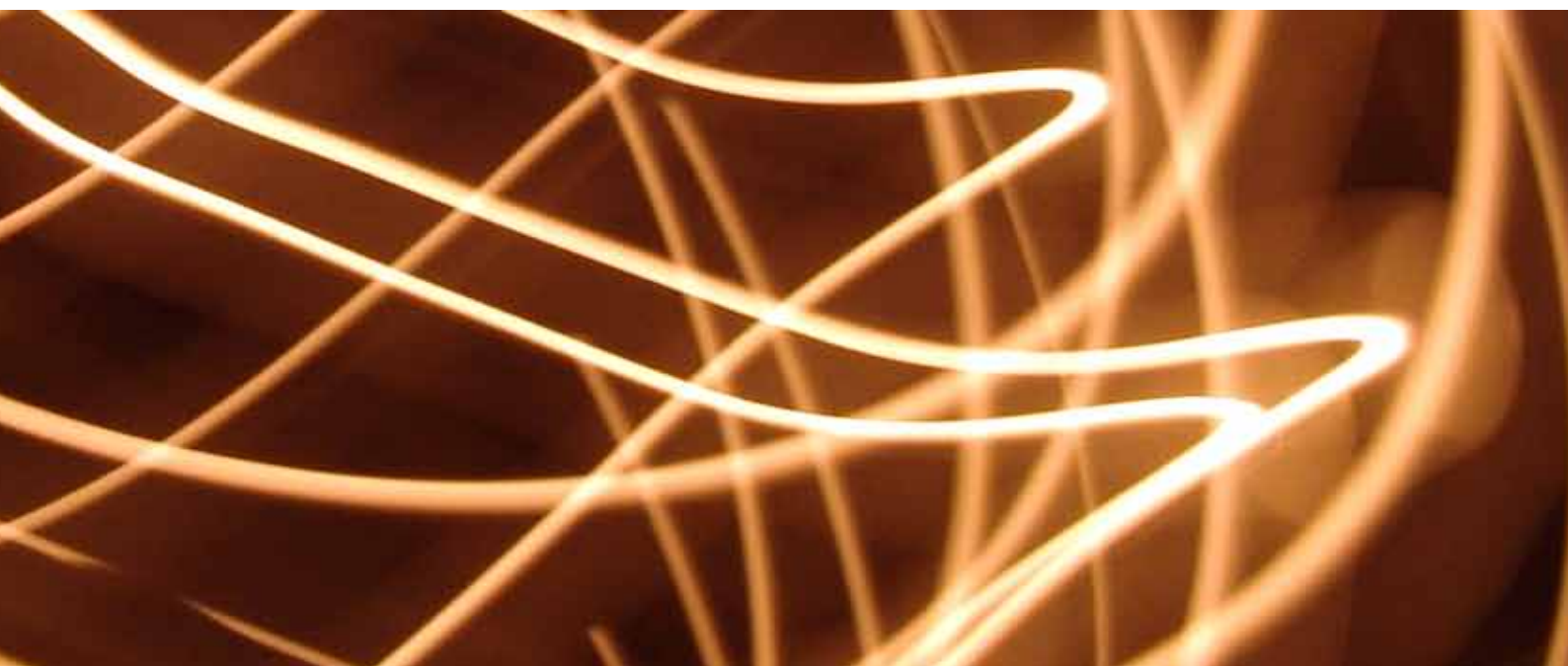


# Economic Review

June 2011



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# Economic projections for Belgium – Spring 2011

## Introduction

At the beginning of 2011, the recovery phase seen in the global economy over the past two years reached a degree of maturity. Driven by the emerging economies, international trade which had been severely affected by the financial crisis and the economic recession regained its pre-crisis level. Given the easing of the financial tensions and the accommodating character of the monetary and fiscal policies pursued thus far, activity in the various economic regions should gradually progress from being export-led to become more broadly based, particularly thanks to increasing investment.

Today, the general expectation is therefore that this dynamism will permit the continuation of self-sustained growth, despite the presence of several risk factors. Some of those factors are the legacy of the 2008-2009 crisis. That is true, in particular, of the seriously degraded public finances in most advanced economies on both sides of the Atlantic, placing them in a position which is untenable in the long term in the absence of consolidation measures. In addition, financial institutions in general will have to continue their restructuring in order to bring their operating model into line with the new environment confronting them. Other risk factors are due to the steady improvement in the economic situation over the past two years, and strengthening demand in the emerging economies. They are reflected in the rapid rise in commodity prices, for instance, followed by consumer price inflation. These endogenous factors are compounded by the risks resulting from the natural disasters in Japan and the political and social tensions in the Middle East and North Africa.

Despite the high degree of uncertainty, the economic outlook therefore seems positive, including for the euro area as a whole. However, significant divergences exist within the euro area, witness the unexpected vigour of the recovery in Germany – including the latest statistics for GDP growth in the first quarter of 2011 – and, conversely, the decline in activity in the economies facing serious structural problems, such as Greece, Ireland and Portugal. That is the backdrop to the projections, drawn up in the twice-yearly Eurosystem exercise; the results for the euro area are published in the June 2011 ECB Bulletin.

In Belgium, recent developments in activity have been better than predicted by the previous projection exercises, including the one presented in December 2010. The Belgian economy, in Germany's wake, has succeeded in taking advantage of the revival in global demand, while private consumption has rapidly picked up thanks to the unexpected resilience of the labour market. Business and household investment should gradually recover too. Thus, there are several factors likely to bolster GDP growth. At the same time, the increase in consumer prices has accelerated sharply, driving inflation in Belgium to a level significantly above that in the euro area. That constitutes a risk for the economy, particularly in view of the widespread application of indexation mechanisms. For its part, prudent fiscal management has helped to keep the economy in a relatively sound position over the past three years. Widening of the spreads on government bonds in relation to German Bunds – to over 100 basis points at the cut-off date for the projections – indicates that structural measures are needed to maintain that situation in the medium term.

Overall, the present projections for this year and next put Belgium's GDP growth above the figure expected for the euro area, especially in 2011, but inflation is also higher. The improvement in the labour market is set to continue, while the public sector deficit is forecast at 3.5 to 4 % of GDP. This article sets out these findings in detail. The first section outlines recent developments and the outlook for the international environment, together with the results for the euro area of the projections produced by the Eurosystem central banks. A box explains the technical assumptions made for the purpose of this joint exercise. Section 2 details the results for activity, employment and demand components in Belgium, while section 3 deals with prices and labour costs, paying particular attention to the possible reasons why Belgian inflation currently exceeds the euro area figure. Section 4 covers the government accounts. In that regard, it should be noted that the projections for public finances only take account of policy measures which have been formally approved by the government, or specified in sufficient detail. Finally, the last section looks at the risks surrounding these projections, and compares them with the main other forecasts available for Belgium.

The Bank's projections were based on the information available up to 24 May 2011.

## 1. International environment

### 1.1 The global economy

With GDP growth estimated at 4.9 %, the global economy began expanding strongly again in 2010. This revival was fostered by the easing of financial tensions and the absence of new adverse shocks of the type which had caused a sharp recession in the advanced economies in the previous year, notably the shocks affecting international trade or the property markets in certain countries. In a context of still very accommodating monetary policies and flexible fiscal policies, the revival in activity was very largely underpinned by the dynamism of the emerging economies, particularly those of South-East Asia. By supporting demand not only for commodities and intermediate goods, but also for capital goods and consumption goods, these economies revitalised trade so that, by the end of the year, the volume of trade was restored to its pre-crisis level.

On the basis of that recovery, the expansion phase should continue. That prospect is borne out by the high level of business confidence worldwide. Even if the activity growth were to subside to just below the level seen last

year, it should be consolidated in 2011 and 2012, becoming more broadly based in the various economic regions. It should cease to be driven mainly by foreign demand, and be increasingly supported by consumer demand and business investment. This strengthening of the activity base should enable growth to be sustained despite the presence of various risk factors.

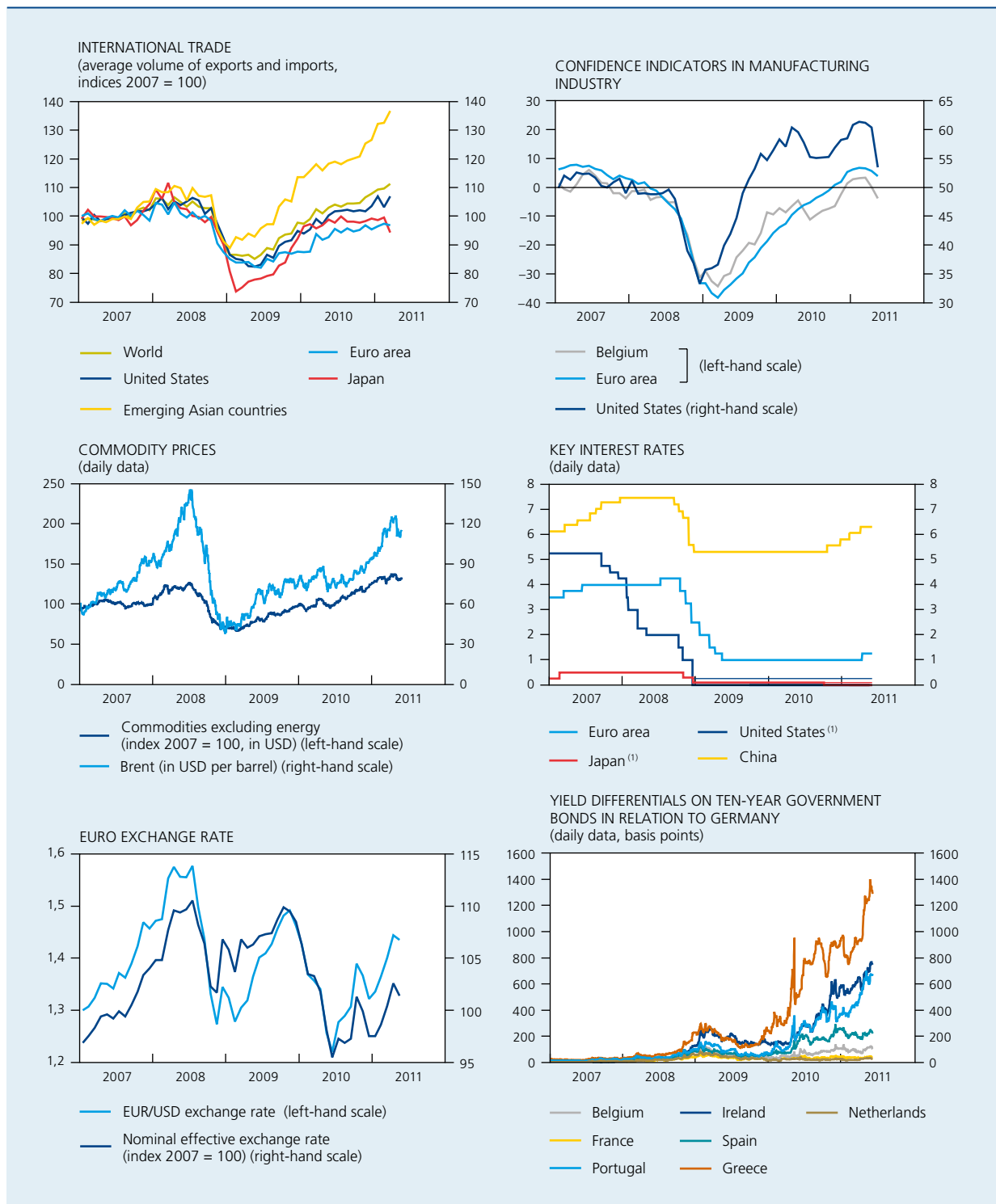
In the short term, the natural disasters which hit Japan on 11 March 2011 – the earthquake and the tsunami which followed it – not only led to a terrible loss of human life but also destroyed much of the local infrastructure, necessitating a major reconstruction effort. Suspension of the operation of the nuclear power stations and electronic component factories in the disaster region could have repercussions on the country's energy market and on some production chains across the world – especially in the car manufacturing sector and the electronic equipment industry. On the basis of experience of other disasters, it is generally considered that the economic impact of these events will be temporary.

More generally, the strong demand for commodities, particularly from the emerging economies, fuelled a sharp rise in international market prices. That trend was reinforced by disappointing harvests and restrictions on exports of agricultural products, particularly cereals. In addition, political tensions in the Middle East and North Africa led to fears of oil supply problems. In all, continuing a trend apparent since the beginning of 2009, the rise in the crude oil price gathered pace during the first few months of the current year. The price per barrel of Brent peaked at USD 125 in the first few days of May 2011, compared to an average of USD 79.6 in 2010. Subsequently, the reversal of the position of oil market operators brought the price down to around USD 110 per barrel at the cut-off date for the projections.

This led to higher consumer price inflation worldwide. The increase was particularly marked in the emerging economies which are operating at close to full production capacity, having been little affected by the economic recession. The advanced economies also saw inflation gather pace, mainly as a direct result of energy prices. In that context, some central banks began to raise their key interest rates in order to contain the overheating of the economy and prevent energy price rises from infecting wages and prices in general. The People's Bank of China increased its interest rates in stages from 5.3 to 6.3 % from the end of 2010, and similar decisions were taken in Brazil. On 4 April 2011, the European Central Bank raised interest rates for the first time since 2008. However, at 1.25 %, the rate on the main refinancing operations remains low, and measures to ensure the provision of ample liquidity are still in place.

**CHART 1** DEVELOPMENTS CONCERNING THE FINANCIAL MARKETS, KEY INTEREST RATES, BUSINESS CONFIDENCE AND INTERNATIONAL TRADE

(monthly data, unless otherwise stated)



Sources : Bank of Japan, CPB, ECB, Federal Reserve, HWWI, People's Bank of China, Thomson Reuters Datastream.

(1) In the case of the key interest rates, the line is divided if the central bank has set a target range, the upper limit being indicated by a narrower line in the same colour.

If consolidation of the cyclical upswing is maintained, monetary policies should continue to become less accommodating in the coming months. At the same time, fiscal consolidation should be implemented in order to counteract the deterioration in public finances which followed the economic crisis, and thus bring down the public debt to a level which is sustainable in the long term. That process should be accompanied by continuing debt reduction in the private sector, in the case of financial institutions and households. These various adjustments should curb the growth of demand during the period covered by the forecasts.

The recent forecasts therefore point to expanding activity in 2011 and 2012; though growth is predicted to be fairly modest as is generally the case following a financial crisis, it should be sufficient to reduce the unemployment rate in the main economic regions. According to the EC, GDP should grow by around 4 % per annum at global level, with the emerging economies achieving twice that figure. For the European Union as a whole, growth is projected at around 1.8 %.

The consolidation of the cyclical upswing expected for the European Union and for the euro area continues to mask significant divergences between countries. On the one hand, thanks to its restored competitiveness and sound public finances, Germany has benefited greatly from the foreign trade revival, taking neighbouring countries including Belgium in its wake. Conversely, other more peripheral countries still face the need to embark on major restructuring in order to restore sound fundamentals, permitting balanced and sustainable economic growth. Depending on the case, they have to strengthen the general competitiveness of the economy, reduce excessive private sector debt – due in particular to the bursting of the property bubble – or more specifically, remedy the seriously compromised position of the banking sector. The threat which these situations pose for the sustainability of the public sector's budgetary and financial position has led to a substantial widening of the spreads on the government bonds of those countries. Following the Greek crisis in April and May 2010, mechanisms were set up by the European Union, the ECB and the IMF to offer emergency solutions; Ireland and Portugal also resorted to those mechanisms. Nonetheless, the essential adjustments needed to bring about a fundamental improvement in these situations depressed demand and activity in the economies in question in 2010, and will continue to do so in the medium term; that will mean bigger variations in performance between the euro area partners.

**TABLE 1** PROJECTIONS FOR THE MAIN ECONOMIC REGIONS  
(percentage changes compared to the previous year, unless otherwise stated)

	2010	2011	2012
	Actual	Projections	
<b>GDP in volume</b>			
World .....	4.9	4.0	4.1
of which:			
United States .....	2.9	2.6	2.7
Japan .....	3.9	0.5	1.6
European Union .....	1.8	1.8	1.9
China .....	10.3	9.3	9.0
India .....	10.4	8.0	8.2
Russia .....	4.0	4.5	4.2
Brazil .....	7.5	4.4	4.3
<i>p.m. World imports</i> .....	12.2	7.3	7.4
<b>Inflation<sup>(1)</sup></b>			
United States .....	1.6	2.5	1.5
Japan .....	-0.7	0.2	0.3
European Union .....	2.1	3.0	2.0
China .....	3.3	5.0	2.5
<b>Unemployment<sup>(2)</sup></b>			
United States .....	9.6	8.7	8.1
Japan .....	5.1	4.9	4.8
European Union .....	9.6	9.5	9.1

Sources: EC, IMF.

(1) Consumer price index.

(2) In % of the labour force.

## 1.2 Eurosystem projections for the euro area

Underpinned by foreign demand and a revival in business investment, activity in the euro area was surprisingly vigorous in the first quarter of 2011. Boosted by the dynamism of Germany and the neighbouring economies, including Belgium, quarterly GDP growth came to 0.8 %, the highest figure seen since the start of the recovery in mid-2009.

According to the Eurosystem projections, the expansion of activity is set to continue for the rest of this year and in 2012, albeit at a slightly slower pace than in the first quarter. Thus, after a 1.7 % increase in 2010, GDP growth is likely to range between 1.5 and 2.3 % in 2011 and between 0.6 and 2.8 % in 2012.

While continuing to benefit from sustained foreign demand – though exports may be held back slightly by the recent appreciation of the euro – activity will increasingly be based on domestic demand. The expected improvement in the labour market is a key factor here, as is the likely recovery of business investment. This endogenous strengthening of the economy should be enough to sustain growth despite the short-term constraining effect of the fiscal consolidation efforts adopted in various countries. That will be accompanied by the effect of the necessary absorption of the imbalances in the private sector debt and competitiveness of countries where the financial crisis revealed serious structural problems.

The increase in inflation seen in 2010 has continued and gained momentum at the beginning of 2011. In April, consumer price inflation reached 2.8 %, compared to an average of 1.6 % in 2010. That is due mainly to the direct effects of higher commodity prices, principally the oil price. In so far as the assumptions made are based on stabilisation of the level of commodity prices, overall inflation should ease slightly in 2012. The weaker contribution of energy prices to the general rise in consumer prices should more than offset the slight acceleration in underlying inflation due to the gradual absorption of excess production capacity. In all, inflation is expected to average between 2.5 and 2.7 % in 2011, and between 1.1 and 2.3 % in 2012.

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

	Euro area			<i>p.m. Belgium</i>		
	2010	2011	2012	2010	2011	2012
Inflation (HICP) .....	1.6	2.5 / 2.7	1.1 / 2.3	2.3	3.4	2.2
GDP in volume .....	1.7	1.5 / 2.3	0.6 / 2.8	2.1	2.6	2.2
of which:						
Private consumption .....	0.8	0.6 / 1.2	0.4 / 2.2	1.6	1.7	1.7
Public consumption .....	0.6	-0.4 / 0.6	-0.5 / 0.9	1.1	0.9	2.1
Investment .....	-0.9	2.0 / 4.2	1.1 / 5.9	-1.5	3.5	2.9
Exports .....	11.1	5.8 / 9.6	2.6 / 10.6	10.6	7.0	5.4
Imports .....	9.3	4.3 / 7.9	2.6 / 10.0	8.4	6.7	5.3

Sources: ECB, NBB.

## Box 1 – Assumptions adopted for the projections

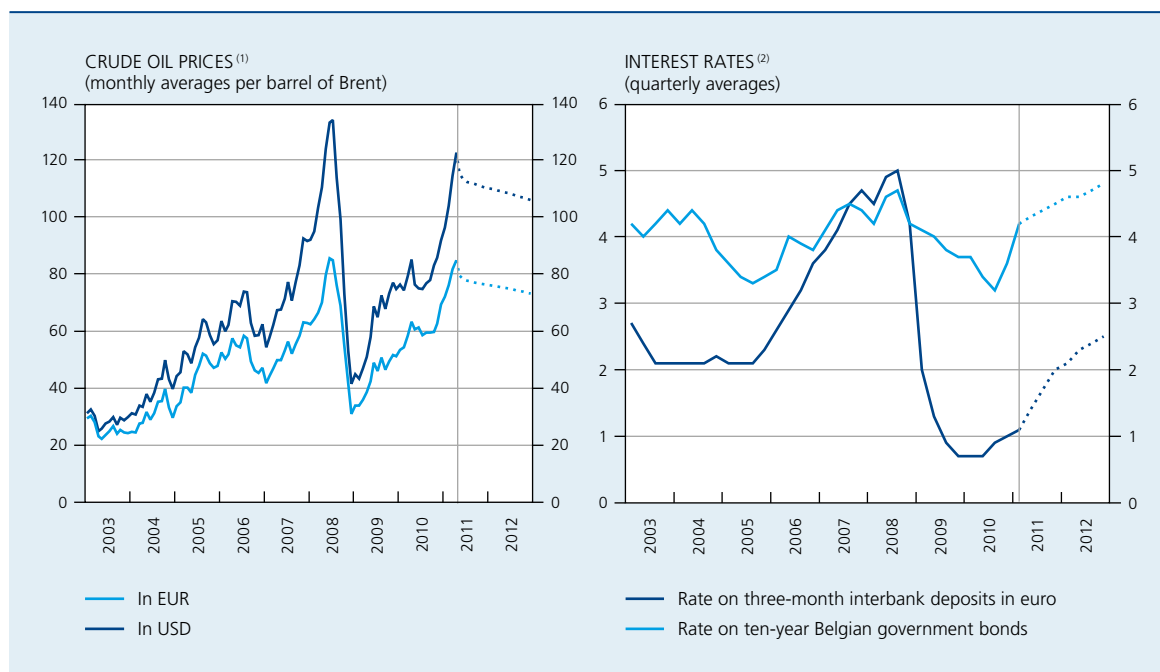
Produced as part of a joint exercise, the Eurosystem's economic projections for the euro area, and the Bank's projections for Belgium, are based on a set of technical assumptions and forecasts for the international environment drawn up jointly by the ECB and the national central banks of the Eurosystem.

The interest rate assumptions are based on market expectations as at mid-May 2011. As an annual average, rates on three-month interbank deposits in euro are expected to increase from 0.8 % in 2010 to 2.3 % in 2012. That rise in 2011 and 2012 mainly reflects the market expectation of an increase in the ECB's key rates. The yield on ten-year Belgian government bonds is projected to rise from 3.5 % in 2010 to 4.3 % in 2011 and 4.7 % in 2012. The increase in the level of long-term interest rates in Belgium is due both to the widespread upward trend evident from the fourth quarter of 2010 and a widening of the spread in relation to the rate on the German Bund to just over 100 basis points. That spread remains constant up to the end of the projection horizon. These movements in the benchmark rates are incorporated in the interest rates which banks apply to their private customers.





## ASSUMPTIONS CONCERNING THE MOVEMENT IN OIL PRICES AND INTEREST RATES



Source: ECB.

(1) Actual figures up to April 2011, assumptions from May 2011.

(2) Actual figures up to the first quarter of 2011, assumptions from the second quarter of 2011.

Bilateral exchange rates are assumed to remain unchanged at their value in mid-May 2011, namely USD 1.43 to the euro. In 2010, the average rate was EUR/USD 1.33.

On the basis of the implicit prices in forward contracts, the price per barrel of Brent is assumed to rise from the 2010 level of USD 79.6 to USD 111.1 dollars in 2011 and USD 108.0 in 2012.

