack of internal funding and, to a lesser extent, external funding, and the excessive cost of innovation. Moreover, they are less frequently granted public funding, particularly European funding. Finally, they make

TABLE 2 INFLUENCE OF THE FIRM'S SIZE AND BRANCH OF ACTIVITY ON THE INNOVATION PROCESS IN BELGIUM
(percentages of the number of innovative enterprises in the corresponding size category or branch of activity, 2002-2004)

	10 – 49 employees	50 – 249 employees	250 employees or more	Industry	Services
Acquisition of machinery, equipment and software	72.3	75.8	76.5	78.3	67.7
Intramural R&D	47.4	65.0	79.3	60.8	44.8
Acquisition of external knowledge	15.8	26.9	36.5	15.8	23.9
University as information source	3.3	3.9	8.1	5.4	1.9
External cooperation	28.6	48.2	73.3	38.1	33.0
Project abandoned or seriously delayed	34.7	53.3	87.4	46.7	36.8
Lack of internal funding	20.2	15.6	13.6	20.8	16.4
Lack of external funding	12.4	8.0	9.2	12.5	9.8
Excessive costs	21.3	14.6	12.8	21.8	16.5
Public funding	21.4	24.2	32.8	29.3	15.2
of which EU	2.3	4.4	14.9	4.4	2.6
Patent	8.6	14.4	26.4	13.1	8.5
Industrial design	9.6	23.0	23.5	14.0	12.7

Source: CIS4.

less frequent use of the main methods of protecting intellectual property rights.

At branch level, industrial firms generally appear to be more involved in the innovation process, including expressing a stronger perception of the obstacles represented by lack of funding and the level of costs. At the level of innovation expenditure, though industrial firms concentrate their spending more on intramural R&D (60.8 p.c., compared to 44.8 p.c. of service enterprises), service enterprises make up for that by acquiring external knowledge (23.9 p.c., compared to 15.8 p.c. of industrial firms).

To what extent are the national CIS results influenced by variations in structure by size or branch? Systematic tests on all the indicators used showed that these structural differences had only a limited impact on the overall result, so that there is little if any bias in comparisons between Belgium, the three neighbouring countries and the EU.

For example, 53.3 p.c. of Belgian innovative firms stated that they had conducted an intramural R&D activity, a proportion comparable to that seen in Germany (53.8 p.c.), but much lower than in the Netherlands and France (respectively 67.4 and 70.2 p.c.). While this comparison involves structural effects which are all unfavourable to Belgium, those effects do not exceed a maximum of 1.8 percentage points in the case of Germany. In other words, if Belgian innovators had the same size structure as in the neighbouring countries – more favourable to intramural R&D in view of the higher percentage of medium-sized and large firms – their overall propensity to intramural R&D would be hardly any greater. The substantial gap in relation to France and the Netherlands is therefore due essentially to intrinsic effects unfavourable to Belgium.

4. Other elements of the innovation process

Following the description of innovation, the forms which it may take, and the investment expenditure on which it depends, this section will focus on illustrating certain stages in the ongoing process: the sources of innovation, the cooperation developed in order to achieve it, the main obstacles encountered and the effects as perceived by the enterprise.

4.1 Sources of information and cooperation with other players

An enterprise does not develop an innovation in a vacuum. It is influenced by other players and, what is more, it often interacts with some of them. Other players may perform a role at the start of the process, as an information source or encouragement for the innovation, but also during development, via cooperation. In this regard, the behaviour of Belgian firms is compatible with their traditional position at the heart of the international production chain, as producers of intermediate goods. That position causes them to take account of their customers' requirements, modifications by suppliers and the behaviour of competitors in their innovation process, but also gives them a natural opportunity to develop numerous international cooperative projects.

That said, the hierarchy of innovation sources is broadly similar between countries, especially for the three main sources, namely the enterprise itself or the group to which it belongs – a source considered very important by over half of innovators in Belgium and the three neighbouring countries –, customers and suppliers. Belgium tends to record prevalence rates which are higher than those of neighbouring countries and the EU; in particular, among the EU countries it has the second highest score at 39 p.c., well behind the 50 p.c. recorded by Ireland – for the source "customers".

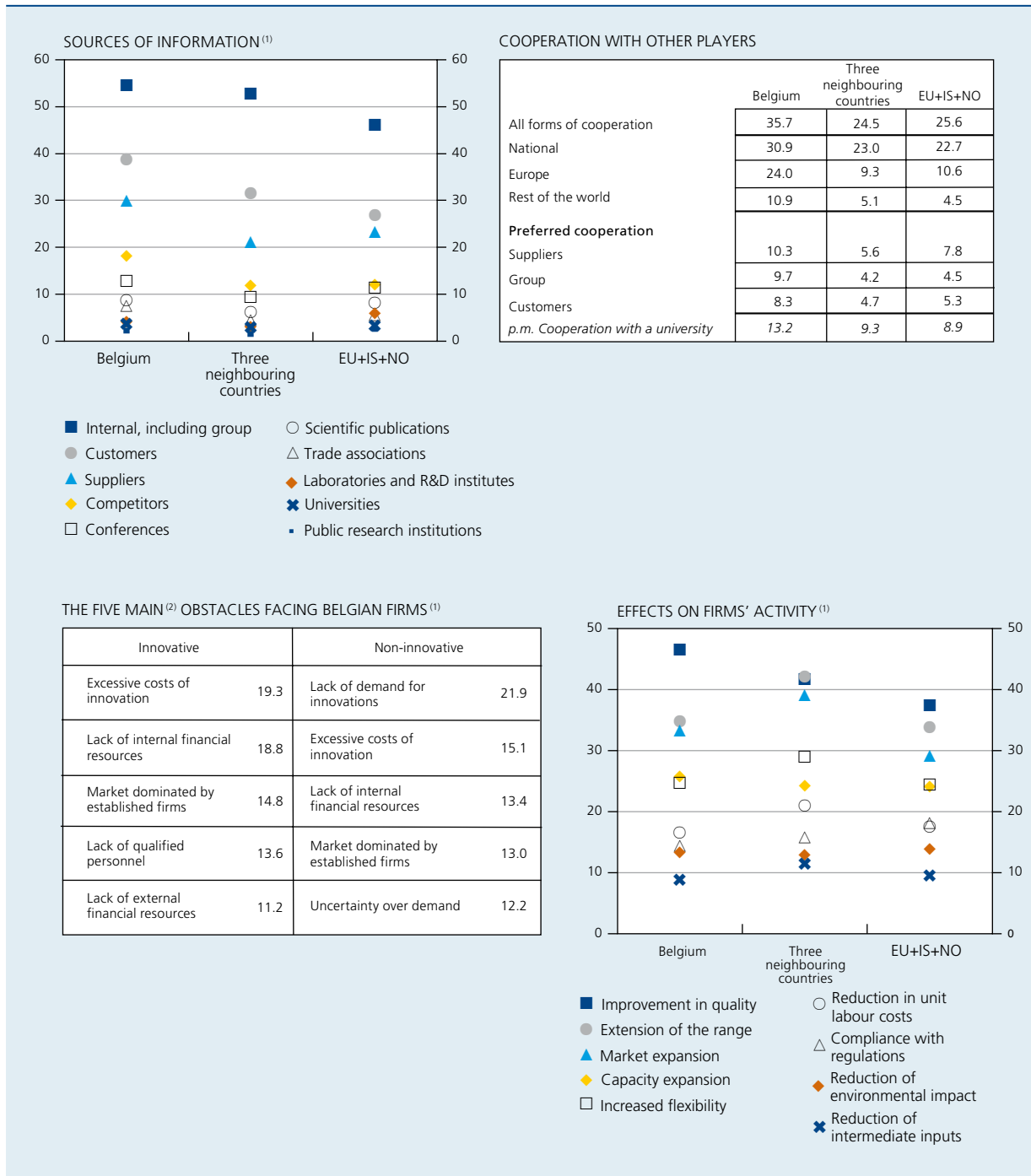
In general, Belgian innovators seem more inclined to cooperate: 35.7 p.c. of them state that they have used one or other form of cooperation, against around 25 p.c. in the neighbouring countries and in the EU. This stronger propensity to cooperate applies particularly to cooperation with foreign countries – in Europe or elsewhere. Belgian innovators are also in 5th position (10.9 p.c. of innovative firms) in terms of cooperation with non-EU countries.

Sources of innovation and cooperation often go together. In both Belgium and the other countries considered, the same players hold the three leading positions, with suppliers being more involved in cooperation and customers being more important as a source of information. While Belgian innovators most often cite the internal source as very important, in response to the question concerning the preferred parties for cooperation – a question to which the CIS permits only one answer – they mention primarily the suppliers, then the enterprise itself or the group to which it belongs, and the customers. These are the same three for the EU and neighbouring countries, though customers are in that case preferred to the group.

CHART 7

ELEMENTS OF THE INNOVATION PROCESS

(percentages of the total number of innovative firms, 2002-2004)



Source : CIS4.

(1) Innovative enterprises attaching great importance to the source, the obstacle or the effect respectively.

(2) Out of a total of eleven potential obstacles suggested by the survey questionnaire. The five main obstacles shown in the table are also the only ones considered very important by more than 10 p.c. of the enterprises concerned.

Interactions with universities deserve special attention in that they are considered essential to the performance of the innovation system. While the universities are a source of innovation seldom mentioned by European

firms, cooperation with a university during the process is more common, particularly in Belgium, where 13.2 p.c. of innovators mention it, compared to about 9 p.c. in the neighbouring countries and in the EU. The general

propensity to cooperate tends to increase in all countries with the size of the firm, but cooperation with a university seems to be the preserve of large enterprises; in Belgium, it concerns 37.5 p.c. of the innovators with 250 employees or more. In this area of industry-science links, Finland clearly stands out: 33.1 p.c. of innovators there state that they have cooperated with a university – namely 69.4 p.c. of large firms, but also 24.5 p.c. of small firms, compared to 10.3 p.c. of innovative firms with 10 to 49 employees in Belgium.

4.2 Obstacles encountered during the innovation process

The obstacles which may impede the route to innovation are potentially numerous and varied. They may originate within the enterprise itself (own resources, costs) or on the factor markets (financial, labour) or product markets (lack of competition, uncertain demand). They may operate at an early stage, stifling any thought of innovation, or take effect during the process, perhaps causing serious delays or even the straightforward abandonment of a project. The obstacles facing firms which nevertheless succeed in introducing an innovation and those which do not are different, as can be inferred from the CIS.

However, in assessing projects which are delayed or abandoned, the survey only considers innovators, which makes it even more difficult to interpret the results. Thus, the lower rate of abandonment or delay among Belgian innovators than in the neighbouring countries or the EU, combined with a relatively high innovation rate, could mean that Belgian firms are more confident when embarking on an innovation process, but could equally mean that they are less ambitious, so that their innovations are less likely to fail. In most countries, projects are more often seriously delayed than abandoned, and abandonment tends to occur at the concept stage.

The main obstacle encountered by Belgian firms which have not innovated is found on the demand side, as – above all – the absence but also the uncertainty of demand is considered to be a very important hampering factor by just over one-third of the firms concerned. Financial factors play an equally significant role, as the scale of the costs and the lack of internal funding are both mentioned by more than a quarter of non-innovators, each in comparable proportions. Domination of the market by established firms is a very important obstacle for 13 p.c. of non-innovators. In the neighbouring countries, the same three obstacles head the list, although financial factors are slightly predominant in Germany and the Netherlands.

For Belgian innovators, the principal obstacles are clearly financial, and apply mainly to small firms: excessive costs and lack of internal funding, each applicable to around 19 p.c. of all innovative firms, plus in fifth place the lack of external funding (11.2 p.c.). Dominance of the market by established firms (14.8 p.c.) and the lack of qualified personnel (13.6 p.c.) complete the table. This last factor is mentioned more often than in the EU (11 p.c.) and in the three neighbouring countries (7.6 p.c.). As firms can identify any desired number of obstacles as being very important, the sum total for all the obstacles mentioned may be informative: it comes to 96.5 p.c. for the neighbouring countries, 107.3 p.c. for Belgium and 130.1 p.c. for the EU.

The impact of the degree of market competition at the level of innovation has formed the subject of many theoretical debates. It is generally accepted that the link takes the shape of an inverted U. Initially, strengthening competition prompts firms to innovate in order to stand out from their competitors and to try to secure the temporary returns on innovation. This effect is more marked in economies or sectors close to the technological frontier, where growth may be harder to achieve owing to imitation (Aghion, 2006). Beyond a certain threshold, however, competition may reduce the returns which could be expected *ex ante* and therefore have the effect of discouraging potential innovators. Dominance of the market by established firms is an obstacle mentioned by a considerable percentage of firms, whether they have innovated or not, though it is not the decisive factor. However, this obstacle is more in evidence in certain industrial branches, both in firms which have innovated and in those which have not. That is the case in chemicals, textiles and the manufacture of other non-metallic mineral products, including glass. In the case of the first branch, in contrast to the other two, this finding is also true for many other European countries.

4.3 Effects of innovation on firms' activities

Regardless of the country or the firm's size, the positive effects of innovation on activity are mainly apparent at product level, which is logical in view of the preponderance of that type of innovation. In Belgium, firms seem to place greater emphasis on improving product quality, while in the neighbouring countries, expanding the range and conquering market share play an equally important role. This might be seen as a sign of modesty on the part of Belgian firms, wishing to offer quality goods and services in order to maintain their intermediate position in the international production chain, while firms in the neighbouring countries focus more on winning market share.

It is also notable that the neighbouring countries make more frequent mention than Belgium of increased flexibility and the reduction in labour costs as consequences of innovation.

Non-technological innovations have a greater impact in the case of technological innovators, indicating that a combination of the two is beneficial in a firm surrounded by a culture of innovation, although it is possible that the respondents cannot distinguish clearly between the effects of the two types of innovation. Once again, the improvement in product quality is the main effect, while the reduction in customer response time proves to be almost as important.

5. Framework conditions and innovation policies

Since innovation is a complex process involving players from various spheres and subject to the influence of many factors, the policies which may promote it are naturally just as varied. While there may be specific measures targeting R&D and innovation, many policies designed to improve the general framework for pursuing economic activity can also prove beneficial.

The EC (2007b) justifies the systemic approach by stipulating that the science-technology-industry triptych needs to be supplemented by a favourable framework in terms of education, labour market and financial markets, in order to enhance performance in regard to competitiveness and growth. Jaumotte and Pain (2005) also showed that an improvement in these framework conditions does more to boost the R&D effort than direct support for R&D, particularly in small open economies.

One of the chief general policies which could affect innovation, as indicated, for example, by the OECD in the 2006 issue of its report *Going for Growth*, is education policy. This puts the emphasis on the training of scientific personnel, necessary for R&D, but also on helping to develop the entrepreneurial spirit. In these same two areas, an efficient labour market facilitates the matching of demand and available resources, signalling any shortages. Since research and innovation activities take place over a long and uncertain horizon, they need suitable funding, both at the launch of the enterprise and in the initial growth stage; the availability of ample and effective venture capital is therefore essential. Finally, the external openness of the economy is a vehicle for innovation via the transfers of technology encouraged by trade and direct investment, while competition policy and

bankruptcy legislation determine the degree of openness and dynamism of the market.

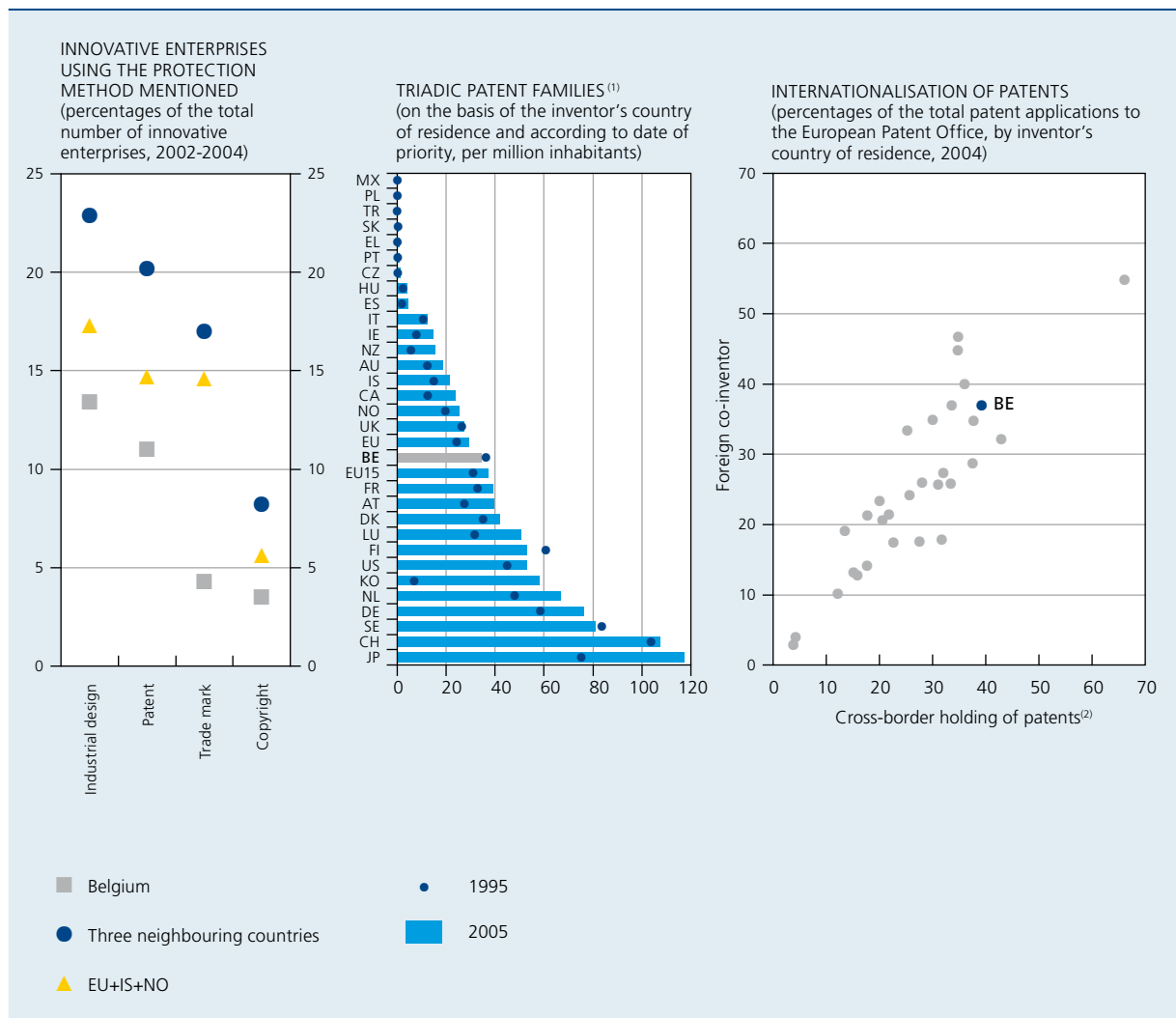
In the general framework of competition policy and the debate over the appropriate level of competition, intellectual property rights are a crucial question for innovation. While a limited period of protection encourages the potential innovator by guaranteeing that he will profit from his efforts, it may also curb the spread of existing innovations, and hence their use and their improvement by other firms. Van Looy et al. (2008) showed that specific legislation on intellectual property rights concerning publicly funded research by universities could encourage the emergence of university entrepreneurship (spin-offs), the original inventor taking a more active share in the product's commercial development. Such legislation, modelled on the American Bayh-Dole Act of 1980 or the law in force in Belgium since the mid 1990s, grants ownership of the invention to the university while providing for appropriate remuneration for the researcher.

Generally speaking, Belgium lags behind in regard to the filing of applications for intellectual protection, which could imply that the innovations introduced are more directly practical. According to the CIS4 results, Belgian innovators make significantly less use of intellectual protection methods of any kind than their counterparts in neighbouring countries and in the EU. The gap is particularly marked in the case of industrial design, the commonest form of protection ahead of patents.

In regard to triadic patents – patents filed simultaneously with the American, European and Japanese patent offices – Belgium is in a relatively median position, close to that of the EU15 but well behind the Netherlands and Germany. Also, the rate of patent filing diminished slightly in Belgium between 1995 and 2005, whereas it increased in the great majority of countries. In this area, too, Belgium's activity is highly international, so that the statistics should be viewed in that perspective. Thus, Belgium is among the countries with the highest level of cross-border ownership of patents and involvement of a foreign co-inventor: this concerns about 40 p.c. of the patents filed to the European Patent Office. On the other hand, in contrast to trade flows but more comparable to the situation in foreign direct investment, the United States is the leading partner country, although the EU is still predominant on account of cooperation with Germany and France.

Apart from general policies, governments may also exert a more direct influence on R&D and innovation, be it via their own R&D activities – from the point of view of both

CHART 8 INTELLECTUAL PROPERTY RIGHTS



Sources: CIS4, OECD.

(1) Patents filed simultaneously with the three patent offices in America, Europe and Japan.

(2) Arithmetical mean of the share of national patents held by foreigners and the share of foreign patents held by nationals.

their scale and their governance – or by subsidising private R&D, by acting as the primary user or, more generally, by organising the establishment of an effective innovation system which encourages links and transfers of knowledge between universities and industry.

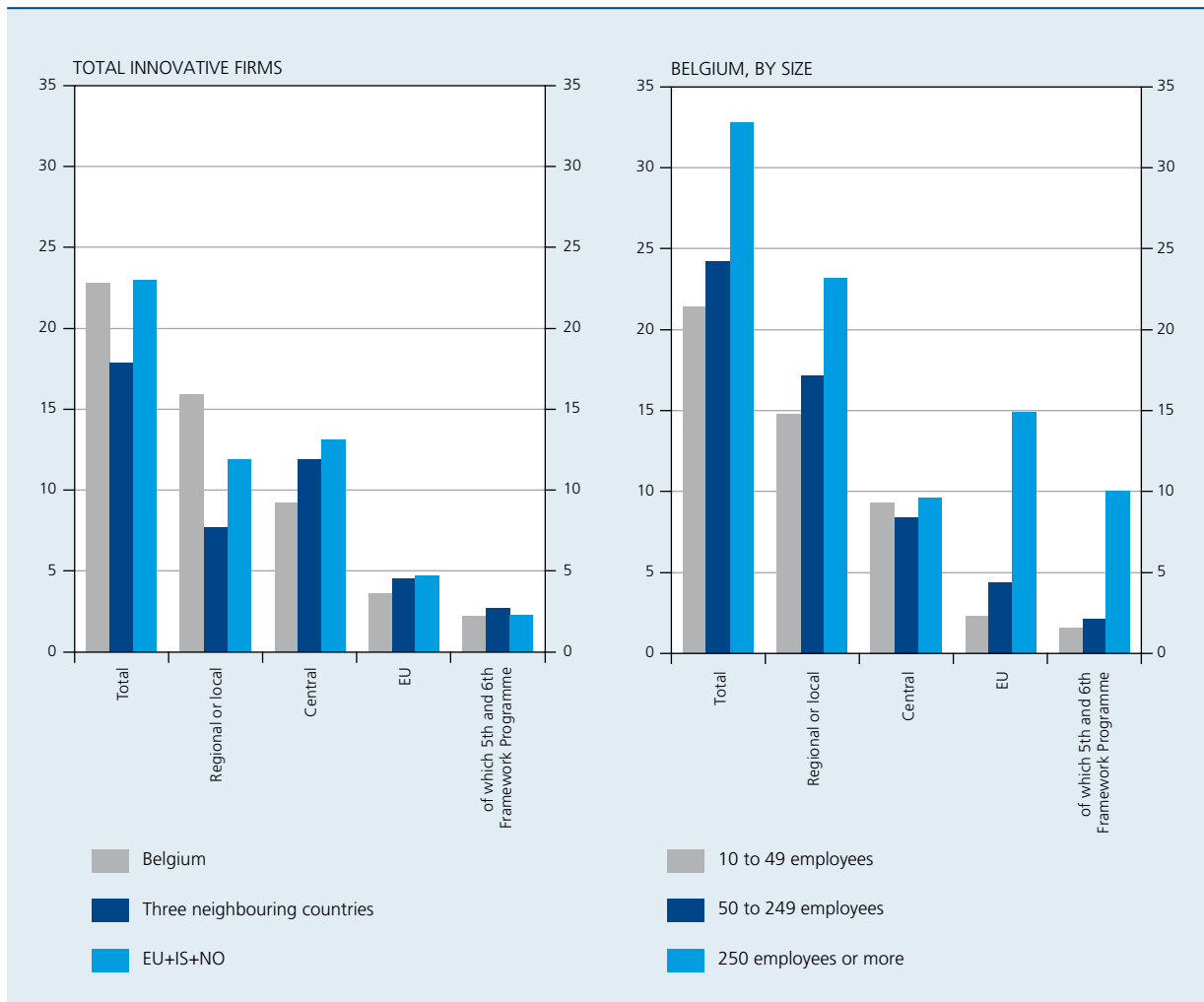
The CIS4 offers an original view of the public funding received by firms. Altogether, 22.8 p.c. of Belgian innovators stated that they had received public funding, a rate comparable to the European average but higher than that in the neighbouring countries. However, the latter display wide variations: the public funding received in the Netherlands is substantial, in France it conforms to the European average and in Germany it is low. The differences between countries are evident mainly at the

level of national funding sources. Within those sources, the breakdown between levels of power is naturally dictated by the country's institutional structure: funding is more often regional in Belgium, and federal or central in the neighbouring countries; for the EU as a whole, the breakdown is relatively balanced. In Belgium, while the policy of direct support for R&D and innovation is now largely delegated to the regions, the federal government can still intervene via taxation, as it did during the recent period by lowering the payroll tax for R&D personnel. In that regard, in its latest assessment of the progress made in implementing the National Reform Programme, the EC considered that Belgium's innovation policy still lacked adequate coordination between the levels of power concerned.

CHART 9

PUBLIC FUNDING OF INNOVATION

(innovative firms which have received funding from the level of government mentioned between 2002 and 2004, percentages of the total number of corresponding innovative firms)



Source : CIS4.

Overall, European funding is less important than national funding. Moreover, Belgian innovators receive even less of it than those in the neighbouring countries or in the EU as a whole. The gap is particularly apparent in the case of funding not forming part of the Framework Programme. However, these results based on the number of beneficiary firms do not say anything about the amount of funding received.

The firm's size has a marked influence on the receipt of public funding. Almost 33 p.c. of Belgian innovative large firms have received public funding, taking all sources together, compared to 21 to 24 p.c. in the case of SMEs. These differences originate from regional funding and the EU's Framework Programme, though the latter aims to place particular emphasis on SMEs; conversely, the

proportion of Belgian firms receiving federal funds is similar for all size classes. In the other countries, it is also frequently more common for large firms to receive public funding, and that is certainly true in the case of European funding.