### PROJECTION ASSUMPTIONS

	2010	2011	2012
		(annual averages)	
Interest rate on three-month interbank deposits in euro . . . . .	0.8	1.6	2.3
Yield on ten-year Belgian government bonds . . . . .	3.5	4.3	4.7
EUR/USD exchange rate . . . . .	1.33	1.42	1.43
Oil price (USD per barrel) . . . . .	79.6	111.1	108.0
		(percentage changes)	
Export markets relevant to Belgium . . . . .	10.2	7.0	7.1
Competitors' export prices . . . . .	6.1	3.5	1.4

Source: ECB.

Following a vigorous resurgence in 2010, with a volume increase of around 10 % against the previous year, the expansion of demand from Belgium's export markets is expected to consolidate in 2011 and 2012, with the growth rate stabilising at around 7 %.

Compared to the projections produced at the end of 2010, the main revisions concern the oil price and the euro exchange rate. In both cases, the trend is upwards. The interest rates taken into account are also revised upwards, as is export markets growth.

Regarding public finances, the projections are based – in accordance with the Eurosystem conventions – on the macroeconomic environment and policy measures that have already been announced and specified in sufficient detail by governments, and which have been or are likely to be passed by national parliaments.

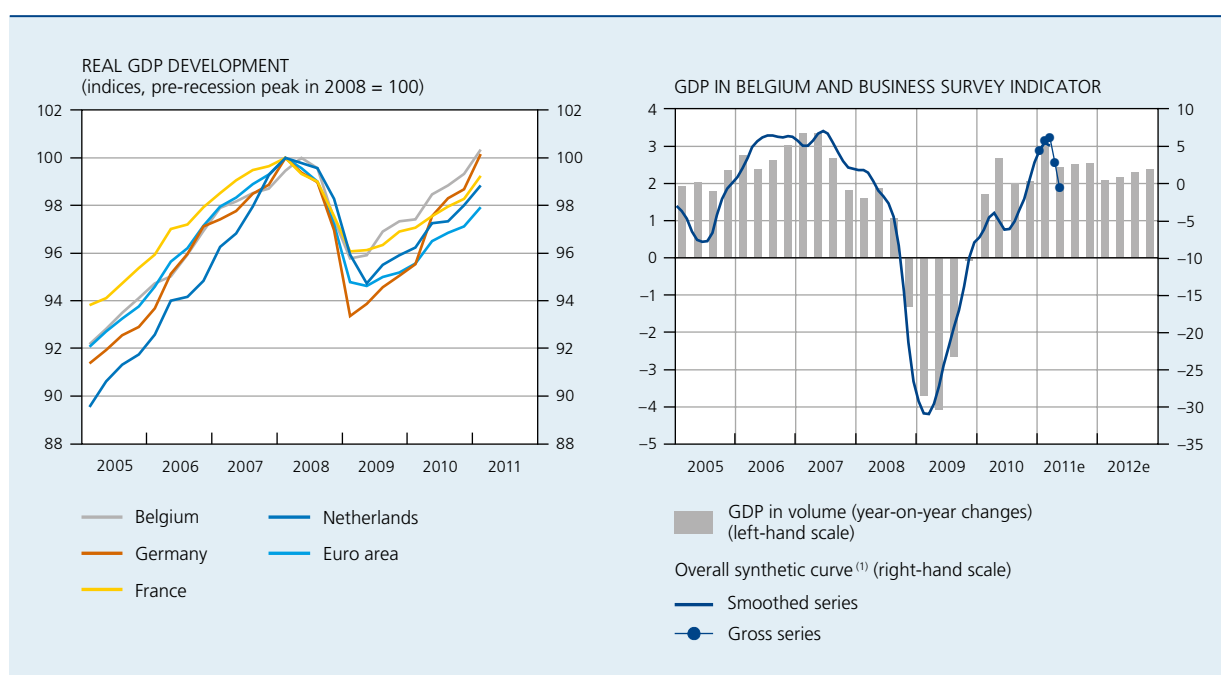
## 2. Activity, employment and demand

In Belgium, a robust recovery has been in progress for almost two years. The quarterly increase in the volume of GDP averaged 0.6 % between mid-2009 and the end of 2010, or 2.4 % at an annualised rate. According to the NAI's flash estimate, quarterly growth came to 1 % in the first three months of 2011. Thus, after eleven quarters, GDP has exceeded the figure for the second quarter of 2008, before the start of the recession.

It therefore seems that the Belgian economy has got through the recession better than the euro area as whole, including France and the Netherlands among the main neighbouring countries. The downturn in activity had been sharper in Germany and the Netherlands, and so far the recovery has been less vigorous in France. Only Germany has also regained the pre-crisis level of activity, thanks to a strong recovery in the last two years based largely on demand from the emerging economies. Belgium benefited indirectly via its close links with the German economy.

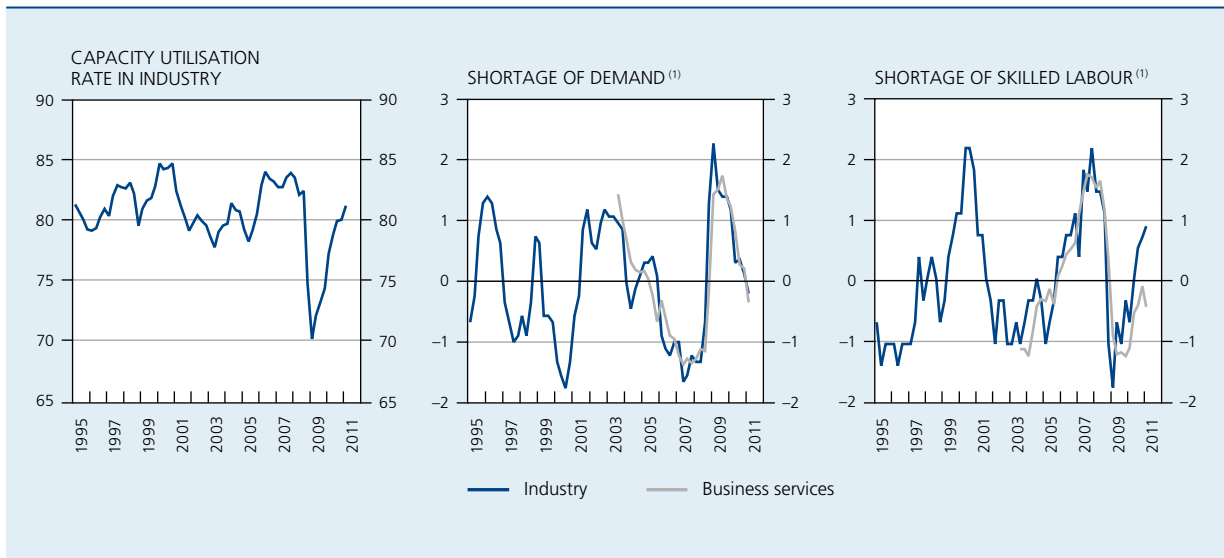
**CHART 2** GDP AND THE BUSINESS SURVEY INDICATOR

(data adjusted for seasonal and calendar effects, unless otherwise stated)



Sources: EC, NAI, NBB.  
 (1) Seasonally adjusted data.

**CHART 3** CYCLICAL TENSION INDICATORS



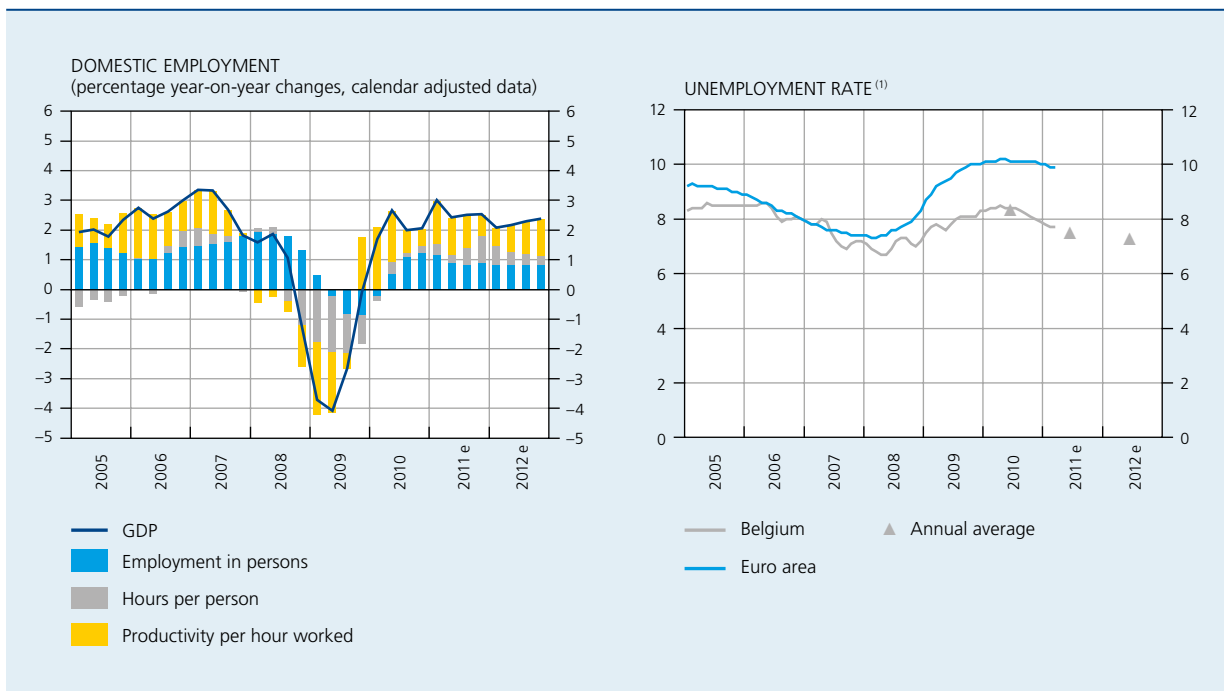
Source : NBB.

(1) Proportion of firms citing the factor as a factor impeding production. Centred, normalised series.

According to the projections, following the robust growth in the first quarter of 2011, activity for the rest of the year and in 2012 is likely to revert to a growth rate comparable to that seen previously. Overall, average annual GDP growth

is expected to increase from 2.1 % in 2010 to 2.6 % in 2011, before subsiding to 2.2 % in 2012. According to the typical pattern of a cyclical consolidation period, it is likely to be based increasingly on domestic demand.

**CHART 4** EMPLOYMENT AND UNEMPLOYMENT



Sources : EC, NAI, NEO, NBB.

(1) Harmonised unemployment rate, as a percentage of the labour force.

Thanks to the vigour of the current recovery, the under-utilisation of the production factors – labour and capital – which had resulted from the severe recession of 2008-2009 has been largely eliminated. True, GDP is probably not yet back to the potential level of full employment in the economy, but a number of tension indicators are rapidly returning to their long-term value. That applies to the level of capacity utilisation in manufacturing industry, which has risen by 11 percentage points since the lowest point in the crisis, to reach 81.2 % in April 2011. Similarly, a diminishing proportion of firms report a lack of demand, while the percentage complaining of a shortage of skilled labour is growing. These indicators, based on surveys seeking the opinions of business leaders, cannot measure the reserve capacity available in the economy – which may have been temporarily or permanently affected by the 2008-2009 economic crisis. Nonetheless, the consistent results for those indicators display the characteristics of a cyclical recovery which is maturing.

In any case, as economic activity picked up, the labour market rapidly improved, while the decline in employment had been noticeably modest at the midst of the crisis.

Initially, that improvement took the form of a revival in hourly productivity at the end of 2009 and a very gradual normalisation of the implicit working time per person, whereas these two variables had fallen sharply during the recession. By the beginning of 2010, these two movements were already accompanied by net job creation at a time when productivity, and especially the average working time per person, had still only partly recovered. Recourse to temporary lay-off schemes, in particular, lessened only gradually during the year.

Overall, for the economy as a whole, employment in persons increased by 0.7 % on average between 2009 and 2010, while the number of hours worked per person hardly increased at all, and productivity per hour worked increased by 1.3 %. According to the projections, 2011 and 2012 should see continuing consolidation of the labour market. Job creations are expected to persist at a rate very slightly higher than in 2010, at 0.9 and 0.8 % respectively. At the same time, the normalisation of actual working time which had begun in the previous year should continue in 2011 and, to a lesser extent, in

**TABLE 3** LABOUR SUPPLY AND DEMAND  
(calendar adjusted data, annual averages, unless otherwise stated)

	2008	2009	2010	2011 e	2012 e
	(percentage changes)				
GDP .....	0.8	-2.7	2.1	2.6	2.2
Volume of labour .....	1.4	-1.8	0.8	1.5	1.3
Domestic employment in persons .....	1.7	-0.4	0.7	0.9	0.8
	(changes in thousands of persons)				
Domestic employment .....	75.9	-15.9	29.5	41.9	37.4
<i>p.m. Change during the year</i> <sup>(1)</sup> .....	57.4	-38.4	54.2	40.2	37.3
Employees .....	65.9	-21.4	25.2	37.7	36.1
of which branches sensitive to the business cycle .....	44.7	-45.1	0.8	18.4	15.7
Self-employed persons .....	10.0	5.6	4.3	4.2	1.2
Frontier workers .....	0.5	1.0	0.2	0.0	0.0
National employment .....	76.4	-14.9	29.6	41.9	37.4
Unemployed job-seekers .....	-25.7	50.5	13.7	-24.5	-13.5
<i>p.m. Change during the year</i> <sup>(1)</sup> .....	-5.1	59.7	-10.2	-23.8	-9.1
Labour force .....	50.7	35.7	43.3	17.4	23.9
<i>p.m. Harmonised activity rate</i> <sup>(2)</sup> .....	67.1	66.9	67.7	67.9	68.0
<i>Harmonised employment rate</i> <sup>(3)</sup> .....	68.0	67.1	67.6	68.2	68.5
<i>Harmonised unemployment rate</i> <sup>(2)</sup> .....	7.0	8.0	8.4	7.5	7.3

Sources: EC, NAI, NEO, NBB.

(1) Difference between the fourth quarter of the year concerned and the fourth quarter of the previous year.

(2) In % of the population of working age (15-64 years), non calendar adjusted data.

(3) In % of the labour force (20-64 years), non calendar adjusted data.

2012. Productivity gains are expected to drop to around 1 % per annum, a rate comparable to that seen before the crisis.

In net terms, around 77 000 extra jobs should be created between the end of 2010 and the end of 2012, following an increase of 54 200 units during 2010. Thus, 68.5 % of the population aged from 20 to 64 years should be working in 2012, putting the employment rate 1.4 percentage point above the low point recorded in 2009. Taking account of the expected movement in the labour force, the downward trend in unemployment which had begun in early 2010 should continue steadily, reducing the unemployment rate from an average of 8.4 % in 2010 to 7.3 % in 2012.

As growth continues in 2011 and 2012, it should become more broadly based. The economic recovery which began in Belgium in mid-2009 was in fact driven by the vigorous export revival resulting from the marked strengthening of world trade, while the growth of domestic demand lagged behind. Although household consumption was already recovering in 2010, investment should reinforce the expansion of domestic demand in 2011. Imports are also expected to continue increasing as a result of strengthening domestic demand. Overall, the contribution of net exports to GDP growth is likely to fall to 0.4 percentage points in 2011 and 0.3 percentage points in 2012, while the contribution of domestic demand excluding the

change in inventories should increase to 1.8 and 2 percentage points respectively over those two years.

Exports of goods and services, which had exhibited vigorous growth in excess of 10 % in 2010, in parallel with the upturn in foreign demand, are likely to show more modest growth this year and next, amounting respectively to 7 and 5.4 % in real terms. For one thing, the expansion of foreign markets is likely to slow down to around 7 % in 2011 and 2012. Also, the loss of market shares incurred by Belgian firms, which had been very limited in the past three years, is expected to increase over the projection horizon. That loss is thus set to revert to the previous trend, owing to adverse cost developments for Belgian firms compared to their competitors, due both to the movement in labour costs in Belgium and the delayed impact of the recent appreciation of the euro.

The consolidation of economic activity is seen in a recovery in the demand addressed to firms, expressed in particular in the considerable increase in capacity utilisation in manufacturing industry and an improvement in corporate profitability which may facilitate the internal financing of investment projects. In that context, business investment is expected to begin expanding again from 2011, after two consecutive years of contraction. The gross fixed capital formation of firms is thus projected to increase by 3.7 % in volume in 2011 and 2012.

**TABLE 4** GDP AND MAIN EXPENDITURE CATEGORIES

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

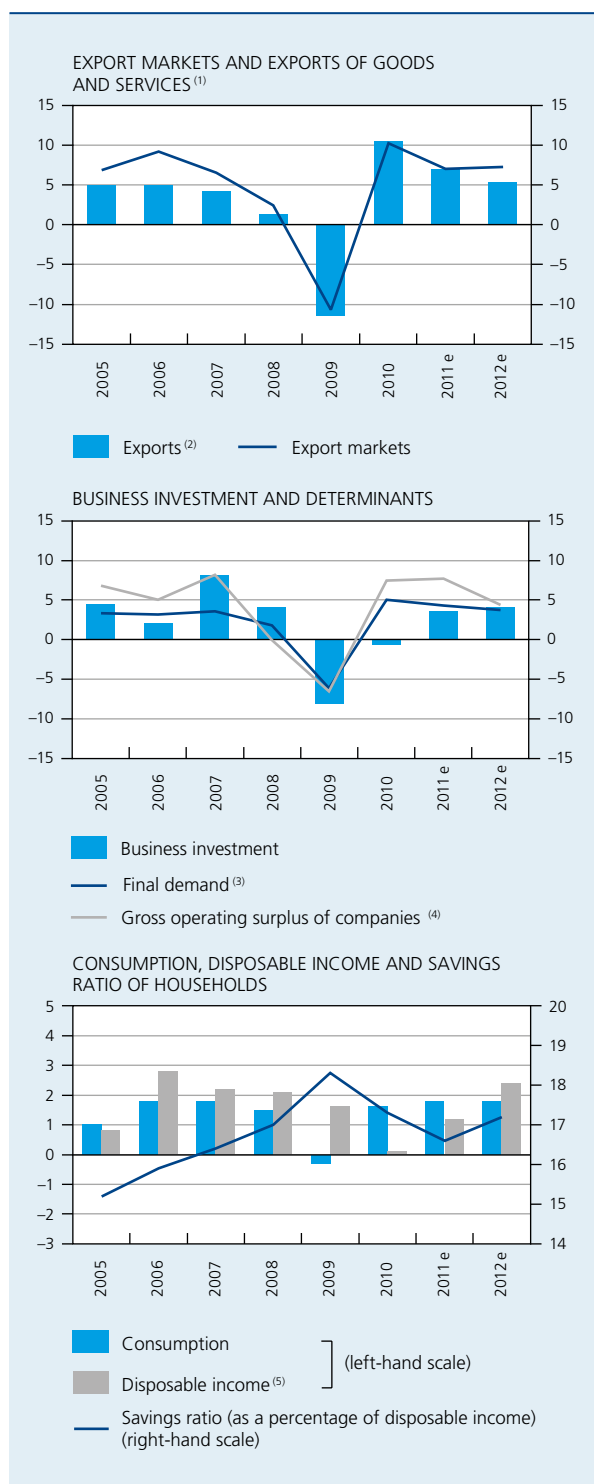
	2008	2009	2010	2011 e	2012 e
Private consumption expenditure .....	1.4	-0.2	1.6	1.7	1.7
General government consumption expenditure .....	2.5	0.4	1.1	0.9	2.1
Gross fixed capital formation .....	2.2	-5.0	-1.5	3.5	2.9
Housing .....	-0.6	-3.0	-2.5	1.6	0.4
General government .....	1.9	9.0	-2.8	8.4	5.5
Enterprises .....	3.4	-7.5	-0.9	3.7	3.7
<i>p.m.</i> Total final domestic expenditure <sup>(1)</sup> .....	1.7	-1.1	0.8	1.8	2.0
Change in inventories <sup>(1)</sup> .....	0.1	-1.0	-0.5	0.4	0.0
Net exports of goods and services <sup>(1)</sup> .....	-1.0	-0.5	1.8	0.4	0.3
Exports of goods and services .....	1.4	-11.4	10.6	7.0	5.4
Imports of goods and services .....	2.8	-10.9	8.4	6.7	5.3
GDP .....	0.8	-2.7	2.1	2.6	2.2

Sources: NAI, NBB.

(1) Contribution to the change in GDP.

**CHART 5** MAIN EXPENDITURE CATEGORIES

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



Sources: ECB, NAI, NBB.

(1) Seasonally adjusted data.

(2) Calendar adjusted data.

(3) Excluding change in inventories.

(4) Value data.

(5) Data deflated by the household consumption expenditure deflator.

In comparison with the other components of domestic demand, household consumption had picked up fairly quickly following the crisis: after a sharp fall in 2009, it grew by 1.6 % in real terms in 2010. This growth is set to continue at much the same pace in 2011 and 2012, at around 1.7 %, despite the slightly increased volatility of household disposable income. In nominal terms, that income should continue to increase steadily in 2011 and 2012, against the backdrop of strengthening activity and high inflation, leading to a sustained increase both in the earnings of employees and self-employed workers, and in investment incomes and social benefits. Conversely, disposable incomes will display a contrasting pattern in real terms between 2011 and 2012. As happened in 2010, the rise in real disposable income is likely to be curbed in 2011 by the fact that the current surge in inflation will be reflected only partially, and after some delay, in indexed incomes. That is because the health index which is used as the reference for index-linking incomes excludes certain products featuring particularly volatile prices, and because there is a time lag before the indexation mechanisms are triggered. Similarly, the tax scales applicable to payroll tax are only indexed after a certain time, and the adjustment is only made at the time of the final assessments, temporarily swelling the tax paid in a period of accelerating inflation. In 2012, these effects should be reversed, and that should bolster household purchasing power. These temporary movements in real disposable income are largely offset by the movement in the savings ratio, thus smoothing the consumption profile. Following a strong rise at the height of the crisis, in 2011 the savings ratio is expected to continue the decline which began in 2010. In 2012, it is projected to rise by 0.6 percentage points to 17.2 %, which is close to its long-term level. Household investment in housing is expected to increase again in 2011, with growth of 1.6 %; in 2012, curbed somewhat by the rise in interest rates, growth is projected at just 0.4 %.

Finally, the increase in general government consumption expenditure is put at 0.9 % in 2011, rising to 2.1 % in 2012. Public investment, which fluctuates in line with the electoral calendar, is likely to be particularly dynamic in 2011, with growth forecast at 8.4 %, remaining strong in 2012 with a further 5.5 % increase.

### 3. Prices and costs

In parallel with the strong revival in activity and demand at global level, there was a considerable increase in inflationary pressures of external origin in Belgium during 2010 and in early 2011. Those pressures should lessen during the projection period, whereas – in contrast – domestic pressures will gradually strengthen.

Measured by the HICP, inflation increased from 0.8 % in January 2010 to 3.7 % in January 2011. It is expected to hover at well above 3 % throughout the year with a fluctuating profile in 2011 – reaching almost 4 % during the summer – mainly on account of oil price volatility. Overall, as an annual average, the rise in consumer prices is expected to increase from 2.3 % in 2010 to 3.4 % in 2011, before easing to 2.2 % in 2012, when – according to the assumptions adopted – the increases in consumer prices of energy are set to slow down.

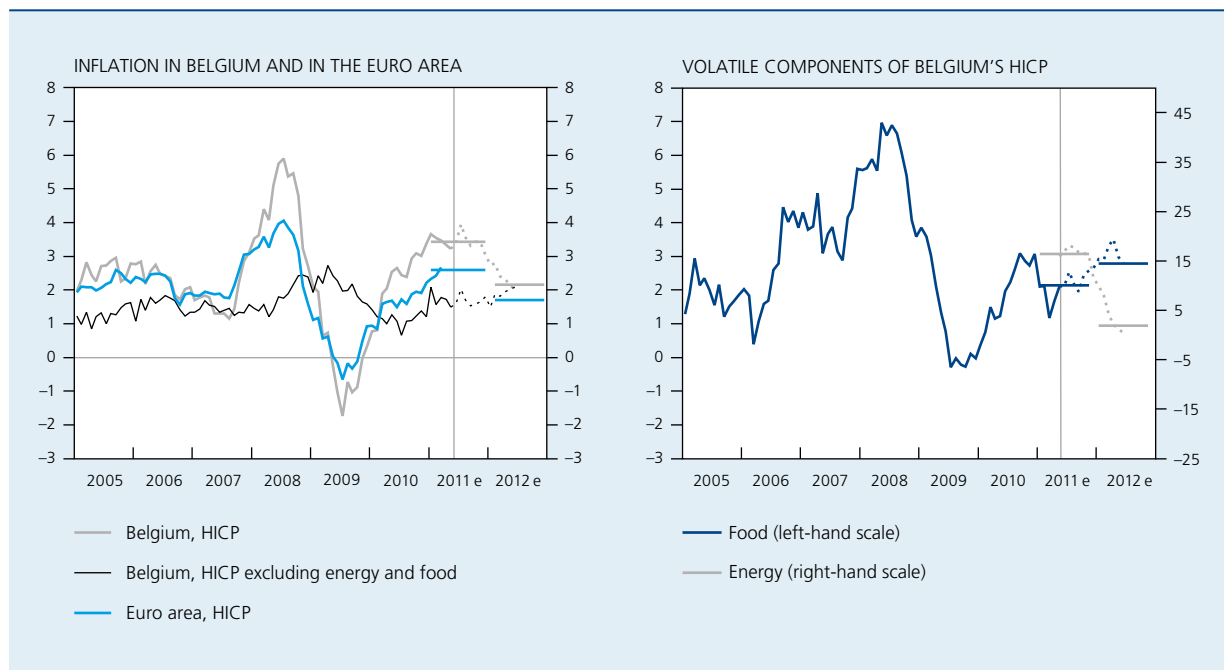
The energy component is in fact largely responsible for the recent and the predicted pattern of inflation. After the price per barrel of Brent had risen from an average of USD 62 in 2009 to almost USD 80 the following year, the increase accelerated strongly at the end of 2010 and the beginning of 2011, with prices reaching an average of USD 123 per barrel in April, an additional rise of 54 % against 2010. Owing to the recent appreciation of the euro, that increase is cut to 41 % when prices are expressed in that currency, although that is still a substantial rise. In mid-May, prices dropped to around USD 110 per barrel, though that was still well above the previous year's figure. Thus, inflation reached 10 % in 2010 for the energy component – which represents around 11 % of the consumer price basket – and is projected at over 16 % in 2011. The increase in consumer prices of energy

is expected to fall to less than 2 % in 2012, largely on account of the time lag before the recent increase in energy commodity prices is passed on in gas and electricity prices. According to the assumption adopted, oil prices are in fact expected to remain stable in 2012. The projections also take account of the substantial rise in electricity distribution tariffs in large areas of Flanders, which is estimated to have an impact on the energy component of inflation of around 1 percentage point in 2011 and 2012. That rise is due to the high cost of the regional subsidies for the installation of solar panels.

Food prices also gathered pace in the second half of 2010, and price rises are likely to be sustained in 2011. As in the case of energy, the strength of global demand combined with supply problems affecting certain products led to a steep rise in food commodity prices on the international markets. Although these movements are partly attenuated by the pricing method used in the European common agricultural policy, they still led to a food price rise which is set to continue in 2011.

While a gradual deceleration is expected in 2012 for the energy and food components, the increase in underlying inflation is likely to be sustained. It accelerated at the end of 2010 and in early 2011, rising from an average of 1.1 % in 2010 to 1.7 % in April 2011 – fuelled mainly

**CHART 6 INFLATION**  
(HICP, percentage changes compared to the corresponding period of the previous year)



Sources: EC, NBB.

by services; it is expected to average 2 % in 2012. The acceleration is due in part to the allowance for increases in prices of fuel or food in the prices of plane tickets or restaurant services, for example. It is also driven by the price adjustments directly linked to inflation or other reference indices for a range of services. Finally, in a favourable economic climate, it will be propelled by the strong rise in labour costs – itself largely fuelled by indexation to prices – and by expanding profit margins.

Overall, the increase in inflation during 2010 outpaced the average for the euro area and, according to the projections produced by the Bank and the Eurosystem,

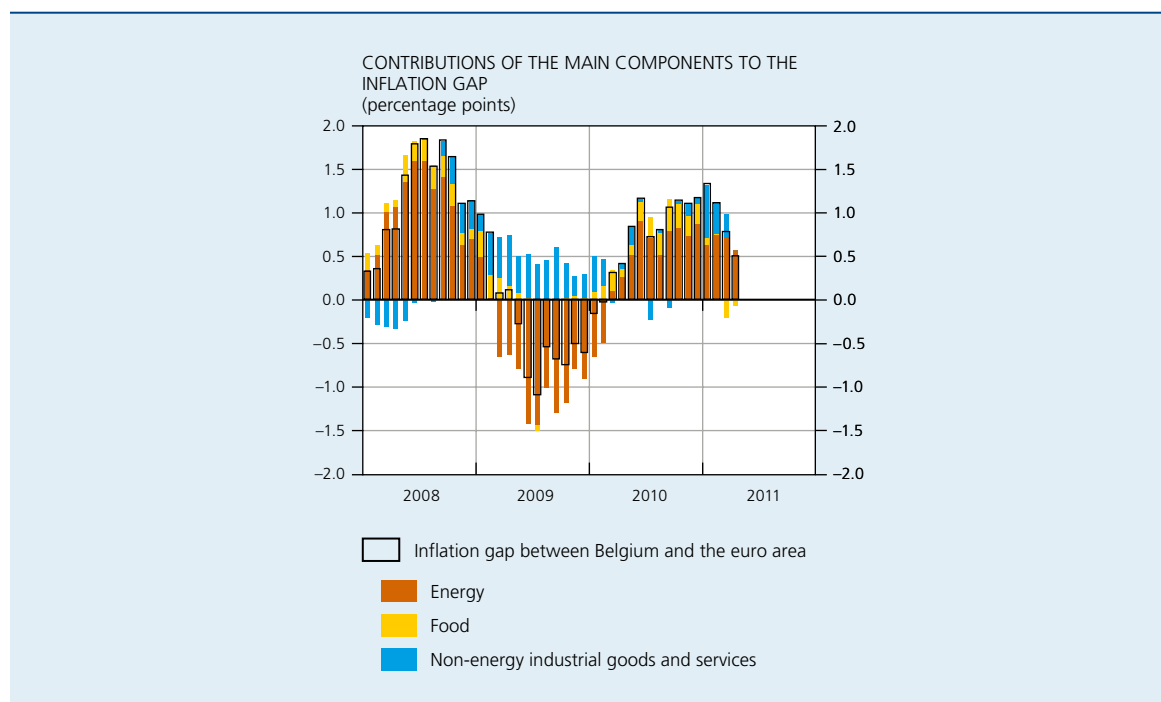
inflation in Belgium is likely to remain significantly higher in 2011 and 2012, even though convergence is expected in the long term. Box 2 examines this gap in more detail.

Although, in a context of rising oil prices, the positive inflation gap between Belgium and the euro area is due largely to the energy component of the price index, according to the data available for the euro area, it will also be accompanied by a bigger rise in labour costs in 2011 and 2012. That applies equally in relation to the three main neighbouring countries, and will impair the cost competitiveness of firms.

## Box 2 – Why is inflation in Belgium currently higher than in the euro area?

After having been negative in 2009, the inflation gap between Belgium and the euro area became positive again in 2010 and at the beginning of 2011; that is very similar to the situation prevailing in 2008. Just as in that year, it was principally the direct effects of rising commodity prices – mainly concerning the energy component – that were greater in Belgium. The large contribution of energy to the inflation gap is due to three factors: greater consumption of energy by households, a lower average level of excise duty on energy, and certain characteristics

### INFLATION GAP BETWEEN BELGIUM AND THE EURO AREA



Sources : EC, NBB.



of the setting of energy prices excluding tax, notably the more marked and swifter transmission of energy commodity prices to consumer prices of gas and electricity (see also the Bank's Report 2010, box 5, page 76). In 2011, the contribution of the energy component was also augmented by an increase in electricity distribution tariffs – a situation which again mirrored that prevailing in 2008.

Subsequently, these first-round effects – which are more prominent in Belgium – may put up the price of products whose cost is largely determined by the cost of energy or food, such as plane tickets or restaurant services, and thus widen the inflation gap. Other price rises are due to the common practice in Belgium of more or less explicitly indexing the price of certain services to recent inflation. That applies to rents, for example, but also to services such as some types of insurance or public transport. In all, leaving aside energy prices set according to specific formulas, it can be said that around 10 % of the components of the price index basket are subject to an indexation mechanism based on the general inflation figures or on a similar benchmark such as the health index.

Finally, the wage increases granted in order to compensate for the loss of purchasing power caused by the first-round effects may ultimately fuel the inflation gap if they lead to earlier or bigger price increases than in other countries. The automatic indexation of wages in Belgium facilitates that type of wage increase. Such second-round effects were observed during 2008-2009 and could widen the inflation gap attributable to underlying inflation.

It should be noted that the interpretation of the movement in the gap in 2011 is hampered by the introduction of methodological changes concerning the way in which seasonal product prices are taken into account in most other euro area countries in 2011 (Belgium had already started applying the new Directive on the subject in 2010); these changes affect the price profile of processed foods and non-energy industrial goods. In addition, the substantial narrowing of the gap in March and April 2011 – due in particular to the energy contribution – must be considered temporary. In the coming months, the gap is expected to widen, taking account of the movement in the energy component and, in particular, the rise in the distribution tariffs, but also the movement in labour costs and second-round effects.

In Belgium, unit labour costs in the private sector dropped by 0.7 % in 2010, owing to the combined effects of the recovery of productivity and a very small rise in labour costs per hour worked. They are estimated to increase strongly in 2011 and 2012, by 1.6 and 2.5 % respectively.

The result for 2010 was due mainly to the effects of the incipient recovery, and largely represents a catching-up process following the very considerable increase in the two preceding years, at the time of the economic recession. At the start of the recovery phase, apparent labour productivity per hour picks up again as a result of the absorption of the under-used labour reserves in firms. In addition, in 2010, the increase in wages was slowed by the delayed effects of the very weak inflation in the previous year. These factors will no longer be so decisive in 2011 and 2012, and could even contribute to a strong increase in labour costs, in a context of consolidation of the recovery phase and high inflation.

Thus, following a 1.3 % increase in 2010, hourly productivity in the private sector is expected to return gradually to an annual growth rate of around 1 %, comparable to that seen immediately before the economic recession.

The growth of hourly labour costs is expected to increase from 0.6 % in 2010 to 2.9 % in 2011 and 3.4 % in 2012. This marked acceleration – admittedly, from a low rate of increase in the first year – is very largely due to the automatic indexation of wages. According to the projections, the health index of consumer prices, which is used as the reference for indexation, will rise by 3 % in 2011 – or 0.4 percentage points less than overall inflation – and 2.3 % in 2012, giving a cumulative increase of 5.4 %. Ultimately, that increase will be fully integrated into the movement in wages, but the effect of indexation will still be more marked in the second year owing to the time lags caused by the varying indexation arrangements applicable in the joint committees. Apart

**TABLE 5** PRICE AND COST INDICATORS

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

	2008	2009	2010	2011 e	2012 e
HICP .....	4.5	0.0	2.3	3.4	2.2
Health index .....	4.2	0.6	1.7	3.0	2.3
Underlying inflation <sup>(1)</sup> .....	1.8	2.1	1.1	1.7	2.0
GDP deflator .....	1.9	1.1	1.8	2.7	2.5
Labour costs in the private sector:					
Labour costs per hour worked .....	3.6	3.9	0.6	2.9	3.4
of which indexation .....	2.9	2.5	0.5	2.7	2.7
Labour productivity <sup>(2)</sup> .....	-0.2	-0.8	1.3	1.2	0.9
Unit labour costs .....	3.8	4.7	-0.7	1.6	2.5

Sources: EC; FPS Employment, Labour and Social Dialogue; NAI; NBB.

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

(2) Value added in volume per hour worked by employees and self-employed persons.

from the indexation, the assumption for the movement in hourly labour costs in the private sector in 2011 and 2012 takes account of the 0.3 % increase planned for the second year under the draft central agreement endorsed by the government, and an additional increase due in particular to the tensions emerging on certain segments of the labour market.

## 4. Public finances

### 4.1 Overall balance

According to the figures published by the NAI at the end of March 2011, Belgium's public finances recorded a deficit of 4.1 % of GDP in 2010. That is a considerable improvement on the previous year, when the economic and financial crisis had driven the deficit up to 5.9 % of GDP. In the macroeconomic context described above, the deficit is expected to fall to 3.5 % of GDP in 2011. However, in 2012 it is likely to increase again to 4.1 % of GDP.

It should be noted that the projections take account only of budgetary measures which have already been announced and specified in sufficient detail. They disregard the effect of any measures yet to be taken, particularly when the 2012 budgets are drawn up.

The April 2011 stability programme assumes a deficit of 3.6 % of GDP in 2011, falling to 2.8 % of GDP in 2012 before being systematically cut and converted to a small

surplus in 2015. According to the present projections, the target for 2011 will be met. Conversely, the targets defined for 2012 and the subsequent years will require a very substantial consolidation effort.

The economic situation is expected to have a favourable impact on the budget balance. In both 2011 and 2012, the expansion of activity is likely to be sustained and to exceed the trend growth rate. Overall, the economic situation is predicted to improve the financing balance by 0.6 % of GDP during the period considered.

Interest charges will probably continue to exert a positive effect on the budget balance in 2011. While the interest rates on treasury certificates should gradually increase, the impact of that rise should be less than that of the new reduction in the implicit interest rate on the long-term debt. Despite the increase in market interest rates, loans maturing or repaid in advance could in fact be refinanced at a lower rate. Conversely, in 2012, the expected continuation of the increase in market interest rates is likely to raise the implicit interest rate on the short- and long-term debt, pushing up the interest charges.

Non-recurring factors are expected to have a positive impact on the financing balance in 2011. The main factor here is a temporary rise in revenues: owing to the accelerating inflation, the personal income tax collected in the form of payroll tax is increasing faster than labour incomes. The annual indexation of the scales used to calculate the payroll tax is in fact based on the previous year's inflation figure. The impact of non-recurring factors is likely to be very limited in 2012.

**TABLE 6** GENERAL GOVERNMENT ACCOUNTS<sup>(1)</sup>  
(in % of GDP)

	2008	2009	2010	2011 e	2012 e
Revenues .....	48.8	48.1	48.8	49.1	48.8
Fiscal and parafiscal revenue .....	43.7	42.9	43.3	43.4	43.1
Other .....	5.1	5.3	5.5	5.7	5.6
Primary expenditure .....	46.3	50.4	49.5	49.3	49.2
Primary balance .....	2.5	-2.3	-0.7	-0.2	-0.5
Interest charges .....	3.8	3.6	3.4	3.3	3.6
Financing requirement (-) or capacity .....	-1.3	-5.9	-4.1	-3.5	-4.1
<i>p.m. Effect of non-recurrent factors</i> .....	0.0	-1.0	0.0	0.2	0.0

Sources: NAI, NBB.

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

## 4.2 Revenue

Revenues of general government are expected to grow by 0.3 % of GDP in 2011, before contracting by a similar percentage in 2012.

The increase in the revenue ratio in 2011 is due partly to the temporary effect that the acceleration in inflation exerts on personal income tax revenues. However, it is attributable mainly to structural measures. Thus, the abolition of the remaining portion of the flat-rate reduction granted to residents of the Flemish Region increases personal income tax, while the allowance for energy-saving investment and the system of deducting mortgage costs on own homes will probably restrain the rise in these revenue categories. The levies on goods and services are projected to increase as a result of the rise in excise duty on tobacco and diesel and the new rules whereby VAT will be payable in full on the sale of a new building with an associated plot of land. Corporate tax revenues should then also increase as a result of the application of the exit tax on real estate investment funds with fixed capital, and a fall in the net cost of the risk capital allowance. The average yield on a ten-year linear bond, used as the benchmark rate for the risk capital allowance, in fact declined to 3.4 % in 2010. As that rate applies to the year 2012, the assumption is that companies will already take that into account in 2011 in their advance corporate tax payments.

Non-fiscal and non-parafiscal revenues are also set to rise strongly in 2011, owing partly to the increase in the new levy under the deposit protection system, and partly to the substantial rise in payments to the government in respect of the support given during the financial crisis, notably following

the first payment made by a financial institution in remuneration for the financial resources injected by the government.

**TABLE 7** STRUCTURAL MEASURES CONCERNING PUBLIC REVENUES

(in € million, unless otherwise stated;  
changes compared to the previous year)

	2011 e	2012 e
Taxes .....	644	-614
of which:		
Tax reduction granted by the Flemish Region .....	104	56
Tax reduction for energy-saving investment .....	-61	0
Deduction of mortgage charges for own homes .....	-95	0
Excise duty on tobacco .....	59	0
Excise duty on diesel .....	188	0
VAT on certain building land .....	97	0
Risk capital allowance: change in the reference interest rate .....	280	-670
Tax on real estate investment funds with fixed capital .....	50	0
Social security contributions .....	8	-185
Non-fiscal and non-parafiscal revenues ..	1 273	-220
of which:		
Remuneration on guarantee systems .....	452	-199
Interest and dividends .....	821	-21
<b>Total</b> .....	<b>1 924</b>	<b>-1 019</b>
<i>p.m. In % of GDP</i> .....	<i>0,5</i>	<i>-0,3</i>

Sources: Budget documents, FPS Finance, NSSO, NBB.

It should be noted that the increase in the revenue ratio fell short of the impact of the measures in 2011. The reason is that labour incomes – which are subject to relatively high fiscal pressure – are rising less quickly than GDP, and that is depressing the revenue ratio.

The decline in the revenue ratio in 2012 will be due almost exclusively to structural factors. The main point here is the reduction in corporate tax revenues which will result from the expected rise in the average yield on ten-year linear bonds: that yield is projected to rise to 4.3 % in 2011, leading to a corresponding increase in the benchmark interest rate for the risk capital allowance. The provisional scheme whereby that benchmark rate was limited to 3.8 % will in fact cease to apply.

### 4.3 Primary expenditure

Primary expenditure expressed as a percentage of GDP should fall by 0.2 percentage point in 2011 and 0.1 points in 2012, while still remaining at what can be considered a very high level in historical terms. In volume terms, primary expenditure is expected to expand by 1.5 % and 2.3 % over those two years. For 2011, the real increase in this expenditure will be limited, since the rise in wages and social benefits linked to indexation is less than the increase in the consumer price index, and on account of the reduction in unemployment expenditure. Adjusted for non-recurring and cyclical factors and the effects of indexation, primary expenditure is expected to grow by 2.2 % and 1.8 % respectively in 2011 and 2012.

The expected increase in primary expenditure in 2011 is the outcome of divergent movements within the government sub-sectors. At federal government level, there is likely to be a relatively moderate increase in expenditure, notably on account of the expected fall in employment in that sub-sector. Similarly, the expenditure of the Communities and Regions will only increase slightly. At the same time, the strong growth of social security spending will persist, particularly owing to the expected developments in health care and pensions. A further increase in expenditure on service vouchers and measures concerning adjustment in line with prosperity will probably also boost expenditure. Local authorities will likewise record a relatively large increase, influenced as usual by a strong rise in their investment in the run-up to the local elections.

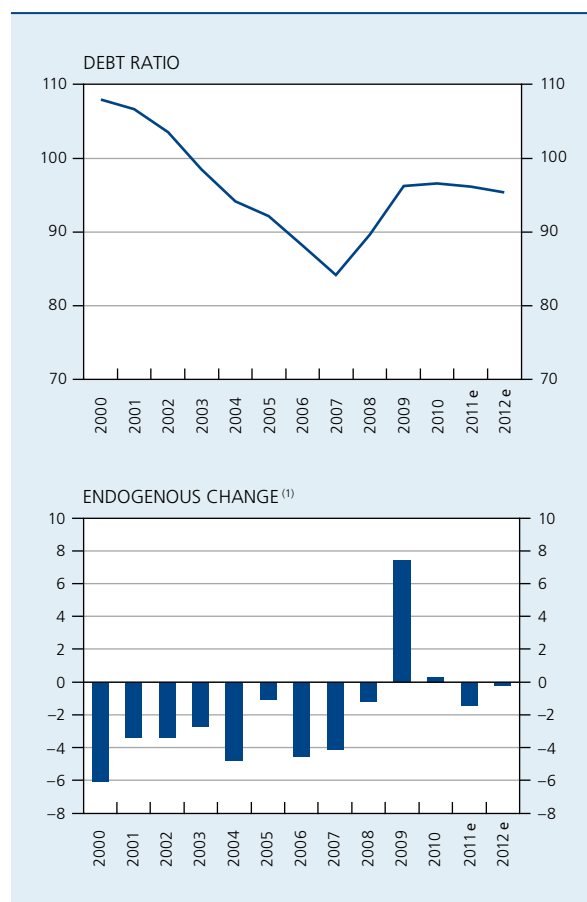
The growth of primary expenditure in 2012 is obviously hard to estimate since no budget is available as yet. The estimates for that year were therefore produced

in accordance with the principle of a relatively neutral spending policy, the rise in primary expenditure after adjustment for cyclical and non-recurring factors being more or less equivalent to the trend growth of activity. The impact of the relatively large increase in local authority investment and health care is expected to be offset by a small increase in other expenditure categories, such as subsidies granted to enterprises.

### 4.4 Debt

Between 1993 – when the public debt had peaked at 134.1 % of GDP – and 2007, the general government debt ratio had declined continuously. In 2008, that decline came to an abrupt end: in that year, the debt ratio increased sharply as a result of the capital injections for financial institutions during the crisis which battered

**CHART 7** PUBLIC DEBT<sup>(1)</sup>  
 (percentages of GDP)



Sources: NAI, NBB.

(1) Consolidated gross debt of general government.

(2) The endogenous change in the public debt reflects the debt dynamics, leaving aside the impact of operations which influence the debt without affecting the overall balance.

the sector. In 2009, the debt ratio continued to rise significantly owing to the decline in GDP and the substantial increase in the deficit. In 2010, the upward trend in the debt continued, but at a much more modest rate than in the previous year. At the end of 2010, the debt ratio still stood at 96.6 % of GDP.

According to the projections, 2011 should bring a turnaround in the situation: the debt ratio should decline again, if only slightly. As a result of a relatively strong rise in nominal GDP – due both to the strengthening of economic activity and accelerating inflation – the debt ratio should in fact record an endogenous decline, exceeding the rise in the public debt due to exogenous factors such as the impact of the loans to Greece, Ireland and Portugal. Thus, the debt ratio should drop to 96.1 % of GDP in 2011.

In 2012, the endogenous downward trend in the public debt should be reinforced by the partial repayment – taken into account in the budget forecasts – of the capital aid to the financial sector. During that year, the debt ratio should continue falling to 95.4 % of GDP.