6. The special role of entrepreneurship

Entrepreneurs play a key role as innovation promoters and catalysts. Thus, the rise of the advanced, highly technology-intensive sectors was supported by newly established small firms. The development of entrepreneurship has therefore attracted much attention recently, in both theoretical discussions and political debates, especially in connection with the Lisbon strategy. According to

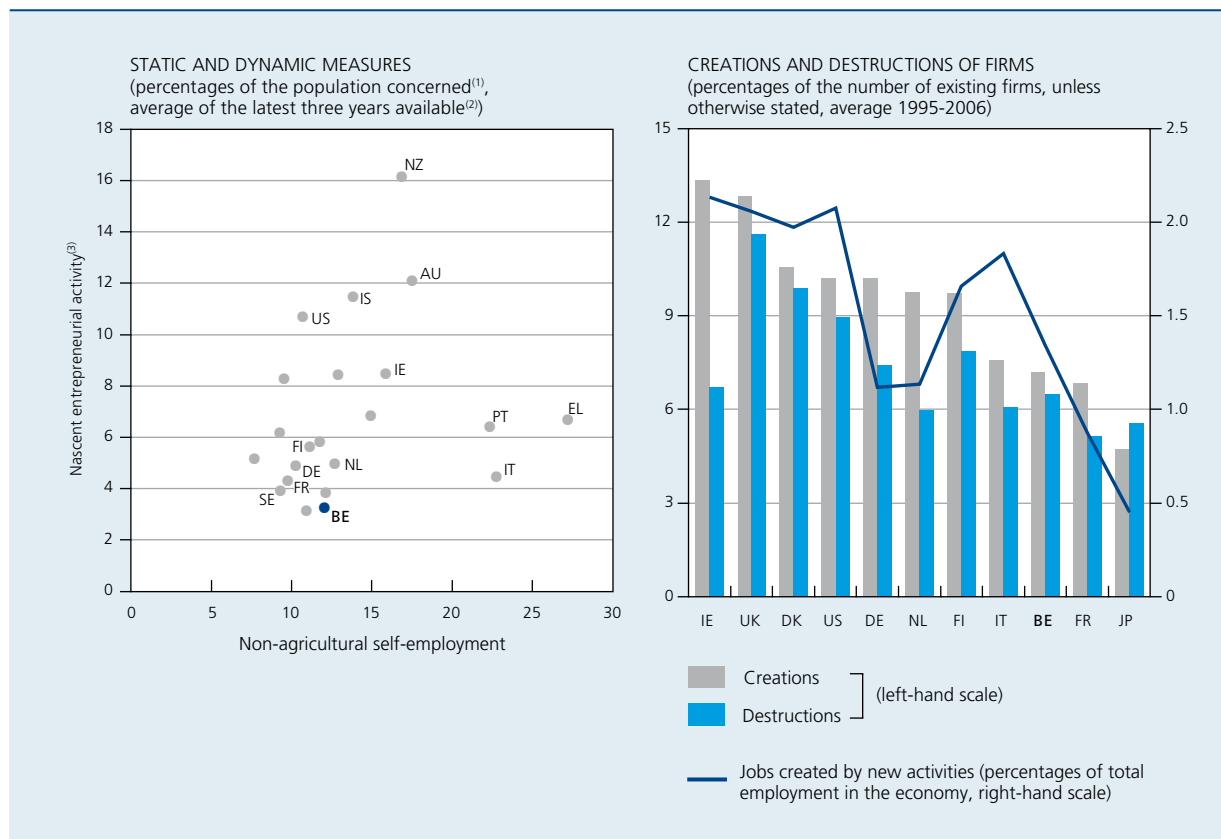
Audretsch (2007), the establishment of a business makes it possible to eliminate the barriers relating, for instance, to divergences of individual perceptions which, in large firms, prevent new knowledge from being converted into commercial applications. The entrepreneurial capital which thus enters the production function has a large local dimension, as there is an evident tendency for innovation to be concentrated geographically, e.g. via clusters.

Like innovation, entrepreneurship is a complex phenomenon to define and describe; it may be viewed variously as the action of creating an activity, the inclination to do so, or a societal phenomenon. The main definitions put forward over the years indicate that the entrepreneur is an innovator, an industrial leader who creates new combinations of the means of production (Schumpeter), taking the risk relating to the uncertainty of the business (Knight). He thus displays an ability to be aware of the opportunities available on the market and to choose between them (Kirzner).

The entrepreneur is notable for the function which he performs, but has no specific status, be it as a self-employed person, shareholder or manager, so that various types of entrepreneur exist. Similarly, a policy aiming to encourage entrepreneurship is not equivalent to a policy targeting SMEs. The latter have their own needs connected with their size, justifying the provision of a level playing field, whereas entrepreneurship occurs in the preliminary phase, at the embryonic stage of the activity, or even when it is still just a project or idea.

While Audretsch et al. (2007) identify a fundamental tendency featuring the transition from a managerial economy to an entrepreneurial economy, a combination of small and large firms is of course necessary, as demonstrated by Keilbach and Sanders (2007), who distinguish between expanding the product range – which comes under exploration, and is therefore an entrepreneurial function – and improving the quality of existing products – which comes under operation, and is therefore an R&D function, more readily applied by large companies. This might explain

CHART 10 ENTREPRENEURSHIP



Sources: Compendia, Global Entrepreneurship Monitor, International Benchmark of Entrepreneurs.
 (1) Population in employment in the case of non-agricultural self-employment, population aged from 18 to 64 years in the case of nascent entrepreneurial activity.
 (2) 2004-2006 in the case of non-agricultural self-employment, the latest three years available over the period 2004-2007 in the case of nascent entrepreneurial activity.
 (3) Entrepreneurs at the preparatory stage or active for more than 3 months but less than 42 months.

the “European paradox” whereby the EU achieves good results in terms of patents – intermediate R&D results – but seems to have greater difficulty than the United States in converting them to marketable innovations owing to a lack of entrepreneurship.

Given its multiple dimensions which are difficult to define, entrepreneurship is hard to measure, especially for the purpose of international comparison on the basis of harmonised indicators. It is traditional to use static approximations such as the number of self-employed persons, or dynamic ones such as the ratio of business formations or closures, or surveys assessing the behaviour of individuals or their inclination to set up a business.

It is clear from these various sources and indicators that Belgium is suffering from a serious deficit in entrepreneurship. Although it holds a median position in terms of the proportion of non-agricultural self-employed workers (12 p.c. of employment), it has one of the lowest rates of nascent entrepreneurial activity, proof that self-employed status and entrepreneurial activity in the sense understood by this article represent two different realities. According to the GEM figures, in 2007 only 3.2 p.c. of the population aged 18 to 64 years had been pursuing an entrepreneurial activity for a short time (between 3 and 42 months) or had taken steps in that direction. However, the performance of France, Sweden and Germany is comparable or hardly any better, in contrast to Finland and the United States with scores of 6.9 and 9.6 p.c. respectively.

Observed over twelve years (1995-2006), the gap between the rates for the creation and disappearance of enterprises, known as turbulence, proves relatively small in Belgium. Attitudes towards starting a business, be it in terms of desire or feasibility, are in fact below the average for the three neighbouring countries and the EU25.

As in the case of innovation, the policies for boosting the level of entrepreneurship in an economy are many and varied, owing to the numerous individual, sectoral and macroeconomic factors which may exert an influence. Moreover, action is needed primarily in the early stages, as the hardest obstacles to overcome apparently arise before the initial steps leading to the creation of a business, as shown by van der Zwan et al. (2006). That same study, which endeavours to explain the propensity to become an entrepreneur, reveals the inhibiting influence of the perception of administrative charges, and sometimes the existence of a negative country effect, particularly in Belgium.

In broad terms, Audretsch et al. (2007) identify seven groups of determinants affecting supply and/or demand in the case of entrepreneurs, and hence seven routes for political intervention. These include general policies already mentioned in the determination of a favourable framework for innovation (funding, training, market organisation, etc.), but also policies influencing individual choices between employee and self-employed status, and individual preferences (values and attitudes towards risk) which are much harder to influence.

Conclusion

Innovation and its catalyst entrepreneurship constitute the cornerstone underpinning the growth of economies which have reached an advanced stage of development. Innovation takes place according to a process involving numerous elements which may influence its chances of success. Political measures in favour of innovation therefore potentially cover a broad field and are not confined to an indiscriminate increase in R&D budgets. In particular, the general framework in which an economy operates, its structural characteristics and its history are too important to ignore.

Thus, in the case of Belgium, the fact that it is a small open economy means that its innovation activity is largely determined by foreign enterprises. That is manifested in the percentage of R&D expenditure funded by other countries, and in the often international character of the patents resulting from its research. Similarly, the group – often foreign – to which an enterprise belongs plays a substantial role as an innovation source or cooperation partner. Finally, large Belgian enterprises, which are particularly innovative compared to their European counterparts, mostly belong to a foreign group.

It is therefore especially difficult in Belgium to isolate R&D activity from the international context, since the results of research conducted there benefit other countries, while at the same time the Belgian economy seems to benefit more from research conducted elsewhere. A European view is therefore necessary.

Moreover, the structural attention paid to public finances clearly has to do with the inadequate level of public R&D, which is a support and essential complement for private R&D. Furthermore, the allocation of competence in a federal State requires efficient coordination of policies conducted at the various levels of power, and that is not yet sufficiently the case in Belgium, as pointed out by the EC in its latest assessment of the progress made in implementing the National Reform Programme.

In addition, the structure of activity in the Belgian economy, such as its specialisation in intermediate goods, does influence its innovative profile. The position of Belgian firms at the centre of the international production chain means that innovations take greater account than elsewhere of the needs of customers and suppliers, and tend towards improvements to existing products rather than the development of new products designed to conquer new markets. Similarly, Belgian enterprises make relatively less use of R&D, but compensate for that lack by the acquisition of external knowledge, something which is certainly favoured by their external openness and their membership of a group.

While these structural characteristics may in some respects weaken the innovation process, they can also be seen as strengths, above all via the high degree of adaptability

and absorption capacity of Belgian firms. The need now is to consolidate these advantages and work on the most glaring weaknesses in order to set up an efficient innovation system. Among the various general conditions necessary for encouraging innovation, training remains a priority, insofar as human capital forms an essential pillar of a knowledge-based economy. In addition to its general contribution to the improvement of the labour market, strengthening basic and further training can yield benefits at various stages in the innovation process: providing scientific personnel for R&D, developing entrepreneurial spirit, facilitating the spread of ICT in the economy, etc.

Efficient factor and product markets are also indispensable. Examples here are the availability of suitable funding for new companies and the supply of network products such as gas, electricity and broadband connections.

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Trend in the financial structure and results of firms 2007

David Vivet

Introduction

Every year, in the December issue of the 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.

This article comprises three sections. Section 1 briefly describes the methodology and sample used. Section 2 presents an extrapolation of the main profit and loss account items for 2007. Finally, section 3 assesses the financial situation of companies, particularly their level of profitability, solvency and liquidity.

It must be stressed that this analysis concerns the year 2007 only, and therefore does not permit any conclusions regarding developments in 2008, particularly the consequences of the current financial crisis.

1. Methodology and constant sample

1.1 Characteristics of the data used and the constant sample

Since the late 1970s, the Central Balance Sheet Office has collected data on the accounts of non-financial corporations. For that purpose, 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. By September, an initial analysis is possible. However, each year the nature of the data available for the latest financial year examined – in the present case 2007 – raises methodological questions.

The population of annual accounts relating to 2007 is incomplete, mainly because some firms are late in filing their annual accounts. Moreover, those same firms are often in a structurally less favourable financial position than firms which file their accounts in time to meet the deadline. Previous editions of this article have highlighted the significant differences – particularly in terms of profitability, solvency and liquidity – between firms according to the date on which they file their annual accounts. In all probability, the data currently available for 2007 present an over-optimistic view of reality.

Owing to these problems, the 2007 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 2006-2007 comprises firms which filed annual accounts for both 2006 and 2007⁽¹⁾. The method consists in extrapolating the 2007 results on the basis of the trends found in the constant sample: the 2007 figures are obtained by taking the final figures for

(1) In order to be included in the sample, firms must also meet the following conditions:

- both sets of annual accounts relate to a financial year lasting 12 months;
- both sets of annual accounts met the quality requirements of the Central Balance Sheet Office;
- the annual accounts relating to 2006 were filed before 31 August 2007;
- the annual accounts relating to 2007 were filed before 31 August 2008.

2006 and applying the rates of change recorded in the sample. It is therefore assumed that the trends seen in the sample are representative of the trends occurring in the population as a whole. As verified in previous editions of this article, that assumption is largely borne out since, in the vast majority of cases, the estimates give an accurate representation of the direction and scale of the actual movements.

Table 1 shows the constant sample for 2006-2007. It comprises 164,548 firms, or over 58 p.c. of the annual accounts filed in 2006. Representativeness in terms of the balance sheet total is significantly higher, since it comes to 86 p.c. The reason for this difference is that it is mainly small or very small firms which are absent from the sample. Also, in terms of the balance sheet total, the representativeness of manufacturing industry is particularly high (96 p.c.) since large firms predominate in that sector.

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

2.1 General trends and cyclical context

In line with what occurred in the previous year, activity growth in Belgium was again robust in 2007, at 2.8 p.c. compared to 2.9 p.c. in 2006. This is similar to the growth

observed in the euro area as a whole, and the contributory factors are the same in both cases. On the one hand, despite the slowdown in the United States, external demand remained steady, driven mainly by the economies of Eastern Europe and Asia and the commodity-producing countries. Also, domestic demand for investment and consumption showed a marked rise.

In contrast to previous episodes since the start of the millennium, when periods of recovery soon ground to a halt, activity thus maintained a vigorous rate of expansion for almost two years. However, the second half of 2007 brought the beginning of a slowdown. Although it subsequently intensified, the slowdown nonetheless remained relatively moderate in 2007, having regard to the accompanying developments in the external environment, namely the turmoil which erupted on the financial markets, the rapid appreciation of the euro and the further substantial increase in the price of energy and agricultural commodities.

In that context, the value added of non-financial corporations maintained the upward trend of the preceding four years, growing by 4.8 p.c. at current prices in 2007. Total value added, i.e. the difference between sales revenues and the cost of goods and services supplied by third parties, thus came to over 162 billion euro (at current prices). The value added created by a firm enables it to cover its operating expenses, with any surplus recorded as a net operating profit. That profit reflects the firm's current

TABLE 1 COMPOSITION AND REPRESENTATIVENESS OF THE CONSTANT SAMPLE 2006-2007

	Firms in the 2006-2007 sample	All non-financial corporations in 2006	Representativeness of the sample, in p.c.
Number of firms	164,548	281,674	58.4
Large firms	12,018	16,549	72.6
SMEs	152,530	265,125	57.5
Manufacturing industry	14,431	23,171	62.3
Non-manufacturing branches	150,117	258,503	58.1
Balance sheet total (millions of euro) ⁽¹⁾	922,731	1,073,190	86.0
Large firms	818,033	913,959	89.5
SMEs	104,698	159,231	65.8
Manufacturing industry	249,467	260,405	95.8
Non-manufacturing branches	673,263	812,785	82.8

Source: NBB.

(1) For firms in the constant sample, the balance sheet total taken into account is the 2006 figure.

industrial and commercial efficiency, independently of its financing policy and any exceptional items.

Staff costs traditionally account for by far the major part of a firm's expenses: in 2007, they thus represented almost 91 billion euro, or 72 p.c. of the operating expenses of non-financial corporations. In parallel with a further increase in the workforce, staff costs increased by 5.6 p.c. For the first time in five years, the growth rate of staff costs thus outpaced the increase in value added. After staff costs, depreciation allowances are by far the most significant operating expense. In 2007, echoing the further substantial rise in investment, they increased for the fourth consecutive year at a rate of 4.8 p.c.⁽¹⁾

Determined largely by staff costs and depreciation, the increase in total operating expenses was once again less than the rise in value added (+4 p.c.). Consequently, the net operating result maintained the upward trend of the last five years, gaining 8 p.c. to over 35 billion euro, or twice the 2002 figure. Previous editions of this article

have pointed out that this trend is exceptional in historical terms; it is broadly due to cost control in a generally favourable economic context, and has significantly altered the breakdown of value added, to the detriment of staff costs and depreciation (cf. chart 1)⁽²⁾.

The movements in corporate value added and operating results can also be compared with the movement in the Bank's business survey indicator, which measures business confidence (cf. chart 2). In contrast to the steep falls normally seen after a peak in the cycle has been reached, the business survey indicator remained at a high level for quite a time after the July 2006 peak. It did not decline until the beginning of the second half of 2007, and then only to a limited degree since, at the end of the year, it was still above its long-term average level. That pattern is connected with the gradual deceleration in the growth of

(1) Including reductions in value.

(2) This type of finding is not specific to Belgium and also applies, for example, to all OECD countries. On this subject, see OECD (2008), "Growing unequal? Income distribution and poverty in OECD countries", Paris.

TABLE 2 MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT

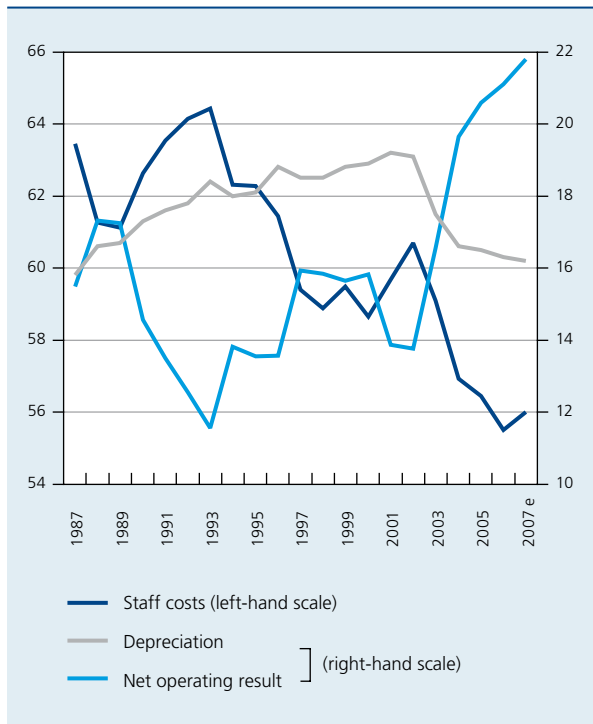
	Percentage changes compared to the previous year					Millions of euro	Percentages of value added
	2003	2004	2005	2006	2007 e	2007 e	2007 e
Value added	4.4	6.6	4.6	6.1	4.8	162,156	100.0
Staff costs	(-) 1.6	3.4	3.0	4.3	5.6	90,769	56.0
Depreciation, downward value adjustments ⁽¹⁾	(-) -4.3	0.7	3.7	5.3	4.8	26,340	16.2
Other operating expenses	(-) 11.8	1.4	6.5	12.8	-11.0	9,713	6.0
<i>Total operating expenses</i>	<i>1.0</i>	<i>2.7</i>	<i>3.4</i>	<i>5.2</i>	<i>4.0</i>	<i>126,822</i>	<i>78.2</i>
Net operating result	25.5	26.5	9.2	9.3	8.0	35,334	21.8
Financial income	(+) 6.8	-12.4	-4.4	-9.1	16.8	44,465	27.4
Financial charges	(-) 4.6	-15.9	-10.9	-13.3	15.9	33,852	20.9
<i>Financial result</i>	<i>31.8</i>	<i>18.0</i>	<i>36.5</i>	<i>8.3</i>	<i>19.7</i>	<i>10,614</i>	<i>6.5</i>
Ordinary result	26.7	24.9	14.1	9.1	10.5	45,948	28.3
Exceptional result ⁽²⁾	(+) -	-	-	-	-	11,927	7.4
Net result before tax	77.0	2.3	47.4	3.8	13.1	57,874	35.7
Taxes on profits	(-) 7.0	11.5	10.9	4.7	8.4	9,243	5.7
Net result after tax	112.1	-0.1	57.7	3.6	14.1	48,632	30.0
<i>p.m. Net result after tax excluding the exceptional result</i>	<i>34.8</i>	<i>29.2</i>	<i>15.0</i>	<i>10.2</i>	<i>11.0</i>	<i>36,705</i>	<i>22.6</i>

Source: NBB.

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

(2) There is very little sense in calculating a percentage change for this aggregate, which may be either positive or negative and does not lend itself to reliable estimation. The figure for 2007 corresponds to the sum of the exceptional results known at the time of writing this article.

CHART 1 CHANGE IN THE BREAKDOWN OF VALUE ADDED
(percentages of value added)



Source: NBB.

value added in 2007. Thanks to the moderate character of the downturn in the cycle combined with cost control, the operating result increased for the sixth consecutive year.

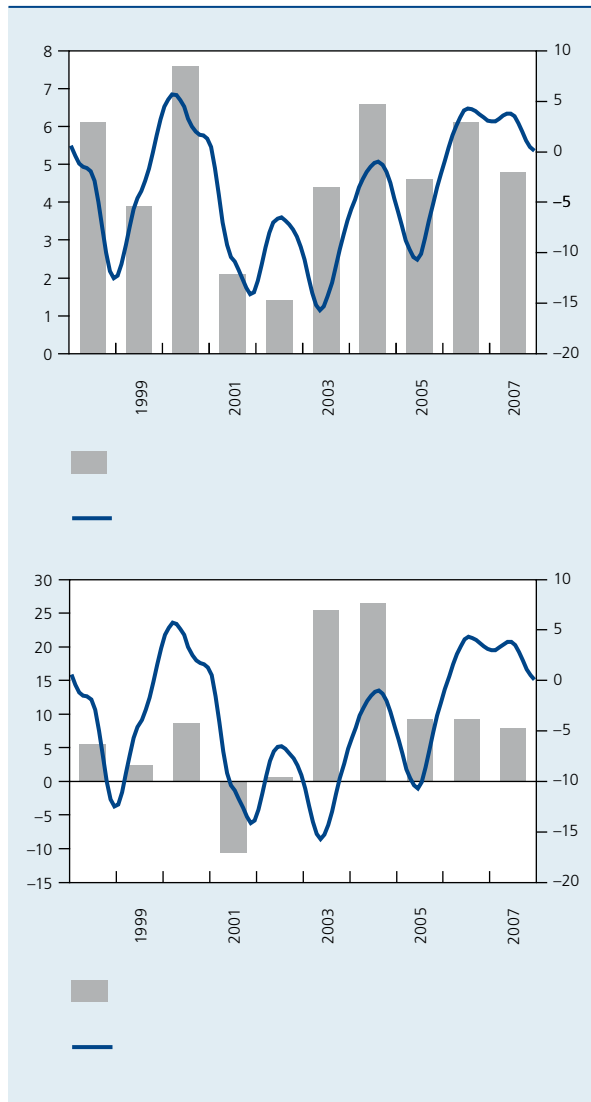
The financial result showed a further improvement in the year under review, reaching 10.6 billion euro. The net exceptional result was decidedly positive for the third year running, the main factor being capital gains on the realisation of financial assets. After deduction of taxes on profits, non-financial corporations made a net profit of almost 49 billion euro in 2007, an increase of 14.1 p.c. The profit excluding the exceptional result rose by 11 p.c. in 2007.

Annex 1 gives details on the data in table 2 by firm size and sector.

2.2 Results by branch of activity

For the first time since 2001, value added in manufacturing stagnated in 2007 (-0.2 p.c. at current prices), while the growth of the operating result slowed sharply (+1.4 p.c.) (cf. table 3). Apart from the euro's appreciation

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



and the rising cost of commodities, the main factor behind these developments is the restructuring of large firms in the two main branches of industry, namely chemicals and metal manufactures (and more specifically car manufacture). Moreover, that restructuring had an impact on the workforce of those branches, which between them lost almost 4,000 jobs. In the agri-food industry, results stagnated, owing mainly to the rise in commodity prices. In the three industries mentioned, however, the fall in the operating result should be viewed in the context of the strong growth previously recorded⁽¹⁾. Metallurgy is the only major industrial branch to maintain the momentum

(1) Between 2001 and 2006, the operating result at least doubled in these three branches.

TABLE 3 VALUE ADDED AND NET OPERATING RESULT BY BRANCH OF ACTIVITY
(percentage changes compared to the previous year)

	Value added		Net operating result		<i>p.m.</i> Percentage share of the branches in total value added in 2007 e
	2006	2007 e	2006	2007 e	
Manufacturing industry	6.0	-0.2	11.8	1.4	30.6
of which:					
Agricultural and food industries	0.7	2.4	-6.5	-3.1	4.0
Textiles, clothing and footwear	0.1	1.7	6.0	12.0	1.2
Timber	8.6	10.1	21.3	22.7	0.6
Paper, publishing and printing	1.8	2.5	2.4	3.9	2.2
Chemicals	8.8	-8.4	12.5	-20.6	7.9
Metallurgy and metalworking	6.2	14.5	17.4	51.6	5.0
Metal manufactures	11.5	-5.1	30.4	-4.9	6.3
Non-manufacturing branches	5.4	7.6	8.4	12.1	69.4
of which:					
Retail trade	4.4	7.9	9.8	19.9	8.4
Wholesale trade	5.2	11.2	9.5	14.2	13.6
Hotels and restaurants	2.9	5.1	-22.2	20.7	1.7
Transport	5.7	6.8	12.7	14.7	8.1
Post and telecommunication	2.6	-1.2	0.9	-4.2	4.6
Real estate activities	1.4	2.9	2.0	1.7	3.0
Business services	7.7	8.9	13.6	17.0	13.6
Energy and water	11.5	-1.4	3.3	-2.3	3.9
Construction	8.9	8.3	12.9	19.7	6.6

Source: NBB.

of recent years, bolstered by the iron and steel industry but also by companies processing metals other than iron. In the space of five years, the operating profits in metallurgy have risen from 0.3 to 2.1 billion euro.

It was therefore the non-manufacturing branches that underpinned the results of Belgian firms in 2007: overall, value added increased by 7.6 p.c. and the operating result was up by 12.1 p.c., in both cases representing a bigger rise than in 2006. In the retail trade, the discount formula expanded particularly strongly, while in the wholesale trade, activities relating to pharmacy, chemicals and refineries did best. In business services, it was the temporary employment agencies that made the principal contribution to growth. The construction sector, though

suffering from higher costs and interest rates, benefited from the dynamism of dredging activities.

3. Financial situation of firms

The financial analysis which follows is based on the theory of interpretation of the annual accounts, from which a number of ratios have been taken⁽¹⁾.

The ratios are presented both in global form and as a median. The globalised ratios are obtained by taking the sum of the numerators for all firms and dividing it by the sum of their denominators. The median is the central value in an ordered distribution: for a given ratio, 50 p.c. of firms have a ratio above the median and 50 p.c. of firms have a ratio below it. The two measures are complementary as they answer different questions. Since it

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

takes account of each firm according to its real weight in the numerator and the denominator, the globalised ratio primarily reflects the situation of the largest firms.

In contrast, by indicating the situation of the central firm, the median reflects the movement in the population in general, as the median is influenced equally by each of the firms, regardless of size.

3.1 Profitability

Profitability concerns firms' ability to generate profits. It can be assessed, in particular, on the basis of the net return on a firm's own capital. This ratio, also known as the return on equity (ROE), expresses the net profit after tax as a percentage of the equity capital. It therefore indicates the return which shareholders receive after deduction of all expenses and taxes. Over a sufficiently long period, the return on equity has to exceed the return on a risk-free investment in order to provide shareholders with a premium to compensate for the risk to which they are exposed: this is known as a risk premium.