## 5. Risk factor assessment

In Belgium as in other European countries, the economic consolidation has continued at a sustained pace in the past six months. Thus, two years after reaching the lowest point in a major crisis, the activity and employment situation is more favourable than feared. In particular, thanks to stronger than expected foreign demand, but also the strong GDP growth in the first quarter of 2011, the Bank's projection for the year as a whole has undergone significant upward revision: it is now 2.6 % whereas it was 1.8 % in the December 2010 exercise. This projection is higher than the figure presented in April 2011 by the IMF, and even those published recently by the Federal Planning Bureau, the EC or the OECD. Owing to the combined effect of the increase in energy costs and a faster rise in underlying inflation, the inflation forecast is also considerably higher than six months ago, both for 2011 – when it is put at no less than 3.4 % – and for 2012. In regard to the general government budget balance, the Bank predicts a deficit of 3.5 % of GDP in 2011, comparable to the figure announced by the government in the budget, and 4.1 % in 2012, which is close to most other forecasts. In that connection, it should be noted that the OECD forecasts assume a public deficit figure similar to that in the stability programme submitted to the European Union by the Belgian government. In contrast to the other institutions, which base their

projections on an unchanged policy, the OECD forecasts take account of fiscal consolidation measures which are yet to be adopted.

The scenario of a continuation of the favourable cyclical phase is retained, but depends on the assumptions adopted for the purpose of this exercise and, more generally, on the absence of new major shocks. A number of risk factors may be mentioned here.

Regarding the international environment, in the short term, the natural disasters in Japan could affect some production chains far beyond the Japanese economy, owing to its role in supplying specific components for certain industries. It is generally thought that these effects will be short-lived and limited in scale, but there is considerable uncertainty here. More fundamentally, overheating of the emerging economies could hold back global activity and world trade, whereas those economies had made a substantial contribution in recent years.

In general, while the advanced economies are indeed in a growth phase, they will no longer be able to count on new economic policy stimuli in order to maintain that growth. On the contrary, the essential debt reduction efforts could apply the brakes in the short term. In particular, the euro area has to contend with a sovereign debt crisis. Despite the support mechanisms set up for countries in difficulty, the situation remains very tense on the government bond markets, and a deterioration here could have serious repercussions and impede continued growth.

The Belgian economy is still particularly sensitive to international economic and financial developments, be they favourable or adverse. While it has benefited from the general improvement in economic conditions over the past two years, that is due largely to the sound financial position of households and firms, and a limited deterioration in public finances during the crisis. Maintenance of a stable and sound macroeconomic environment is essential in order to continue performing well in line with these projections. Various risks apply here.

First, the development of a widespread upward trend in prices and costs would be detrimental to the profitability and competitiveness of firms, and hence to the outlook for employment and household incomes. In that regard, limited transmission of the increased cost of commodities in energy prices – currently the main reason why inflation in Belgium exceeds the average for the euro area – and food prices, and moderate increases in other prices and wages are vital to maintain a stable macroeconomic framework.

**TABLE 8** COMPARISON OF THE FORECASTS FOR BELGIUM  
 (percentage changes compared to the previous year)

	GDP in volume		Inflation <sup>(1)</sup>		Budget balance <sup>(2)</sup>		Publication date
	2011	2012	2011	2012	2011	2012	
NBB – Spring 2011 .....	2.6	2.2	3.4	2.2	-3.5	-4.1	June 2011
<i>p.m. Autumn 2010</i> .....	1.8	–	2.1	–	-4.7	–	<i>December 2010</i>
Federal Planning Bureau (FPB) .....	2.2	2.2	3.5	2.0	-3.8	-4.4	May 2011
IMF .....	1.7	1.9	2.9	2.3	-3.9	-4.0	April 2011
EC .....	2.4	2.2	3.6	2.2	-3.7	-4.2	May 2011
OECD .....	2.4	2.0	3.6	2.4	-3.6 <sup>(3)</sup>	-2.8 <sup>(3)</sup>	May 2011
<i>p.m. Actual figures 2010</i> .....	2.1		2.3		-4.1		

(1) HICP, except FPB: final private consumption deflator.

(2) In % of GDP.

(3) Trajectory of the stability programme in April 2011.

Next, financial institutions must continue their efforts to strengthen their balance sheets. After all, they have a key role to play in financing the economy and preserving savings.

Finally, concrete, credible measures are essential to consolidate public finances and thus bring down the debt level sufficiently to find a path which is sustainable in the long term. It is not only a question of reassuring the financial

markets and rating agencies, but also reducing exposure to an increase in interest rates and making preparations for the budgetary consequences of population ageing.

Boosting productivity in the economy, mobilising a higher proportion of the population in employment, and improving competitiveness are other factors which are crucial in order to face the challenges of ageing and globalisation.

## Annex

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

	2008	2009	2010	2011 e	2012 e
<b>Growth</b> (calendar adjusted data)					
GDP in volume	0.8	-2.7	2.1	2.6	2.2
Contributions to growth:					
Domestic expenditure, excluding change in inventories	1.7	-1.1	0.8	1.8	2.0
Net exports of goods and services	-1.0	-0.5	1.8	0.4	0.3
Change in inventories	0.1	-1.0	-0.5	0.4	0.0
<b>Prices and costs</b>					
Harmonised index of consumer prices	4.5	0.0	2.3	3.4	2.2
Health index	4.2	0.6	1.7	3.0	2.3
GDP deflator	1.9	1.1	1.8	2.7	2.5
Terms of trade	-2.4	3.5	-1.8	-0.4	0.2
Unit labour costs in the private sector	3.8	4.7	-0.7	1.6	2.5
Hourly labour costs in the private sector	3.6	3.9	0.6	2.9	3.4
Hourly productivity in the private sector	-0.2	-0.8	1.3	1.2	0.9
<b>Labour market</b>					
Domestic employment (annual average change in thousands of units)	75.9	-15.9	29.5	41.9	37.4
<i>p.m. Change during the year, in thousands of persons<sup>(1)</sup></i>	57.4	-38.4	54.2	40.2	37.3
Total volume of labour <sup>(2)</sup>	1.4	-1.8	0.8	1.5	1.3
Harmonised unemployment rate <sup>(3)</sup> (in % of the labour force)	7.0	8.0	8.4	7.5	7.3
<b>Incomes</b>					
Real disposable income of individuals	2.1	1.6	0.1	1.2	2.4
Savings ratio of individuals (in % of disposable income)	17.0	18.3	17.3	16.6	17.2
<b>Public finances<sup>(4)</sup></b>					
Overall balance (in % of GDP)	-1.3	-5.9	-4.1	-3.5	-4.1
Primary balance (in % of GDP)	2.5	-2.3	-0.7	-0.2	-0.5
Public debt (in % of GDP)	89.6	96.2	96.6	96.1	95.4
<b>Current account</b> (according to the balance of payments, in % of GDP)					
	-1.8	0.5	1.4	1.4	1.7

Sources: EC, DGSEI, NAI, NBB.

(1) Difference between the fourth quarter of the year concerned and the fourth quarter of the previous year.

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

(3) In % of the labour force (15-64 years), non calendar adjusted data.

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

# Central bank rates, market rates and retail bank rates in the euro area in the context of the recent crisis

N. Cordemans  
M. de Sola Perea

## Introduction

The economic and financial crisis that arose in summer 2007 led to a significant increase in perceptions of risk in the economy, resulting in a sizeable rise in risk and liquidity premia on credit markets. Given the nature of the crisis, the financial sector was particularly affected, with respect to its financing via both the money market and the bond market, which may have had an impact on the retail interest rates offered by banks to businesses and households. Similarly, the sovereign debt crisis that appeared in late 2009 may have had an impact on financing costs in the private sector, insofar as sovereign bond yields are often used as a reference for other interest rates in the economy. The financial crisis, along with the contagion effects of the sovereign debt crisis on the banking sector, has also affected bank balance sheets and weighed on their liquidity and solvency ratios. This may have led banks to restrict the supply of credit or increase their rate margins.

Against this backdrop, this article addresses recent trends in the financing costs of various public and private sectors in the euro area and Belgium. It pays particular attention to the monetary policy transmission process via the interest rate channel during the crisis and notably examines the extent to which the process was affected by tensions on sovereign debt markets. Furthermore, this article looks at certain unconventional monetary policy decisions adopted in the euro area (full liquidity allotment, longer-term refinancing operations, covered bond purchases and, more recently, the Securities Markets Programme).

Whereas some of these measures caused interest rates to fall further, they were implemented primarily to keep the monetary policy transmission mechanism functioning properly<sup>(1)</sup>.

The first part of the article deals with the relationship between Eurosystem monetary policy decisions and market interest rates. It looks, on the one hand, at the links between central bank rates and money market rates and, on the other hand, at the trend during the crisis of the risk-free yield curve, i.e. that of AAA-rated euro area government bonds. The second section addresses the question of long-term market rates harbouring credit risk. We examine the financing costs of the public sector and the financial and non-financial private sector, as well as the relationship between the two, at both the euro area and national levels. Lastly, part three is devoted to retail bank interest rates. Using an econometric analysis, it seeks to evaluate the impact of the financial crisis and the sovereign debt crisis on lending and deposit rates, at the level of the euro area in general and in Belgium in particular. The final section presents our conclusions.

We have used data available up to the end of May 2011 throughout the article, with the exception of the last part, for which the data used are those available at the time the econometric estimations were carried out, i.e. end of April 2011.

(1) Trichet (2009).



## 1. Monetary policy and market interest rates

### 1.1 Central bank rates and money market rates

The Eurosystem is only able to directly influence very short-term money market interest rates. It does so by adjusting its injection of liquidity so that the Eonia rate – the overnight interbank rate in the euro area – moves as close as possible to the minimum bid rate on main refinancing operations<sup>(1)</sup>. In the wake of the tensions that arose from 9 August 2007 on interbank markets, the Eonia overnight rate became more volatile. However, by adjusting the time profile for supplying liquidity – notably by offering banks the possibility of front loading – the Eurosystem managed to stabilise Eonia around the main refinancing rate in the first phase of the crisis. During this period, the cycle of interest rate increases was temporarily interrupted, after the central key rate had been raised to 4 % in June 2007. It was not until July 2008 that it was raised to 4.25 %, in a climate marked by surging inflation and the emergence of potential second-round effects.

The morning after Lehman Brothers declared bankruptcy, on 15 September 2008, the money market crashed. Because the financial crisis represented a threat to the real economy and price stability, the ECB decided to cut interest rates substantially – by a total of 325 basis points between October 2008 and May 2009 – and to take exceptional monetary policy measures, including the adoption of a fixed-rate, full-allotment policy. These actions contributed heavily to the steep drop in the Eonia rate to a level below the ECB's main refinancing rate. In particular, the ECB's execution of a series of three one-year refinancing operations, respectively in July, September and December 2009, generated an unprecedented increase in excess liquidity, which notably resulted in massive use of deposit facilities and a drop in Eonia to a level close to the deposit facility rate. As a result, Eonia stood at an average of 0.35 % between July 2009 and June 2010, whereas the key interest rate was only lowered to 1 %. The adaptation of the process for issuing liquidity during the crisis profoundly altered the relationship between the central key rate and the overnight interbank market rate, which moved closer in line with the deposit facility rate due to the significant increase in excess liquidity. With the arrival at maturity of the one-year financing operations in July, September and December 2010, the level of excess liquidity fell sharply, triggering not only an increase of, but also greater volatility in Eonia, which averaged 0.67 % in the first quarter

of 2011. In early April, the Governing Council decided to raise its interest rates by 25 basis points, given the upside risks to price stability. The decision was attributed to the acceleration in inflation in early 2011, against a backdrop of rising commodity prices, along with signals confirming the euro area's economic recovery. Considering the high level of uncertainty still surrounding the health of financial institutions, however, the Governing Council did not alter its liquidity provision policy. In accordance with what was announced in March, it was intended that refinancing operations would continue in the form of fixed-rate tenders with full allotment at least until the start of the third quarter of 2011. The increase in key interest rates spurred the Eonia rate higher, even though the full-allotment liquidity policy was maintained.

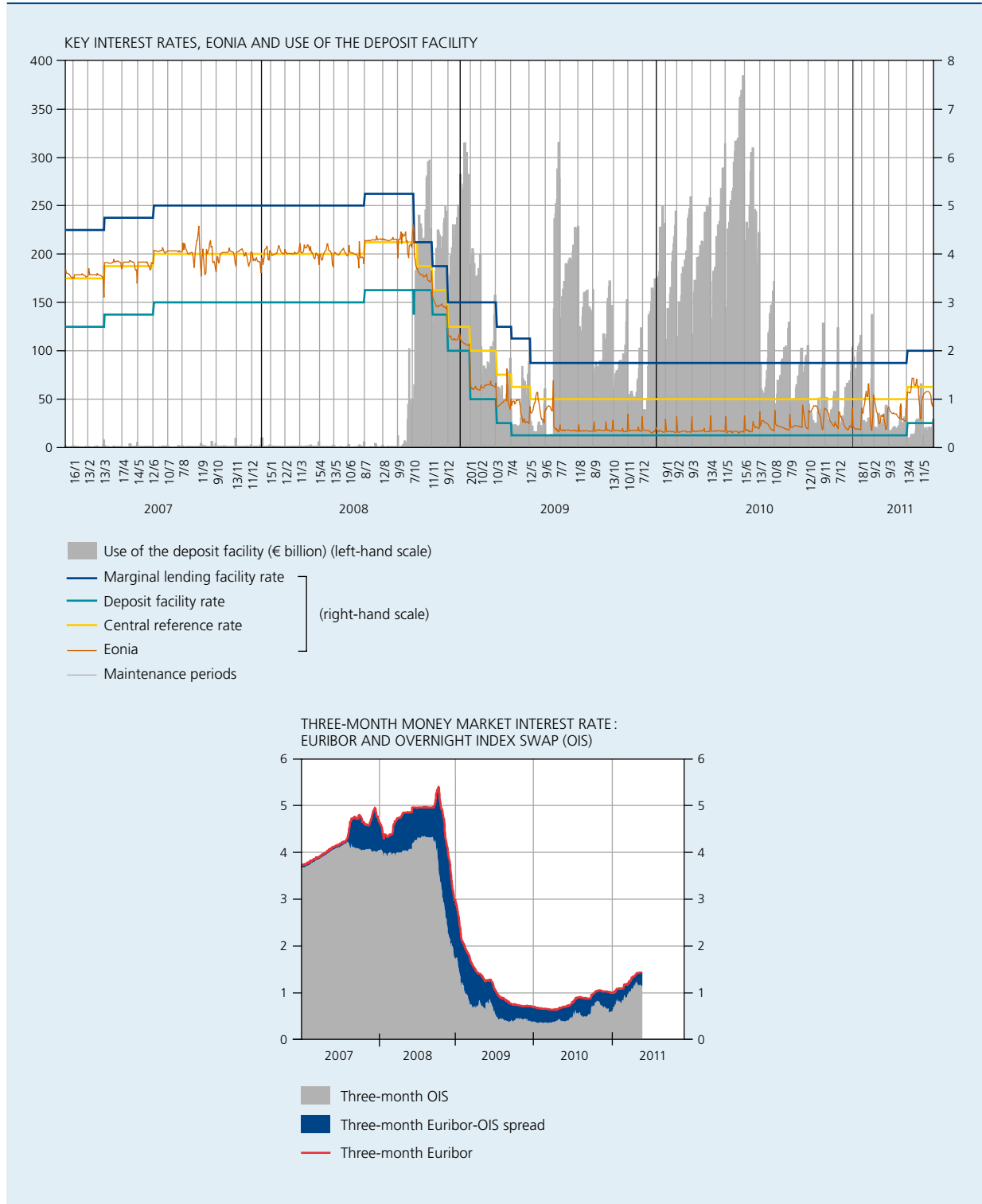
Reflecting credit institutions' reluctance to lend to one another, the risk premium between three-month Euribor and the Overnight Index Swap (OIS) climbed significantly from the first signs of money market disruptions in summer 2007. It subsequently moved in line with the intensity of the turbulences, before peaking in early October 2008. Since then, despite the fact that the ECB has no direct control over the money market beyond the immediate term, the rate cuts that it orchestrated and the various steps that it took to provide liquidity made it possible to considerably lower the three-month risk-free rate and the three-month Euribor rate at which banks lend to each other on the unsecured interbank market. Given the reference role that Euribor plays in short-term lending to the non-financial private sector, this decline passed through to the financing costs of businesses and households, and thus helped preserve efficient transmission of monetary policy. Since the end of 2009, the risk premium appears to have moved largely as a function of tensions on sovereign debt markets. In the first quarter of 2011, it trended downwards, but the decline was nevertheless more than offset by the increase in the risk-free rate related to the rise in the Eonia rate. As a result, the three-month Euribor averaged 1.2 % in the first five months of 2011, compared with just 0.67 % on average in the first half of 2010.

### 1.2 Monetary policy and long-term risk-free rates

Monetary policy only has a direct impact on very short-term interest rates, whereas longer-term rates, at least under normal conditions, are shaped largely independently by the market. Monetary policy expectations, which depend notably on central bank communication, nevertheless play a significant role. During the crisis, the Eurosystem did not actively communicate on future rate trends, unlike, for example, the US Federal Reserve. After

(1) Aucremanne, Boeckx, Vergote (2007).

**CHART 1** USE OF THE DEPOSIT FACILITY AND EURO AREA MONEY MARKET INTEREST RATE  
(daily data)



Sources: Thomson Reuters Datastream, ECB.

lowering its interest rate as far as it could go, the Fed announced that it intended to keep rates at that level

for a prolonged period. However, the Eurosystem's communication regarding the economic outlook and the lack

– at least initially – of an upside risk to price stability led to a succession of downward revisions in expectations regarding the direction of monetary policy, resulting in a decline in long-term interest rates. The Fed also initiated a significant programme of Treasury bond purchases to lower longer-term rates. The Eurosystem did not adopt an equivalent unconventional policy. However, by providing longer-term liquidity – up to one year – it was able to put significant downward pressure on longer-term rates. Under these conditions, it is interesting to examine movements in the risk-free yield curve, measured in this case by the yield on AAA-rated euro area government bonds, during the crisis.

In early July 2007, the yield curve was relatively flat and slightly positive, principally reflecting expectations that the cycle of rate rises initiated by the ECB in 2005 – the rate had been raised from 2 % to 4 % between December 2005 and June 2007 – would continue. Since then, the curve’s principal movements can be split into six stages:

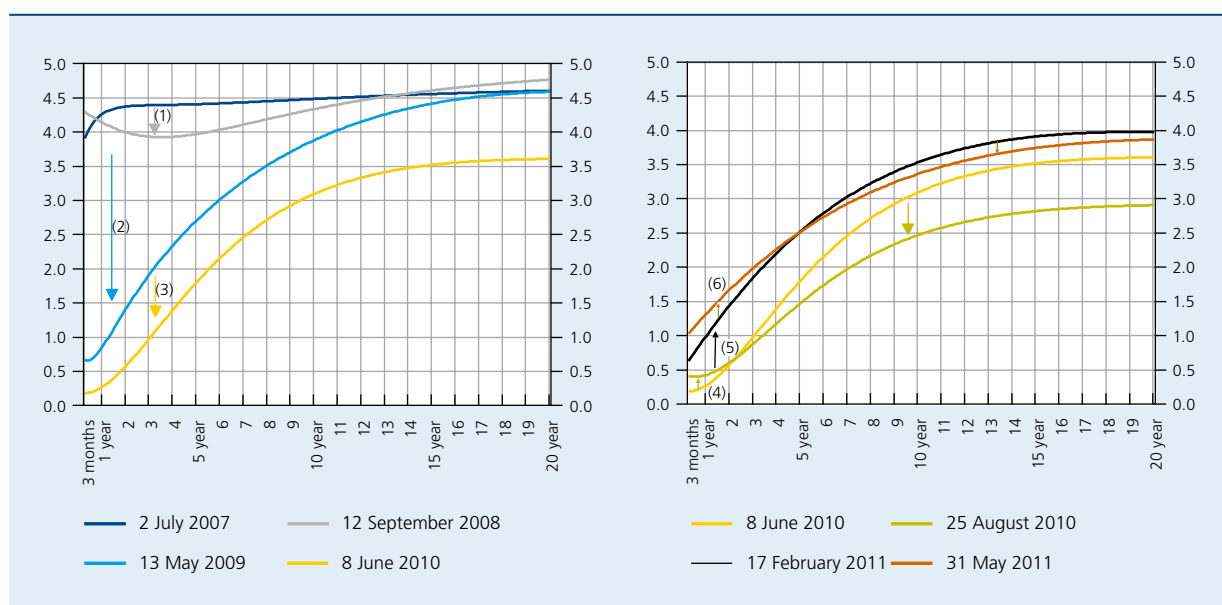
1. Despite the rise in short-term rates that followed the Eurosystem’s July 2008 decision to raise its rates by 25 basis points, slightly longer-term rates dropped, attesting to expectations of slower economic growth and a downward revision in expectations regarding short-term rates, no doubt linked in part to financial market turmoil.

2. At the same time as the ECB cut rates and adopted a first round of non-standard measures, short-term rates plunged, causing the yield curve to steepen considerably. Such a steepening is normal during a phase of monetary policy easing, but the move was particularly pronounced during the present crisis due to the speed and size of the monetary easing that took place. Already by 13 May 2009 – when the first operations at 1 % were carried out – the three-month yield on risk-free government bonds was 0.67 %, or slightly lower than the secured interbank market rate, reflecting a “flight to quality” that benefited the safest government securities.

3. Following the three one-year operations and the resulting strong growth in excess liquidity, three-month yields and those with intermediate maturities continued to decline. With the persistence of a high degree of uncertainty and intensification of the sovereign debt crisis, they exerted downward pressure on longer-term yields.

4. After the first one-year operation reached maturity, which resulted in a steep drop in excess liquidity, short-term rates rose slightly. With conditions still marked by tremendous uncertainty regarding the speed of the global economic recovery and deflationary risks across the Atlantic, longer-term rates nevertheless continued

**CHART 2** RISK-FREE YIELD CURVE  
(yield on AAA-rated euro area government bonds at various maturities, in percentage points)



Source: ECB.

to decline, reaching a floor during the Jackson Hole Conference in late August 2010. The ten-year yield on risk-free euro area government debt bottomed out at 2.5 %.

5. Signalling a better growth outlook and the disappearance of deflationary fears, long-term rates bounced back strongly in early 2011. In line with the rise in very short-term money market rates, short-term risk-free yields on government borrowings also rose. The fairly pronounced increase in yields on intermediate maturities reflects a considerable upward revision in monetary policy expectations, partly related to the change in short- and medium-term inflation risks. It is also interesting to note that the yield curve became concave again in early 2011.
6. Following the ECB's decision to raise its key interest rates by 25 basis points in April, the rise in short-term rates continued into the early part of the second quarter. On the other hand, the renewed climate of uncertainty on the financial markets exerted downward pressure on longer-term risk-free rates.

## 2. Long-term market interest rates with credit risk

The economic and financial crisis caused an increase in risk perceptions on the part of financial market participants and resulted in a significant increase in risk and liquidity premia in every segment of the credit market. As a result, we saw a very clear differentiation in financing costs among borrowers, both public and private. In this section, we look specifically at the trend in spreads between the financing costs of various sectors throughout the crisis. After a quick review of the situation at the euro area level, we examine the situations of individual countries, moving from the public sector to the financial private sector and the non-financial private sector. We focus in particular on the extent to which the widening gap in financing costs among public sectors from end-2009 was passed on in the financing costs of the two other sectors, and thereby attempt to gauge the impact of the sovereign debt crisis on private sector financing costs in the euro area.

### 2.1 Euro area level

From the first signs of money market tensions in summer 2007, yield spreads relative to the German Bund of the same maturity<sup>(1)</sup> widened for bonds issued by every sector and in particular the financial sector, whose institutions

were hit with heavy losses stemming from the subprime mortgage crisis in the US. The day after the Lehman Brothers bankruptcy in autumn 2008, they skyrocketed, ultimately narrowing considerably from March 2009 in the midst of a broad financial market recovery.