In 2007, the globalised return on equity came to 9.2 p.c. for large firms and 12.5 p.c. for SMEs (cf. chart 3). As in the previous year, SMEs therefore achieved higher profitability than large firms. The reason for the recent decline which the latter have suffered is that profits have not grown as fast as the equity, which was influenced to some extent by the recent introduction of the tax allowance for risk capital, commonly known as the "notional interest deduction". The steady recovery in the profitability of SMEs over the past five years is attributable largely to business services and real estate activities. Moreover, the movement in the median shows that the improvement in profitability concerned the Belgian economy as a whole: since 2002, median profitability has risen by almost 5 p.c. for large firms and 3.3 p.c. for SMEs.

The yield on government bonds is a useful benchmark for assessing corporate profitability. The gap has tended to widen in favour of firms: whereas in 2002 the profitability of the two categories of firms had dropped below the rate on linear bonds, the situation has changed radically since then. Broadly speaking, the risk premium offered is 8.2 p.c. for SMEs and 4.9 p.c. for large firms.

CHART 3 RETURN ON EQUITY AND BENCHMARK BOND YIELD ⁽¹⁾
(percentages)



Source: NBB.

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

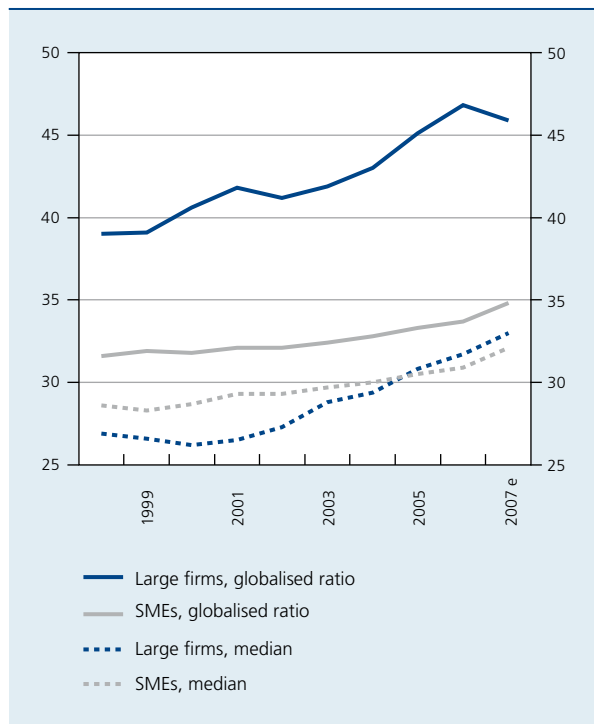
3.2 Solvency

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

The degree of financial independence is equal to the ratio between equity capital and total liabilities. If the ratio is high, the firm is independent of borrowings. This has two beneficial effects: first, financial expenses are low and therefore exert little downward pressure on profits; also, if necessary, the firm can easily contract new debts on favourable terms. The degree of financial independence can also be interpreted as a measure of the firm's financial risk, since the remuneration of third parties is fixed, unlike the firm's results which fluctuate over time.

In 2007, globalised financial independence stood at 45.9 p.c. for large firms and 34.8 p.c. for SMEs (cf. chart 4). The slight fall in the case of large firms is due to a share purchase financed by borrowing in the energy sector. The ratio has maintained an upward trend for almost twenty years, and that is true for the whole population considered, as is evident from the medians.

CHART 4 DEGREE OF FINANCIAL INDEPENDENCE (percentages)



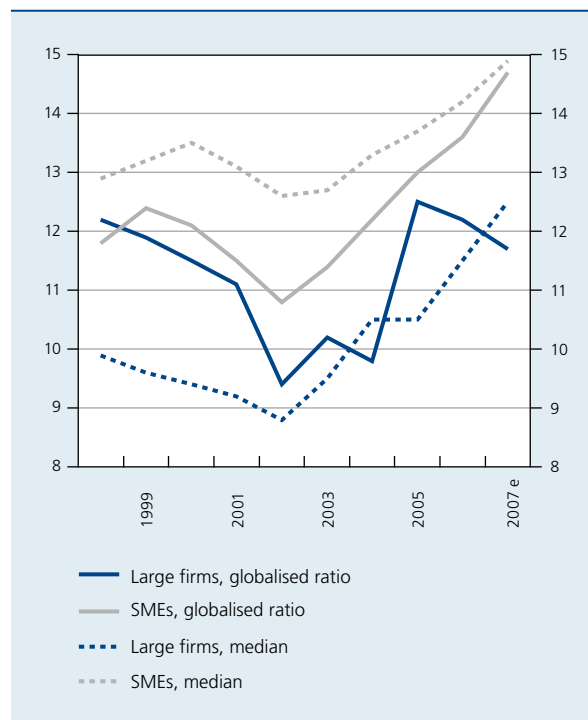
Source: NBB.

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

As a measure of the percentage of its debts that the firm could repay by allocating the whole of the year's cash flow to that purpose, the degree to which borrowings are covered by cash flow indicates the firm's repayment capability. The converse of that ratio indicates the number of years which it would take to repay all the debts at a constant cash flow. The information supplied by this ratio supplements that provided by the ratio of financial independence, as a high level of indebtedness may very well be mitigated by a substantial repayment capability, and vice versa.

In 2007, the globalised cover rate of borrowings stood at 11.7 p.c. for large firms and 14.7 p.c. for SMEs, the two categories of firms recording divergent movements as in the previous year (cf. chart 5). Following a marked recovery between 2002 and 2005, the ratio of large firms

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

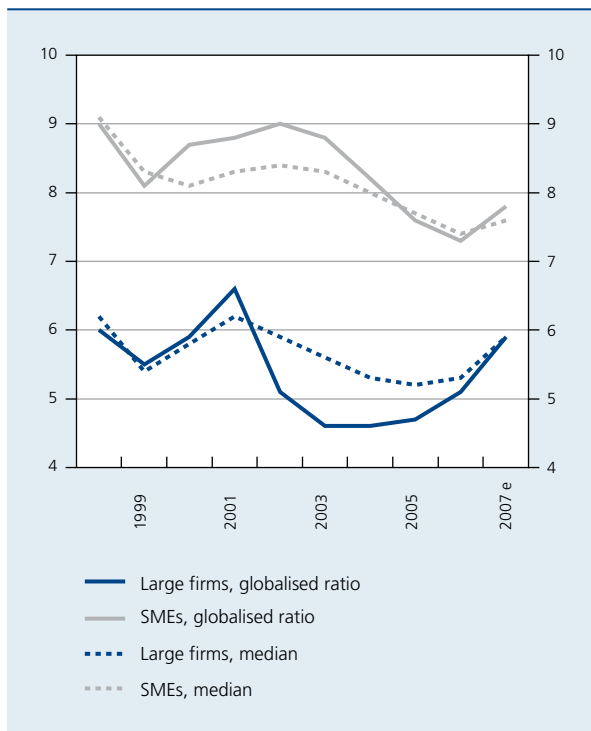


Source: NBB.

contracted in the ensuing two years, as the increase in the cash flow was not enough to offset the rise in debts (influenced in particular, by a firm in the energy sector, as already mentioned). However, the movement in the medians does indicate that, for most firms, the ratio improved steadily in 2006 and 2007.

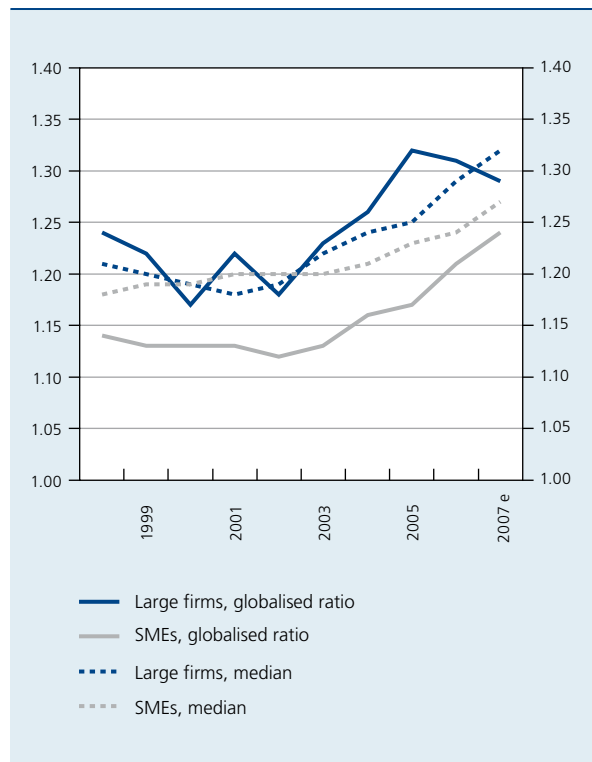
The average interest charges on financial debts provide a means of assessing the cost of recourse to borrowings. In 2007, in globalised terms these charges came to 5.9 p.c. for large firms and 7.8 p.c. for SMEs (cf. chart 6). The year 2007 was synonymous with a general increase in the cost of external financing. Having begun in late 2005, the rise in interest rates on the various categories of corporate loans persisted in 2007, owing to successive increases in the Eurosystem's key rates and, from the summer, the financial market tension generated by the subprime crisis. As chart 6 shows, these developments are reflected mainly in the accounts of large firms.

CHART 6 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS (percentages)



Source : NBB.

CHART 7 LIQUIDITY IN THE BROAD SENSE



Source : NBB.

3.3 Liquidity

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

In 2007, the globalised liquidity ratio in the broad sense came to 1.29 for large firms and 1.24 for SMEs (cf. chart 7). While the latter maintained the upward trend of recent years, that was not so in the case of large firms, which recorded a fall in the ratio despite a considerable increase in their current assets (+11 p.c.). The reason lies in the even larger increase in their short-term liabilities which – as already mentioned – is attributable to a firm in the energy sector. Nevertheless, the liquidity of large firms

is still above the average for the past decade. Moreover, the movement in the medians indicates that the majority of firms are better able to meet their short-term liabilities. Finally, as pointed out in previous editions of this article, the number of firms mentioning overdue debts to the tax authority and the NOSS has fallen steadily for the past ten years; such debts are generally a sign of serious cash flow problems.

Conclusion

It must be stressed that this analysis concerns the year 2007 only, and therefore does not permit any conclusions regarding developments in 2008, particularly the consequences of the current financial crisis.

In line with the previous year, economic activity continued to expand vigorously in 2007, recording growth of 2.8 p.c., compared to 2.9 p.c. in 2006. Despite the slowdown in the United States, external demand remained buoyant, while domestic demand for investment and consumption gained momentum. Overall, activity thus maintained a vigorous rate of expansion for almost two years.

However, the second half of 2007 brought the start of a slowdown. Though this subsequently became much more marked, it still remained relatively moderate in 2007, in the light of the accompanying developments in the external environment (financial market turmoil, rapid appreciation of the euro and rising price of commodities).

Consequently, with a growth rate of 4.8 p.c., the preceding years' upward trend in the value added at current prices of non-financial corporations was maintained in 2007. Since total operating expenses (and more particularly staff costs and depreciation) once again grew more slowly than value added, the net operating result increased for the sixth consecutive year. Between 2001 and 2007, it more than doubled, rising steadily from 17 to over 35 billion euro. As pointed out in previous editions of

this article, that growth is exceptional in historical terms, in both its duration and its scale. As examination of the operating margin confirms, it indicates an unprecedented ability on the part of firms to generate income for their shareholders.

Corporate financial health also continued to improve in 2007. Although the globalised ratios of large firms declined, that is attributable to just one or two isolated instances. Conversely, the trend in the median ratios reveals that the majority of firms, whatever their size, achieved higher profitability, solvency and liquidity. It was only the cost of interest charges on financial debts that increased in 2007, following successive increases in the Eurosystem key rates and, from the summer, the financial market tension due to the subprime crisis.

TABLE 1 ALL NON-FINANCIAL CORPORATIONS: MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1998 AND 2007
(millions of euro)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 e
Value added	108,272	112,546	121,045	123,532	125,295	130,829	139,504	145,872	154,721	162,156
Staff costs	63,756	66,960	70,986	73,734	76,114	77,326	79,973	82,367	85,944	90,769
Depreciation	19,981	21,193	22,863	23,678	23,892	22,859	23,023	23,882	25,143	26,340
Other operating expenses	7,348	6,763	8,028	8,974	8,020	8,963	9,088	9,678	10,913	9,713
Total operating expenses	91,085	94,917	101,876	106,386	108,025	109,148	112,084	115,927	121,999	126,822
Net operating result	17,186	17,629	19,169	17,146	17,270	21,681	27,420	29,945	32,722	35,334
Financial income	23,259	25,774	35,724	37,655	46,875	50,061	43,829	41,888	38,072	44,465
Financial charges	20,820	22,258	29,620	30,979	43,015	44,975	37,830	33,699	29,205	33,852
Financial result	2,440	3,516	6,104	6,676	3,859	5,085	5,999	8,189	8,868	10,614
Ordinary result	19,626	21,145	25,273	23,822	21,129	26,767	33,419	38,134	41,589	45,948
Exceptional result	2,911	5,798	2,822	1,438	-2,665	5,922	7	11,145	9,562	11,927
Net result before tax	22,537	26,943	28,095	25,261	18,465	32,689	33,426	49,279	51,152	57,874
Taxes on profits	5,276	5,822	6,491	6,479	6,156	6,587	7,347	8,145	8,527	9,243
Net result after tax	17,261	21,121	21,604	18,782	12,309	26,102	26,078	41,133	42,625	48,632
p.m. Net result after tax excluding the exceptional result	14,350	15,323	18,782	17,344	14,973	20,179	26,071	29,989	33,062	36,705

Source: NBB.

TABLE 2 LARGE FIRMS: MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1998 AND 2007
(millions of euro)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 e
Value added	84,875	87,246	93,840	95,281	96,425	100,653	107,082	111,521	117,617	122,132
Staff costs	(-) 50,616	52,865	56,007	58,142	59,935	60,809	62,558	64,228	66,645	70,200
Depreciation	(-) 14,932	15,704	16,919	17,465	17,494	16,388	16,152	16,581	17,310	18,069
Other operating expenses	(-) 6,017	5,317	6,483	7,345	6,389	7,262	7,236	7,800	8,979	7,652
<i>Total operating expenses</i>	71,565	73,886	79,409	82,951	83,818	84,459	85,945	88,610	92,934	95,922
Net operating result	13,310	13,360	14,431	12,330	12,607	16,194	21,137	22,911	24,683	26,210
Financial income	(+) 21,797	24,291	34,035	35,850	45,112	48,175	41,826	39,736	35,646	41,159
Financial charges	(-) 18,140	19,697	26,677	27,828	39,678	41,517	34,382	30,291	25,543	29,773
<i>Financial result</i>	3,657	4,594	7,358	8,022	5,435	6,658	7,444	9,445	10,103	11,386
Ordinary result	16,967	17,954	21,789	20,352	18,041	22,852	28,582	32,356	34,785	37,596
Exceptional result	(+) 2,313	4,875	2,035	873	-3,185	5,345	-852	9,865	7,852	10,215
Net result before tax	19,280	22,829	23,823	21,225	14,856	28,198	27,730	42,221	42,637	47,811
Taxes on profits	(-) 3,931	4,274	4,724	4,615	4,353	4,793	5,368	5,968	6,092	6,472
Net result after tax	15,349	18,555	19,099	16,609	10,503	23,405	22,362	36,253	36,545	41,339
<i>p.m. Net result after tax excluding the exceptional result</i>	13,036	13,680	17,064	15,737	13,689	18,059	23,214	26,388	28,694	31,124

Source: NBB.

TABLE 3 SMES: MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1998 AND 2007
(millions of euro)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 e
Value added	23,396	25,300	27,205	28,251	28,871	30,176	32,422	34,352	37,104	40,024
Staff costs	13,139	14,095	14,979	15,592	16,179	16,517	17,415	18,139	19,299	20,568
Depreciation	5,049	5,489	5,943	6,213	6,398	6,471	6,872	7,301	7,833	8,301
Other operating expenses	1,332	1,447	1,544	1,629	1,631	1,701	1,852	1,878	1,933	2,032
Total operating expenses	19,520	21,031	22,467	23,435	24,208	24,689	26,139	27,318	29,065	30,901
Net operating result	3,876	4,269	4,738	4,816	4,663	5,487	6,282	7,034	8,039	9,123
Financial income	1,462	1,483	1,689	1,805	1,762	1,885	2,003	2,152	2,427	3,306
Financial charges	2,680	2,561	2,943	3,151	3,337	3,458	3,448	3,408	3,662	4,079
Financial result	-1,217	-1,078	-1,254	-1,346	-1,575	-1,573	-1,445	-1,256	-1,235	-772
Ordinary result	2,659	3,191	3,484	3,470	3,088	3,914	4,837	5,778	6,804	8,351
Exceptional result	598	923	787	566	520	577	859	1,279	1,711	1,712
Net result before tax	3,257	4,114	4,272	4,036	3,609	4,491	5,696	7,057	8,515	10,063
Taxes on profits	1,345	1,548	1,767	1,863	1,803	1,794	1,979	2,177	2,436	2,770
Net result after tax	1,912	2,566	2,505	2,173	1,805	2,697	3,717	4,880	6,079	7,293
p.m. Net result after tax excluding the exceptional result	1,314	1,643	1,718	1,607	1,285	2,120	2,858	3,601	4,368	5,581

Source: NBB.

TABLE 4 MANUFACTURING INDUSTRY: MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1998 AND 2007
(millions of euro)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 e
Value added	39,682	39,749	42,689	42,402	42,853	44,240	45,807	46,830	49,642	49,560
Staff costs	23,890	24,325	25,105	26,159	26,502	26,328	27,054	27,222	27,899	28,953
Depreciation	7,882	7,984	8,479	8,799	8,674	7,933	7,740	8,017	8,372	8,136
Other operating expenses	1,812	1,722	1,851	2,459	1,929	2,876	2,034	2,097	2,758	1,705
<i>Total operating expenses</i>	<i>33,584</i>	<i>34,031</i>	<i>35,435</i>	<i>37,418</i>	<i>37,104</i>	<i>37,136</i>	<i>36,829</i>	<i>37,336</i>	<i>39,030</i>	<i>38,794</i>
Net operating result	6,098	5,717	7,254	4,985	5,749	7,104	8,978	9,494	10,613	10,766
Financial income	3,915	3,473	4,678	4,390	5,334	6,199	7,088	6,810	8,756	10,945
Financial charges	3,829	3,617	4,915	5,214	5,385	5,459	5,678	5,618	5,849	6,880
<i>Financial result</i>	<i>86</i>	<i>-144</i>	<i>-237</i>	<i>-824</i>	<i>-51</i>	<i>741</i>	<i>1,410</i>	<i>1,192</i>	<i>2,907</i>	<i>4,066</i>
Ordinary result	6,184	5,574	7,018	4,161	5,698	7,844	10,388	10,686	13,520	14,832
Exceptional result	656	921	1,033	1,072	-215	808	-729	7,034	2,526	3,889
Net result before tax	6,841	6,494	8,051	5,233	5,483	8,652	9,659	17,719	16,046	18,721
Taxes on profits	1,989	1,889	2,298	1,927	1,842	1,928	2,184	2,355	2,361	2,362
Net result after tax	4,852	4,605	5,753	3,305	3,641	6,725	7,476	15,365	13,685	16,359
<i>p.m. Net result after tax excluding the exceptional result</i>	<i>4,196</i>	<i>3,684</i>	<i>4,719</i>	<i>2,233</i>	<i>3,856</i>	<i>5,916</i>	<i>8,205</i>	<i>8,331</i>	<i>11,159</i>	<i>12,470</i>

Source: NBB.

TABLE 5 NON-MANUFACTURING BRANCHES: MOVEMENT IN THE MAIN COMPONENTS OF THE PROFIT AND LOSS ACCOUNT BETWEEN 1998 AND 2007
(millions of euro)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 e
Value added	68,590	72,797	78,356	81,129	82,443	86,589	93,696	99,043	105,079	112,596
Staff costs	39,866	42,636	45,881	47,574	49,612	50,998	52,918	55,145	58,045	61,816
Depreciation	12,099	13,209	14,383	14,879	15,218	14,926	15,283	15,865	16,771	18,311
Other operating expenses	5,537	5,041	6,177	6,515	6,091	6,087	7,054	7,581	8,154	7,901
<i>Total operating expenses</i>	<i>57,502</i>	<i>60,886</i>	<i>66,441</i>	<i>68,968</i>	<i>70,921</i>	<i>72,011</i>	<i>75,255</i>	<i>78,591</i>	<i>82,970</i>	<i>88,028</i>
Net operating result	11,088	11,912	11,915	12,161	11,521	14,578	18,441	20,451	22,109	24,568
Financial income	19,344	22,301	31,047	33,266	41,541	43,861	36,741	35,079	29,316	33,520
Financial charges	16,991	18,641	24,706	25,765	37,630	39,517	32,152	28,082	23,356	26,972
<i>Financial result</i>	<i>2,354</i>	<i>3,660</i>	<i>6,341</i>	<i>7,500</i>	<i>3,910</i>	<i>4,345</i>	<i>4,589</i>	<i>6,997</i>	<i>5,961</i>	<i>6,548</i>
Ordinary result	13,441	15,571	18,256	19,662	15,432	18,922	23,030	27,448	28,070	31,116
Exceptional result	2,255	4,878	1,789	367	-2,449	5,114	736	4,111	7,036	8,038
Net result before tax	15,696	20,449	20,044	20,028	12,982	24,036	23,767	31,559	35,106	39,154
Taxes on profits	3,287	3,933	4,193	4,551	4,314	4,659	5,164	5,790	6,166	6,881
Net result after tax	12,409	16,516	15,851	15,477	8,668	19,377	18,603	25,769	28,940	32,273
<i>p.m. Net result after tax excluding the exceptional result</i>	<i>10,154</i>	<i>11,638</i>	<i>14,063</i>	<i>15,110</i>	<i>11,117</i>	<i>14,263</i>	<i>17,866</i>	<i>21,657</i>	<i>21,903</i>	<i>24,235</i>

Source: NBB.

Annex 2

SECTORAL CLASSIFICATION

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

(1) Except 74.151 (management of holding companies).

Annex 3

DEFINITION OF THE RATIOS

	Item numbers allocated	
	full format ⁽¹⁾	abbreviated format
1. Return on equity		
Numerator (N)	70/67 + 67/70	70/67 + 67/70
Denominator (D)	10/15	10/15
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
10/15 > 0 ⁽²⁾		
2. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
3. Degree to which borrowings are covered by cash flow		
Numerator (N)	70/67 + 67/70 + 630 + 631/4 + 6501 + 635/7 + 651 + 6560 + 6561 + 660 + 661 + 662 – 760 – 761 – 762 + 663 – 9125 – 780 – 680	70/67 + 67/70 + 8079 + 8279 + 631/4 + 635/7 + 656 + 8475 + 8089 + 8289 + 8485 – 9125 – 780 – 680
Denominator (D)	16 + 17/49	16 + 17/49
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
4. Average interest charges on financial debts		
Numerator (N)	650	– 65 – 9125 – 9126
Denominator (D)	170/4 + 42 + 43	170/4 + 42 + 43
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
5. Liquidity in the broad sense		
Numerator (N)	3 + 40/41 + 50/53 + 54/58 + 490/1	3 + 40/41 + 50/53 + 54/58 + 490/1
Denominator (D)	42/48 + 492/3	42/48 + 492/3
Ratio = N/D		

(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 2007

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Introduction

Introduced in 1996, the social balance sheet contains a set of information concerning various aspects of employment in enterprises. That information can be used to analyse the trend in employment, staff costs and working time, the structure of employment at the end of the financial year, staff movements and employee training. In addition, the social balance sheet was intended to provide information on the use which businesses made of various employment promotion measures. However, the constant adjustments to employment policy have rendered that record obsolete and hence unusable, despite the efforts of the legislature to update it. In the new version of the social balance sheet, applicable to financial years ending from 1 December 2008, this table will no longer appear since the NSSO is able to supply the information requested from the multi-purpose declaration that businesses have been required to file since 2003. Another important change concerns the tables relating to training, which have been modified in order to take better account of all corporate

training efforts: formal training, informal training and initial training will be recorded in separate tables. In addition, the report on persons employed at the end of the financial year will from now on include a breakdown by gender and standard of education for both the abbreviated and full-format balance sheets; that information will therefore disappear from the detailed breakdown of staff recruitment and departures, which was available for full-format accounts only.

This article discusses the results of the social balance sheets filed for 2007. It is divided into five main sections. The first section examines the trend in employment between 2006 and 2007. It also sets out the main results of an analysis of employment dynamics and the contribution made by firms' demography to this. The second section analyses staff movements recorded in 2007. The third comments on the structure of employment (particularly working arrangements, type of employment contracts and the use of temporary workers), and the last two focus respectively on staff costs and training.

The results set out in this article are obtained, for each financial year, from uniform populations of firms which have filed a social balance sheet meeting a range of quality criteria⁽¹⁾. Annex 1 contains a brief account of the methodological principles governing the construction of these populations and the regional breakdown of firms belonging to them. The breakdown by branch of activity is based on the sections and divisions of the NACE-Bel nomenclature (2003 version) reproduced in Annex 2. As in previous years, Annexes 2-9 contain a series of detailed indicators per branch of activity. Annexes 10-12 break

(1) It should be noted that the obligation on large and very large NPIs to file standardised accounts, imposed from the 2006 financial year, causes a break in the historical data series. All NPIs employing more than 20 persons have been required to complete a social balance sheet since 1998. In most cases they submitted a single social balance sheet to the National Bank. But although they have long been subject to this obligation, some of these NPIs did not comply. Since 2006, the standard models for the annual accounts of large NPIs (meeting or exceeding more than one of the following criteria: annual average number of workers employed (in full-time equivalents) equal to 5; total annual income other than extraordinary income (excl. VAT) equal to 250,000 euro; balance sheet total equal to 1,000,000 euro), or very large NPIs (if the average annual number of workers employed (in full-time equivalents) exceeds 100 persons or if more than one of the following criteria is exceeded: annual average number of workers employed (in full-time equivalents) equal to 50; total annual income other than extraordinary income (excl. VAT) equal to 6,250,000 euro; balance sheet total equal to 3,125,000 euro) include a social balance sheet, which encourages them to fulfil their legal obligations. In addition the formalisation of the accounting obligations has led to the filing of a single set of accounts for some entities from 2006 or 2007, whereas in previous years they had filed multiple social balance sheets.

down some of those indicators according to the region to which the firms belong. Annex 13 contains the new social balance sheet form applicable to firms filing full-format accounts for years ending from 1 December 2008⁽¹⁾.

Most of the results of this analysis are obtained from a constant reduced population⁽²⁾ of firms, which permits analysis of the movement in a range of variables between the 2006 and 2007 financial years, whereas comparison with the data relating to the complete population for 2006 would introduce a bias which would distort the conclusions. However, the use of a constant population does impose constraints. By definition, the firms which are included in that population must have filed social balance sheets for two successive years. This automatically excludes new businesses and companies which have disappeared (e.g. because they have gone bankrupt or

been taken over), possibly causing some discrepancies between the changes observed in the constant population (referred to as the reduced population in the rest of this article) and those recorded for the total population. However, the adoption of this approach is justified in view of the considerable length of time required to obtain information for all firms, and the safeguards offered by the representativeness of the reduced population.

The reduced population comprises 44,718 firms which, on the basis of the 2006 data, employed 1,312,274 workers, representing respectively 56 p.c. of firms in the total population and 70 p.c. of the workers which they employ.

The breakdown of firms by branch of activity is based on the NACE-Bel codes. Altogether, workers employed in the trade, transport and communication branch represent one-third of the reduced population, and industry 28 p.c. The other branches are less important in relative terms, namely 19 p.c. for the financial, real estate and business services branch, 12 p.c. for other services and 7 p.c. for construction. Agriculture remains decidedly marginal, which is why it does not appear in the tables and charts in this article (except in the annexes).

- (1) The new version of the social balance sheet applicable to firms filing full-format accounts is shown in Annex 13. The document is also available on the National Bank's website (http://www.nbb.be/DOC/BA/SocialBalance/Models/Bilan%20social_C_17032008.pdf), as is the form applicable to firms filing accounts in the abridged format. (http://www.nbb.be/DOC/BA/SocialBalance/Models/Bilan%20social_A_17032008.pdf).
- (2) Firms have seven months from the end of the financial year to file their social balance sheets at the Central Balance Sheet Office. In view of the extra time needed to check the data, the full set of social balance sheets was not available on 8 September 2008, the date on which the 2007 figures were extracted.

TABLE 1 CHARACTERISTICS OF THE TOTAL AND REDUCED POPULATIONS IN 2006
(percentages of the total, unless otherwise stated)

	Total population		Reduced population	
	Number of firms	Number of employees ⁽¹⁾	Number of firms	Number of employees ⁽¹⁾
<i>p.m. Units</i>	79,402	1,863,641	44,718	1,312,274
<i>(in percentage of the corresponding data for the total population)</i>			(56.3)	(70.4)
Breakdown by branch of activity				
Agriculture	1.7	0.5	1.6	0.4
Industry	13.2	24.6	15.3	28.4
Construction	14.7	7.4	15.2	7.3
Trade, transport and communication	42.9	30.9	41.8	32.8
Financial, real estate and business services	20.1	17.1	19.8	18.6
Other services ⁽²⁾	7.3	19.5	6.2	12.5
Breakdown by size of firm⁽³⁾				
Small firms (up to 50 FTEs)	94.6	34.0	93.0	29.0
Medium-sized firms (over 50 to 250 FTEs)	4.4	21.7	5.7	21.8
Large firms (over 250 FTEs)	1.0	44.3	1.3	49.2

Source: NBB (social balance sheets).

(1) Sum of items 1001 (full-time workers) and 1002 (part-time workers).

(2) Health and social work; community, social and personal services.

(3) Determined according to the value of item 1003 (FTEs) in 2006.

The classification of firms by size is based on the average number of workers expressed as full-time equivalents (FTEs)⁽¹⁾. Small firms with no more than 50 FTEs, or 93 p.c. of firms in the reduced population, employed around 29 p.c. of that population's workforce in 2006, well below the figure of 34 p.c. recorded for the total population. Medium-sized firms, employing 50 to 250 FTEs, accounted for 22 p.c. of the workforce in the reduced population, a proportion similar to that for the total population. Large firms, with over 250 FTEs, employed just under half of the workforce in firms in the reduced population, compared to 44 p.c. in the total population. The results obtained from the reduced population are therefore influenced by the over-representation of large firms.

1. General characteristics of employment developments

1.1 In the reduced population of firms between 2006 and 2007

On average, the number of workers employed in the 44,718 firms in the reduced population increased by 29,605 units, representing a rise of 2.3 p.c. between 2006 and 2007. Expressed in FTEs, the growth in the volume of employment was slightly lower at around 2.1 p.c. The employment expansion is due both to the rise in full-time workers and the increase in part-time workers – up by 15,856 and 13,749 units respectively. In relative

terms, it is the number of part-timers that has shown the largest increase at 4.3 p.c., compared to 1.6 p.c. for full-time workers. On the basis of the situation at the end of the year, employment grew by 1.9 p.c. – or 1.8 p.c. in terms of FTEs – indicating a fall in the rate of job creation during the year, consistent with the economic slowdown observed in 2007.

At the end of the year, the firms considered thus employed just over 25,000 more workers than a year earlier. With 14,396 additional persons recorded on the staff register, female workers made a larger contribution to this rise than male workers. In regard to the type of working arrangement, the number of full-time employees increased by 13,353 units, with fairly similar contributions from male and female staff. Conversely, it was mainly women who influenced the increase in the number of part-timers registered at the end of the year, since they accounted for 71 p.c. of the rise in this staff category. However, it is worth noting that the number of men employed part time increased at a slightly higher rate than the number of women, at 4.2 p.c. against 3.4 p.c.

The growth of the average number of persons employed was generated mainly by small and medium-sized enterprises which recorded an increase in their workforce of 13,000 and 10,000 units respectively. Large firms recorded a rise of almost 6,500 workers. While full-time workers accounted for most of the increase in employment in SMEs, the opposite applied in firms with over 250 FTEs, where part-timers accounted for 83 p.c. of the expansion in employment.

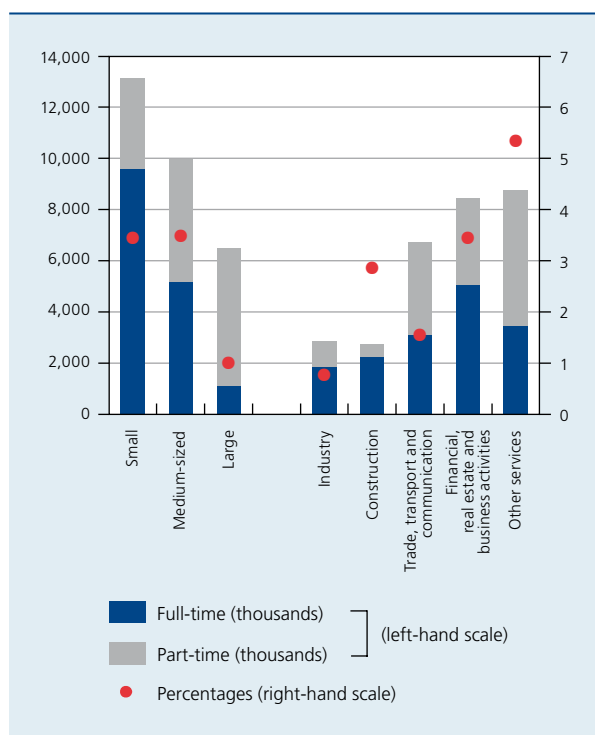
(1) Item 1003 in the social balance sheet.

TABLE 2 EMPLOYMENT DEVELOPMENT BETWEEN 2006 AND 2007
(reduced population)

	Persons employed			FTEs
	Full-time	Part-time	Total	
Annual average				
Units	15,856	13,749	29,605	25,034
Percentages	1.6	4.3	2.3	2.1
As at 31 December				
Units	13,353	11,656	25,009	21,664
of which:				
Men	7,213	3,400	10,613	9,695
Women	6,140	8,256	14,396	11,970
Percentages	1.3	3.6	1.9	1.8

Source: NBB (social balance sheets).

CHART 1 CHANGE IN EMPLOYMENT BETWEEN 2006 AND 2007 : BREAKDOWN BY FIRMS' SIZE AND BRANCH OF ACTIVITY ⁽¹⁾
(annual averages, reduced population)



Source : NBB (social balance sheets).

(1) Agriculture was disregarded owing to its minor relative importance.

Employment expanded in all the main branches of activity, albeit in varying proportions. The strongest increases, between 8,000 and 9,000 additional workers, were recorded in financial, real estate and business activities – the sub-branch covering real estate and business activities accounting for most of the rise – and in the other services branch which includes health and social work. In relative terms, this was the branch recording the biggest increase, at 5.4 p.c. The number of workers also showed a marked rise in firms in the trade, transport and communication branch (6,710 additional workers) particularly in firms active in trade and repairs.

1.2. Employment dynamics and contribution of firms' demography ⁽¹⁾

The annual data taken from the social balance sheets were used to construct a longitudinal database covering all firms active in NACE-BEL branches of activity C to K ⁽²⁾ – i.e. the secondary sector in the broad sense (including energy supply and construction) and market services – which filed a social balance sheet at the National Bank's Central Balance Sheet Office between 1998 and 2006.

This database was used notably to determine how the individual changes in the behaviour of firms affect total employment throughout the business cycle. The study deals with the period 1998-2006 and takes account of the heterogeneity of both firms and workers.

The concepts of job creation and destruction rates are intended to identify individually the firms which have recorded an increase in employment and those recording a decline in their workforce between two consecutive years, to permit separate recording of increases and reductions in the workforce, known as gross job flows. It is therefore possible to measure, year after year, the respective intensity of these movements by relating the gross flows to average employment in the firm. Combining the job creation and job destruction rates gives the net change in employment.

This leaves out of account both firms where employment has remained stable and firms for which no employment data are available for one of the two years in question. Net employment growth therefore represents an approximation of the actual change in employment observed in the population of all firms employing paid staff.

In our analysis population, the job creation rate averaged 8.8 p.c. between 1998 and 2006, while the job destruction rate came to 7.2 p.c. These rates are 4 to 5 times higher than the net employment growth rate observed, which averaged 1.6 p.c. per annum.

The job creation rate is closely linked to the business cycle. The correlation coefficient between this variable and volume GDP growth is 0.74 for the period considered. Conversely, though the correlation between the job destruction rate and economic activity is negative, as expected, it is much weaker since the coefficient is -0.40.

This last finding is borne out by other studies. According to the literature, an adjustment in the workforce via job destruction is generally associated with a flexible employment market, as is the case, for example, in the United States. Thus, the job reallocation rate – i.e. the sum of the job creation and job destruction rates – shows a negative correlation with GDP growth in the United States, which means that firms can easily cut back their employment during a recession. Conversely,

(1) This section reflects the main results of the study by Heuse and Saks (2008) and is based on a different population from the one used in the rest of this article.

(2) I.e. C : Mining and quarrying ; D : Manufacturing ; E : Electricity, gas and water supply ; F : Construction ; G : Wholesale and retail trade, repair of motor vehicles and personal and household goods ; H : Hotels and restaurants ; I : Transport and communication ; J : Financial intermediation and K : Real estate, renting and business activities.

Box – How to calculate job creation and destruction rates

For example, imagine an economy consisting of three firms. During the period of observation, no firms are created and none disappear.

EMPLOYMENT

(persons)

	Workforce at the end of the period		Average workforce in t	Change in employment from $t - 1$ to t
	$t - 1$	t		
Firm 1	286	258	272	-28
Firm 2	80	100	90	20
Firm 3	10	24	17	14
Total employment in the economy	376	382	379	6

There are two different sets of firms in the economy:

- firms recording a positive net change in employment (in this case, firms 2 and 3);
- firms recording a negative net change in employment (in this case, firm 1).

Job creation rate in the economy

This is the sum of the positive changes in employment (namely, the total jobs created): $20 + 14 = 34$
 expressed as a function of total employment in the economy (379 persons)
 i.e. a job creation rate in t : 9.0 p.c.

Job destruction rate in the economy

This is the sum of the negative changes in employment (namely the number of jobs destroyed),
 in absolute terms: 28
 expressed as a function of total employment in the economy (379 persons)
 i.e. a job destruction rate in t : 7.4 p.c.

Net growth of employment in the economy

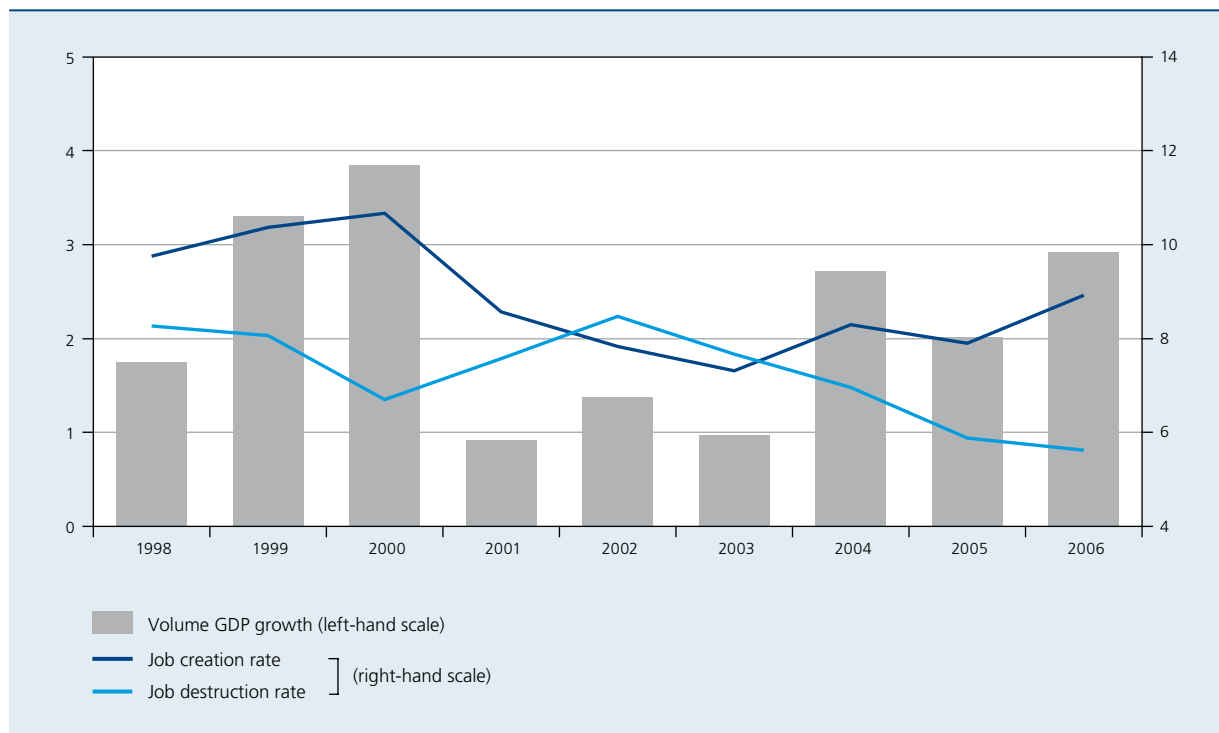
This is the difference between the rate of job creation and the rate of job destruction
 i.e.: $9.0 \text{ p.c.} - 7.4 \text{ p.c.} = 1.6 \text{ p.c.}$

in Continental European countries, where the labour market is more rigid, adjustments generally take place via job creation and generally, the negative correlation between the reallocation rate and economic activity is not confirmed. This is true for Belgium: during the period under review, this correlation coefficient is

positive. In particular, Belgian employment protection legislation and the labour shortages seen for certain occupations and certain branches of activity may limit the scale of redundancies during a slowdown in activity, especially where the slowdown is considered to be temporary or minor.

CHART 2 JOB CREATION AND DESTRUCTION RATES: INFLUENCE OF THE BUSINESS CYCLE

(percentages)



Sources: NAI, NBB.

Over the period 1998-2006, the job creation rate peaked (at 10.7 p.c.) in 2000, when GDP grew by 3.8 p.c., the maximum observed during that period. In that year, the job destruction rate reached a low point of 6.7 p.c. During the ensuing slowdown in activity, the job creation rate declined gradually while, conversely, the job destruction rate increased. In 2002 and 2003, the net employment growth rate thus became negative. In the following three years, a cyclical upswing emerged and reversed the trends. The job creation rate picked up, but without regaining its 2000 level, while the destruction rate fell to its lowest level during the period, namely 5.6 p.c. in 2006.

By using the same indicators based on Davis, Haltiwanger and Schuh (1996), it is also possible to examine the impact which the creation and disappearance of firms has on the movement in aggregate employment. For that purpose, firms are divided into four sub-sets which are exhaustive and mutually exclusive.

The set of firms recording a positive change in employment between $t-1$ and t is divided into two sub-groups: the first comprises incoming firms which for the first time

report paid employment which is not zero in t , and the second comprises established firms where employment increases between $t-1$ and t .

Similarly, the set of firms recording a negative change in employment between $t-1$ and t is divided into two sub-groups: the first comprises firms which disappear between $t-1$ and t , and the second comprises established firms where employment declines between $t-1$ and t .

For the total population examined, 27 p.c. of job creation (or 2.4/8.8) is due to the creation of firms, while the remaining 73 p.c. is attributable to established firms. The disappearance of firms accounts for about 30 p.c. (or 2.2/7.2) of job destruction, while the remaining 70 p.c. corresponds to the contraction of employment in established firms.

Comparable results exist for Austria, Germany and Italy (Stiglbauer et al., 2003), where incoming firms account respectively for 32, 27 and 32 p.c. of total job creation, while outgoing firms contribute to respectively 34, 23 and 33 p.c. of the total jobs destroyed each year.

TABLE 3 JOB FLOWS AND FIRM DYNAMICS
(percentages, annual averages 1998-2006)

	Job creation rate ⁽¹⁾			Job destruction rate ⁽¹⁾		
	Total	Incoming firms	Established firms	Total	Outgoing firms	Established firms
Total NACE-Bel C to K	8.8	2.4	6.4	7.2	2.2	5.1
of which:						
Manufacturing	6.0	1.5	4.4	6.3	1.6	4.7
Services	10.3	2.9	7.4	7.7	2.5	5.2

Source: NBB (social balance sheets).

(1) The various rates are calculated here in relation to the same denominator, namely total employment in the sector considered.

The methodology used to calculate the effect of firms' demography on movements in employment is arbitrary in some respects. To illustrate this point, imagine a mature firm experiencing serious financial problems. In general, the firm will begin by cutting its expenditure and modifying its human resources management policy, before reviewing its recruitment policy and possibly making staff redundant. If the firm eventually goes out of business, at the end of a process which often takes several years, it is only the final change in its employment which is attributed to the firm's disappearance. In that sense, the method underestimates the real impact of disappearing firms on the total job destruction.

2. Staff movements

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

The social balance sheet contains a specific table showing recruitment of workers at the time of their entry in the firm's staff register, and staff departures corresponding to the termination of their employment contract during the year. These staff movements were greater in 2007 than in 2006. Taking all firms in the reduced population, recruitment was 7.8 p.c. higher than in the previous year and departures were up by 10.4 p.c. Altogether, net recruitment came to 21,052 persons in 2007⁽¹⁾, which was lower than the figure of 31,017 recorded a year earlier. This fall in net inflows concerned all sizes of firms, although in varying proportions; in contrast to the situation in small and large firms, the decline was very modest in medium-sized firms.

(1) Staff changes recorded as at 31 December year-on-year (25,009 units in table 2) are not always equal to the balance of staff recruitment and departures, owing to the existence of errors in the social balance sheets filed.

Firms filing full-format accounts are required to supply more detailed information on staff recruitment and departures. The information relates to the characteristics of the newly recruited workers and those whose contract has ended. Apart from the working arrangement – a detail also supplied in abbreviated accounts – it also concerns the type of employment contract, gender, standard of education and, if appropriate, the reason for termination of the contract. Firms required to submit full-format accounts represented 18.3 p.c. of the total number of firms in the reduced population in 2007, but 77.4 p.c. of the average workforce. The level of their staff recruitment and departures, which was higher than a year earlier, implied a net inflow of 14,182 persons in 2007, slightly fewer than in 2006.

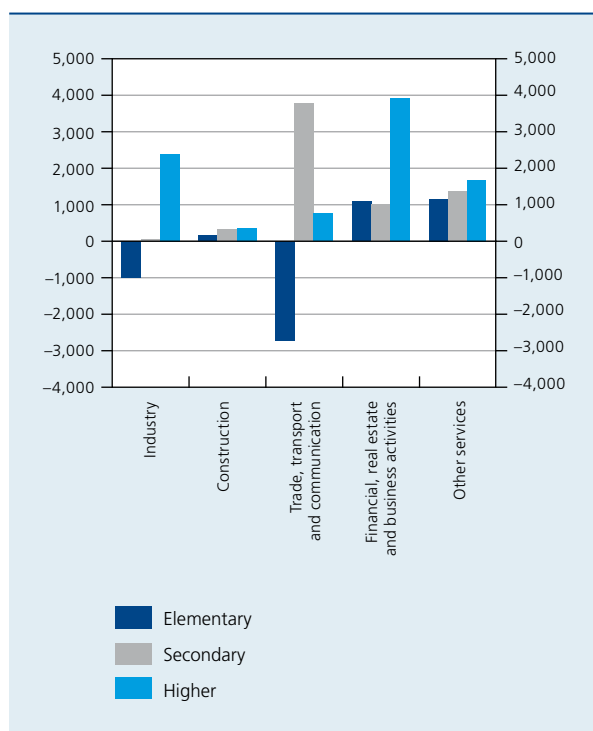
Continuing a trend seen in previous years, in 2007 the net recruitment of women in firms filing full-format accounts (7,885 units) exceeded male net recruitment (6,297 units).

TABLE 4 STAFF RECRUITMENT AND DEPARTURES
(persons, reduced population)

	2006	2007
Recruitment	511,234	550,983
of which: full-format accounts ..	282,622	303,820
Departures	480,217	529,931
of which: full-format accounts ..	267,354	289,638
Net recruitment	31,017	21,052
of which: full-format accounts ..	15,268	14,182

Source: NBB (social balance sheets).

CHART 3 NET STAFF RECRUITMENT IN 2007: BREAKDOWN OF WORKERS BY STANDARD OF EDUCATION AND BRANCH OF ACTIVITY⁽¹⁾
(persons, reduced population, full-format accounts)



Source: NBB (social balance sheets).

(1) Agriculture is disregarded because of its minor relative importance.

The net increase in the workforce recorded in firms filing full-format accounts was due to the combination of net recruitment of workers with higher education qualifications (9,088 units) or certificates of secondary education (6,473 units) and net departures of holders of certificates of elementary education (1,379 units). Although this tallies with what is seen in the latest social balance sheets, the net flow of persons with higher education qualifications was smaller than the year before (down by 2,705 units). Net departures of low-skilled workers were less pronounced (down by 1,318 units). All the main branches of activity recorded net recruitment of highly-skilled staff, in varying proportions. Net departures of low-skilled workers concerned more specifically firms active in industry and those belonging to the trade, transport and communication sector. The efforts which those firms have to make in order to compete are often reflected in staff restructuring, which primarily affects this category of workers. In industrial firms, which are older, these net departures are also attributable to the retirement of staff who are, on average, less skilled. Conversely, in contrast to what happened in 2006, recruitment of medium-skilled staff exceeded departures

in all branches, and more specifically in the trade, transport and communication sector which recorded more net recruitment of persons with secondary level qualifications than highly-skilled workers.

2.2 Expansion of part-time working

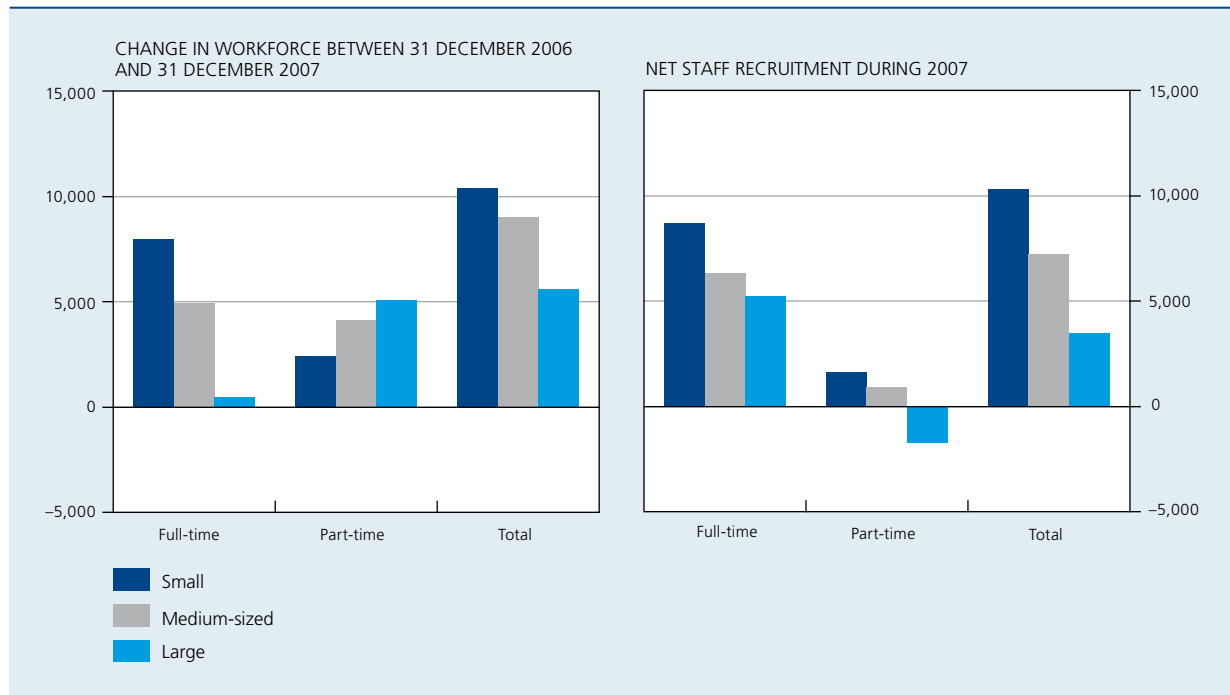
The importance of part-time working in the expansion of employment between one year and the next is evident in the social balance sheets. The choice of this working arrangement satisfies several objectives. It can notably attenuate the effects of restructuring in some firms, keep people in employment longer as they approach retirement, or make it easier for individuals to achieve a better work-life balance.

Various career break schemes encourage individual reductions in working time. The time credit scheme – applicable in the private sector – enables people to temporarily take a total or partial break from their career. During the period of suspension of the employment contract or reduction in hours worked, the worker qualifies for an allowance paid by NEO. According to NEO's annual report, in 2007 224,021 workers received an allowance for adjusting their working time. Of these, half were recorded in the time credit scheme. The most successful type of career break is the one-fifth reduction in working time, as 61 p.c. of workers in the time credit scheme chose that option. The flexibility offered by the time credit was quite popular with men, and in 2007 their share in this scheme came to 37 p.c., the same as in 2006. Workers aged 50 and over represent the major part of the time credit scheme: their share has risen steadily to reach 55.7 p.c. in 2007. That is a considerable increase compared to their 41 p.c. share in 2003.

The changing relative proportions of full-time and part-time workers originate not only from staff recruitment and departures but also from internal changes, e.g. when workers switch from full-time to part-time work. In the social balance sheets, the scale of such changes can only be ascertained by comparing staff numbers between two year-end dates and external staff movements during the year.

The expansion of part-time working was not on the same scale in all firm size classes, and did not always originate from the same source. In large firms, the part-time workforce expanded by 5,105 units between 31 December 2006 and 2007, while the full-time workforce barely increased during that period. This development is due mainly to changes in working arrangements within the firm. In fact, examination of external movements shows

CHART 4 STAFF MOVEMENTS IN 2007 : BREAKDOWN BY WORKING ARRANGEMENTS AND FIRM SIZE
(persons, reduced population)



Source : NBB (social balance sheets).

that this category of firms recorded net departures of part-time workers and substantial net recruitment of full-time workers during the year. In medium-sized firms, switching to part-time work was also a decisive factor: while the number of part-timers increased in roughly the same proportions as full-time workers between 31 December 2006 and 2007, expanding by 4,129 and 4,904 persons respectively, net recruitment of part-time workers was quite modest. In small firms it was mainly full-time workers who contributed to the rise in employment between 2006 and 2007. The part-time workforce expanded by 2,422 persons, with internal changes reinforcing the net recruitment of workers under this type of arrangement.