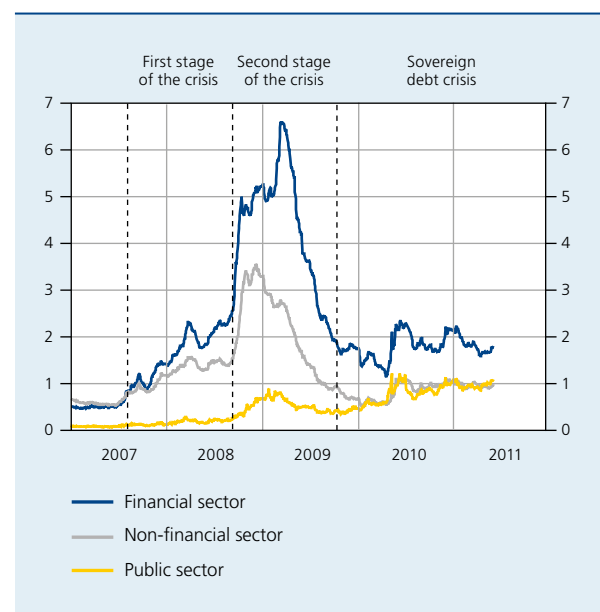
In the early stages of the crisis, the various sectors' yield spreads versus the Bund moved more or less in the same direction, albeit in varying proportions. In autumn 2009, however, the emergence of the public debt crisis marked the start of a partial decoupling of public sector borrowing costs from those of the non-financial private sector, as the trend in the bond yield spread of the two sectors shows. As public sector borrowing costs rose, the spread was whittled down to nothing, and even became negative temporarily in 2010, whereas the same yield spread between public sector and financial sector bonds remained substantially positive.

These developments tend to show that the public debt crisis had a definite impact on the financing costs of the financial sector, but only a limited impact on the rest of the private sector at the aggregate level. Similar conclusions emerge from a comparison of the yield spreads

(1) The "Bund" is the abbreviation for the long-term bonds issued by the German government. They are rated AAA by all rating agencies and their yields generally serve as a benchmark for the entire euro area bond market.

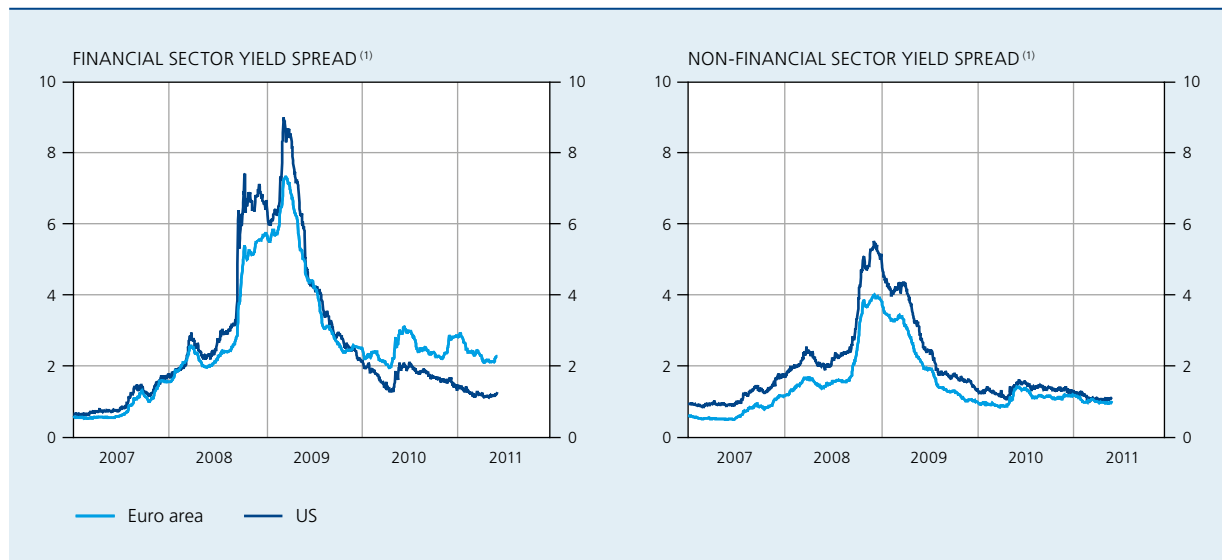
**CHART 3** YIELD SPREADS ON EURO AREA PUBLIC AND PRIVATE SECTOR BONDS RELATIVE TO THE GERMAN BUND

(all maturities combined, indices weighted by outstanding amounts, daily data, in percentage points)



Source: Thomson Reuters Datastream.

**CHART 4** YIELD SPREAD OF PRIVATE SECTOR BONDS IN THE EURO AREA AND US  
(all maturities combined, indices weighted by outstanding amounts, daily data, in percentage points)



Source : Thomson Reuters Datastream.  
(1) Respectively versus the German Bund (euro area) and US Treasury Bill (US).

for the euro area and the US. For example, the risk and liquidity premia demanded of US financial corporations relative to the Treasury bill fell substantially from late 2009, whereas the premia demanded of European financial companies vis-à-vis the Bund held fast. In the case of non-financial corporations, differences in interest rate movements compared to risk-free rates between the euro area and the United States are much less pronounced.

As relevant as they are, these aggregate results are nevertheless biased by the significant weight of large countries – which benefited from the debt crisis – in indices, and they may obscure very different situations in individual countries. The next section will study the latter and, after an overview of the financing costs of euro area public sectors, examine the repercussions of the debt crisis on the cost of borrowing on the market for financial and non-financial private sectors at the country level.

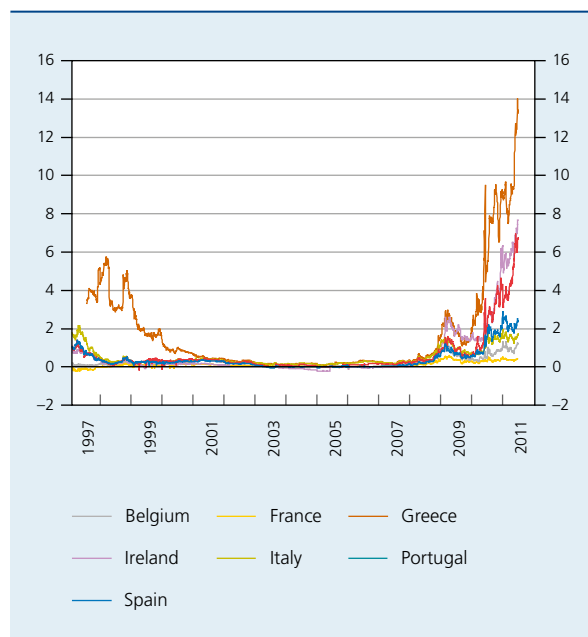
## 2.2 Country level

### 2.2.1 Public sector

Whereas immediately prior to the third stage of Economic and Monetary Union, in January 1999, the government bond yields of each of the participating countries rapidly converged toward that of the German Bund, significant yield spreads emerged as early as summer 2007. After

the fall of Lehman Brothers, divergences increased significantly, and, as macroeconomic conditions worsened,

**CHART 5** YIELD SPREAD ON 10-YEAR GOVERNMENT BONDS VERSUS THE GERMAN BUND IN EURO AREA COUNTRIES  
(indices weighted by outstanding amounts, daily data, in percentage points)



Source : Thomson Reuters Datastream.

factors specific to each economy gained in importance. Starting in late 2009 with the emergence of the sovereign debt crisis, the credit risk factors of individual countries became a determining factor. To begin with, Greek woes weighed principally on the yields of its own government bonds, but a contagion effect swiftly appeared and a general wariness took hold. Investors retreated to the least risky securities and the most liquid markets, driving yield spreads to record highs.

Since autumn 2010, uncertainty linked to the cost of the Irish bank sector bail-out, fears related to the political or macroeconomic situation in numerous other countries,

the lack of detail regarding the future mechanism for resolving euro area crises and speculation about a possible Greek debt restructuring continued to fuel the widening of yield spreads, which became particularly pronounced. For example, at end-May 2011, the unweighted average yield spread versus the ten-year German Bund was around 340 basis points (compared with 13 on average over the period 1 January 1999 to 31 July 2007). Moreover, there were significant disparities within that figure, including a spread of more than 1 320 basis points for Greece, but only 41 points for France and 32 points for the Netherlands. The spread for Belgium was around 120 basis points at end-May 2011, after reaching nearly 140 points at end-November 2010.

### Box 1 – The Securities Markets Programme (SMP) and other ECB actions intended to limit the impact of the sovereign debt crisis on the monetary policy transmission mechanism

Given the reference role played by government bond yields in determining interest rates for private sector lending (asset price channel), the use of sovereign bonds as collateral in bank refinancing operations (liquidity channel) and their weight on the balance sheets of credit institutions (balance sheet channel), an efficiently functioning public debt market plays a key role in the mechanism for the transmission of monetary policy to the real economy in the euro area. This is why, amid a climate of growing investor concern over the viability of public finances in numerous countries and the rapid rise in the borrowing costs of numerous governments, in spring 2010 the Governing Council adopted a series of measures to maintain efficient policy transmission.

In particular, on 10 May 2010, the Governing Council decided to intervene in bond markets by creating the Securities Markets Programme (SMP). Under the SMP, the Eurosystem may conduct interventions in the euro area's public and private debt securities secondary markets in order to ensure the stability and liquidity of market segments that have experienced severe disruptions. Like the other non-standard monetary policy measures, the programme is temporary and is carried out in pursuit of the Eurosystem's primary objective: medium-term price stability. Its goal is to ensure that adequate transmission of monetary policy continues, but without affecting its direction. To this end, purchases made under the programme are systematically sterilised through operations specifically designed to reabsorb the liquidity injected. Most purchases under the SMP were made in the first few weeks after the programme was implemented.

Furthermore, in order to insulate banking institutions against the effects of additional weakening of sovereign bond ratings, the Governing Council suspended the minimum eligibility requirements for debt instruments issued or backed by the Greek government (in May 2010) and the Irish government (in March 2011) used as collateral. This means that Greek and Irish government debt is currently accepted as collateral for refinancing operations regardless of rating. These decisions were taken following the Governing Council's backing for the economic and financial adjustment programmes adopted by the countries in question, which formed the basis for the rescue plans put together by the European Commission and the IMF. This also implies that any suspension of the minimum eligibility threshold is conditional on correct implementation of the adjustment programmes.

Lastly, to ensure broad access to liquidity for credit institutions in the euro area in the face of a risk of paralysis on the interbank market, in May 2010 the Governing Council reintroduced a certain number of measures that it had previously abandoned. These included offering banks the possibility of obtaining liquidity in US dollars, and a six-month operation was carried out, while three-month operations were conducted again with full allotment.

## 2.2.2 Private sector

In the early stages of the crisis, the trend in financial and non-financial private sector financing costs<sup>(1)</sup> tended to reflect their intrinsic weaknesses. For example, Irish financial sector bond yields were particularly high due to the bursting of the country's real estate bubble. To a lesser extent, the Belgian financial sector experienced a sharp increase in its bond yields in autumn 2008 and early 2009 against the backdrop of the difficulties experienced by the main banking groups. As for the non-financial sector, it is striking to observe that the differences in financing costs between countries remain much less pronounced than in the financial sector. Only the Irish non-financial sector stood out noticeably from the early part of 2009, which is in keeping with the country's particularly severe economic slowdown.

With the arrival of the sovereign debt crisis, however, borrowing costs began to better reflect the financial health of individual countries, particularly for the financial sector. In general, the borrowing costs of financial companies in troubled countries rose substantially, whereas those in financially healthier countries proved quite resilient. For example, the cost of borrowing via the market in the Spanish financial sector, which was one of the lowest in the euro area at end-2009, climbed sharply over the

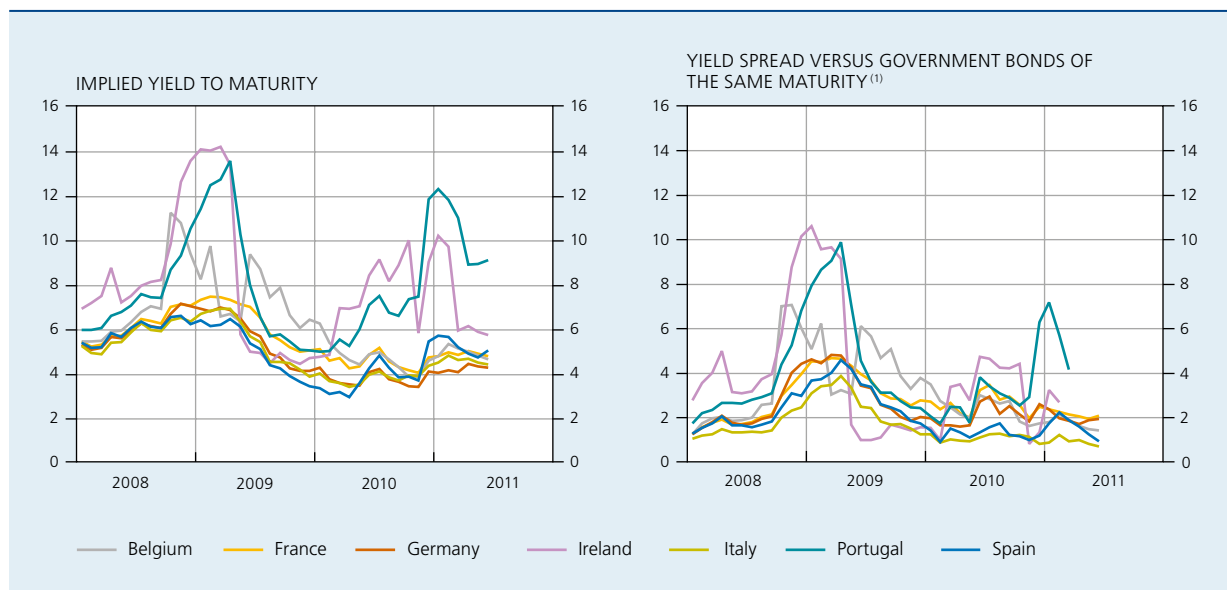
course of 2010, whereas that of the German financial sector remained stable. The direct link between the financing costs of the public and financial sectors can also be illustrated by the relative stability of yield spreads between financial sector and public sector bonds from autumn 2009 onwards.

However, these close relationships do not in any way indicate a causal link, which, in the context of a financial crisis, must be considered in both directions. It is evident, for example, that in Ireland the financial sector bail-out was more of a burden on government financing costs, whereas in Greece, it was the banking institutions that fell victim to the country's poor management of its public finances.

(1) The data considered here are averages, weighted for outstanding amounts, of the implied yields on baskets of the uncovered bonds of financial and non-financial corporations. They reflect the market financing costs of the private sector in each country. However, they are not a perfect indicator because only a handful of companies are represented and the data are influenced by bonds issued during the reference period. The conclusions drawn from this analysis must therefore be interpreted with caution, particularly with respect to smaller countries, where few companies have access to financial markets for their financing. This is why we have excluded Greece from this analysis.

**CHART 6** YIELD ON EURO AREA FINANCIAL SECTOR BONDS

(all maturities combined, indices weighted by outstanding amounts, monthly data, in percentage points)



Source: Barclays Capital.

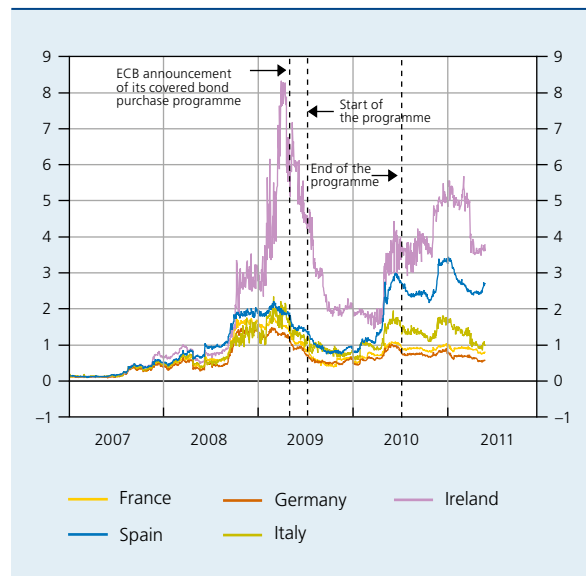
(1) So as not to introduce maturity bias, the yields on government debt used here were selected so as to ensure optimal correspondence between the maturities on public and private bonds.

## Box 2 – ECB Covered Bond Purchase Programme

Alongside conventional bonds, covered bonds are an important financing tool for banks in several euro area countries. The yield on these instruments shot up following the Lehman Brothers failure, potentially disrupting the financing of many credit institutions. Under these conditions, and to give a shot in the arm to a market that had grown sluggish, the ECB announced on 7 May 2009 that it would launch a Covered Bond Purchase Programme (CBPP). This programme, which sought to bolster the supply of bank credit to non-financial sectors of the economy, ran from 6 July 2009 to 30 June 2010 and resulted in asset purchases for a nominal amount of € 60 billion. Yield spreads narrowed after the programme was launched. Certain markets also saw a significant increase in the number of issuers and amounts outstanding, and thus a deepening and broadening of their covered bond markets.

### COVERED BOND YIELD SPREAD

(1- to 3-year maturities, yield spreads with the German Bund of the same maturity, indices weighted by outstanding amounts, daily data, in percentage points)



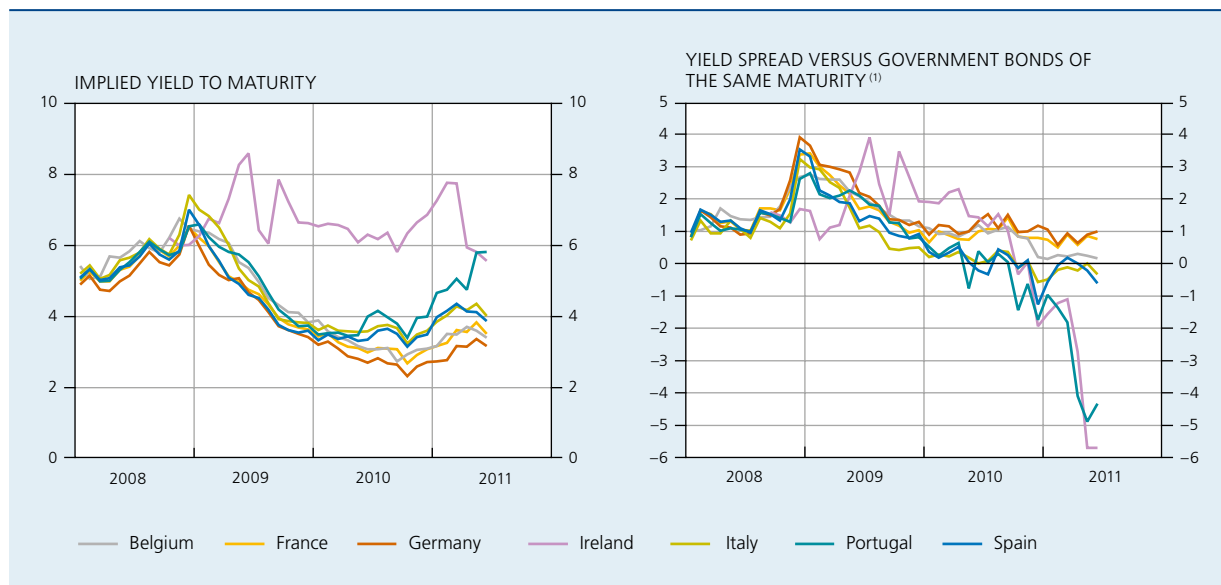
Source: Thomson Reuters Datastream.

With tensions on public debt markets intensifying in spring 2010, the yield on covered bonds in the most hard-hit countries (Ireland and Spain) again began to spike, whereas the French and German markets were mostly spared. The ECB's purchase programme was justified in the early stages of the crisis by intrinsic problems experienced by covered bond markets throughout the euro area – all countries had been affected. By contrast, such a programme was not justified in the context of the sovereign debt crisis, when covered bond market disruptions were essentially due to individual governments' public financing woes. In this case, the measures described in Box 1 are more appropriate.



## CHART 7 YIELDS ON NON-FINANCIAL SECTOR BONDS IN THE EURO AREA

(all maturities combined, indices weighted by outstanding amounts, monthly data, in percentage points)



Source: Barclays Capital.

(1) So as not to introduce maturity bias, the yields on government debt used here were selected so as to ensure optimal correspondence between the maturities on public and private bonds.

As for the non-financial sector, the spread in financing costs relative to the public sector tended to diminish. In many countries, in fact, there was a decoupling of financing costs between the non-financial and public sectors. This decoupling is particularly evident in the cases of the most troubled countries, and it is interesting to note that a certain number of Portuguese and Irish companies are currently obtaining financing at a lower interest rate than their respective governments. However, it is important to note that the indices sometimes include only a small number of companies, some of which are the subsidiaries of large international corporations, and thus do not necessarily reflect the borrowing costs of all companies in the country.

The analysis of financing costs via the market of the national private sectors thus amply confirms the conclusions of the analysis at the euro area level, i.e. that the sovereign debt crisis has had a significant impact on the borrowing costs of the financial sector, but a limited impact on those of the non-financial sector. Furthermore, it highlights the close link at the national level between the borrowing costs of the public sector and those of the financial sector.

## 3. Retail interest rates

Trends in money market interest rates and bond yields reflect both monetary policy decisions and the impact of the financial crisis and, more recently, the sovereign debt crisis on banks' financing costs. These trends in turn can influence the interest rates that banks offer to households and businesses. This section looks specifically at the transmission of changes in interest rates between the market interest rates and the retail interest rates. Following a brief description of retail interest rate trends during the crisis, we seek to determine the most relevant market rate for the formation of each retail interest rate analysed and examine what this relationship implied in terms of monetary transmission during the crisis.

### 3.1 Retail interest rate trends in the euro area during the crisis

Retail bank interest rates on both deposits and loans in the euro area have converged strongly since the establishment of the Economic and Monetary Union. However, they were affected to different degrees by the effects of the financial crisis and the turmoil on sovereign debt markets. Moreover, they have moved in different ways following the changes in key interest rates decided by the ECB. This section analyses their trends since the start of 2008.

The retail interest rates presented in this article come from the harmonised survey of monetary financial institution interest rates in the euro area (MIR). The data are available at monthly intervals since January 2003. This survey took the place of the retail interest rate (RIR) survey, which supplied non-harmonised statistics on bank interest rates<sup>(1)</sup>. In the framework of this analysis, we use the rates applied to new business in order to accurately gauge changes over time. These are synthetic interest rates which correspond to the average interest rates, weighted by outstanding amounts, applied by the monetary and financial institutions in each country. Their levels are thus influenced by the relative weight of the maturities of their components: given the positive slope of the yield curve during the crisis, the greater the amounts at short maturities, the lower the average interest rate level, and vice versa. As a result, to a certain extent the differences in level reflect country preferences with respect to maturity and, thus, must be interpreted somewhat cautiously. The series relative to countries unaffected by the sovereign debt crisis (Germany, Austria, Finland, France and the Netherlands) is the average of bank interest rates applied in those countries, weighted by the amounts on new contracts. This article covers the period from January 2008

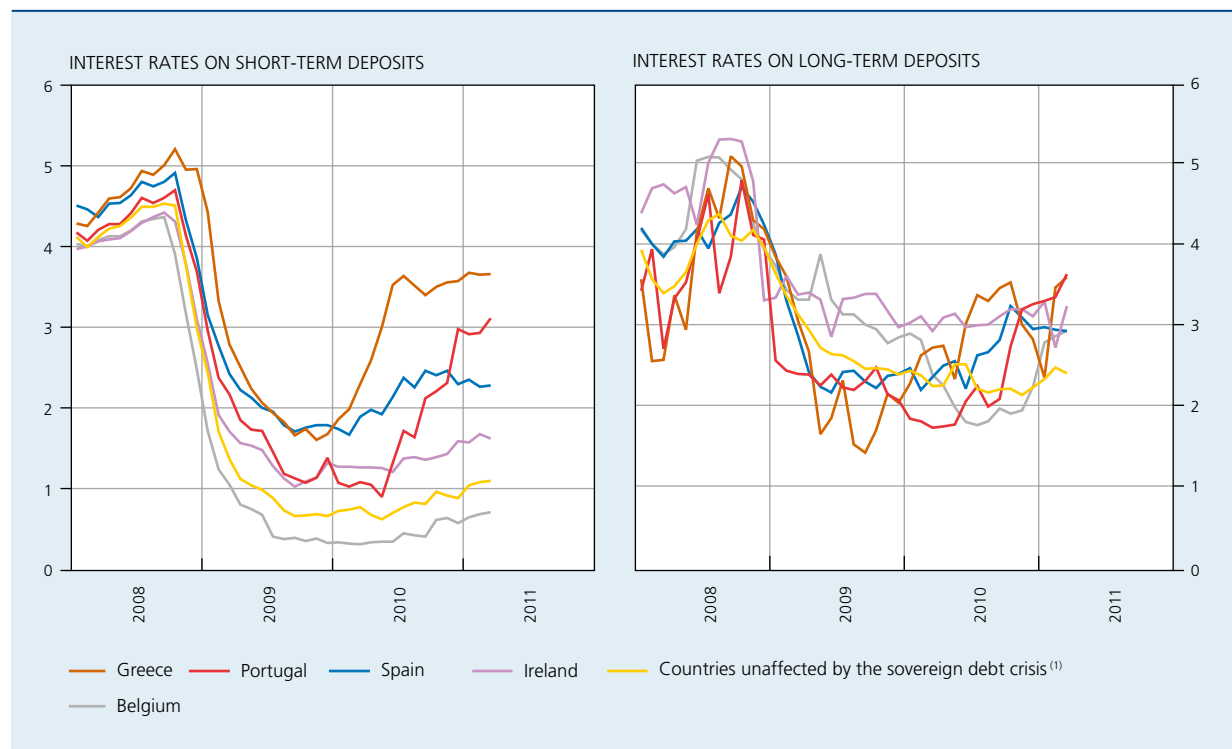
to March 2011, the last month for which the data were available at the end of May 2011.

In general, in keeping with the trend in market interest rates, short-term rates moved more substantially than did long-term rates, reacting more notably to both the increase in central bank rates in June 2008 and the successive rate cuts decided by the ECB from October 2008.

In the case of deposit rates, the interest rate on short-term deposits corresponds to the average rate, weighted by outstanding amounts, of deposits of less than one year made by households and businesses, whereas the long-term interest rate is equal to the average interest rate on deposits of more than one year. The general downward trend that began in autumn 2008 was in keeping with the trend in market interest rates. However, the transmission was not uniform among countries. For example, it appears that from autumn 2008, the dispersion of interest rates increased substantially, particularly for short-term rates. Furthermore, the dispersion intensified

(1) For a detailed description of the differences between the two surveys, see Baugnet and Hradisky (2004).

**CHART 8** SHORT-TERM AND LONG-TERM DEPOSIT INTEREST RATES IN EURO AREA COUNTRIES  
(monthly data)



Sources: NBB, ECB.

(1) Germany, Austria, Finland, France and the Netherlands.

starting in 2010 against the backdrop of the sovereign debt crisis: from early 2010, short-term interest rates increased in the countries most affected by financial difficulties (particularly Greece, Spain and Portugal), whereas in the least affected countries, the rise in interest rates on short-term deposits has been more recent and much less pronounced. This may be because credit institutions in the countries hit hardest by the crisis wanted to limit fund withdrawals in order to hold on to a vital source of financing and thus prevent further weakening of their balance sheets.

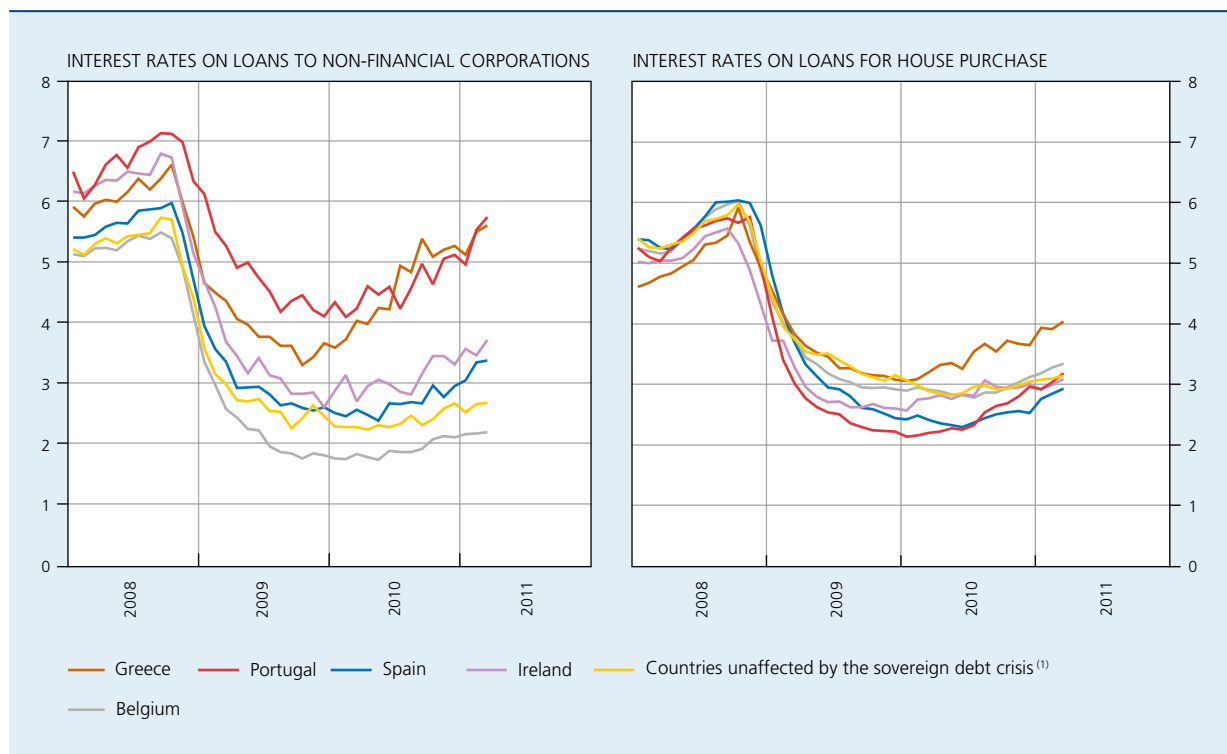
With respect to lending rates, interest rates on short-term loans to non-financial corporations include rates on loans of less than one year for amounts above and below € 1 million. As with short-term deposit rates, they rose over the course of 2008 before plunging abruptly following the interest rate cuts orchestrated by the ECB. Furthermore, during the downward movement, disparities between countries increased. Initially, these disparities were relatively limited and appear to be largely attributable to varying trends in the average maturity of loans between countries. However, they increased significantly starting in late 2009 and especially early 2010, when the

credit institutions in the countries hit hardest by the sovereign debt crisis raised their interest rates more vigorously than those in other countries, thereby passing on the increase in their financing costs.

Interest rates on floating-rate loans for house purchase with an initial rate fixation period of up to one year (treated here as short-term rates) also reflected the upward trend through October 2008 and the decrease in central bank rates thereafter. However, the dispersion between the interest rates of various countries remained relatively limited, although it also increased towards the end of 2009. As with loans to non-financial corporations, the banks in the countries hit hardest by the sovereign debt crisis appear to have raised their interest rates more than institutions in other countries, but the upward movement is much less pronounced than in short-term loans to non-financial corporations.

Long-term lending rates correspond to the interest rates on loans of more than one year. In general, the same observations can be made as for short-term lending rates. These rates followed the trend in market interest rates, although to a lesser extent because long-term interest

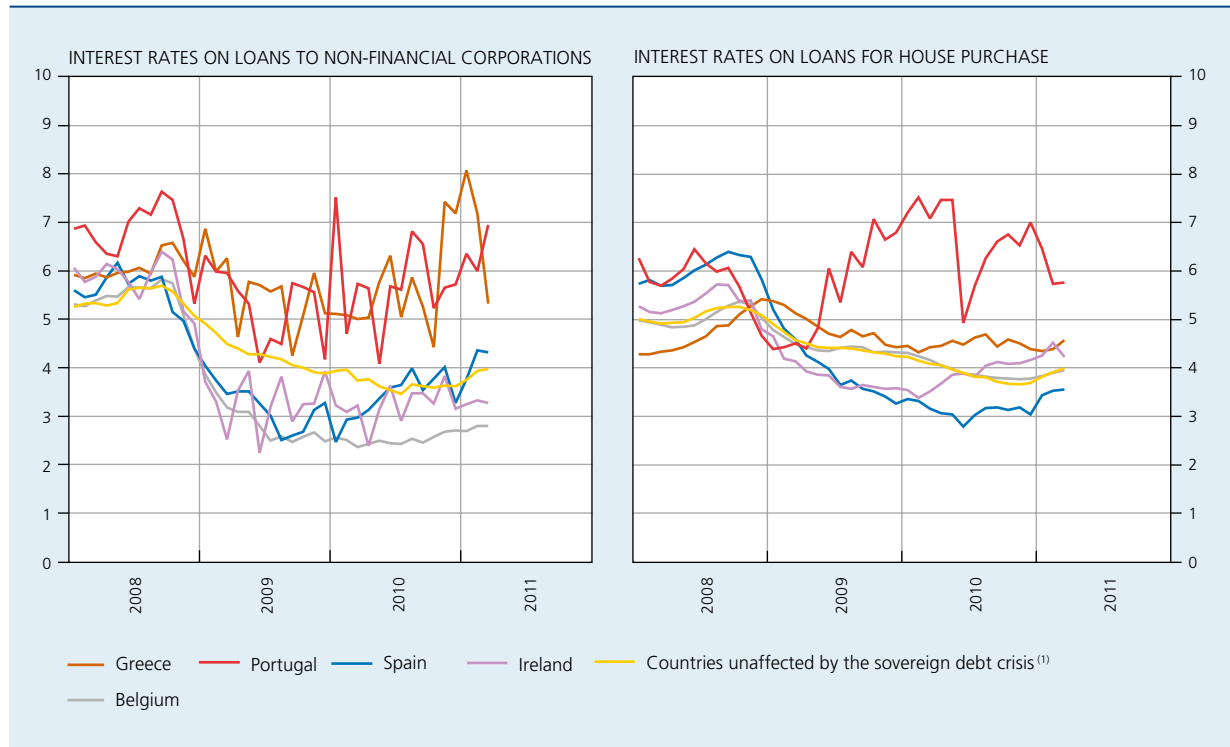
**CHART 9** SHORT-TERM LENDING INTEREST RATES IN EURO AREA COUNTRIES  
(monthly data)



Sources: NBB, ECB.

(1) Germany, Austria, Finland, France and the Netherlands.

**CHART 10** LONG-TERM LENDING INTEREST RATES IN EURO AREA COUNTRIES  
(monthly data)



Sources: NBB, ECB.  
(1) Germany, Austria, Finland, France and the Netherlands.

rates are relatively more stable, and dispersion increased in the context of the sovereign debt crisis. The significant volatility observed in several countries with respect to interest rates on loans to non-financial corporations can be explained by the relative weakness and volatility of the amounts of this type of loan. In the countries hit hardest by the sovereign debt crisis, the weight of long-term loans is fairly small compared with short-term loans. More generally, short-term lending plays a preponderant role in these countries, and the importance of short-term interest rates is much greater in these countries compared with the euro area average.

Overall, retail interest rates in Belgium are similar to those in the countries unaffected by the sovereign debt crisis, and in some cases are lower. The particularly moderate level of short-term interest rates offered to non-financial corporations is attributable to the relatively high level of very short-term maturities for loans to and deposits of non-financial corporations: deposits of less than one month of non-financial corporations represent approximately 40% of all deposits of less than one year, and because they are based on the Euribor of the corresponding maturity, they negatively affect the aggregate interest

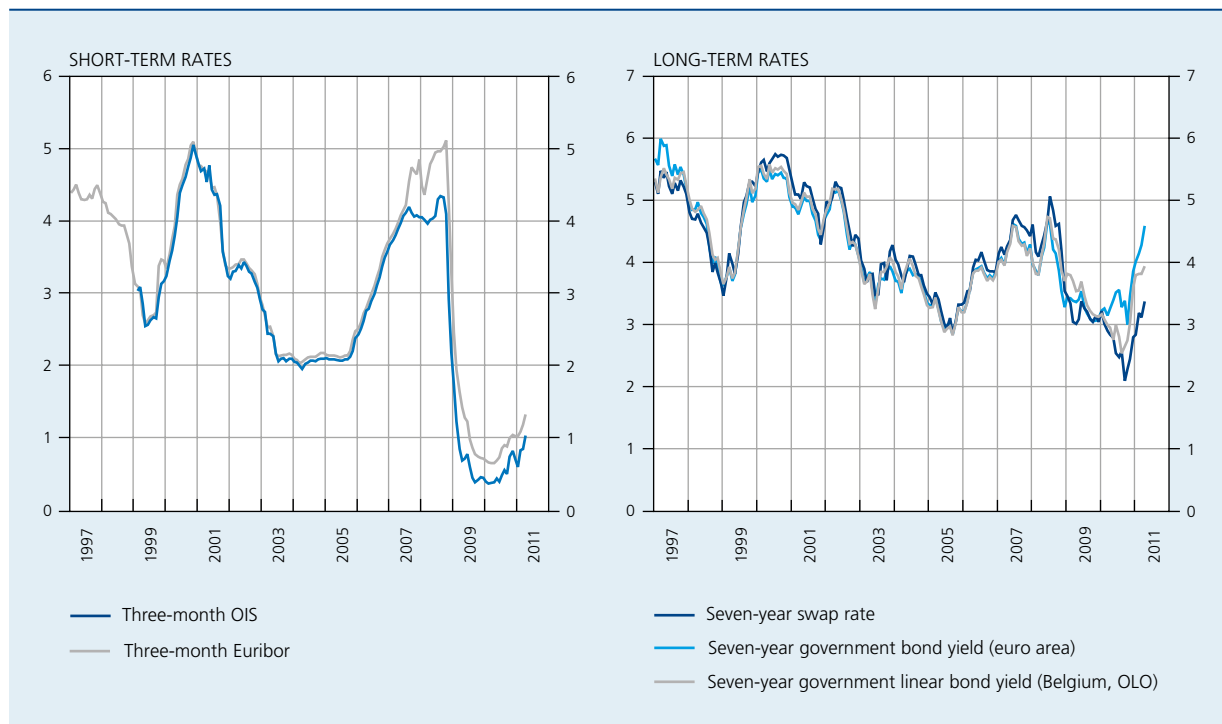
rate level for all deposits of less than one year. Similarly, between 40% and 50% of short-term loans to non-financial corporations have a maturity of less than one month. As for long-term business loans, shorter maturities are also relatively more important, which explains the low level of the synthetic interest rate.

The moderate increase in Belgian interest rates since the start of 2010 corroborates the conclusion cited above, i.e. that the repercussions of the sovereign debt crisis on the financing costs of Belgian banks have so far been limited, although they have tended to increase since the end of 2010.

### 3.2 Analysis of the transmission mechanism to retail interest rates during the crisis

To analyse the question of monetary policy transmission during the crisis, first of all we must determine if the relationship between market interest rates and retail interest rates was stable over the period, while also trying to determine the market interest rates most relevant for explaining the formation of retail interest rates.

**CHART 11** SHORT- AND LONG-TERM MARKET INTEREST RATES  
(monthly data)



Sources : NBB, ECB.

In the years preceding the crisis, the market interest rates likely to be the reference rates for retail rate formation followed very similar trends. This made it difficult to determine unambiguously which rate was used to set retail rates. However, one of the consequences of the financial crisis has been a widening of spreads between market rates with similar maturities, which makes it possible to determine with greater precision the most relevant rate for the formation of retail interest rates. This exercise can be applied both to short-term interest rates and longer-term maturities. Since August 2007, there has been a considerable spread between Euribor and OIS rates, whereas long-term swap rates and government bond yields did not diverge until late 2009 (and especially since 2010), when the sovereign debt crisis intensified.

Divergences between market interest rates during the crisis will thus allow us to examine this question, but also to observe possible disruptions in the monetary policy transmission mechanism attributable to the crisis, as well as the possible transmission of risk premia related to the crisis. Thus, if the analysis shows that the relevant short-term interest rate is Euribor, this indicates that the spread relative to OIS was transmitted to retail interest rates, which may be considered a disruption of the transmission mechanism. As for long-term interest rates, if the relevant rate is the rate at which the government borrows, the sovereign debt crisis might also represent a disrupting factor in the transmission mechanism.

### Box 3 – Market interest rates used in this article

- **Eonia (*Euro OverNight Index Average*)**: the reference rate for unsecured overnight interbank lending in the euro area. Under normal circumstances, this is the rate that the ECB seeks to influence.

- ▶ **Three-month Euribor (*Euro Interbank Offered Rate*)**: the reference rate for three-month unsecured interbank loans. The three-month Euribor rate is often used as a reference for setting interest rates on loans to households and non-financial corporations. Euribor is also calculated for other maturities ranging from one week to twelve months. This article also uses the six-month Euribor.
- ▶ **Three-month OIS rate (*Overnight Indexed Swap rate*)**: this is the fixed rate paid in exchange for a stream of payments based on the Eonia overnight rate over a three-month period. It mainly reflects market expectations regarding the overnight rate over the coming three months. The three-month Euribor-OIS spread provides a measure of credit and liquidity risk on the unsecured money market. As such, it is a good indicator of the tensions affecting it. This article also uses the six-month OIS.
- ▶ **Seven-year swap rate**: fixed interest rate paid in exchange for a stream of payments based on six-month Euribor over a period of seven years. This rate is not affected by credit risk, but rather by the risk of default of the parties. Swap rates also exist for other maturities.
- ▶ **Seven-year government bond yield**: a long-term yield on sovereign debt. The spread between the seven-year swap rate and the seven-year government bond yield provides a measure of credit and liquidity risk on the sovereign debt market.

### 3.2.1 Methodology

The theory suggests that there is a stable relationship between the market interest rate and the retail interest rate, and that causality moves from market rates towards retail rates. In practice, this assumption can be tested using a vector error correction model (VECM), which

assumes a stable relationship between the two rates over the long term. This method is commonly used to analyse monetary policy transmission<sup>(1)</sup>, because this type of model makes it possible to estimate the long-term relationship, the direction of the causality, and the short-term dynamic for the two variables in question.

The estimated formal relationship is as follows:

$$\Delta br_t = \alpha_{br} (br_{t-1} - \beta mr_{t-1} - \gamma) + \sum_{i=1}^n \delta_{br,t-i} \Delta br_{t-i} + \sum_{i=1}^n \theta_{br,t-i} \Delta mr_{t-i} + u_{br,t}$$

$$\Delta mr_t = \alpha_{mr} (br_{t-1} - \beta mr_{t-1} - \gamma) + \sum_{i=1}^n \delta_{mr,t-i} \Delta br_{t-i} + \sum_{i=1}^n \theta_{mr,t-i} \Delta mr_{t-i} + u_{mr,t}$$

where  $br$  is the retail bank interest rate,  $mr$  is the market interest rate used as a reference, the coefficients  $\alpha$  represent the speeds of adjustment towards the long-term equilibrium,  $\beta$  measures the degree of transmission over the long term, the coefficients  $\theta$  and  $\delta$  measure the short-term dynamic, and  $u$  are the error terms. The term in the parentheses is the cointegration vector and represents the long-term relationship between the interest rates, whereas the rest of each of the equations shows the short-term dynamic. The constant ( $\gamma$ ) included in the error correction term makes it possible, in this basic model, to

account for other factors that influence the determination of the interest rates and that are not specified in our analysis (such as the effects of competition among banks). The number of lags used in each model ( $n$ ) is chosen according to the Schwarz information criterion. There is a stable long-term relationship – the so-called cointegration relationship – between the market interest rate and the retail interest rate, and the causality of this relationship goes in

(1) See, for example, Mojon (2000); Toolsema, Sturm and Haan (2002); Baugnet and Hradisky (2004); Sorensen and Werner (2006); and ECB (2009).

the right direction – i.e. from the market interest rate to the retail interest rate – if  $\alpha_{br}$  is significantly negative (the more negative it is, the faster the adjustment towards the long-term relationship) and if, by contrast,  $\alpha_{mr}$  is not significantly different from zero. Consequently, estimating the complete system, and not just the retail interest rate equation, enables us to verify the robustness of the initial assumption. The degree of transmission over the long term, for its part, indicates the extent to which the retail interest rate incorporates changes in the market interest rate over the long run. A unitary degree of transmission ( $\beta = 1$ ) indicates a complete pass-through. Furthermore, dealing with both interest rates in an integrated system makes it possible – through an orthogonal transformation of the error terms  $u^{(1)}$  – to break down the variation in the two variables as being the result of two structural shocks: one affecting the market interest rate and the other affecting the retail interest rate.

Each retail interest rate studied is set against two reference market interest rates, with the goal of determining which rate is the most relevant to the formation of retail interest rates. The short-term market interest rates are OIS and Euribor. The long-term market interest rates are the swap rate and the government bond yield for the corresponding maturity. Each model is, moreover, estimated using two samples to test the stability of the relationship between each of the market rates and the retail rate. The first sample covers the period leading up to the crisis; it begins in January 1997 and ends in July 2007. The second sample includes the crisis period and ends in February 2011, last month for which data were available at the time of running the estimations. The results of these estimations are summarised in a table in the annex.

For each of the estimated models, the analysis of the impulse response functions and the historical decompositions will provide a response to the questions posed.

The impulse response functions will show how the retail interest rate reacts to a shock to the market interest rate. Observing this reaction before and after the crisis, considering each of the market interest rates, will indicate the stability of the relationships between the retail interest rate and each of the market interest rates, which will help determine the most relevant market rate. The rate whose relationship with the retail interest rate is characterised by a significant degree of stability can be considered the most relevant market interest rate.

(1) A Choleski decomposition (Enders (2003)) was used for this purpose. In choosing the order of the variables, the market interest rate was treated as the most exogenous rate (no contemporary impact of the retail interest rate on the market interest rate).

(2) While the use of these non-homogeneous series is not ideal, it is warranted in cases such as this one where the alternative is to resign oneself to using a smaller amount of data. We follow an approach used by the ECB (ECB (2009)).

The technique of historical decomposition enables us to determine the extent to which the retail interest rate is explained by:

- a reference level (forecast of the variable in the absence of a shock to the market interest rate or to the retail interest rate);
- the contribution of a shock to the market interest rate (dynamic effect on the retail interest rate of a normal transmission of variations in the market interest rate);
- the contribution of a shock to the retail interest rate itself (which explains the specific movements in the retail interest rate not attributable to the second factor).

If the model corresponds to the initial hypothesis, i.e. that the market interest determines movements in the retail interest rate, the portion attributable to shocks to the market interest rate will be larger than the portion due to shocks to the retail interest rate itself. If, however, the financial crisis affects retail interest rates and the transmission mechanism (beyond the influence linked to the choice of relevant market interest rate), this impact will show up in the presence of the contribution of this second shock. Furthermore, the sign of the contribution of this shock during the financial crisis is an important part of the analysis: in principle, we can expect that possible distortions of the transmission due to the crisis translate into a positive and relatively persistent contribution from this shock. This would indicate that the retail interest rate is too high relative to the market interest rate in the context of a normal transmission, and that it thus incorporated an additional risk premium due to the crisis.