2.3 Type of employment contracts

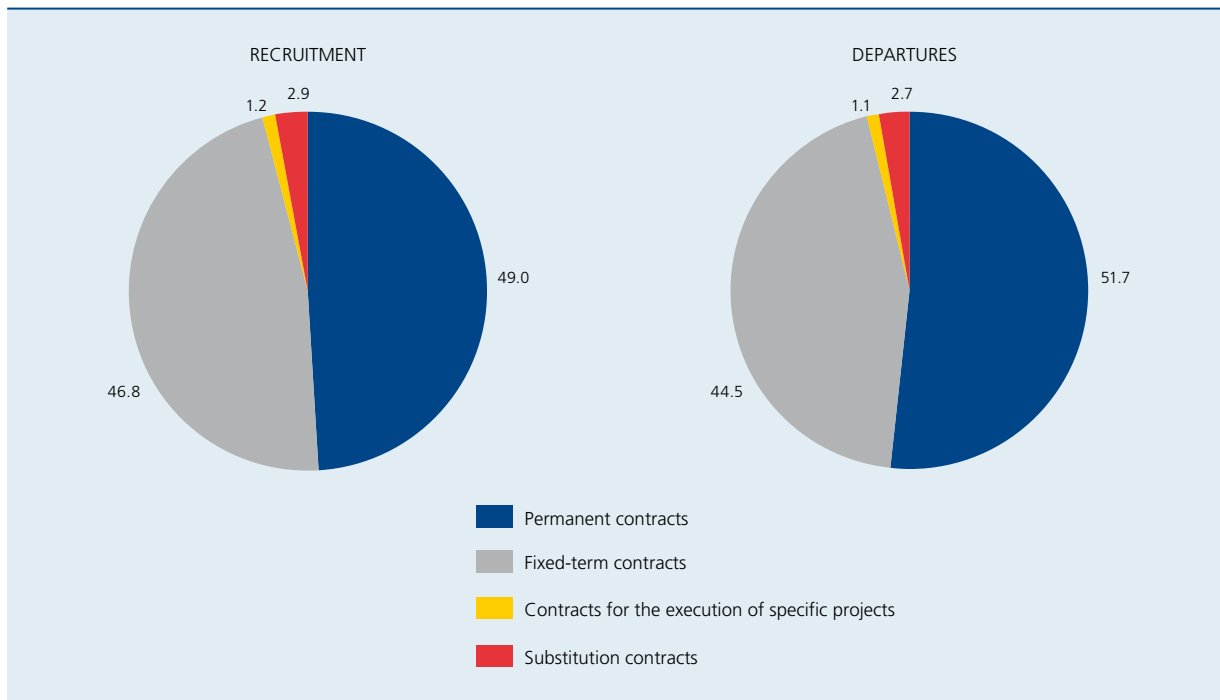
Firms in the reduced population filing full-format accounts stated that 49 p.c. of staff recruitment and 51.7 p.c. of departures recorded in 2007 concerned workers on permanent contracts, while the respective figures were 46.8 and 44.5 p.c. for staff on fixed-term contracts. Contracts for the execution of a specific project and substitution contracts together represented around 4 p.c. of recruitment and departures.

The turnover rate in the case of staff recruited for a fixed term – including those taken on to execute a specific project or for substitution purposes – is high by nature. Despite the supposedly more stable link with the employer, staff employed on permanent contracts do exhibit some mobility as a result of natural wastage or the desire of either party to terminate the contract. The staff turnover rate provides an indication of external mobility: it is calculated by comparing staff departures during the year with the number of staff recorded at the beginning of the year. In 2007, this rate was 15.2 p.c., or 0.6 percentage point higher than the year before. It was small firms – where the rate of staff replacement is traditionally higher – that recorded the biggest increase in staff turnover, up from 24.9 to 27.2 p.c. in 2007, compared to 18.6 and 11.8 p.c. respectively in medium-sized and large firms in 2007. These differences, which are seen every year, may be due notably to greater opportunities for internal mobility in large firms which also tend to have a more structured approach to pay progression. These differences are also reflected at the level of branches of activity, as some of them tend to have a higher concentration of large firms. Thus, in industry (especially energy and water), health and social work (which includes hospitals) and in financial and insurance services, the rate of staff turnover is below average. In the transport and communication

CHART 5

GROSS STAFF RECRUITMENT AND DEPARTURES BROKEN DOWN BY TYPE OF CONTRACT IN 2007

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



Source : NBB (social balance sheets).

sector the turnover rate is around 4 percentage points below the average. Conversely, some branches of activity record particularly high external mobility. That applies, for instance, to real estate and business services, which comprise firms of more varied sizes. The type of activities also determines to some extent the scale of staff turnover. In community, social and personal services, and even more obviously in the hotel and restaurant trade, the respective turnover rates are 28 and 80 p.c. These very high replacement rates are recurrent and may be attributed partly to less favourable pay and working conditions. However, it should be pointed out that in these branches the social balance sheets record only part of the total volume of employment.

2.4 Reasons for leaving

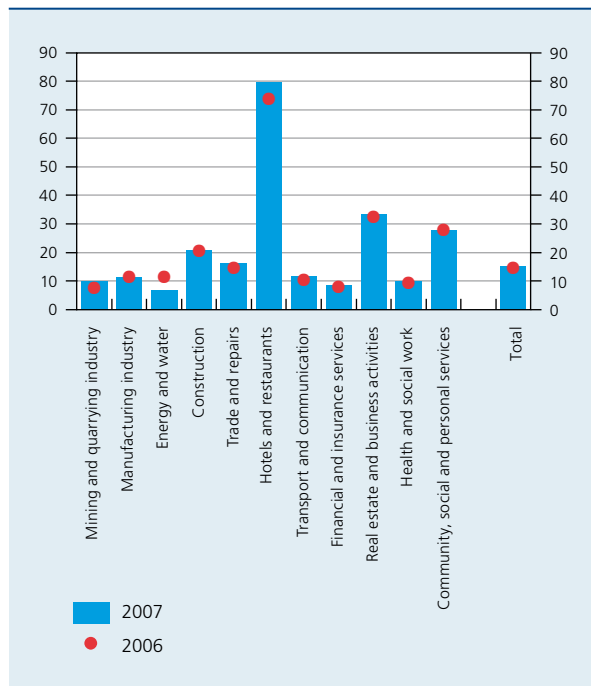
When recording staff departures, firms filing full-format accounts are required to specify the reason for termination of the contract. As in previous years, around half of departures are due to the termination of a temporary contract. In 2007, 31 p.c. of contract terminations were due to voluntary departure, the same proportion as in the previous year, reflecting the relative dynamism of the labour market. In fact, the ratio of voluntary departures

tends to be higher in years of cyclical upswing, as workers have more chance of finding employment elsewhere. Among the other causes, 16 p.c. of departures were due to redundancies. Staff taking early retirement or retirement accounted respectively for 3.1 and 2.3 p.c. of those leaving.

The relative importance of the reasons for terminating contracts vary according to firm size, and even more so, according to the firm's branch of activity. In small firms, termination of temporary contracts accounted for only 31 p.c. of departures. It was workers leaving voluntarily – probably influenced by the more limited opportunities for internal mobility – who accounted for the majority of the staff departures (almost 52 p.c.). Voluntary departures represent a smaller proportion in large firms. Conversely, compared to SMEs, large firms have higher levels of redundancies and staff taking early retirement or retirement. Firms employing over 250 FTEs accounted for around 76 p.c. of staff taking early retirement or retirement in the population considered.

At the level of branches of activity, termination of a temporary contract was the reason for almost 70 p.c. of departures in firms in the other services sector which, as already mentioned, includes the health sector and

CHART 6 RATE OF TURNOVER ⁽¹⁾ FOR WORKERS UNDER PERMANENT CONTRACTS IN 2006 AND IN 2007
(percentages, reduced population, full-format accounts)



Source: NBB (social balance sheets).

(1) Ratio between the number of departures recorded in t and the number of staff at the end of year t minus recruitment and plus departures recorded during the year. Agriculture was disregarded because of its minor relative importance.

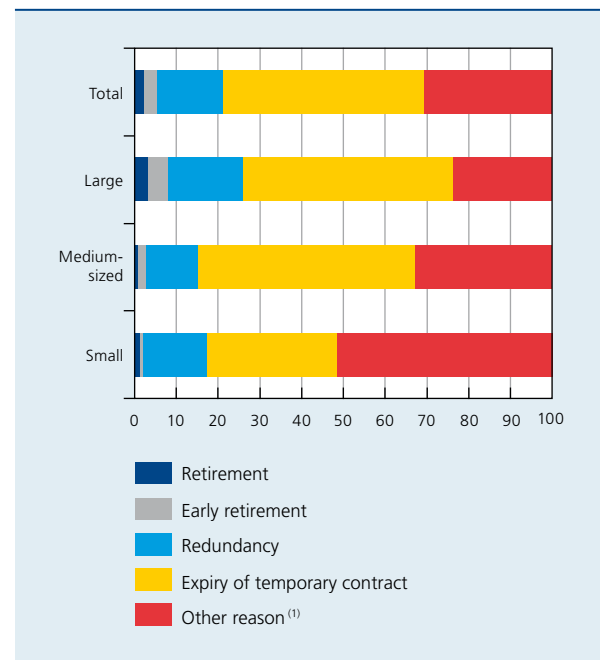
community, social and personal services. This was also a major reason for leaving in the trade, transport and communication sector. In the case of firms in the construction sector, 60 p.c. of departures were due to people leaving voluntarily. In industry, the percentage leaving for this reason was also above average. Financial, real estate and business services also deviated from the average in that just over a quarter of departures were due to redundancy. Finally, regarding other reasons for leaving, it is the industrial sector where early retirement was most widespread, representing 10 p.c. of departures. This branch – which tends to consist of large firms – accounted for 60 p.c. of total early retirement.

3. Structure of employment

3.1 Full-time and part-time work

Part-time work has expanded steadily in firms required to file a social balance sheet. While one in five workers was employed part time in 1998, that proportion had risen to

CHART 7 GROSS STAFF DEPARTURES IN 2007 : BREAKDOWN BY REASON AND FIRM SIZE
(percentages of the total, reduced population, full-format accounts)



Source: NBB (social balance sheets).

(1) Voluntary departures by mutual agreement between the parties, or death in service.

one in four by 2004. It continued to increase significantly thereafter, particularly between 2005 and 2006, probably because a larger number of NPIs – which often have a higher proportion of part-time staff – were included in the total population from 2006, following the obligation imposed on the larger ones to submit standardised accounts to the Central Balance Sheet Office.

In the reduced population there was a further rise in the proportion of part-time workers, up by 1.7 p.c. between 2006 and 2007. An increase was recorded for both men and women. The proportion of women working part time – already very high – increased by a further 0.5 p.c. However, it was men who recorded the biggest increase (2.9 p.c.), though admittedly starting from a much lower level. If these percentages are applied to the figures for the total population in 2006, it seems that almost 52 p.c. of women and 11 p.c. of men were working part time in 2007.

An increase in part-time working was evident in all firm size classes and in all branches of activity between 1998 and 2007. However, part-time working is very unevenly distributed, as is clear from the figures obtained for 2007

TABLE 5 DEVELOPMENTS IN PART-TIME WORKING BETWEEN 1998 AND 2007

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

	Men	Women	Total
Total population			
1998	6.2	43.0	20.0
1999	6.7	43.7	20.8
2000	7.0	44.0	20.7
2001	7.3	44.8	21.3
2002	8.1	46.5	22.8
2003	9.1	48.0	24.1
2004	9.8	49.0	25.2
2005	10.3	50.4	25.9
2006	10.8	51.6	27.4
Reduced population			
2006	9.7	49.6	24.3
2007	10.0	49.9	24.7
<i>p.m. Percentage changes</i>	2.9	0.5	1.7

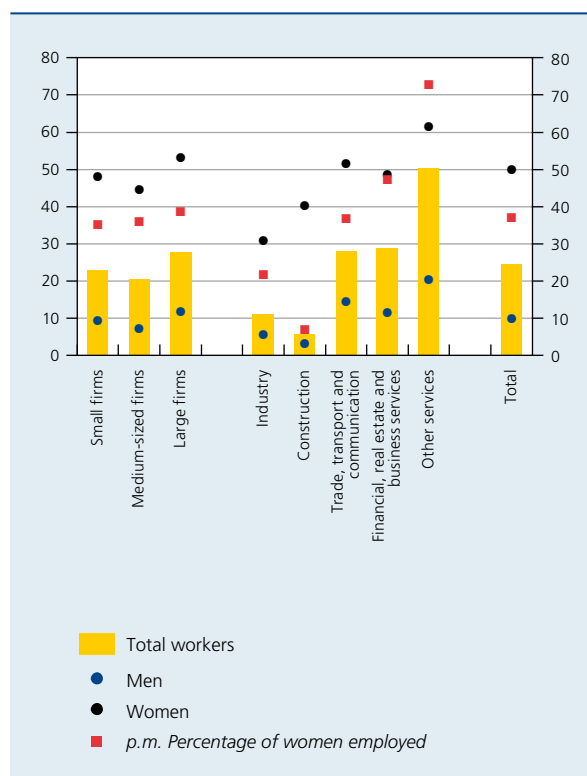
Source: NBB (social balance sheets).

for the reduced population. For example, it is less common in medium-sized firms (20.5 p.c. of workers) than in small (23 p.c.) or large firms (27.7 p.c.). The reasons for greater use of this working arrangement are probably not the same in small companies as in large ones. In the former, it is primarily an instrument for adjusting the volume of employment in line with activity. In large companies, on the other hand, the volume of labour is spread over a larger number of workers, making it easier for the employer to respond to workers wishing to achieve a better work-life balance.

The relative importance of part-time work is closely connected with the percentage of women in the workforce of the various branches of activity. Construction – a sector where women represent less than 7 p.c. of the workers – is where this working arrangement is least common (5.7 p.c.), although the proportion of female part-timers there is considerably higher than in industry (respectively 40.3 and 31 p.c.). Conversely, there are fewer male part-timers in construction than in industry (respectively 3.1 and 5.7 p.c.). In other services, part-time workers account for half of the labour force. In this branch, where almost three-quarters of the workers are women, 61.4 p.c. of the female workforce work reduced hours, as do 20.4 p.c. of the men.

CHART 8 MALE AND FEMALE PART-TIME WORKING IN 2007 ⁽¹⁾

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



Source: NBB (social balance sheets).

(1) Agriculture was disregarded because of its minor relative importance.

3.2 Type of employment contract

Temporary employment contracts – i.e. fixed-term contracts, substitution contracts or contracts concluded for the execution of a specific project – and contracts employing agency workers are instruments for adjusting the volume of labour according to production requirements. Furthermore, with the prior authorisation – or in some cases notification – of the social inspectorate, the secondment of staff gives the user access to additional workers, usually from an associated company.

The information on agency workers and staff on secondment is available only for firms filing full-format accounts. For firms as a whole, the only available item is the breakdown by employment contract as at 31 December for staff entered in the firm's register, which already offers a good idea of the use of certain instruments permitting flexible employment.

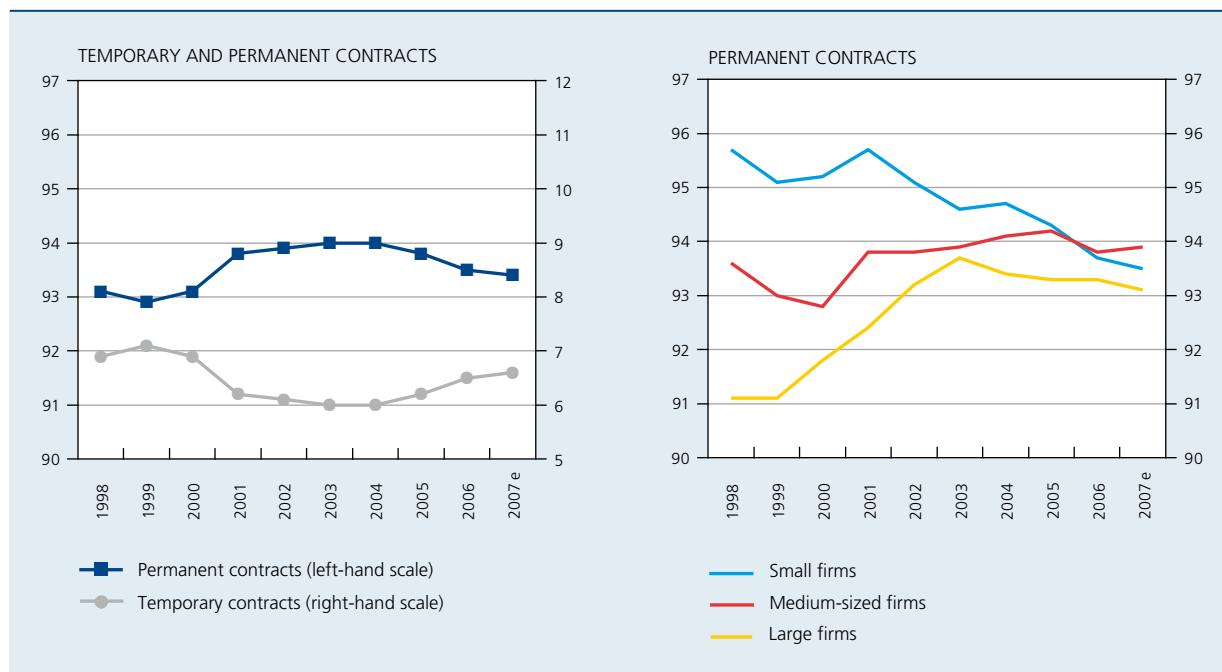
Following a decline recorded between 1999 and 2001, the share of temporary contracts stabilised at around 6 p.c. between 2002 and 2004. Since then, the trend has been upwards: in 2006, these contracts represented 6.5 p.c. of total jobs, a level which is nevertheless lower than that recorded at the beginning of the analysis period. The rise continued at a moderate pace between 2006 and 2007. If the increase recorded in the reduced population is applied to the figure for the total population in 2006, the proportion of temporary contracts comes to 6.6 p.c. of the total in 2007.

On average, the number of permanent workers increased by 1.8 p.c. between 2006 and 2007, whereas over the same period the number of staff recruited on temporary contracts was up by 4.1 p.c. The rise was substantial in the case of contracts concluded for the purpose of a specific project, the number of which increased by over 25 p.c. A large increase was recorded in various branches of activity, particularly trade, health and social work, and real estate and business services. In all, however, staff engaged on this type of contract account for only a marginal fraction of the workers recruited (0.2 p.c.).

Permanent contracts still make up the bulk of total employment, at 93.4 p.c. in 2007. In this regard, attention should be drawn to the strong convergence in the proportion of permanent workers in the three firm size classes. Whereas at the start of the analysis period small firms had a much higher proportion of workers on permanent contracts than they do now, at 95.7 p.c. in 1998 compared to 93.5 p.c. in 2007, the opposite is true for large firms. In these, the relative proportion of permanent workers has increased, rising from 91.1 p.c. in 1998 to a peak of 93.7 p.c. in 2003, before gradually subsiding to 93.1 p.c. In medium-sized firms, the situation has changed little, except at the start of the period when the business environment entailed short-term adjustments to the workforce, boosting the proportion of temporary workers in employment. In 2007, the share of permanent staff came to 93.9 p.c., compared to 93.6 p.c. in 1998.

Workers entered in their employer's staff register on temporary contracts are proportionately a little less numerous in firms filing full-format accounts (5.3 p.c. of the workforce as at 31 December 2007 for the reduced population) than in firms filing abridged accounts (5.8 p.c.).

CHART 9 RELATIVE IMPORTANCE OF TEMPORARY CONTRACTS ⁽¹⁾ AND PERMANENT CONTRACTS BETWEEN 1998 AND 2007 ⁽²⁾
(percentages of the total, data as at 31 December, total population)



Source : NBB (social balance sheets).

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

(2) The results for 2007 were calculated by applying the change recorded between 2006 and 2007 for the reduced population to the value observed for the total population in 2006.

Nonetheless, in the case of full-format accounts additional information is available on the use of agency workers⁽¹⁾ or workers seconded from another company, so that the total active workforce (in FTEs) can be broken down by type of contract, including agency workers and workers on secondment.

This analysis shows that, in firms filing full-format accounts, the use of external workers recruited by another enterprise – staff agency, sister company or any other employer – is widespread. In 2007, a total of 4.1 p.c. of employment expressed in FTEs consisted of agency workers – who therefore make up the largest proportion of temporary workers – and 2.9 p.c. consisted of workers on secondment, while 3.8 p.c. of staff were workers on fixed-term contracts, and the other two categories of temporary contracts remained marginal. Altogether, workers on permanent contracts represented 88.5 p.c. of employment.

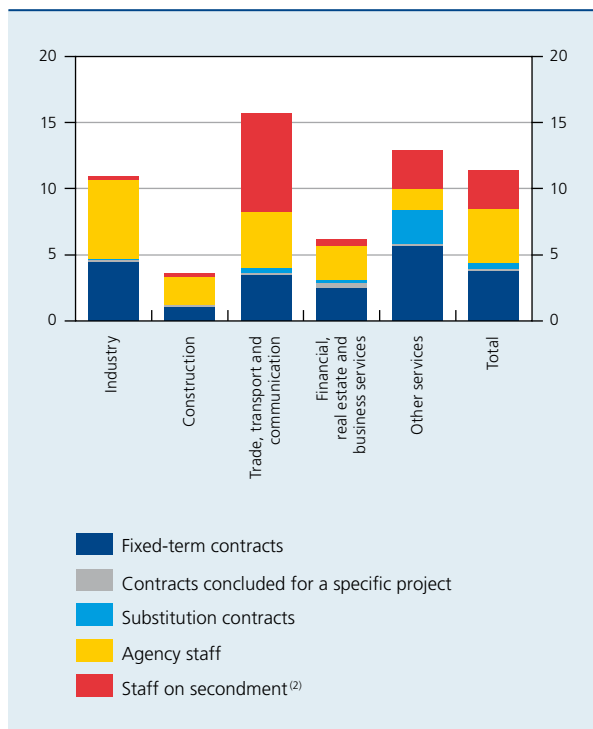
Permanent contracts account for around 90 p.c. of employment in terms of FTEs in both medium-sized and large firms. While the percentage of temporary workers is

almost the same, large firms make proportionately greater use of fixed-term contracts, whereas medium-sized firms make greater use of agency staff. In small firms, workers on secondment represent the bulk of the temporary staff, but for this category of firms the breakdown is heavily biased by the presence of a new structure linked to the BNRC and set up in 2004, which had only two workers on the permanent staff at the end of 2007 but during this period received almost 19,000 FTEs transferred from BNRC Holding.

Relatively few firms use workers on secondment. In 2007, of the 8,185 firms filing full-format accounts, only 387 used this procedure, or under 5 p.c. of the total. Nonetheless, workers on secondment represent no less than a fifth of the workforce expressed in FTEs in the user firms. They are particularly common in transport and communication (particularly at BNRC and in a number of port handling firms which make use of companies supplying dockers) and in the health and social work sector.

The proportion of firms using temporary employment agencies far exceeds the proportion of firms using workers on secondment. Although the use of agency staff is strictly regulated, and is still prohibited in certain cases and for a number of activities⁽²⁾, the regulations applicable are much less strict than those concerning secondment, which is generally prohibited except in certain cases⁽³⁾. In the reduced population, 63 p.c. of firms filing full-format accounts took on agency workers in 2007. The percentage rises the bigger the firm. Thus, 53 p.c. of small firms use such staff, compared to 79 p.c. of medium-sized firms and 90 p.c. of large firms. However, in small firms agency staff account for 7.5 p.c. of the workforce in FTEs compared to 6.9 p.c. in medium-sized firms and only 3.3 p.c. in large firms. In the various sectors, a larger proportion of firms in mining and quarrying, manufacturing and hotels and restaurants take on agency staff: here, user firms represent 92, 85 and 75 p.c. respectively of the total number of companies. The sectors making least use of agency workers are health and social work and financial and insurance services.

CHART 10 PROPORTION OF WORKERS EMPLOYED UNDER A NON-PERMANENT CONTRACT IN 2007⁽¹⁾
(percentages of total employment in FTEs, reduced population, full-format accounts)



Source : NBB (social balance sheets).

(1) Agriculture was disregarded on account of its minor relative importance.

(2) Staff linked to a firm by entry in the staff register and seconded to another firm obliged to file a social balance sheet are counted twice, without it being possible to correct that double counting.

(1) In terms of hours worked, the volume of agency work stated in the social balance sheets for 2007 represented over 40 p.c. of that recorded by Fedegon, the "Federation of Employment Partners". The conclusions which may be drawn from the social balance sheet therefore appear to be representative.

(2) The use of agency workers is prohibited in cases where an employment contract is suspended on account of a lack of work caused by economic factors or inclement weather, or in the case of a strike or lock-out in the firm. In the case of removal firms, furniture storage facilities and related activities, the use of agency staff is still strictly prohibited. In construction, it is permitted only for the purpose of replacing a worker who is unfit for work or if there is a temporary surplus of work.

(3) Apart from their normal activities, employers may make their permanent staff available to other users on an exceptional basis and for a limited period. However, this requires the prior authorisation of the social inspectorate following agreement between the user and the firm's union or, failing that, the workers' organisations represented on the joint committee for the firm. The prior authorisation is not required if two firms are mutually dependent in economic and financial terms and/or if the staff are made available for the purpose of performing specialist work requiring particular professional qualifications.

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

	2006	2007
Percentages of the total		
Number of FTEs	3.9	4.1
Hours worked	4.8	5.0
Staff costs	3.2	3.3
Units		
Number of FTEs	39,490	41,966
Hours worked (thousands)	73,932	78,673
Hours worked per FTE	1,872	1,875
Staff costs per hour worked (euro)	23.2	23.8
<i>p.m. Percentages of agency employment recorded by Federgon</i>		
<i>Hours worked</i>	<i>42.7</i>	<i>42.0</i>

Sources: Federgon, NBB (social balance sheets).

Agency staff employed by firms in the reduced population filing full-format accounts increased by 6.3 p.c. between 2006 and 2007. In the latter year, these firms employed 41,966 FTEs from agencies, equivalent to 4.1 p.c. of employment. The percentage is similar in small and medium-sized firms, at around 5.6 p.c., but is only 3.1 p.c. in large firms. In community, social and personal services, manufacturing industry, and hotels and restaurants, the share of agency workers exceeds 6 p.c. Conversely, in health and social work, energy and water, and financial and insurance services it is still around or below 1 p.c.

The volume of hours worked by agency staff increased by 6.4 p.c. and in 2007 represented 5 p.c. of the total volume of labour. The average annual working time per agency worker remained more or less steady, rising from 1,872 hours in 2006 to 1,875 hours in 2007. The average hourly cost of an agency worker was up from 23.2 to 23.8 euro, a rise of 2.7 p.c., comparable to the average increase for staff recorded in the register of firms filing full-format accounts, namely 2.8 p.c. In total, costs relating to the employment of agency workers accounted for 3.3 p.c. of staff costs in 2007.