The time series of bank interest rates were constructed using retail interest rates (RIR) from the old survey of credit institutions, available up until September 2003, and monetary financial institution interest rates (MIR), available from January 2003, taken from the new harmonised survey of euro area interest rates. For each of the interest rates, the two statistical series were combined by systematically carrying over the difference in interest rates for the month of January 2003, while retaining the dynamic of each of the series. It was verified that the two series were strongly correlated during the nine months for which data from both of them overlap<sup>(2)</sup>.

The market interest rates used are, for the short term, Euribor (as well as BIBOR when analysing Belgian rates, through December 1998) and OIS. For the long term, we used three- and seven-year Euribor swap rates, and three- and seven-year euro area government bond yields (synthetic); we also used the interest rate on seven-year Belgian government linear bonds (OLOs) to analyse long-term retail interest rates in Belgium.

### 3.2.2 Results

The goal of this analysis is not to perform an exhaustive study of the crisis's effects on monetary policy transmission in the euro area and Belgium, but to illustrate a certain number of transmission problems associated with the crisis. As a result, the study covers a sample of short- and long-term lending and deposit rates offered by banks in the euro area and Belgium.

#### 3.2.2.1 Euro area

The analysis of the euro area includes both deposit and lending rates. Among deposit rates, we analyse the overnight deposit rate and the savings deposit rate. As for lending rates, we analyse the rates on short- and long-term loans to non-financial corporations and on consumer loans. A cointegration relationship has been identified for all of the estimated models but one. The results for the two samples are detailed in the annex.

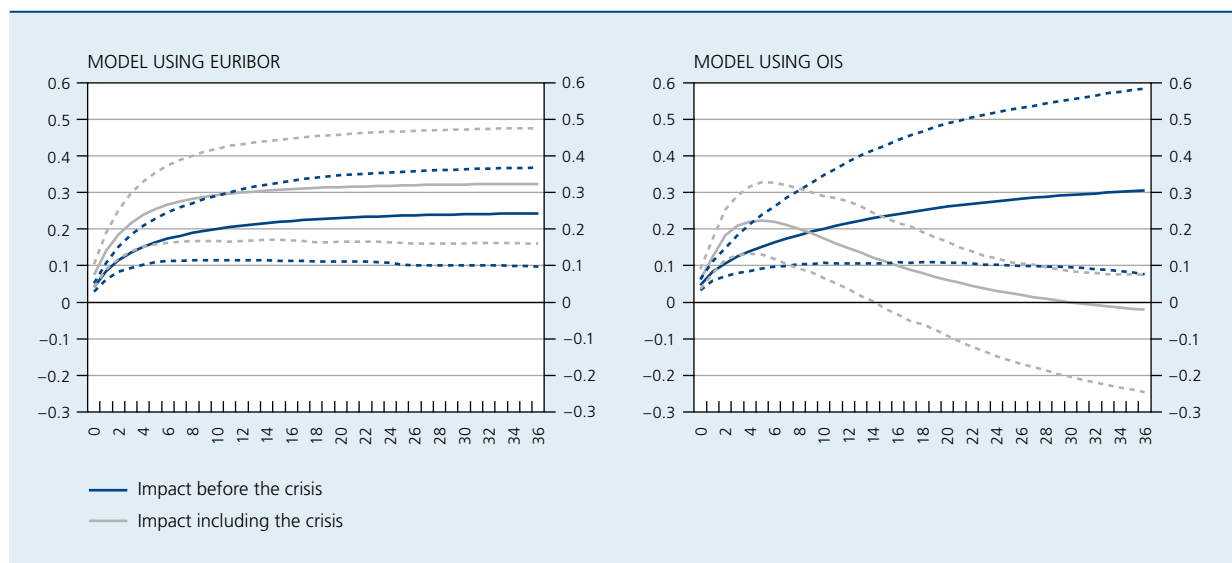
Initially, the comparison of impulse response functions makes it possible to visualise the extent to which the models are stable over the period analysed, and relative to the two market interest rates considered. The charts illustrating the impulse response functions measure the effects of a shock the size of one standard deviation (that occurs at period 0) over the course of the following 36 periods (months), and indicate whether it is permanent or temporary. They include confidence intervals estimated using Hall's bootstrap method<sup>(1)</sup>, with a probability of 95%.

The cases in which the conclusion is the most evident are those of short-term interest rates, for which the market rates used began to diverge in the second half of 2007. In the case of both the rate on short-term loans to NFCs and overnight deposits, for the models estimated using Euribor, the shock to the market rate had a fairly stable and permanent impact on the retail interest rate for the two samples considered. Conversely, the models estimated using the three-month OIS become problematic when the crisis period is included in the analysis. In the case of the interest rate on short-term loans to non-financial corporations, when the analysis is performed on a long series, the shock to the OIS rate no longer has a permanent impact on the retail interest rate, whereas the impact of Euribor was similar both before and during the crisis (which testifies to the stability of the relationship). A similar result was obtained for overnight deposits (not illustrated). In the case of savings deposits (not illustrated), the impulse response functions do not clearly indicate a relevant interest rate.

This indicates that, during the crisis, short-term retail interest rates moved in step with Euribor rather than OIS. These interest rates can thus be considered "contaminated" by the widening spread between the two market interest rates; at the same time, the ECB's adoption of unconventional measures made it possible, as we explained above, to counteract this effect by reducing OIS

(1) The bootstrap method supplies a certain number of indications regarding the estimates obtained from a sample by using "new samples" drawn from the initial sample. Here we use Hall intervals constructed on 1,000 drawings.

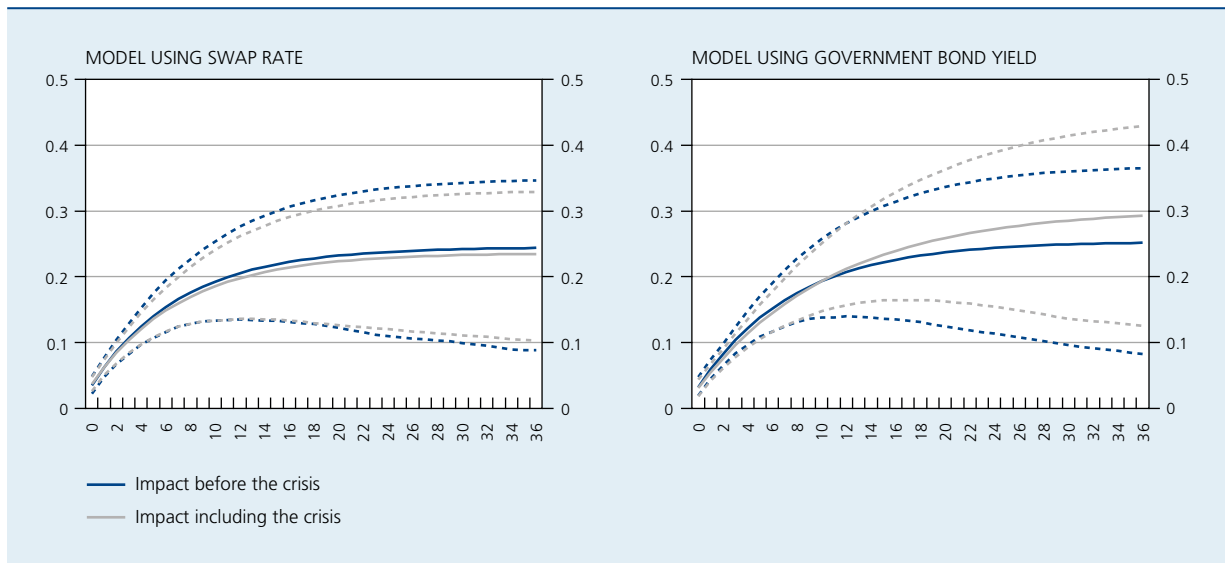
**CHART 12** IMPULSE RESPONSE FUNCTIONS OF THE INTEREST RATE ON SHORT-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN THE EURO AREA AFTER A SHOCK TO THE MARKET INTEREST RATE



Source: NBB.



**CHART 13** IMPULSE RESPONSE FUNCTIONS OF THE INTEREST RATE ON LONG-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN THE EURO AREA AFTER A SHOCK TO THE MARKET INTEREST RATE



Source : NBB.

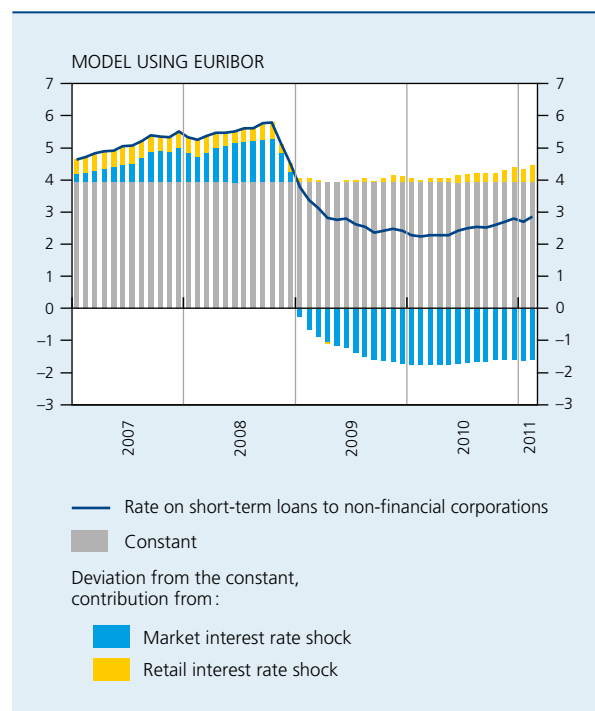
(which fell to a level below the ECB’s central key rate) and, subsequently, Euribor.

The analysis of longer-term interest rates enables us to observe whether the sovereign debt crisis has had (or may have) a material impact on the cost of lending to businesses and households in the euro area, on the basis of the spreads recorded between government bond yields and swap rates. In the case of long-term loans to non-financial corporations, the relationship with each of the market interest rates remains very stable after the crisis. Unlike in the previous exercise, it thus appears too early to draw firm conclusions regarding the impact of the sovereign debt crisis on this interest rate. This is almost certainly due to the small amount of data that reflect a widening spread between the market interest rates considered in this analysis (the widening of spreads between the two market interest rates was relatively brief in 2009 and began relatively late in 2010). In the case of the interest rate on consumer loans (not illustrated), the models (estimated using the three-year swap rate and the government bond yield of the same maturity) again do not allow us to firmly conclude that the former interest rate grew less relevant as a result of the crisis.

Consideration of the historical decomposition of the relationship becomes important especially in cases where the analysis of patterns of impulse response functions is not decisive. It allows us to observe the impact of each of the two shocks.

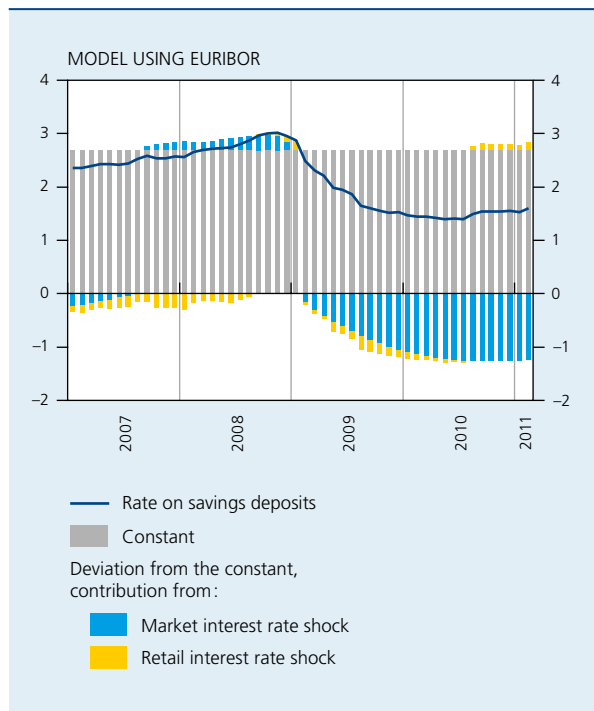
Regarding the short-term interest rates analysed, this historical decomposition appears to confirm the hypothesis

**CHART 14** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON SHORT-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN THE EURO AREA



Source : NBB.

**CHART 15** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON SAVINGS DEPOSITS IN THE EURO AREA



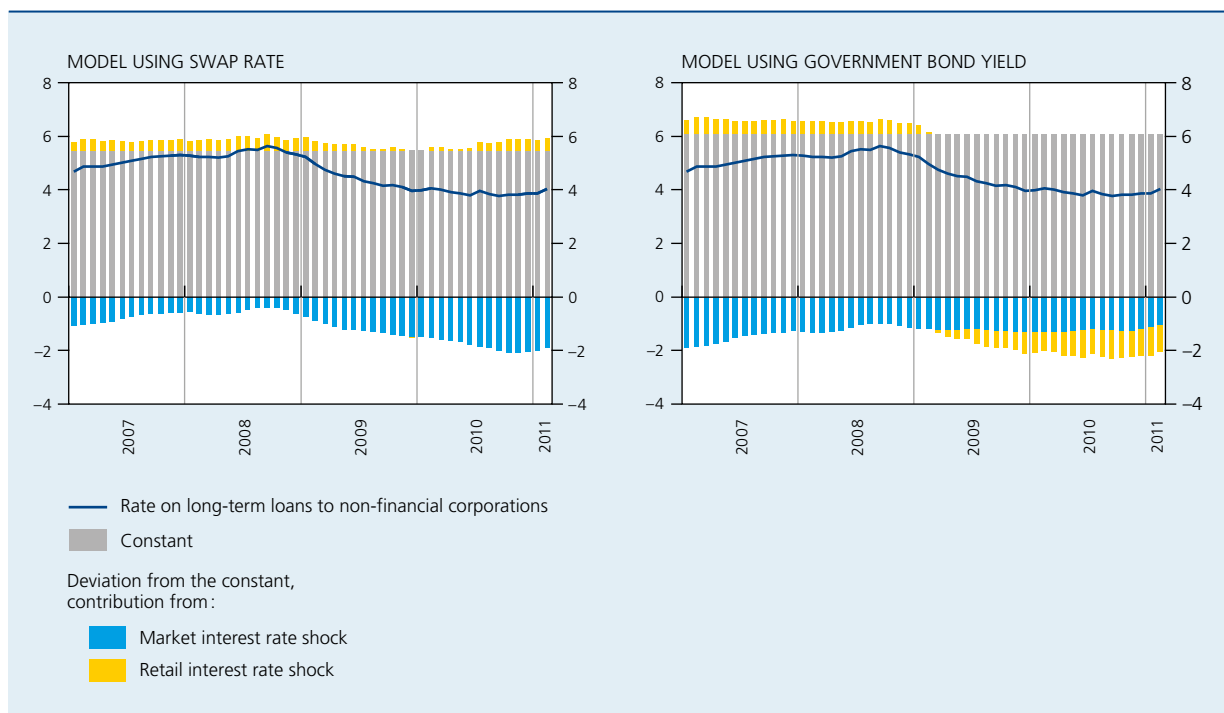
Source: NBB.

cited earlier, that the reference interest rate is three-month Euribor. Interest rates on short-term loans to non-financial corporations, as well as the interest rates on savings deposits and overnight deposits (not illustrated) in the euro area, were determined to a large extent by shocks to the market interest rate. This indicates that the risk premia that have widened the Euribor-OIS spread since summer 2007 were transmitted to the interest rates on both loans to NFCs and deposits.

Furthermore, in the two cases illustrated, a moderately positive contribution from the shock to the retail interest rate itself appears late in the period. This may reflect an additional increase in the financing costs of banks not integrated into Euribor, which, given the growing mistrust vis-à-vis a number of banks, has become less representative of the marginal financing costs of those banks.

The historical decomposition of the interest rate on long-term loans to non-financial corporations appears to indicate that the reference market interest rate is the swap rate. However, this result is tenuous. In the case of the model estimated using the swap rate, the contribution of the shock to the retail interest rate becomes positive at the end of the period. This could be interpreted as the upwards influence of the sovereign debt crisis and the increase in

**CHART 16** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON LONG-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN THE EURO AREA



Source: NBB.

bank financing costs, but the impact is relatively weak (some 50 basis points for the euro area as a whole). In the case of the model estimated with government bond yields, which are clearly contaminated by the sovereign debt crisis, the retail interest rate is subject to a significant negative shock to itself, apparently to offset the additional upwards effect of this alternative reference rate. Overall, for the euro area as a whole, the sovereign debt crisis thus does not yet appear to be materially reflected in the trend in retail interest rates on long-term loans to non-financial corporations. The conclusion is roughly the same for the interest rate on consumer loans (not illustrated). However, this does not prevent the sovereign debt crisis from affecting the retail interest rates of certain countries, notably those hit hardest by the crisis. This is in substance what emerged from the descriptive analysis presented in the previous section.

### 3.2.2.2. Belgium

The Belgian retail interest rates analysed include both lending rates (interest rates on short- and long-term loans to non-financial corporations, and loans for house purchase) and deposit rates (savings deposits). The cointegration relationships are less evident than in the case of euro area interest rates, especially for the short-term sample (up to July 2007), but barring that, the models produce results compatible with the initial hypotheses.

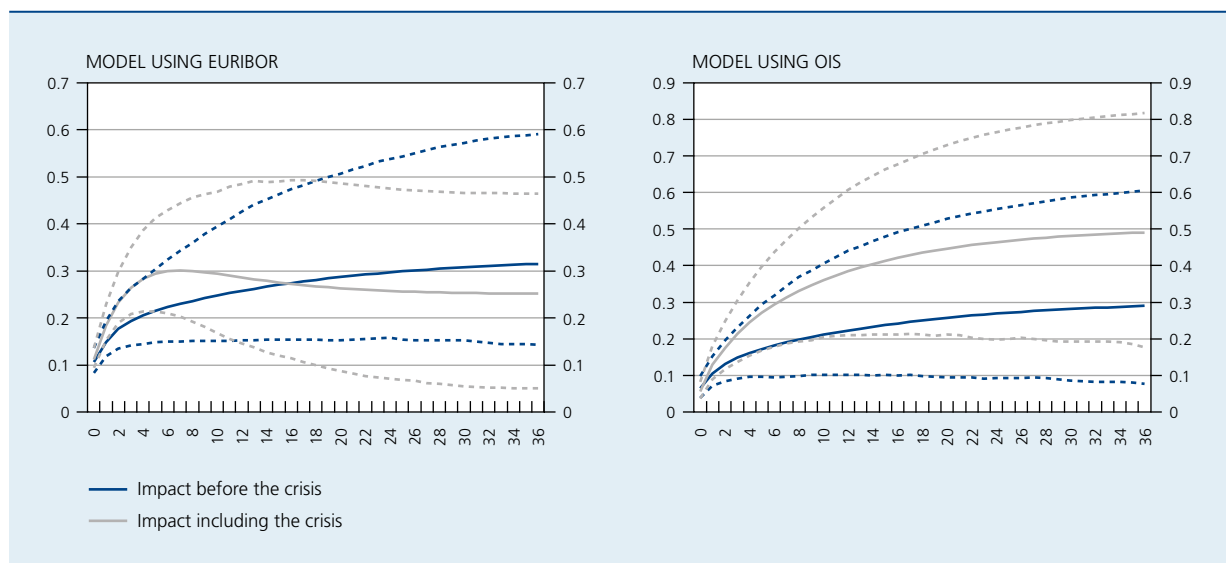
Analysis of the estimated models' impulse response functions indicates, as with the euro area, a high degree of stability for the long-term interest rate models (not

illustrated), even though for long-term loans to non-financial corporations, government bond yields appear to gain in importance for the sample that includes the crisis period.

Regarding short-term interest rates, the impulse response functions do a good job of showing the relevance of Euribor during the crisis period for savings deposit rates and the instability of the model estimated using the OIS, as was the case for the euro area. However, the conclusion is much less clear in the case of short-term loans to non-financial corporations. For the latter, the model estimated using the OIS even seems to improve if the crisis period is included in the sample, whereas the corresponding model using Euribor produces the opposite result.

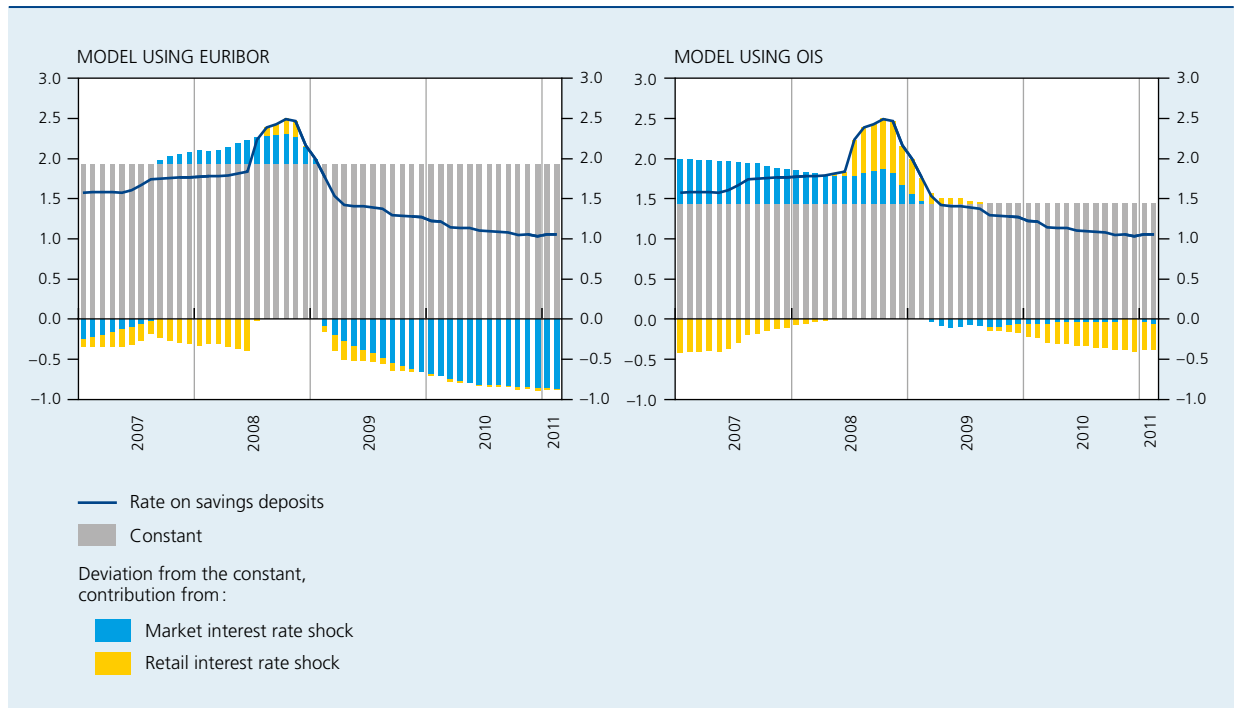
For the deposit rate analysed, the historical decompositions also indicate that Euribor is the most relevant market interest rate. The shocks to Euribor explain virtually all of the movement in savings deposit rates during the crisis. As a result, it must have incorporated the increase in the risk premium that widened the Euribor-OIS spread since the start of the crisis. Conversely, in the case of the model estimated using the OIS, both the increase and decrease in the retail interest rate are principally due to the shock to the retail rate, which indicates that this model is insufficient for explaining the events during the crisis. The savings deposit interest rate is particularly important in Belgium, because it includes the interest rate applied to savings accounts, the type of deposit most frequently used by Belgian households.