4. Staff costs

The staff costs recorded in the social balance sheets comprise only payments by employers to staff entered in the register. They differ from the labour cost concept used in the national accounts in that they do not include the payments made to pensioners – who are no longer recorded in the staff register – or certain costs associated with any restructuring, which may be recorded on the balance sheet of firms as exceptional expenses. Furthermore, the picture indicated by the social balance sheets relates to a reduced population of firms, constant for 2006 and 2007, with the omissions of workers and firms which this methodology implies. Consequently, the movement in costs stated in the social balance sheets is not directly comparable to that calculated on the basis of the national accounts.

The costs incurred by firms in the reduced population in respect of workers recorded on their register increased by 5.1 p.c. between 2006 and 2007. Over the same period, the number of workers expressed as FTEs rose by 2.1 p.c. This increased the average annual labour cost by 3 p.c., from 50,196 to 51,679 euro.

TABLE 7 STAFF COSTS RELATING TO WORKERS RECORDED IN THE STAFF REGISTER
(euro, unless otherwise stated; annual averages; reduced population)

	2006	2007	Percentages change between 2006 and 2007
Per FTE	50,196	51,679	3.0
Per hour worked	32.9	33.8	2.8
Full-time workers	33.5	34.5	2.9
Part-time workers	29.7	30.4	2.2

Source: NBB (social balance sheets).

The volume of labour expressed in hours increased at a slightly higher rate than in the case of employment expressed in FTEs, namely by 2.3 p.c., so that costs per hour worked increased by slightly less (2.8 p.c.) than costs per FTE, reaching an average of 33.8 euro in 2007. The rise was slightly sharper for full-time workers, whose wages increased from 33.5 to 34.5 euro per hour worked – up by 2.9 p.c. In contrast, the hourly wages of part-time workers increased by a much more modest 2.2 p.c. to reach 30.4 euro in 2007.

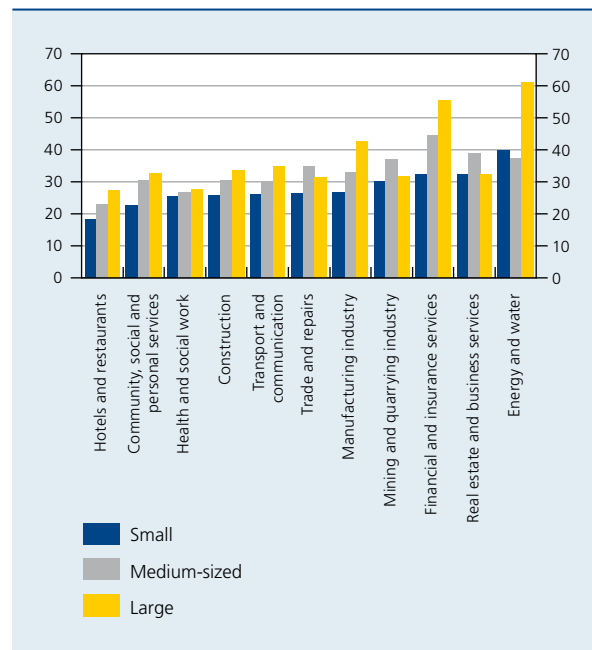
The trend in hourly labour costs is often more volatile for part-timers than for full-time workers, as the expansion of part-time working is leading to changes in the structure of the part-time workforce (notably in terms of the workers' gender, qualifications and seniority, as well as the working arrangement chosen and the branch of activity where they are employed), which have some influence on the level and growth of the wage bill attributed to these workers. It is also worth noting that the breakdown of the volume of labour and costs between full-time and part-time workers is often complicated at firm level, and that the resulting errors have a greater impact in the case of part-time work than full-time work, the volume of which is much larger.

The rise in average costs per hour worked remained fairly uniform – at or around 3 p.c. – in the various firm size classes. The scale of the increase was the same in small and medium-sized firms, both for full-time workers (2.9 p.c.) and for part-timers (3.8 p.c.). In contrast, in large firms the rise was much more marked for full-time workers (3.4 p.c.), while it was decidedly smaller for part-timers (1.2 p.c.).

Hourly cost increases varied between the branches of activity. The rise was very modest in the energy and water sector (0.1 p.c.) and in financial and insurance services (1.6 p.c.). It was also well below the average in hotels and restaurants (2.2 p.c.). Conversely, hourly costs increased by significantly more than the average in the health and social work sector (3.9 p.c.) and in mining and quarrying and manufacturing (3.9 and 3.7 p.c. respectively), as well as in community, social and personal services (3.5 p.c.). In the other branches, the increase was between 2.4 and 2.7 p.c.

While the movement in staff costs per hour worked varies between firms brought together by branch of activity, the hourly cost levels also differ, both according to branch and firm size. As a general rule, hourly costs increase the larger the firm, but that is not systematically the case, as is evident from the 2007 findings in the reduced population. In trade, mining and quarrying, and real estate and business services, hourly costs in medium-sized firms

CHART 11 STAFF COSTS PER HOUR WORKED IN 2007: BREAKDOWN BY SIZE AND BRANCH OF ACTIVITY OF THE FIRMS⁽¹⁾
(euro, reduced population)



Source: NBB (social balance sheets).
(1) Agriculture was disregarded on account of its minor relative importance.

exceeded those in large companies, and in the energy and water sector they were lower than the costs recorded in small firms.

In 2007, hourly costs averaged 26.8 euro in small firms, 32.8 euro in medium-sized companies and 38.9 euro in large firms, but for the same size class the hourly cost in some firms was up to twice as high as in others, depending on the branch of activity. The hotel and restaurant trade recorded the lowest wages for all size classes: the cost of one hour's work averaged 18 euro in small enterprises, 23 euro in medium-sized ones and 27 euro in large ones. In the energy and water sector, on the other hand, hourly wages came to almost 40 euro in small companies and over 60 euro in large ones. In the case of medium-sized firms, hourly labour costs were highest in financial and insurance services, at around 44 euro.

5. Training

The social balance sheet makes it possible to measure the training efforts of firms on an annual basis. For 2007, it comprised two tables, one concerning formal training and the other dealing with training, guidance and mentoring activities resulting from the law of 5 September

2001 promoting the employment rate of workers. These last activities are relatively uncommon, unlike formal training activities: in 2006, 416 enterprises, out of the 79,402 firms in the total population, stated that they had conducted such activities, and in the reduced population the figure was only just over 300 in 2007, or 0.7 p.c. of the total. This low proportion suggests that the results thus obtained are not validly usable. Moreover, since this information no longer appears in the new version of the social balance sheet applicable for years ending on or after 1 December 2008, it was decided not to devote a specific section to the subject in this analysis.

5.1 Formal training recorded in the social balance sheets

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

At the level of the total population, just over 5,000 firms completed the social balance sheet table relating to formal training between 2002 and 2005. In 2006, the number of trainer companies increased to 5,549 units. Entry into force of the obligation on large NPIs to file standardised annual accounts from that year onwards was doubtless a factor here. Thus, in 2006, in the community, social and personal services branch and in the health and social work sector, where NPIs are very numerous, the number of enterprises organising formal training increased by 45 and 145 respectively compared to the average figures recorded between 1998 and 2005, representing a rise of 39 and 24 p.c. respectively.

While the rise between 2005 and 2006 in the total population probably reflects a break in the series, that is not the case in the reduced population – which covers the same enterprises for the two consecutive years – where a significant increase of almost 5 p.c. in the number of enterprises organising training was recorded between 2006 and 2007. In 2007, 4,102 enterprises had organised formal training, or 9.2 p.c. of companies in the reduced population.

It should be noted that the training programmes of some firms may vary considerably from one year to another according to their investment projects and the available budgets. Moreover, not all firms arrange training systematically in every year. Thus, even within the reduced population, 3,159 enterprises completed the tables relating to formal training for both 2006 and 2007, while 754 firms supplied this information for 2006 only, and 943 (almost a quarter of the total) for 2007 only. These characteristics must be taken into account in assessing the results recorded in relation to the training targets set.

In 1998, under the central agreement for 1999-2000, the social partners had quantified the amount to be spent on training in the next six years: in 2004, training costs were to represent 1.9 p.c. of labour costs incurred by all firms in the private sector. Intermediate targets had been set for the years 2000 (1.4 p.c.) and 2002 (1.6 p.c.). In 2003, at the employment conference, a target for participation in training was added: by 2010, one in two workers must have access to training each year. At the end of 2005, under the Generation Pact, the government asked the social partners to ensure that these commitments were fulfilled. In particular, it asked them to define new growth paths. In this connection there is provision for assessing the training efforts at sectoral level, and a penalty system has been set up in the form of a specific contribution from sectors making insufficient effort. The pact also stipulated that the target of 1.9 p.c. of the wage bill to be spent on training was now to be achieved by 2006, or two years later than the social partners originally planned.

On the basis of the results obtained for our analysis population (which does not include all firms: in particular, those with less than one FTE are excluded, as are those whose financial year ends on a date other than 31 December), the figures fell far short of the targets. In 2006, the number of workers with access to training came to only 35.2 p.c. of the total workforce, and training costs represented less than 1.2 p.c. of the wage bill. This weak performance highlights the substantial effort still required on this matter.

Between 2006 and 2007, there was nonetheless an encouraging rise in training indicators in the reduced population⁽¹⁾. Thus, the number of workers trained increased by 2.5 p.c., outpacing the increase in employment, which expanded by 2.3 p.c. on average. As a result, the training participation rate increased, though admittedly by a modest amount (only 0.2 p.c.), bringing it to 39.4 p.c. in 2007.

(1) Note that in the case of the training indicators obtained for the reduced population, both the levels and the movements are subject to an upward bias owing to the over-representation of large firms, which are traditionally more systematic in reporting their investment in training.

The rise in the numbers taking part in training remained moderate compared to the increase in budgets and training hours, up by 9.3 and 9.7 p.c. respectively. For comparison, total staff costs increased by only 5.1 p.c. and hours worked by 2.3 p.c. The share of training costs in total staff costs therefore increased sharply, from 1.37 to 1.42 p.c. for this same reduced population, representing a 4 p.c. rise. The number of hours of training expressed as a percentage of the total hours worked was up by 7.3 p.c. in firms in the reduced population between 2006 and 2007. In 2007, these firms thus devoted 0.93 p.c. of working time to training, compared to 0.87 p.c. a year earlier.

Since the hours of training and the costs increased at similar rates of around 9 p.c., the average cost of an hour's training remained unchanged overall, in the region of 52 euro. Conversely, the number of hours of training per participant increased by 7.1 p.c., with each trained worker receiving 32.6 hours of training, or two hours more than in 2006. The situation still varies between men and women. For women, access to training was still almost 10 p.c. below the figure for men in 2007, while the average number of hours of training for female workers was more than 25 p.c. less than for men. There was a gap of comparable size in regard to the cost of an hour's training.

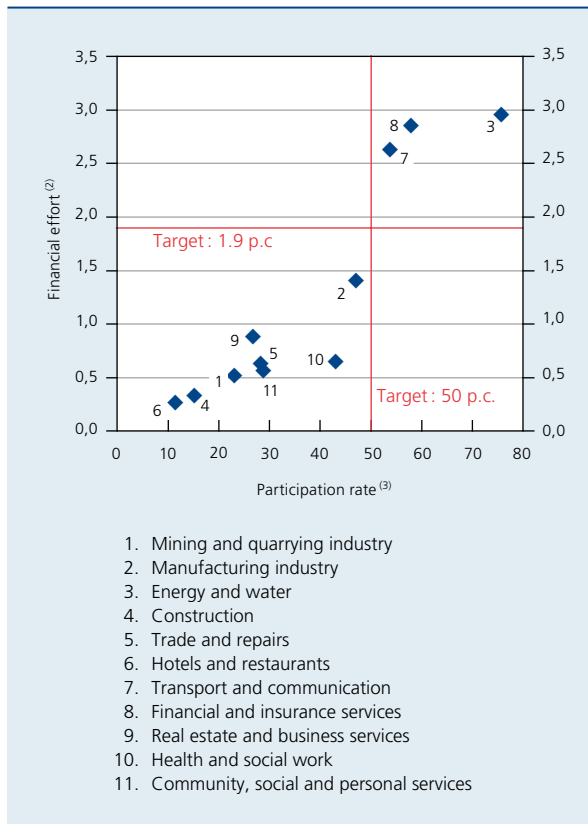
As a general rule, investment in training and workers' access to training increases the bigger the firm. But the training policy also depends very largely on the specific requirements of the various sectors. Thus, some of them long ago set up training schemes accessible to a large proportion of their staff. In the energy and water sector, three-quarters of workers had access to training in 2007. The rate of access to training was also well in excess of the 50 p.c. target in financial and insurance services, and in transport and communication, while it was close to that figure in manufacturing (47 p.c.). Conversely, workers in the hotel and restaurant trade and the construction industry are the worst off, since barely 11 and 15 p.c. of them respectively were offered training. In regard to the financial effort, the ranking of the sectors and their position in relation to the targets is almost the same. The top performers devote more than 2.5 p.c. of the wage bill to training, while the sectors which spend the least spend less than 0.5 p.c. The health and social work sector is different from the others: while the participation rate there (43 p.c.) is well above the average (39 p.c.), the amounts allocated to training are quite low in proportion: training costs represent only 0.65 p.c. of the wage bill, compared to the average of 1.42 p.c.

TABLE 8 FORMAL TRAINING IN FIRMS

	Training firms (as p.c. of total firms)	Training participants (as p.c. of average employment)	Training costs		Hours of training	
			(as p.c. of staff costs)	(average per hour, in euro)	(as p.c. of hours worked)	(average per participant, in hours)
Total population						
1998	7.5	33.0	1.34	44.5	0.75	33.1
1999	7.8	34.6	1.30	44.4	0.75	31.2
2000	7.6	35.1	1.42	43.0	0.86	35.3
2001	7.0	35.0	1.36	44.3	0.84	34.0
2002	7.2	34.6	1.27	46.4	0.79	31.8
2003	7.1	34.7	1.20	45.4	0.77	31.0
2004	6.8	35.7	1.13	46.6	0.73	28.4
2005	6.7	36.0	1.13	47.9	0.73	28.0
2006	6.9	35.2	1.17	49.3	0.75	29.0
Reduced population						
2006	8.8	39.3	1.37	52.0	0.87	30.5
2007	9.2	39.4	1.42	51.8	0.93	32.6
<i>p.m. Percentage changes</i>	4.8	0.2	4.0	-0.4	7.3	7.1

Source: NBB (social balance sheets).

CHART 12 POSITION OF BRANCHES OF ACTIVITY IN 2007, IN RELATION TO TRAINING TARGETS ⁽¹⁾
(percentages, reduced population)



Source: NBB (social balance sheets).

(1) Agriculture was disregarded owing to its minor relative importance.

(2) Training costs as a percentage of staff costs.

(3) Numbers participating in training, as a percentage of average employment.

5.2 Tables relating to training in the new version of the social balance sheet

A new form relating to the social balance sheet applies to all financial years commencing from 1 December 2008. As regards the training efforts of employers, the information requested is much more detailed and the scope is broader. Given the importance of this information in the future for the assessment of the training efforts of firms, at both macroeconomic and sectoral or individual level, it is essential to clarify the content. That is why a methodological note, available on the website of the National Bank of Belgium, was produced jointly by the Central Balance Sheet Office, the Central Economic Council and the National Labour Council ⁽¹⁾.

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

The training schemes covered are divided into further vocational training and basic vocational training.

Further vocational training schemes comprise training attended by one or more staff members, planned in advance and designed to augment the workers' knowledge or improve their skills. This training is funded partly or entirely by the firm (including indirectly, e.g. via contributions to training funds). This training category is subdivided into formal and informal training.

Further formal vocational training means courses and apprenticeships designed by trainers. This type of training is characterised by a high degree of organisation by the trainer or the training institution. It takes place in premises clearly separate from the place of work. These training programmes are intended for a group of trainees and may lead to a certificate of attendance.

Less formal or informal vocational training means learning activities other than those mentioned above. This kind of training is typically organised to a large degree (in terms of time, place and content) by the individual trainees or groups of trainees themselves. The content is determined according to their individual needs. There is a direct link between the training and the job or the place of work, but the training may also involve attendance at conferences or trade fairs for learning purposes.

The social balance sheet devotes one table to each of these two types of further training. In both cases, employers are required to state the number of workers concerned, the hours of training completed and the net cost borne by the firm, giving separate figures for men and women. However, the table relating to formal vocational training contains more details on costs, since employers have to give specific details on the calculation of the net cost for the firm, namely the gross costs directly connected with the training (comprising the costs inherent in the training – enrolment fees and, if appropriate, travel and accommodation costs, cost of supplies, remuneration of training staff and organisers, miscellaneous operating costs – and the wages of the workers), contributions and payments to collective funds intended for financing the training, less any subsidies and other financial benefits received.

The last table is devoted to initial training given to persons employed under systems which alternate training and work experience. To qualify as initial training, it must fulfil the following criteria: the purpose of the training is to acquire a diploma or an officially registered certificate; the person's main activity must be training, but the course must consist at least in part of practical experience in the firm; the period of training must be at least six months.

In regard to initial training, the employer must state separate figures for men and women indicating the total number of apprentices or trainees in question, the hours worked in the firm (excluding time spent in the training institution) and the net cost to the firm.

Conclusions

As an annual average, employment grew by 2.3 p.c. in 2007, driven by the favourable developments in the full-time and part-time workforce. The rise in the average number of workers was widespread in all firm size classes and all branches of activity, but it exceeded the average in SMEs and in certain branches of the tertiary sector.

The expansion of part-time working is attributable only partly to the recruitment of staff working reduced hours. In medium-sized and large firms, the growth of the part-time workforce corresponds mainly to changes in the working arrangements of existing staff. In small firms, on the other hand, these internal changes reinforced the net inflow of part-time workers. However, in this category of firms, it was full-time staff who accounted for most of the rise in employment in 2007.

Construction of a longitudinal database using the annual data taken from the social balance sheets over the period 1998 to 2006 made it possible to study the dynamics of paid employment in the private sector in relation to the business cycle. The rate of job creation thus appears to be closely linked to the pattern of business activity, while the correlation between the rate of job destruction and economic activity, although negative as expected, is weaker. The influence of firms' demography on the dynamics of paid employment was also demonstrated. In 27 p.c. of cases, job creation is attributable to new firms, while the disappearance of firms accounts for around 30 p.c. of job destruction; this corresponds to the orders of magnitude seen in other European countries.

The external staff movements recorded in firms in the reduced population were greater than in the previous year, but in total the net inflow of workers in 2007 – around 21,000 units – was 10,000 units below the 2006 level. It came to around 14,000 units in firms filing full-format accounts, which are required to supply more details on these staff movements. In these companies, net recruitment was higher for women than for men, continuing a trend apparent for several years. Regarding the workers' standard of education, the net increase in the workforce was due to a combination of net recruitment of workers with higher education

diplomas or certificates of secondary education and net departures of holders of certificates of elementary education.

Analysis of the reasons for leaving indicates variations according to the firm's size and branch of activity. In medium-sized and large firms, most staff departures are due to expiry of temporary contracts, while in small firms voluntary departure is the main cause. Also, redundancies and retirement, including early retirement, are relatively more common in firms with over 250 FTEs. At the level of branches of activity, the relative shares of the various reasons for leaving sometimes deviate widely from the average. Thus, the expiry of temporary contracts accounted for almost 70 p.c. of departures in firms in the other services branch. In construction, 60 p.c. of departures were due to workers leaving voluntarily. Financial, real estate and business services also exhibited significant deviations from the average, since just over a quarter of departures were due to redundancy. Finally, early retirement was most widespread in industry, accounting for 10 p.c. of departures.

In the case of firms filing full-format accounts, the turnover rate of staff on permanent contracts came to 15.2 p.c. in 2007, 0.6 percentage point higher than a year earlier. In particular, small firms – which traditionally have a higher rate of worker replacement – recorded increased external mobility. In the branches which tend to contain large firms, such as manufacturing, health and social work, and financial and insurance services, the rate of staff turnover was below the average. In contrast, some branches of activity recorded particularly high levels of external mobility. This was true, for instance, in real estate and business services, a sector containing firms which vary more in size.

Part-time working continued to expand steadily among the staff of firms required to file a social balance sheet, rising from 20 p.c. in 1998 to over 27 p.c. in 2006. In the reduced population, there was a further increase (1.7 p.c.) in the rate of part-time working in 2007. Already very widespread among the female working population, since over half of women work reduced hours, female part-time working showed a further slight increase between 2006 and 2007 (0.5 p.c.). For men the increase was larger (2.7 p.c.), although admittedly starting from a much lower level.

This working arrangement is increasingly common whatever the branch or firm size. Nonetheless, it is unevenly distributed: it is more common in small and large entities than in medium-sized firms, and in branches of activity where women are the most strongly represented, such

as other services (which includes in particular health and social work).

The proportion of temporary contracts continued to rise in 2007, reaching 6.6 p.c. of the total, compared to 6 p.c. three years earlier. However, permanent contracts still represent the major part of employment, i.e. between 93 and 94 p.c. of the total depending on the firm's size class. This convergence contrasts with the much more heterogeneous situation seen at the beginning of the analysis period, when the proportion of permanent workers in small firms was almost 5 percentage points higher than in large companies.

Agency work expanded again in 2007 in firms filing full-format accounts – the only ones for which this information is available – to represent a total of 4.1 p.c. of the FTE workforce; this constitutes the largest proportion of the temporary labour force, ahead of workers on fixed-term contracts (3.8 p.c.) and workers on secondment (2.9 p.c.). The instruments used to adjust the labour force vary between branches: in industry, it is agency staff that are used most frequently, while in trade, transport and communication greater use is made of workers on secondment and while the other services branch makes more use of workers on fixed-term contracts.

The wage bill increased by 5.1 p.c. between 2006 and 2007 in firms in the reduced population. At the same time, the volume of labour grew by 2.3 p.c., so that the increase in hourly costs averaged 2.8 p.c. The increase was larger in the case of full-time workers (2.9 p.c.) than part-time workers (2.2 p.c.). The movement in these costs and the cost levels vary considerably according to the firm's size class and branch of activity. Hourly costs generally increase with size. They are lowest in the hotel and restaurant trade and highest in the energy and water sector, and in financial and insurance services.

In regard to training, the performance observed in 2006 for the total population still falls well short of the targets: training costs represented only 1.17 p.c. of the wage bill, whereas the Generation Pact had stipulated a target of 1.9 p.c., and the rate of worker participation in training was only 35.2 p.c., compared to the target of 50 p.c. set for 2010. Some improvement was nevertheless recorded between 2006 and 2007 in the reduced population: the indicator relating to the amount spent on training was up by 4 p.c. If this percentage were applied to the 2006 figure for the total population, the training budget would have represented 1.22 p.c. of staff costs in 2007. The rate of worker participation in training also increased very slightly, by 0.2 p.c., to reach 35.3 p.c. in 2007 according to the same calculation method.

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Annex 1

Methodological annex

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

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

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

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

In addition, the analysis of the results of the social balance sheets filed for 2007 is conducted on a constant reduced population⁽⁴⁾, which further limits the coverage of the analysis population in relation to the balance sheets filed at the Central Balance Sheet Office. The results presented in this article therefore reflect the changes recorded in a population which remained stable between 2006 and 2007, and may differ from the changes which, following final closure, will be observed on the basis of the total population⁽⁵⁾ of firms filing a social balance sheet.

Following the selection process, the total population for 2006 comprised 79,402 firms and 1,863,641 employees. For the same year, the constant reduced population comprised 44,718 companies which together employed 1,312,274 workers, corresponding to 70.4 p.c. of the persons employed in all the firms submitting a social balance sheet for that year, although the number of firms included in the reduced population represents only 56 p.c. of the total population of firms. Workers employed in firms in the reduced population represent 50 p.c. of the private sector employment recorded in the national accounts⁽⁶⁾.

(1) Private sector employment is defined as employment recorded in the total economy (S1), less employment in the public sector (S13) and in the household sector (S14). This concept also excludes firms in NACE-Bel branches 75 "public administration and defence; compulsory social security", 80 "education" and 95 "Activities of households as employers of domestic staff", as well as temporary employment agencies (NACE-Bel 74-502).

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

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

(4) Firms have seven months from the date of the end of the financial year to file their social balance sheets at the Central Balance Sheet Office. In view of the additional time needed to check the data, the full set of social balance sheets relating to 2007 was not available on 8 September 2008 when the data were extracted.

(5) Firms which did not file a social balance sheet for one of the two years are in fact excluded from the reduced population. Moreover, since the Central Balance Sheet Office gives priority to processing the annual accounts of large firms, the results based on the reduced population for 2007 lead to some distortion in favour of large firms.

(6) The concept of private employment used here corresponds to employment recorded in the total economy (S1), less employment in the public sector (S13) and in the household sector (S14). This concept also excludes firms in NACE-Bel branches 75 "public administration and defence; compulsory social security", 80 "education" and 95 "Activities of households as employers of domestic staff", which are not taken into account in full in the social balance sheets.

TABLE 1 REPRESENTATIVENESS OF THE REDUCED POPULATION IN 2006

	Number of workers			Representativeness of the reduced population	
	In the national accounts ⁽¹⁾	In the social balance sheets		In p.c. of private sector employment ⁽¹⁾	In p.c. of the total population
		Total population ⁽²⁾	Reduced population ⁽²⁾		
	(1)	(2)	(3)	(4) = (3) / (1)	(5) = (3) / (2)
According to the employment criterion	2,620,678	1,863,641	1,312,274	50.1	70.4
Agriculture	17,021	9,809	5,389	31.7	54.9
Industry	586,991	459,084	372,553	63.5	81.2
Mining and quarrying industry	3,087	2,999	2,566	83.1	85.6
Manufacturing industry	558,735	433,901	352,354	63.1	81.2
Energy and water	25,169	22,184	17,633	70.1	79.5
Construction	186,126	137,667	95,551	51.3	69.4
Trade, transport and communication	784,035	575,348	430,823	54.9	74.9
Trade and repairs	462,223	312,718	231,026	50.0	73.9
Hotels and restaurants	88,398	55,443	25,948	29.4	46.8
Transport and communication	233,414	207,187	173,849	74.5	83.9
Financial services, real estate and business services	547,231	317,753	244,237	44.6	76.9
Financial and insurance services	127,445	111,890	98,086	77.0	87.7
Real estate and business services ⁽³⁾	419,786	205,863	146,151	34.8	71.0
Other services	499,274	363,981	163,720	32.8	45.0
Health and social work	398,379	318,659	134,484	33.8	42.2
Community, social and personal services	100,895	45,322	29,236	29.0	64.5
According to the criterion concerning the number of firms	n.	79,402	44,718	n.	56.3

Sources: NAI, NBB (social balance sheets).

(1) The concept of employment used here corresponds to paid employment in the private sector, or employment in the total economy (S1) less employment in the public sector (S13) and the household sector (S14). Moreover, this concept excludes employees in NACE-BEL branches 75 (Public administration and defence; compulsory social security), 80 (Education) and 95 (Private households with employed persons), which are not taken into account in full in the social balance sheets.

(2) Sum of items 1001 (full-time workers) and 1002 (part-time workers).

(3) Excluding temporary recruitment agencies in the case of the social balance sheets.

Representativeness according to the employment criterion varies from one branch of activity to another. Expressed as a percentage of the workers employed in firms in the total population relating to 2006, it is lowest in the branches dominated by small firms, whose annual accounts are filed and/or processed later. This applies, in particular to hotels and restaurants and to agriculture. Representativeness is also low in the health and social work branch, where changes in the filing practices of some NPIs disrupted the recording of information contained in the social balance sheets in 2007, causing the authors to disregard the enterprises concerned⁽¹⁾.

Furthermore, some firms are not represented in the analysis population. Examples include NPIs employing fewer than 20 persons, which are not required to submit a social balance sheet, and temporary employment agencies which were omitted for the sake of the consistency and quality of the analysis populations. Similarly, paid staff working for employers not incorporated as a company are excluded since only companies are required to file a social balance sheet. Consequently, representativeness expressed as a percentage of the employment recorded in the national accounts is particularly low in the branches containing a large proportion of such enterprises or workers, notably the community, social and personal services branch, the real estate and business services branch, hotels and restaurants, and agriculture.

(1) Following the obligation to file standardised accounts, applicable to large and very large NPIs since 2006, some institutions which previously filed separate social balance sheets have filed a single social balance sheet since 2006 or 2007.

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

In contrast to last year, the analysis of the social balance sheets was not conducted from a regional angle in this article. Nevertheless, Annexes 10 to 12 contain a series of regional indicators identical with those published in the December 2007 Economic Review.

The regional breakdown of firms applies only to the total populations obtained on the basis of the methodological principles described in section 1 of this annex, for the years 1998 to 2006. The methodology governing the regional breakdown is similar to that used in 2004⁽¹⁾.

Single-region firms are those whose registered office and place(s) of business are located in a single region. In 2006, these single-region firms numbered 78,241, or almost 99 p.c. of the total firms filing a social balance sheet which met the quality criteria for that year. These companies are generally fairly small: on average, they employ 18 workers.

TABLE 2 REGIONAL BREAKDOWN OF FIRMS FILING A SOCIAL BALANCE SHEET IN 2006
(total population)

	Number of firms		Number of workers	
	Units	Percentages of the total	Total, units	Percentages of the total
Single-region firms	78,241	98.5	1,373,355	73.7
Brussels	9,226	11.6	152,149	8.2
Flanders	48,202	60.7	872,829	46.8
Wallonia	20,813	26.2	348,377	18.7
Multi-region firms	1,161	1.5	490,286	26.3
Total	79,402	100.0	1,863,641	100.0

Source: NBB (social balance sheets).

The remaining 1,161 "multi-region" firms are established in more than one region. On average, they employ 422 persons.

For firms established in more than one region, there are two ways of producing the regional breakdown. The first consists in attributing the whole of the amounts entered in the social balance sheet items of these firms to the region in which the firm records the largest number of jobs. In this "majority" approach, each firm is attached to a single region each year, but that region may differ from one year to the next according to the changes in employment at its places of business. This majority allocation method introduces distortions in the employment breakdown because some of the firms active throughout Belgium are attributed to Flanders, which covers 44 p.c. of the country but contained almost 58 p.c. of its residents as at 1 January 2007, while others are allocated to the Brussels region owing to the location of their registered office, where many services and hence workers are concentrated.

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

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

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

It must be pointed out that the breakdown by branch of activity differs considerably between multi-region and single-region firms (cf. table 3). Within each of these groups there are divergences in specialisation between firms based in Brussels and those based in Flanders or Wallonia. This heterogeneity is part of the reason for the differences in results recorded for the regional indicators in Annexes 10 to 12.

TABLE 3 REGIONAL STRUCTURE OF EMPLOYMENT IN 2006
(percentages of the total, total population)

	Single-region firms				Multi-region firms	Total
	Brussels	Flanders	Wallonia	Total		
Agriculture	0.1	0.8	0.7	0.7	0.0	0.5
Industry	11.5	28.4	26.4	26.0	20.7	24.6
Construction	5.0	9.4	11.5	9.4	1.6	7.4
Trade, transport and communication	29.9	27.7	23.8	26.9	41.9	30.9
Financial, real estate and business services	34.1	11.1	9.2	13.2	27.8	17.1
Other services	19.4	22.6	28.3	23.7	8.0	19.5

Source : NBB (social balance sheets)

Annex 2

Classification of firms by branch of activity

The classification of the firms by branch of activity is based on the activity code given in the directory of firms prepared by the National Bank for the compilation of the national accounts, and containing a range of administrative data on firms active during any year. The 2006 directory was chosen as the reference to determine the sector and branch of activity to which firms should be allocated for the whole period from 1998 to 2007. It is based on the 2003 NACE-BEL nomenclature. Firms not listed in the 2006 directory retain the activity code attributed in the 2005 directory, or failing that, the code allocated to them by the Central Balance Sheet Office.

The descriptions in the body of the text are based on a breakdown into six or twelve branches, according to requirements. These two breakdowns appear systematically in annexes 3 to 9.

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

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

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

Annex 3

CHANGE IN THE NUMBER OF WORKERS RECORDED BETWEEN 2006 AND 2007 IN FIRMS IN THE REDUCED POPULATION

	Full-time equivalents			Number of persons						
	Average employment		Employment at year end	Average employment						Employment at year end
	(units)	(p.c.)		Full-time		Part-time		Total		
			(units)	(p.c.)	(units)	(p.c.)	(units)	(p.c.)	(p.c.)	
Agriculture	120	2.5	-0.2	124	3.0	-12	-0.9	112	2.1	-0.4
Industry	2,347	0.7	0.5	1,838	0.6	1,014	2.5	2,853	0.8	0.5
Mining and quarrying	-8	-0.3	-1.2	-8	-0.3	-2	-1.4	-10	-0.4	-1.4
Manufacturing	2,465	0.7	0.5	2,069	0.7	866	2.2	2,935	0.8	0.5
Energy and water	-109	-0.6	1.2	-223	-1.4	150	10.7	-73	-0.4	1.3
Construction	2,570	2.7	1.9	2,255	2.5	473	9.4	2,728	2.9	2.0
Trade, transport and communication	5,518	1.4	0.7	3,105	1.0	3,605	3.0	6,710	1.6	0.8
Trade and repairs	4,533	2.2	1.1	3,435	2.2	1,239	1.7	4,674	2.0	1.0
Hotels and restaurants	-59	-0.3	-4.6	-165	-1.3	353	2.6	188	0.7	-3.0
Transport and communication	1,044	0.6	0.7	-165	-0.1	2,013	5.9	1,848	1.1	1.2
Financial, real estate and business services	7,591	3.5	4.0	5,050	2.9	3,389	4.8	8,440	3.5	3.9
Financial and insurance services	540	0.6	-0.1	28	0.0	181	0.7	210	0.2	-0.2
Real estate and business services ⁽¹⁾	7,051	5.5	6.8	5,022	4.9	3,208	7.3	8,230	5.6	6.6
Other services	6,889	5.2	5.0	3,484	4.2	5,279	6.5	8,763	5.4	5.1
Health and social work	6,454	6.1	5.9	3,179	5.3	5,111	6.9	8,290	6.2	6.1
Community, social and personal services	434	1.7	1.5	304	1.4	168	2.2	473	1.6	0.4
Total	25,034	2.1	1.8	15,856	1.6	13,749	4.3	29,605	2.3	1.9

Source: NBB (social balance sheets).

(1) Excluding temporary employment agencies.

Annex 4

HOURS WORKED BY WORKERS RECORDED IN THE STAFF REGISTER

	Units, per year (total population)									Percentage change between 2006 and 2007 (reduced population)		
	2000	2001	2002	2003	2004	2005	2006			Per full-time equivalent	Per full-time worker	Per part-time worker
	Per full-time equivalent						Per full-time equivalent	Per full-time worker	Per part-time worker			
Agriculture	1,573	1,537	1,545	1,533	1,556	1,525	1,548	1,546	755	1.0	0.8	2.2
Industry	1,534	1,518	1,506	1,508	1,533	1,517	1,520	1,523	998	0.3	0.2	-0.1
Mining and quarrying	1,517	1,479	1,487	1,497	1,490	1,463	1,479	1,476	1,004	1.1	1.6	-6.9
Manufacturing	1,540	1,523	1,510	1,512	1,540	1,521	1,525	1,528	995	0.1	0.1	-0.2
Energy and water	1,416	1,415	1,426	1,425	1,410	1,445	1,435	1,432	1,073	3.1	3.1	2.1
Construction	1,460	1,438	1,427	1,433	1,464	1,442	1,442	1,437	944	0.3	0.4	-1.0
Trade, transport and communication	1,677	1,640	1,627	1,616	1,605	1,578	1,576	1,580	878	0.0	-0.3	1.6
Trade and repairs	1,634	1,628	1,610	1,600	1,608	1,597	1,589	1,594	945	-0.1	0.0	0.5
Hotels and restaurants	1,624	1,580	1,590	1,567	1,562	1,561	1,564	1,544	671	0.3	-0.2	0.3
Transport and communication	1,740	1,666	1,656	1,648	1,608	1,554	1,560	1,568	886	0.0	-0.7	4.0
Financial, real estate and business services	1,601	1,588	1,552	1,541	1,551	1,536	1,541	1,561	878	0.5	0.6	1.2
Financial and insurance services	1,529	1,500	1,428	1,426	1,436	1,422	1,417	1,459	843	1.3	1.4	3.5
Real estate and business services ⁽¹⁾	1,657	1,654	1,646	1,625	1,630	1,609	1,612	1,620	895	-0.2	-0.1	-0.2
Other services	1,555	1,514	1,513	1,520	1,531	1,510	1,496	1,482	875	0.2	0.1	0.7
Health and social work	1,549	1,503	1,502	1,508	1,523	1,496	1,482	1,462	879	0.1	-0.1	0.6
Community, social and personal services	1,595	1,583	1,581	1,594	1,583	1,592	1,585	1,577	823	0.8	0.9	1.0
Total	1,584	1,559	1,545	1,543	1,552	1,532	1,530	1,533	889	0.2	0.1	1.0

Source: NBB (social balance sheets).

(1) Excluding temporary employment agencies.

Annex 5

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

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

	2000	2001	2002	2003	2004	2005	2006	2006	2007
	(total population)							(reduced population)	
By type of contract									
Permanent contract	93.1	93.8	93.9	94.0	94.0	93.8	93.5	94.7	94.6
Fixed-term contract	5.4	4.8	4.8	4.9	5.0	5.2	5.4	4.5	4.6
Agriculture	7.4	7.5	5.2	6.1	6.2	6.4	6.3	5.4	6.9
Industry	5.2	4.2	3.8	3.5	3.8	3.9	4.4	4.3	4.6
Mining and quarrying	6.1	5.6	5.8	6.0	6.1	6.3	8.2	8.1	7.4
Manufacturing	5.1	4.0	3.7	3.4	3.7	3.7	4.2	4.2	4.6
Energy and water	8.0	7.4	6.2	6.3	6.0	6.3	6.6	6.9	6.1
Construction	3.1	2.1	2.7	2.7	2.7	2.9	3.2	2.6	2.6
Trade, transport and communication	4.6	4.7	5.2	5.6	5.5	6.0	5.9	5.0	5.1
Trade and repairs	5.1	5.6	5.6	6.0	5.7	6.1	5.8	5.5	5.7
Hotels and restaurants	9.9	8.9	9.7	11.4	12.6	15.0	15.4	11.1	12.5
Transport and communication	2.8	2.5	3.7	3.7	3.2	3.3	3.3	3.3	3.2
Financial, real estate and business services ...	4.7	4.2	4.1	4.2	4.0	4.4	4.3	2.9	2.8
Financial and insurance services	4.8	4.4	3.5	2.9	3.0	2.9	2.9	2.6	2.2
Real estate and business services ⁽¹⁾	4.7	4.0	4.6	5.1	4.7	5.2	5.0	3.2	3.2
Other services	8.5	7.9	7.4	7.2	7.7	7.6	7.7	7.1	6.8
Health and social work	8.5	7.8	7.2	7.0	7.7	7.5	7.6	6.9	6.9
Community, social and personal services ...	8.8	8.8	8.8	8.6	7.9	8.4	8.3	8.0	5.9
Substitution contract	1.3	1.2	1.1	0.9	0.9	0.8	0.9	0.7	0.7
Contract for a specific project	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2
By gender									
Men	63.0	62.7	61.9	61.6	60.9	61.1	59.3	63.4	63.0
Women	37.0	37.3	38.1	38.4	39.1	38.9	40.7	36.6	37.0

Source: NBB (social balance sheets).

(1) Excluding temporary employment agencies.

Annex 6

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

(percentages of average FTE employment)

	2000	2001	2002	2003	2004	2005	2006	2006	2007
	(total population)							(reduced population)	
Workers on the staff register	96.3	96.5	96.5	96.4	95.7	95.6	93.7	93.1	93.0
Agency workers	3.0	2.8	2.7	2.8	3.1	3.3	3.7	3.9	4.1
Agriculture	2.9	3.6	5.4	5.4	6.7	4.5	7.3	5.1	4.6
Industry	4.8	4.2	4.1	4.3	5.0	5.0	5.8	5.8	6.0
Mining and quarrying	4.1	3.3	3.7	3.1	2.3	2.6	2.8	2.8	3.2
Manufacturing	5.0	4.4	4.3	4.5	5.2	5.2	6.1	6.1	6.3
Energy and water	0.8	0.9	0.8	1.0	1.0	1.0	1.3	0.9	1.0
Construction	1.4	1.3	1.1	1.1	1.2	1.6	2.0	2.0	2.2
Trade, transport and communication	2.8	2.8	2.7	2.9	3.4	3.7	4.2	4.0	4.2
Trade and repairs	3.6	3.5	3.3	3.5	3.9	4.0	4.5	4.4	4.6
Hotels and restaurants	6.1	5.0	4.6	4.0	4.0	4.3	6.0	4.9	6.1
Transport and communication	1.9	1.9	2.0	2.3	2.9	3.4	3.8	3.5	3.7
Financial, real estate and business services	2.1	2.0	1.8	1.7	2.0	2.1	2.6	2.5	2.6
Financial and insurance services	1.2	1.2	0.8	0.7	0.6	0.7	0.8	0.7	0.8
Real estate and business services ⁽¹⁾	3.0	2.8	2.7	2.7	3.2	3.2	3.8	4.0	4.0
Other services	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.5	1.6
Health and social work	0.4	0.4	0.4	0.4	0.6	0.5	0.5	0.6	0.7
Community, social and personal services	5.3	5.1	5.1	5.1	5.2	5.3	5.8	6.4	6.6
Persons seconded to the firm⁽²⁾	0.7	0.7	0.8	0.9	1.1	1.1	2.6	2.9	2.9

Source: NBB (social balance sheets).

(1) Excluding temporary employment agencies.

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

Annex 7

STAFF COSTS PER FTE ⁽¹⁾

	Euro, per year (total population)							Percentage change between 2006 and 2007 (reduced population)
	2000	2001	2002	2003	2004	2005	2006	
Agriculture	26,660	27,007	28,417	28,750	29,772	29,826	29,908	3.3
Industry	44,969	46,455	48,694	49,694	51,594	52,677	54,528	3.7
Mining and quarrying	39,958	41,812	43,941	45,628	46,147	46,671	47,957	5.1
Manufacturing	43,823	45,273	47,285	48,627	50,289	51,354	53,204	3.8
Energy and water	70,529	74,075	77,528	74,852	77,809	79,108	80,831	3.1
Construction	33,534	34,532	35,638	36,609	37,763	37,934	39,077	2.9
Trade, transport and communication	37,472	38,807	40,486	41,212	42,370	43,543	44,882	2.6
Trade and repairs	38,346	39,797	41,080	41,509	42,398	43,448	44,815	2.6
Hotels and restaurants	24,750	25,141	26,517	27,508	28,230	28,676	29,532	2.5
Transport and communication	38,420	39,753	42,003	43,215	44,939	46,488	47,957	2.6
Financial, real estate and business services	53,581	55,196	56,179	56,904	57,516	58,091	58,945	2.2
Financial and insurance services	62,437	63,910	64,292	65,667	67,278	68,908	70,838	2.9
Real estate and business services ⁽²⁾	46,675	48,654	49,972	50,562	50,742	51,151	52,125	2.2
Other services	33,892	33,924	35,905	37,491	39,097	39,726	40,323	3.9
Health and social work	33,996	33,848	35,731	37,381	39,169	39,694	40,122	4.0
Community, social and personal services	33,176	34,388	37,020	38,193	38,625	39,912	41,614	4.3
Total	41,382	42,729	44,411	45,265	46,496	47,503	48,522	3.0

Source: NBB (social balance sheets).

(1) Item 1023 / item 1003.

(2) Excluding temporary employment agencies.

Annex 8

STAFF COSTS PER HOUR WORKED ⁽¹⁾

	Euro (total population)							Percentage change between 2006 and 2007 (reduced population)
	2000	2001	2002	2003	2004	2005	2006	
Agriculture	16.95	17.57	18.40	18.75	19.13	19.56	19.32	2.3
Industry	29.31	30.61	32.34	32.96	33.66	34.73	35.87	3.5
Mining and quarrying	26.35	28.27	29.56	30.48	30.96	31.90	32.43	3.9
Manufacturing	28.46	29.73	31.32	32.17	32.67	33.77	34.89	3.7
Energy and water	49.80	52.35	54.35	52.52	55.17	54.75	56.34	0.1
Construction	22.97	24.01	24.97	25.55	25.79	26.31	27.10	2.5
Trade, transport and communication	22.34	23.66	24.89	25.50	26.40	27.59	28.48	2.7
Trade and repairs	23.47	24.45	25.52	25.95	26.36	27.20	28.21	2.7
Hotels and restaurants	15.24	15.91	16.68	17.55	18.08	18.37	18.88	2.2
Transport and communication	22.09	23.86	25.37	26.23	27.95	29.91	30.74	2.6
Financial, real estate and business services	33.47	34.75	36.20	36.92	37.09	37.82	38.26	1.6
Financial and insurance services	40.84	42.59	45.03	46.06	46.84	48.45	49.99	1.6
Real estate and business services ⁽²⁾	28.17	29.41	30.35	31.11	31.12	31.80	32.34	2.4
Other services	21.79	22.40	23.73	24.67	25.53	26.31	26.96	3.8
Health and social work	21.94	22.52	23.78	24.79	25.71	26.54	27.08	3.9
Community, social and personal services	20.80	21.72	23.42	23.97	24.40	25.06	26.26	3.5
Total	26.12	27.40	28.75	29.34	29.95	31.01	31.71	2.8

Source: NBB (social balance sheets).

(1) Item 1023 / item 1013.

(2) Excluding temporary employment agencies.

Annex 9

FORMAL TRAINING IN 2007 IN FIRMS IN THE REDUCED POPULATION

	Training participants			(as p.c. of hours worked)	Hours of training			(as p.c. of staff costs)	Training costs		
	(as p.c. of employment)				(average per participant, in hours)				(average per participant, in euro)		
	Total	Men	Women		Total	Men	Women		Total	Men	Women
Agriculture	4.9	4.1	8.5	0.06	16.2	16.4	15.9	0.06	378	457	269
Industry	48.3	49.6	44.5	1.15	34.9	36.2	29.5	1.52	1,743	1,801	1,513
Mining and quarrying	23.1	23.4	22.2	0.75	47.5	48.0	41.0	0.52	1,147	1,067	2,144
Manufacturing	47.1	48.6	42.9	1.09	34.1	35.6	28.3	1.41	1,621	1,680	1,380
Energy and water	75.7	73.9	75.1	2.32	43.4	43.9	42.0	2.96	3,313	3,438	2,906
Construction	15.2	15.4	11.5	0.25	23.8	23.7	24.7	0.33	899	888	1,107
Trade, transport and communication	37.5	41.5	31.2	0.92	34.1	38.4	24.1	1.50	1,683	1,880	1,235
Trade and repairs	28.3	30.3	26.0	0.43	21.4	23.2	19.0	0.63	917	1,036	754
Hotels and restaurants	11.5	12.9	10.8	0.16	16.1	17.0	15.0	0.27	519	563	463
Transport and communication	53.8	54.7	51.0	1.63	43.6	46.8	31.8	2.63	2,261	2,349	1,943
Financial, real estate and business services	38.9	42.4	34.3	1.06	37.2	38.2	35.9	1.82	2,577	2,570	2,586
Financial and insurance services	57.9	61.5	54.5	1.57	35.3	34.8	35.9	2.85	3,315	3,364	3,258
Real estate and business services ⁽¹⁾	26.8	31.4	20.5	0.76	39.9	42.0	36.1	0.88	1,562	1,675	1,355
Other services	40.6	34.6	42.6	0.65	19.1	20.4	18.6	0.64	505	635	465
Health and social work	43.1	33.8	45.1	0.70	18.7	19.5	18.5	0.65	466	513	456
Community, social and personal services	28.8	36.1	20.8	0.44	21.7	22.1	20.9	0.57	785	853	641
Total	39.4	41.0	36.7	0.93	32.6	36.0	26.2	1.42	1,691	1,861	1,367

Source: NBB (social balance sheets).

(1) Excluding temporary employment agencies.

Annex 10

TYPE AND STRUCTURE OF EMPLOYMENT CONTRACTS, BY REGION

(total population)

	2000	2001	2002	2003	2004	2005	2006
Part-time employment							
(percentages of employment as at 31 December)							
Single-region firms	21.2	21.2	22.7	23.6	24.8	25.1	26.6
Brussels	20.0	20.7	22.4	22.3	23.9	24.9	23.9
Flanders	21.0	20.7	22.3	23.4	24.9	25.2	27.0
Wallonia	22.4	22.8	23.7	24.5	24.7	24.9	26.5
Multi-region firms	19.5	21.7	23.0	25.4	26.3	28.2	29.7
Total	20.7	21.3	22.8	24.1	25.2	25.9	27.4
Temporary work⁽¹⁾							
(percentages of employment as at 31 December)							
Single-region firms	7.0	6.1	6.0	6.0	6.2	6.3	6.8
Brussels	7.6	6.1	6.4	7.3	7.5	7.2	6.9
Flanders	5.9	5.1	4.6	4.6	4.8	5.1	5.6
Wallonia	9.7	8.8	9.4	9.1	9.0	9.0	9.7
Multi-region firms	6.4	6.6	6.4	5.9	5.7	5.7	5.7
Total	6.9	6.2	6.1	6.0	6.0	6.2	6.5
Agency work in firms							
filing full-format accounts							
(percentages of average FTE employment)							
Single-region firms	3.5	3.3	3.2	3.2	3.6	3.8	4.5
Brussels	2.3	2.3	2.4	2.3	2.5	2.6	2.6
Flanders	3.6	3.3	3.3	3.4	3.9	4.1	4.8
Wallonia	4.2	3.8	3.5	3.4	3.6	3.8	4.4
Multi-region firms	2.0	1.9	1.7	2.0	2.2	2.2	2.4
Total	3.0	2.8	2.7	2.8	3.1	3.3	3.7

Source: NBB (social balance sheets).

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

Annex 11

HOURS WORKED AND LABOUR COSTS, BY REGION

(total population)

	2000	2001	2002	2003	2004	2005	2006
Hours worked per FTE (units, per year)							
Single-region firms	1,580	1,564	1,554	1,549	1,566	1,549	1,547
Brussels	1,621	1,622	1,604	1,586	1,598	1,578	1,578
Flanders	1,577	1,558	1,551	1,550	1,573	1,554	1,553
Wallonia	1,565	1,550	1,536	1,528	1,532	1,523	1,519
Multi-region firms	1,597	1,547	1,522	1,528	1,513	1,485	1,483
Total	1,584	1,559	1,545	1,543	1,552	1,532	1,530
Staff costs per FTE (euro, per year)							
Single-region firms	39,088	40,337	41,848	42,616	44,021	44,999	45,781
Brussels	47,372	48,871	51,196	50,857	52,548	53,460	53,681
Flanders	38,689	40,051	41,562	42,641	43,946	45,016	45,891
Wallonia	35,518	36,597	37,673	38,603	40,121	41,083	42,101
Multi-region firms	47,529	48,714	50,757	51,790	53,560	54,432	56,044
Total	41,382	42,729	44,411	45,265	46,496	47,503	48,522
Staff costs per hour worked (euro)							
Single-region firms	24.75	25.79	26.93	27.52	28.11	29.05	29.59
Brussels	29.22	30.13	31.91	32.07	32.89	33.88	34.02
Flanders	24.54	25.71	26.80	27.52	27.93	28.97	29.55
Wallonia	22.70	23.60	24.53	25.26	26.19	26.97	27.71
Multi-region firms	29.76	31.48	33.34	33.89	35.39	36.66	37.78
Total	26.12	27.40	28.75	29.34	29.95	31.01	31.71

Source: NBB (social balance sheets).

Annex 12

FORMAL TRAINING IN FIRMS, BROKEN DOWN BY REGION

(total population)

	2000	2001	2002	2003	2004	2005	2006
Training participants (percentages of average employment)							
Single-region firms	27.2	24.7	26.2	25.8	26.8	27.1	26.6
Brussels	30.3	28.5	29.5	27.4	28.1	26.7	26.4
Flanders	30.3	26.2	28.1	27.9	28.8	29.1	28.2
Wallonia	16.8	18.6	19.5	19.6	20.9	22.1	22.8
Multi-region firms	56.7	61.1	55.6	56.8	61.7	60.7	59.4
Total	35.1	35.0	34.6	34.7	35.7	36.0	35.2
Hours of training (percentages of hours worked)							
Single-region firms	0.61	0.58	0.52	0.56	0.53	0.54	0.53
Brussels	0.72	0.61	0.59	0.60	0.49	0.53	0.56
Flanders	0.67	0.63	0.56	0.62	0.59	0.57	0.55
Wallonia	0.39	0.42	0.38	0.38	0.39	0.45	0.44
Multi-region firms	1.52	1.51	1.46	1.31	1.32	1.30	1.41
Total	0.86	0.84	0.79	0.77	0.73	0.73	0.75
Training costs (percentages of staff costs)							
Single-region firms	0.93	0.83	0.76	0.76	0.73	0.72	0.69
Brussels	1.18	0.87	0.85	0.74	0.63	0.70	0.69
Flanders	0.99	0.90	0.82	0.86	0.82	0.77	0.72
Wallonia	0.54	0.58	0.52	0.49	0.56	0.61	0.61
Multi-region firms	2.49	2.47	2.31	2.09	2.07	2.08	2.26
Total	1.42	1.36	1.27	1.20	1.13	1.13	1.17
Training firms (percentages of total firms)							
Single-region firms	7.0	6.4	6.6	6.4	6.3	6.2	6.3
Brussels	7.2	6.7	7.1	6.7	6.9	6.7	7.0
Flanders	8.0	7.1	7.2	7.2	7.0	6.8	6.9
Wallonia	4.6	4.5	4.7	4.5	4.5	4.4	4.7
Multi-region firms	46.8	46.3	47.6	43.4	44.1	44.8	42.9
Total	7.6	7.0	7.2	7.1	6.8	6.7	6.9

Source: NBB (social balance sheets).

Annex 13

SOCIAL BALANCE SHEET

Numbers of joint committees applicable to the firm:

STATEMENT OF PERSONS EMPLOYED

WORKERS RECORDED IN THE STAFF REGISTER

This year and last year

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

On the balance sheet date

Number of workers recorded in the staff register

By type of employment contract

	Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
Permanent contract	110	.....	.....	.....
Fixed-term contract	111	.....	.....	.....
Contract for a specific project	112	.....	.....	.....
Substitution contract	113	.....	.....	.....

By gender and standard of education

Men:	120	.....	.....	.....
elementary	1200	.....	.....	.....
secondary	1201	.....	.....	.....
higher non university	1202	.....	.....	.....
university	1203	.....	.....	.....
Women:	121	.....	.....	.....
elementary	1210	.....	.....	.....
secondary	1211	.....	.....	.....
higher non university	1212	.....	.....	.....
university	1213	.....	.....	.....

By occupational category

Managerial and supervisory staff	130	.....	.....	.....
Clerical workers.....	134	.....	.....	.....
Manual workers.....	132	.....	.....	.....
Other	133	.....	.....	.....

AGENCY STAFF AND PERSONS SECONDED TO THE FIRM

During the year

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

TABLE OF STAFF MOVEMENTS DURING THE YEAR

RECRUITMENT

Number of workers entered in the staff register during the year

By type of employment contract

- Permanent contract
- Fixed-term contract
- Contract for a specific project
- Substitution contract

Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
205
210
211
212
213

DEPARTURES

Number of workers whose contract expiry date was recorded in the staff register during the year

By type of employment contract

- Permanent contract
- Fixed-term contract
- Contract for a specific project
- Substitution contract

By reason for contract termination

- Retirement
- Early retirement
- Redundancy
- Other reason
- Of which: number of persons continuing to work for the firm at least half time as self-employed workers

Codes	1. Full-time	2. Part-time	3. Total in full-time equivalents
305
310
311
312
313
340
341
342
343
350

Summaries of articles

Economic projections for Belgium – Autumn 2008

Since the publication of the previous forecasts in June 2008, the economic outlook has deteriorated very rapidly, both at global level and for Belgium. The financial tensions which emerged in mid 2007 turned into a serious crisis, and the contagion effects on the real economy proliferated, halting the growth of activity in the advanced economies and causing an abrupt fall in commodity prices.

The slowdown in activity which began in mid 2007 as a result of weakening external demand was slightly less marked in Belgium than in the euro area. However, the plummeting confidence indicators show that the deterioration in the international economic situation and the worsening financial crisis will have a more widespread impact on the economy. As in the euro area, activity is predicted to decline in Belgium in late 2008 and early 2009, with a very modest recovery in the ensuing quarters. Thus, real GDP growth is projected to fall from 2.6 p.c. in 2007 to 1.4 p.c. in 2008 and -0.2 p.c. in 2009.

Most expenditure categories are affected directly or indirectly by the global financial crisis, and will therefore reflect the sharp growth slowdown in 2009. Exports of goods and services are projected to fall, following the marked deterioration in external demand. After its expansion had been curbed in 2008 by the stagnation of real disposable income caused by rising inflation, private consumption is not expected to grow in 2009, the main factors being the stock market slide and the subsequent increase in the savings ratio, but more generally the deteriorating economic conditions and labour market prospects. In these gloomy circumstances in terms of demand, and in the face of the increased cost of raising finance via bank credit or via share issues, business investment is forecast to decline in 2009, after having been vigorous for more than four years. Investment in housing is likely to maintain the tendency to slow down which began in 2007.

On the labour market, net job creation, which had been a significant factor bolstering the economy in the last three years, is likely to dry up in 2009. As an annual average, growth should remain positive thanks to the still favourable trend during 2008. Following a year-on-year increase of 1.8 p.c. in 2007 and 1.5 p.c. in 2008, the rate of employment expansion in persons is projected to fall to 0.2 p.c. in 2009, although supported by a further increased in service vouchers. This expected rise in the average number of persons employed in 2009 corresponds to a 0.3 p.c. reduction in the volume of labour, as firms prefer to start reducing the number of hours worked. The unemployment rate is projected to rise from 6.6 p.c. in the fourth quarter of 2008 to 7.1 p.c. in the fourth quarter of 2009. As an annual average, it is set to increase from 6.7 p.c. in 2008 to 6.9 p.c. in 2009.

After having reach a peak of 5.9 p.c. in July 2008, average inflation is likely to diminish from 4.6 p.c. in 2008 to 1.9 p.c. in 2009 on the back of the deceleration in food price rises and the drop

in oil prices. The health index is forecast to rise by 4.3 p.c. in 2008 and 2.3 p.c. in 2009. However, inflation is expected to increase in the case of services, particularly as a result of the indirect effect of the energy and food price shocks on transport and restaurants, the linking of certain service price increases to the general level of inflation, e.g. for rents, and the progressive incorporation of labour cost increases.

Reflecting both the dip in labour productivity, following the weakness of economic activity in 2008 and 2009, and the continuing sustained increase in hourly labour costs, unit labour costs in the private sector are forecast to rise by 3.1 p.c. in 2007, 3.8 p.c. in 2008 and 3.2 p.c. in 2009, compared to an average annual increase of 0.7 p.c. from 2002 to 2006. For 2009, the growth of 3.3 p.c. in hourly labour costs, assumed for the purpose of this exercise, corresponds essentially to the expected effect of indexation, the latter taking time to respond to the acceleration in inflation measured by the health index. This assumption is in line with that adopted by the Central Economic Council Secretariat, taking account of the adjustment to the outlook for growth and inflation in recent months. It does not in any way anticipate the outcome of the current negotiations between the social partners.

According to the latest information, public finances will end the year 2008 with a deficit of 0.9 p.c. of GDP. In the macroeconomic context described above, that deficit is likely to reach 1.7 p.c. of GDP in 2009. The downward trend in the public debt ratio is expected to be interrupted in 2008. At the end of this year, the public debt is forecast at 87.8 p.c. of GDP, or around 4 percentage points above its level at the end of 2007. This increase is due to loans which the Belgian State contracted to finance injections of capital into its financial institutions and the loans which it granted to them. In 2009, the public debt ratio is likely to begin falling again, although more slowly than in previous years taking account of the relative weakness of nominal GDP growth and the increased borrowing requirement.

JEL Codes: E17, E25, E37, E66

Key words: Belgium, macroeconomic projections, Eurosystem

Ten years of monetary union in retrospect

1 January 1999 saw the start of the third and final phase of European Economic and Monetary Union (EMU). Ten years on, membership has expanded from the initial 11 members to reach 16 countries by January 2009. This article reviews the first decade of monetary union from a number of angles.

Monetary policy under EMU managed to secure historically low inflation, thereby creating the conditions for sustainable economic growth. Despite large relative price movements stemming from globalisation, inflation expectations remained well-anchored at levels consistent with price stability. The high degree of price stability did not come at a cost in terms of less stable economic activity as both inflation and output volatility have declined markedly in the euro area over the past decade, as was the case in other industrialised countries too. The current financial turmoil nevertheless poses a serious challenge for monetary policy and it may well require swift and rapid action, as already illustrated by the Governing Council's decisions to cut interest rates. Also, the Eurosystem's operational framework has been used flexibly in order to accommodate euro area banks' demand for liquidity. Before EMU, financial crises tended to hit countries with poor macroeconomic frameworks harder, so monetary union and its unified policy framework have clearly prevented financial turmoil putting even further pressure on individual Member States.

Fiscal policy during the first ten years of monetary union cannot be described as an unqualified success as not all Member States reached their initial targets and their subsequent medium-term objectives set out in their respective Stability Programmes. Taking into account the consequences

of population ageing, such fiscal policy shortcomings might endanger the sustainability of public finances in future.

The introduction of the euro lowered trade costs within EMU, leading to higher international trade flows which in turn fostered price convergence. Financial market integration varies considerably across different market segments with markets closer to monetary policy displaying further integration. The standard of living in the euro area is well below that in the US and has not changed much during the first decade of monetary union. Further structural reforms and the deepening of the Single Market should strengthen Europe's productive potential and the higher labour market participation rates should be sustained.

Growth and inflation differentials in the euro area are relatively small in relation to historical trends and when compared with other monetary unions. Although these differences are not necessarily problematic, the good functioning of a monetary union depends crucially on the efficiency of adjustment mechanisms, such as the competitiveness channel that works through the real effective exchange rate, as illustrated by Germany and the Netherlands, for instance. The overall balance of Belgium's participation in EMU is positive. However, the recent sharp surge in inflation raises questions about the functioning of product markets, in particular for energy, and also highlights the importance of wage moderation.

Big challenges lie ahead for EMU. First and foremost, the financial turmoil poses a significant challenge for monetary policy and for safeguarding financial stability. Secondly, population ageing requires further consolidation of public finances. Structural reforms in product and labour markets can help make this budgetary challenge more manageable and further raise standards of living. Finally, the enlargement of monetary union to other EU Member States might entail more heterogeneity in the euro area, thus requiring efficient national adjustment mechanisms.

JEL Codes: E00, E52, E60, F33

Key words: EMU, monetary policy, fiscal policy, economic integration, monetary union, adjustment mechanism

Review of the IMF's lending framework

In an effort to adapt to changes in its environment, the IMF has over the years adjusted its lending framework. Lending facilities have been created, abolished or modified, according to changing global circumstances. Nevertheless, these adaptations have often been made on an *ad hoc* basis.

The article examines the current structure of IMF lending facilities and the policies governing them. It illustrates how some of the Fund's lending facilities may have lost their relevance, that gaps could be perceived in the current lending framework and why the framework seems fragmented and overly complex. These issues can affect the credibility of the Fund's lending framework and hence the perceived legitimacy of the institution.

In order to address these issues, a comprehensive review of the IMF lending framework is direly needed. In fact, the Fund is currently reviewing its lending instruments and access policies in the context of its ongoing overall strategic review. This article seeks to provide an input into this process and, within this context, suggests three options for modernising the Fund's lending framework.

Under the first option, the spirit of the current multi-facility framework would be maintained, with a different facility for each type of financing need. In order to make this new multi-facility framework less complex and more internally consistent than the current set-up, a number of modifications are put forward to the policies governing it. A second option would involve the most far-reaching

adjustment of the Fund's lending framework, as it would replace the whole arsenal of IMF facilities with a single, flexible, SBA-type facility. Such a system is appealing for its simplicity, transparency and because it avoids the problem of having to analyse *ex ante* the type and expected duration of a member's balance of payments needs. On the other hand, in order to be workable and to ensure uniformity of treatment, each lending decision would need to be based on clear rules and with due regard to precedents and the merits and requirements of each case. As an intermediary solution, the third option suggests replacing the current lending framework with a dual framework. Such a structure would comprise two facilities; one facility for short- and one for medium- to long-term access or, alternatively, one facility for normal access and one for exceptional access to IMF resources.

JEL Codes: F33, F34, F53

Key words: financial facilities, IMF, official lending, review

Innovation and entrepreneurship: structural determinants of competitiveness

Innovation and entrepreneurship have become the cornerstone of growth and competitiveness policies. They are both multidimensional, and thus highly complex, concepts. The focus of the article is on the process nature of innovation which is extensively illustrated by means of the Community Innovation Survey (CIS) results for Belgium, its three main neighbouring countries and the EU as a whole. The CIS offers an original view of how firms are performing in the innovation stakes in each economy, defining innovation as the introduction of a new or significantly improved product or process. Among the various dimensions considered are expenditure on innovation, including R&D, cooperation with other economic agents, hampering factors, public support and innovation policies. The specific role of entrepreneurship as a driver of innovation is also considered.

The article points up the importance of general framework conditions and the structural characteristics of an economy for its innovation process and performance. In the case of Belgium, its external openness, the necessary fiscal restraint, and the position of its firms at the core of the international production process really do exert an influence on its overall innovation profile.

JEL Codes: L26, O31

Key words: innovation, entrepreneurship, CIS

Trend in the financial structure and results of firms in 2007

In 2007, growth of total value added generated by Belgian non-financial corporations reached 4.8 p.c. At the same time, operating costs rose by 4 p.c. So, for the fifth year in a row, value added rose faster than operating costs. As a consequence, net operating profit saw a further noticeable increase (+8 p.c.), reaching the total of more 35.3 billion euro. After taking into account the other elements of the profit and loss account, non-financial corporations generated an overall net profit after tax of 48.6 billion euro, representing a new year-on-year increase. The financial position of firms also continued to improve globally in 2007, as confirmed by profitability, solvency and liquidity ratios.

JEL Codes: G30, L60, L80

Key words: firms results, financial structure, sectoral analysis

The social balance sheet 2007

According to the results of the social balance sheets available in September 2008, employment rose by 2.3 p.c. in 2007. The increase concerned both full-time as well as part-time workers. The rise in part-time working is only partially explained by the hiring of part-time workers: this year again, medium-sized and large enterprises also saw numerous changes in working arrangements. Although women still account for the bulk of part-time workers, the increase in the part-time rate was greater for men than for women. The analysis shows that part-time working is spread unevenly in the various branches of activity.

As in previous years, the article studies staff movements and the characteristics of workers joining and leaving companies filing full-format accounts. It also examines reasons for leaving and the external turnover of workers by comparing the results from the various groups of enterprises categorised according to their size or their branch of activity. The analysis also highlights the further advance in 2007 of temporary employment contracts – whose proportion is tending to become more uniform in the various categories of company size – and the increased use of agency work in companies filing full-format accounts. Recourse to these contracts as instruments for workforce adjustments varies considerably from one branch of activity to the other.

The total wage bill rose by 5.1 p.c. between 2006 and 2007 in the reduced population of companies. Over the same period there was a 2.3 p.c. growth in the number of hours worked, so that hourly labour costs grew by 2.8 p.c. on average. The rise was more pronounced for full-time than for part-time workers. Major differences in levels are still discernible in terms of hourly costs, depending on the size and branch of activity of the companies.

In terms of training, the results for 2006 still fall well short of the set targets: training costs accounted for 1.17 p.c. of the total wage bill whereas the target specified in the Generation Pact for this same year was 1.9 p.c. At the same time, the participation rate in training was only 35.2 p.c. whereas a target has been set of 50 p.c. by 2010. Growth was nevertheless recorded between 2006 and 2007 within a favourable economic context: the cost indicator for training grew by 4 p.c. and the participation rate by 0.2 p.c. If these increases were applied to the level observed in 2006, these same indicators should amount to 1.22 and 35.3 p.c. respectively for 2007.

JEL Codes: J20, J24, J30, M51, M53

Key words: employment, staff costs, training, working hours, employment contract, full-time, part-time, skills, temporary worker

Abstracts of the working papers series

138. The efficiency frontier as a method for gauging the performance of public expenditure: a Belgian case study, by B. Eugène, September 2008

The paper uses the Free Disposal Hull framework in order to assess the relative efficiency of Belgian general government in the field of health care, education and public order and safety. In order to do so, it aggregates a large number of outcome indicators.

Several drawbacks indicate that results must be interpreted cautiously. These drawbacks aside, the analysis reveals that Belgium is relatively efficient in the field of health care. As a whole, the Belgian education system is more expensive but also produces better results than the European average. However, an analysis based on a limited set of indicators reveals that the French-speaking education sector is very inefficient while the Flemish Community's efficiency is markedly better. As far as public order and safety are concerned, major improvements could and should be made, either to improve service or cut costs.

139. Exporters and credit constraints. A firm-level approach, by M. Muûls, September 2008

By building a theoretical model and taking it to the data with two novel datasets, the paper analyses the interaction between credit constraints and exporting behaviour. Building a heterogeneous firms model of international trade with liquidity-constrained firms yields several predictions on the equilibrium relationships between productivity, credit constraints and exports that are then verified in the data. The main findings of the paper are that firms are more likely to be exporting if they enjoy higher productivity levels and lower credit constraints. Also, credit constraints are important in determining the extensive but not the intensive margin of trade in terms of destination. This introduces a pecking order of trade. Finally, exchange rate appreciation will lead existing exporters to reduce their exports, while encouraging entry of credit-constrained potential exporters and exit of the least productive exporters.

140. [Export destinations and learning-by-exporting : Evidence from Belgium](#), by M. Pisu, September 2008

The paper evaluates the causal effects of exports to different destination countries using a comprehensive dataset on Belgian manufacturing firms from 1998 to 2005. Initial evidence suggests that, before export market entry, exporters to more developed economies have superior productivity levels than non-exporters and firms exporting to less developed countries. Moreover, they seem to experience higher productivity growth rates in the post-entry period, suggesting learning-by-exporting effects. However, applying matching methodology to formally evaluate the causal effects of export market entry on productivity reveals no such impact. Thus, the productivity advantage of firms exporting to developed countries appears to be driven solely by self-selection.

141. [Monetary aggregates and liquidity in a neo-Wicksellian framework](#), by M. Canzoneri, R. Cumby, B. Diba, D. López-Salido, October 2008

Woodford (2003) describes a popular class of neo-Wicksellian models in which monetary policy is characterized by an interest-rate rule, and the money market and financial institutions are typically not even modeled. Critics contend that these models are incomplete and unsuitable for monetary-policy evaluation. The Banks and Bonds model developed in the paper starts with a standard neo-Wicksellian model and then adds banks and a role for bonds in the liquidity management of households and banks. The Banks and Bonds model gives a more complete description of the economy, but the neo-Wicksellian model has the virtue of simplicity. The purpose is to see if the neo-Wicksellian model gives a reasonably accurate account of macroeconomic behavior in the more complete Banks and Bonds model. The authors do this by comparing the models' second moments, variance decompositions and impulse response functions. They also study the role of monetary aggregates and velocity in predicting inflation in the two models.

142. [Liquidity, inflation and asset prices in a timevarying framework for the euro area](#), by Ch. Baumeister, E. Durinck, G. Peersman, October 2008

In the paper, the authors investigate how the dynamic effects of excess liquidity shocks on economic activity, asset prices and inflation differ over time. They show that the impact varies considerably over time, depends on the source of increased liquidity (M1, M3-M1 or credit) and the underlying state of the economy (asset price boom-bust, business cycle, inflation cycle, credit cycle and monetary policy stance).

143. [The bond premium in a DSGE model with long-run real and nominal risks](#), by G. D. Rudebusch, E. T. Swanson, October 2008

The term premium on nominal long-term bonds in the standard dynamic stochastic general equilibrium (DSGE) model used in macroeconomics is far too small and stable relative to empirical measures obtained from the data- an example of the "bond premium puzzle. However, in models of endowment economies, researchers have been able to generate reasonable term premiums by assuming that investors face long-run economic risks and have recursive Epstein-Zin preferences. The authors show that introducing these two elements into a canonical DSGE model can also produce a large and variable term premium without compromising the model's ability to fit key macroeconomic variables.

144. Imperfect information, macroeconomic dynamics and the yield curve:
An encompassing macro-finance model, by Hans Dewachter, October 2008

In the paper, the author estimates an encompassing Macro-Finance model allowing for time variation in the equilibrium real rate, mispricing and learning dynamics. The encompassing model specification incorporates (i) a small-scale (semi-)structural New-Keynesian model, (ii) flexible price of risk specifications, (iii) liquidity premiums in the form of (constant) deviations from (Gaussian) no-arbitrage and (iv) learning dynamics. This model is estimated on US data using MCMC (Markovchain Monte Carlo) techniques. We find that the encompassing model outperforms significantly standard Macro-Finance models in terms of marginal likelihood and Bayesian information criterion. Three findings stand out. First, unlike standard Macro-Finance models, a substantial fraction of the variation in long-term yields is attributed to changes in the perceived equilibrium real rate. Second, statistically and economically significant learning effects, especially for inflation expectations, are found. Finally, historical decompositions show that the model can replicate the US yield curve dynamics over the period 1960-2007.

145. Housing market spillovers: Evidence from an estimated DSGE model,
by M. Iacoviello, S. Neri, October 2008

The paper evaluates the causal effects of exports to different destination countries using a comprehensive dataset on Belgian manufacturing firms from 1998 to 2005. Initial evidence suggests that, before export market entry, exporters to more developed economies have superior productivity levels than non-exporters and firms exporting to less developed countries. Moreover, they seem to experience higher productivity growth rates in the post-entry period, suggesting learning-by-exporting effects. However, applying matching methodology to formally evaluate the causal effects of export market entry on productivity reveals no such impact. Thus, the productivity advantage of firms exporting to developed countries appears to be driven solely by self-selection.

146. Credit frictions and optimal monetary policy, by V. Cúrdia, M. Woodford,
October 2008

The authors extend the basic (representative-household) New Keynesian (NK) model of the monetary transmission mechanism to allow for a spread between the interest rate available to savers and borrowers, that can vary for either exogenous or endogenous reasons. They find that the mere existence of a positive average spread makes little quantitative difference for the predicted effects of particular policies. Variation in spreads over time is of greater significance, with consequences both for the equilibrium relation between the policy rate and aggregate expenditure and for the relation between real activity and inflation.

Nonetheless, the authors find that the target criterion – a linear relation that should be maintained between the inflation rate and changes in the output gap – that characterizes optimal policy in the basic NK model continues to provide a good approximation to optimal policy, even in the presence of variations in credit spreads. They also consider a “spread-adjusted Taylor rule”, in which the intercept of the Taylor rule is adjusted in proportion to changes in credit spreads. They show that while such an adjustment can improve upon an unadjusted Taylor rule, the optimal degree of adjustment is less than 100 percent; and even with the correct size of adjustment, such a rule of thumb remains inferior to the targeting rule.

147. Central bank misperceptions and the role of money in interest rate rules,
by G. Beck, V. Wieland, October 2008

Research with Keynesian-style models has emphasized the importance of the output gap for policies aimed at controlling inflation while declaring monetary aggregates largely irrelevant. Critics, however, have argued that these models need to be modified to account for observed money growth and inflation trends, and that monetary trends may serve as a useful cross-check for monetary policy. The authors identify an important source of monetary trends in form of persistent central bank misperceptions regarding potential output. Simulations with historical output gap estimates indicate that such misperceptions may induce persistent errors in monetary policy and sustained trends in money growth and inflation. If interest rate prescriptions derived from Keynesian-style models are augmented with a cross-check against money-based estimates of trend inflation, inflation control is improved substantially.

148. Financial (in)stability, supervision and liquidity injections: A dynamic general equilibrium approach, by G. de Walque, O. Pierrard, A. Rouabah, October 2008

The paper develops a dynamic stochastic general equilibrium model with interactions between an heterogeneous banking sector and other private agents. The authors introduce endogenous default probabilities for both firms and banks, and allow for bank regulation and liquidity injection into the interbankmarket. Their aim is to understand the importance of supervisory and monetary authorities to restore financial stability. The model is calibrated against real data and used for simulations. The authors show that liquidity injections reduce financial instability but have ambiguous effects on output fluctuations. The model also confirms the partial equilibrium literature results on the procyclicality of Basel II.

149. Monetary policy, asset prices and macroeconomic conditions: A panel-VAR study,
by K. Assenmacher-Wesche, S. Gerlach, October 2008

The paper studies the relationships between inflation, economic activity, credit, monetary policy, and residential property and equity prices in 17 OECD countries, using quarterly data for 1986-2006. Using a panel vector autoregression (VAR), the authors find plausible and significant responses to a monetary policy shock. Shocks to asset prices have a positive, significant effect on GDP and credit after three to four quarters, whereas prices start to increase much later. They also consider the transmission of US shocks from the US to the other economies. While monetary policy shocks are transmitted internationally, other shocks are not, perhaps because of the form of coefficient restrictions used.

150. Risk premiums and macroeconomic dynamics in a heterogeneous agent model,
by F. De Graeve, M. Dossche, M. Emiris, H. Sneessens, R. Wouters, October 2008

The authors analyze financial risk premiums and real economic dynamics in a DSGE model with three types of agents – shareholders, bondholders and workers – that differ in participation in the capital market and in terms of risk aversion. Aggregate productivity and distribution risk are shared among these agents via the bond market and via an efficient labor contract. The result is a combination of volatile returns to capital and a highly cyclical consumption process for the shareholders, which are two important ingredients for generating high and countercyclical risk premiums. These risk premiums are consistent with a strong propagation mechanism through an elastic supply of labor, rigid real wages and a countercyclical labor share. The authors discuss the implications for the real and nominal component of the risk premium on equity and bonds. They show how these premiums react to changes in the volatility of the shocks, as experienced during the great moderation.

Conventional signs

–	the datum does not exist or is meaningless
e	estimate by the Bank
n.	not available
p.c.	per cent
p.m.	pro memoria

List of abbreviations

Countries

BE	Belgium
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LU	Luxembourg
MT	Malta
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
FI	Finland
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
EE	Estonia
LV	Latvia
LT	Lithuania
HU	Hungaria
PL	Poland
RO	Romania
SK	Slovakia
SE	Sweden
UK	United Kingdom
EA-13	Eurozone excluding Cyprus and Malta
EU-15	European Union excluding the countries which joined in 2004 and 2007
EU-25	European Union excluding Bulgaria and Romania
AU	Australia
CA	Canada
CH	Switzerland

IS	Iceland
JP	Japan
KO	Korea
MX	Mexico
NO	Norway
NZ	New Zealand
TR	Turkey
US	United States

Others

ANBERD	Analytical Business Enterprise Research and Development Database
BNRC	Belgian National Railway Company
CCBM	Correspondent central banking model
CCL	Contingent Credit Line
CFF	Compensatory Financing Facility
CIS	Community Innovation Survey
CIS4	4th Community Innovation Survey
DGSIE	Directorate-general Statistic and Economic Information Belgium
EC	European Commission
ECB	European Central Bank
EDP	Excessive Deficit Procedure
EFF	Extended Fund Facility
EMS	European Monetary System
EMU	Economic and Monetary Union
Eonia	Euro Overnight Index Average
ESCB	European System of Central Banks
ESF	Exogenous Shocks Facility
EU	European Union
Euribor	Euro Interbank Offered Rate
Federgon	Federation of partners for employment
FSL	Financial Stability Line
FTE	Full-time equivalents
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GRA	General Resources Account
HICP	Harmonised index of consumer prices
Horeca	Hotel, restaurant and cafés
ICT	Information and Communication Technologies
IMF	International Monetary Fund
IPN	Inflation Persistence Network
ISM	Institute for Supply Management
MIR	Monetary Financial Institutions Interest Rates

LIST OF ABBREVIATIONS

NACE-Bel	Belgian version of the statistical nomenclature of economic activities in the European Community
NAI	National Account Institute
NBB	National Bank of Belgium
NEMO	National Employment Office
NPI	Non-Profit institution
NSSO	National Social Security Office
OECD	Organisation for Economic Co-operation and Development
OLO	Linear bond
PRGF	Poverty Reduction and Growth Facility
RAL	Rapid Access Line
RLL	Rapid Liquidity Line
R&D	Research and Development
SBA	Stand-By Arrangement
SDR	Special Drawing Rights
SEPA	Single Euro Payments Area
SLF	Short-Term Liquidity Facility
SME	Small and Medium-sized Enterprises
S&P	Standard and Poor's
SRF	Supplemental Reserve Facility
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
UMTS	Universal Mobile Telecommunications System
VAT	Value added tax

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