**CHART 17** IMPULSE RESPONSE FUNCTIONS FOR THE INTEREST RATE ON SHORT-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN BELGIUM FOLLOWING A SHOCK TO THE MARKET INTEREST RATE



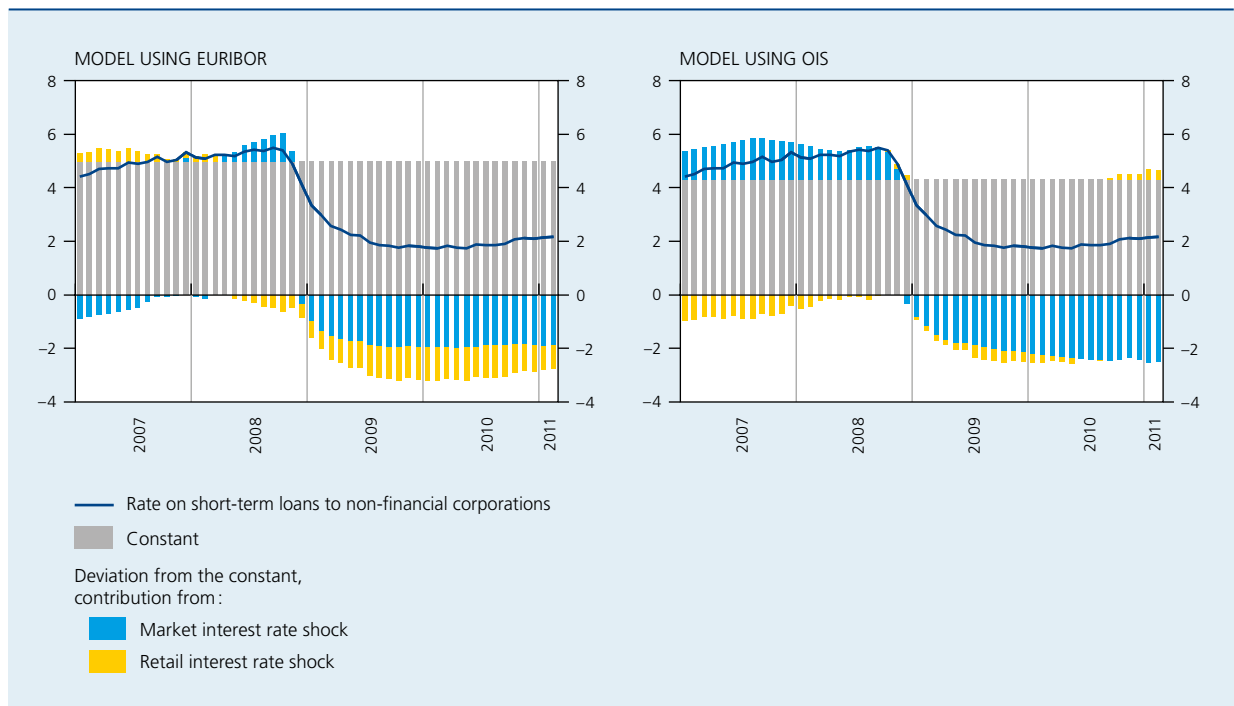
Source : NBB.

**CHART 18** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON SAVINGS DEPOSITS IN BELGIUM



Source : NBB.

**CHART 19** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON SHORT-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN BELGIUM



Source : NBB.

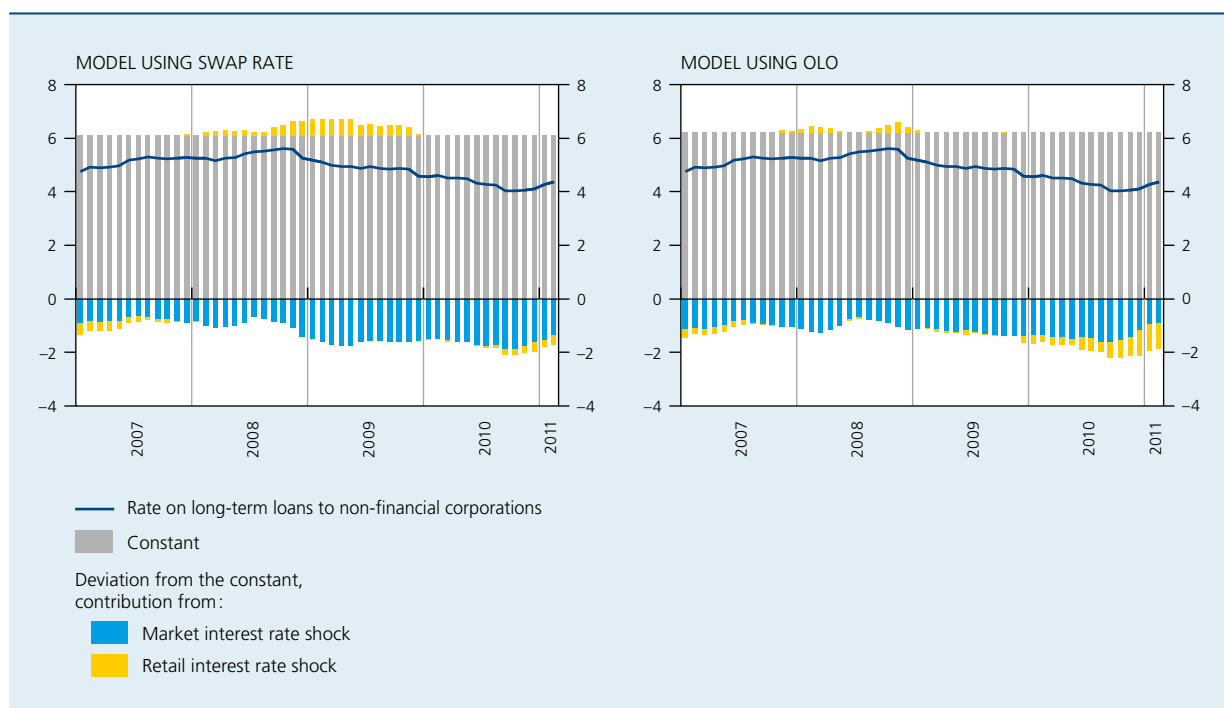
As for the interest rate on short-term loans to non-financial corporations, the historical decompositions, like the impulse responses, appear to indicate that it was unaffected by the Euribor-OIS spread, which is in contrast to the results for the euro area. The relevant rate for determining the retail interest rate appears to be the OIS rate, which does not incorporate the risk premia associated with unsecured interbank loans. This result could be linked to a composition effect, as a consequence of the high percentage of loans with very short-term maturities in Belgium, given that the risk premium on rates with very short maturities is generally quite low. In the model estimated using the OIS, the shock to the market interest rate explains virtually all of the variation in the interest rate on short-term loans to non-financial corporations. However, this model indicates a slight positive contribution from the shock to the retail interest rate at the end of the period (of around 37 basis points in February 2011), which probably reflects the recent increase in the financing costs of Belgian banks.

The interest rate on long-term loans to non-financial corporations is analysed in relation to that of the seven-year swap rate and the seven-year OLO. The swap rate had a considerably negative effect on the interest rate on loans

to non-financial corporations in Belgium, but the latter was affected by the positive contribution of the shock to the retail interest rate early in the rate-cutting period (late 2008 and 2009). This seems to indicate that the interest rate on long-term business loans initially fell less quickly than usual, specifically during the period during which the financial crisis seriously affected the Belgian banking sector. However, this positive contribution disappeared towards the end of 2010, with the shocks to the retail interest rate on itself contributing to its decline, which strengthens the hypothesis that the increase in government bond yields did not pass through to this interest rate. In the case of the model estimated with the OLO, the impact of the retail interest rate on itself is less significant in 2009, but more important in 2010. At the end of the period, this impact is moreover clearly negative, as in the euro area. This seems to indicate that the recent increases in the OLO yield due to the sovereign debt crisis have not been incorporated into the trend in the interest rate on loans to non-financial corporations in Belgium.

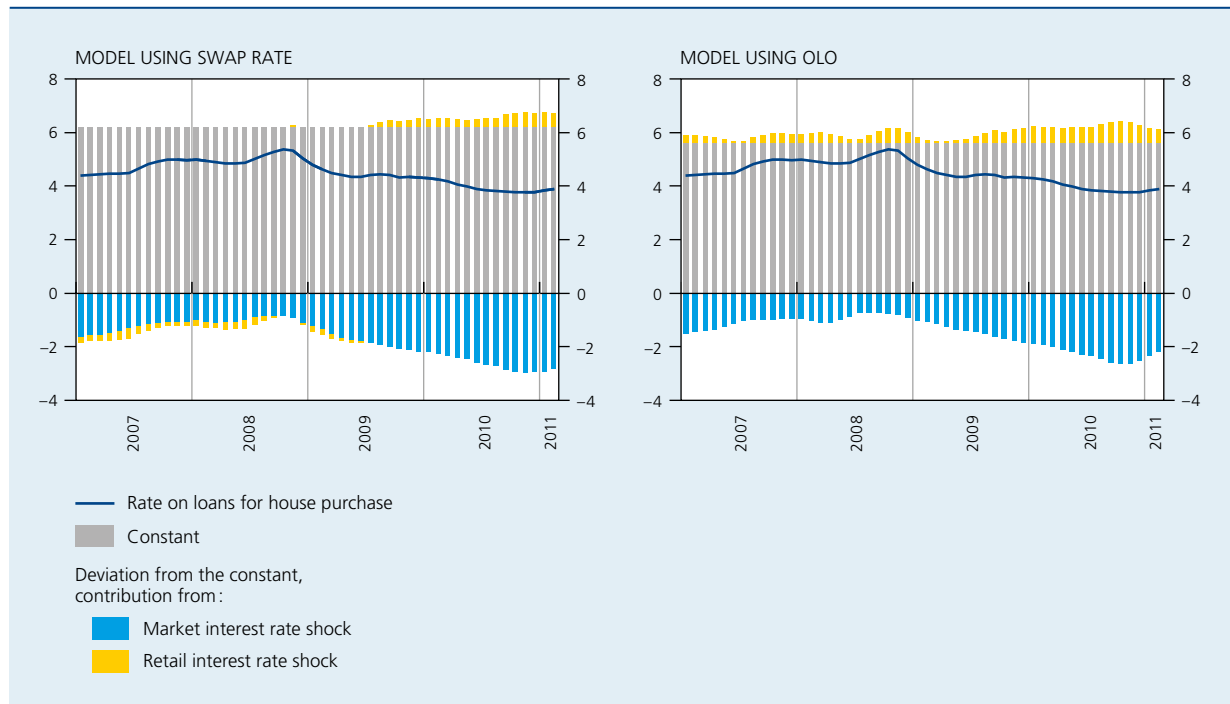
The final lending rate analysed is the interest rate on loans for house purchase, which in Belgium has a long average maturity. The impact of the shock to the mortgage rate

**CHART 20** HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON LONG-TERM LOANS TO NON-FINANCIAL CORPORATIONS IN BELGIUM



Source : NBB.

CHART 21 HISTORICAL DECOMPOSITION OF THE INTEREST RATE ON LOANS FOR HOUSE PURCHASE IN BELGIUM



Source: NBB.

itself is relatively weak, but with a positive contribution at the end of the period in both the swap rate and the OLO models. It is difficult to draw firm conclusions at this stage. However, the positive contributions late in the period point to a certain transmission of the increase in government bond yields and, thus, of the sovereign debt crisis.

Like the other interest rates analysed here, the interest rate on loans for house purchase corresponds to new business and is not influenced by the periodic revision of interest rates on mortgage loans issued earlier. The transmission to the interest charges paid on mortgage loans, however, takes place via rates on new loans and interest rate revisions, which are based on the interest rate on government debt (OLO). Thus, it appears that the Belgian mortgage loan market is relatively vulnerable in the event of an aggravation of tensions on the public debt market.

For both Belgium and the euro area, the transmission of monetary policy appears to have been more disrupted in the case of short-term than of long-term interest rates. In general, the former were affected by the widening of the Euribor-OIS spread, and have thus incorporated the increase in risk and liquidity premia. The only exception is the rate on short-term loans to non-financial corporations

in Belgium, which has rather followed the OIS. However, this phenomenon is likely attributable to the preponderance of loans at very short-term maturities in the aggregate of short-term loans to non-financial corporations in Belgium.

As for long-term interest rates, the pass-through appears, on the contrary, to have remained largely stable, for both Belgium and the euro area as a whole. The analysis shows, however, a certain influence of the sovereign debt crisis on several lending interest rates towards the end of the period. Notably, it appears that the rate on loans for house purchase in Belgium has been slightly affected by the widening of the spread between Belgian government bond yields and the swap rate.

## Conclusions

The economic and financial crisis that emerged in summer 2007 and the sovereign debt crisis that erupted in late 2009 generated considerable pressure on financing costs in the euro area and presented major monetary policy challenges. However, the cuts in key interest rates orchestrated by the ECB and the adoption of several exceptional monetary policy measures amply offset the increase in

risk premia on both the interbank and bond markets, and helped maintain efficient monetary policy transmission.

Thus, while tensions on the market for government debt securities had a certain impact on business and household borrowing costs, their effects were relatively limited at the euro area level, even though, due to its direct involvement in public financing, the financial sector was materially affected. The same conclusions apply to Belgium, where only interest rates on loans for house purchase appear to have been slightly influenced by the increase in sovereign debt yields. Conversely, in the countries that bore the brunt of the sovereign debt crisis, both businesses and households saw their borrowing

costs rise significantly. In general, it appears that at the national level, private sector borrowing costs moved in step with government financing costs, although some decoupling has also been observed, basically at the level of the non-financial sector.

These results are reassuring in that they demonstrate the relative effectiveness of the monetary policies adopted during the crisis and the relatively limited repercussions of the sovereign debt crisis on the rest of the euro area economy. Even so, in the countries hit hardest, the private sector has been deeply affected by the rise in public sector borrowing costs, and measures to clean up the fiscal positions of those countries must remain a top priority.

## Annex

### MAIN RESULTS OF THE ECONOMETRIC ANALYSIS

Retail interest rate	Market interest rate	Cointegration		Long-term pass-through $\beta$		Speed of adjustment $\alpha_{br}$		Speed of adjustment $\alpha_{mr}$	
		from 1997-01 to 2007-07	from 1997-01 to 2011-02	from 1997-01 to 2007-07	from 1997-01 to 2011-02	from 1997-01 to 2007-07	from 1997-01 to 2011-02	from 1997-01 to 2007-07	from 1997-01 to 2011-02
<b>Euro area</b>									
Overnight deposits . . . . .	3-month Euribor	Yes***	Yes***	0.27	0.29	-0.07	-0.06	Not significant	Not significant
	3-month OIS	Yes***	Yes**	0.24	0.20	-0.13	-0.05	Not significant	Significant
Savings deposits . . . . .	3-month Euribor	Yes***	Yes***	0.38	0.38	-0.09	-0.13	Not significant	Not significant
	3-month OIS	Yes***	Yes***	0.29	0.31	-0.25	-0.18	Significant	Significant
Short-term loans to NFCs . . .	3-month Euribor	Yes***	Yes***	0.83	0.76	-0.11	-0.12	Not significant	Not significant
	3-month OIS	Yes***	No	0.81	0.57	-0.15	0.00	Not significant	Significant
Consumer loans . . . . .	3-year swap	Yes***	Yes***	0.55	0.59	-0.12	-0.16	Not significant	Not significant
	3-year government bond yield	Yes***	Yes***	0.52	0.56	-0.18	-0.17	Not significant	Not significant
Long-term loans to NFCs . . .	7-year swap	Yes***	Yes***	0.95	0.89	-0.18	-0.18	Not significant	Not significant
	7-year government bond yield	Yes***	Yes***	0.89	0.98	-0.22	-0.16	Significant	Significant
<b>Belgium</b>									
Savings deposits . . . . .	3-month Euribor	No	Yes*	0.44	0.45	-0.03	-0.03	Not significant	Not significant
	3-month OIS	No	Yes**	0.44	0.19	-0.03	-0.04	Not significant	Significant
Short-term loans to NFCs . . .	6-month Euribor	No	No	1.07	1.06	-0.14	-0.02	Not significant	Significant
	6-month OIS	Yes***	Yes***	1.01	0.94	-0.03	-0.11	Not significant	Not significant
Long-term loans to NFCs . . .	7-year swap	Yes**	Yes***	0.72	0.65	-0.21	-0.17	Not significant	Significant
	7-year OLO	Yes*	Yes***	0.69	0.74	-0.18	-0.17	Significant	Not significant
Loans for house purchase . . .	7-year swap	Yes***	Yes***	1.42	1.23	-0.12	-0.11	Not significant	Not significant
	7-year OLO	Yes***	Yes***	1.51	1.39	-0.08	-0.09	Not significant	Not significant

\* Indicates the presence of a cointegration vector at 15% (\*), at 10% (\*\*), at 5% (\*\*\*) (trace test: probability threshold for which the hypothesis that there is no cointegration vector can be rejected).



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# End of the crisis in the housing markets ?

## An international survey

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### Introduction

Events in recent years have once again demonstrated the importance of developments on the housing markets, both for the economy as a whole and for financial stability.

From the mid-1990s, dynamic housing markets were a significant factor supporting sustained economic growth in most of the advanced economies. The low level of interest rates, financial innovations, flexible credit conditions, sustained growth of disposable incomes, and demographic factors encouraged demand for housing and led to booming house prices and residential investment. Wealth effects combined, in some countries, with practices such as mortgage equity withdrawal also stimulated private consumption expenditure. However, at the same time, the household debt ratio reached unprecedented heights in some countries, making households extremely vulnerable to negative shocks.

House prices surged in the middle of the last decade. The problems which were already in evidence by 2006 in the subprime segment of the US housing market triggered an economic and financial crisis which plunged the global economy into the most serious recession since the end of World War II. The residential property bubbles also burst in other countries.

In some countries, the housing markets seem to have bottomed out, and a number of indicators even suggest a hesitant recovery. Conversely, in other countries, prices are still falling and the correction of the excesses accumulated during the expansion phase continues to weigh heavily on economic growth. The reduction in the heavy debt level of households and the continuing decline in house prices are seriously inhibiting the recovery of domestic demand. Countries where the construction sector had become disproportionately large before the crisis now also have to contend with the fundamental restructuring of their economy.

Against that backdrop, the question is to what extent the house price correction is now over. To answer that, this article uses some simple benchmarks to examine the degree to which those prices are under- or overvalued. It concentrates mainly on the situation in the United States, the United Kingdom and a number of euro area countries, including Belgium. In that regard, in view of the sustained rise in house prices in the run-up to the crisis, the limited correction at the beginning of 2009, and the rapid return to positive growth, it seems that house prices are still overvalued to a certain extent in Belgium. However, as these simple valuation methods have their limitations, the results must be interpreted with caution, and preferably in combination with a detailed analysis of the factors specific to the various countries. Moreover, a number of risk factors persist and could jeopardise what is still a fragile recovery.

This article is structured as follows. Section 1 analyses the characteristics of the latest house price and housing investment cycle. Section 2 highlights the factors which caused the rise over the past decade, some of the factors being global and others specific to particular countries. Section 3 uses a number of indicators to measure the degree of under- or overvaluation of house prices. Section 4 examines the risk factors confronting the housing markets.

## 1. Trends in house prices and housing investment

In the advanced countries, house prices<sup>(1)</sup> tend to rise over a long period, the main reasons being growth of demand for housing due to the expansion of the population and the increase in real purchasing power, ever scarcer building land, building regulations and improvements to housing quality. However, there are numerous cyclical fluctuations around this long-term trend. The last cycle began in the mid-1990s. In a number of countries, house prices

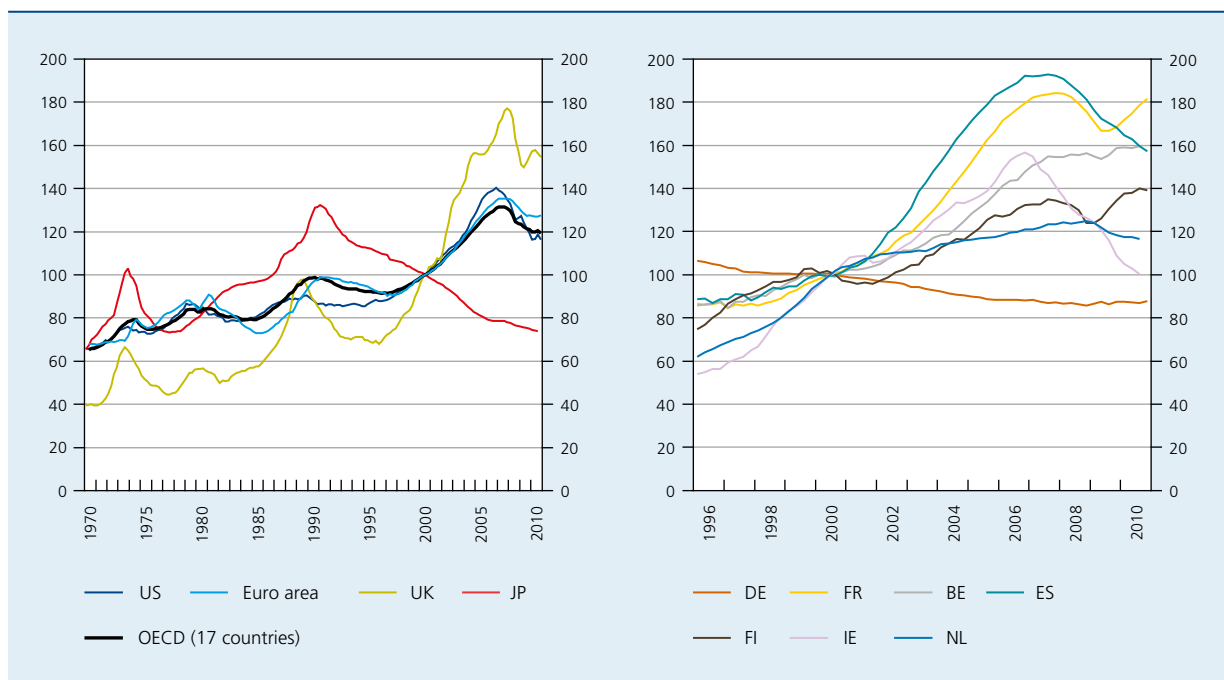
(1) The house price statistics analysed in this report come from the OECD. They are nominal house prices deflated by the private consumption deflator from the national accounts, so as to neutralise the influence of the movement in the general price level. From an economic angle, real house prices have the advantage of making it easy to establish a link with other real economic variables such as investment in housing.

first soared to unprecedented heights, then underwent a sharp downward correction from 2007 onwards.

In the OECD countries, this latest upward phase differs in several respects from the average cycle seen in those countries over the past few decades:

- it extended over a good eleven years (from late 1996 to the end of the first quarter of 2007), whereas the average length of a complete cycle was 6 ½ years, with 3 ½ years in the upward phase.
- the scale of the rise was exceptional. In the past, house prices have risen by 15% on average. During 1996-2007, however, they climbed by 44%. The situation varied largely from one country to another, the extremes being Japan (a 28% fall) and Ireland (a 175% rise). Apart from Ireland, the cumulative increase was very substantial in the United Kingdom, Spain and France, where prices more than doubled. At the same time, Belgium, Finland, the United States and the Netherlands – where the acceleration phase had set in earlier – also recorded sustained increases in real house prices, but to a lesser extent than in the first four above-mentioned countries;
- the increase in house prices was more widespread and synchronised than in previous cycles. Prices rose sharply in more than 75% of the OECD countries, with the

**CHART 1** REAL HOUSE PRICES<sup>(1)</sup>  
(quarterly data; indices 2000 = 100)



Source: OECD.

(1) Nominal house prices deflated by the private consumption deflator.

notable exception of Germany and Japan. During previous upward phases, that figure had tended to be only between 30 and 50 %;

- given the exceptional duration of the latest upward phase, the co-movement between real house prices and the economic cycle, which was a feature of previous cycles, was interrupted: in particular, house prices continued to gain momentum despite the slackening pace of economic growth in the early 2000s.

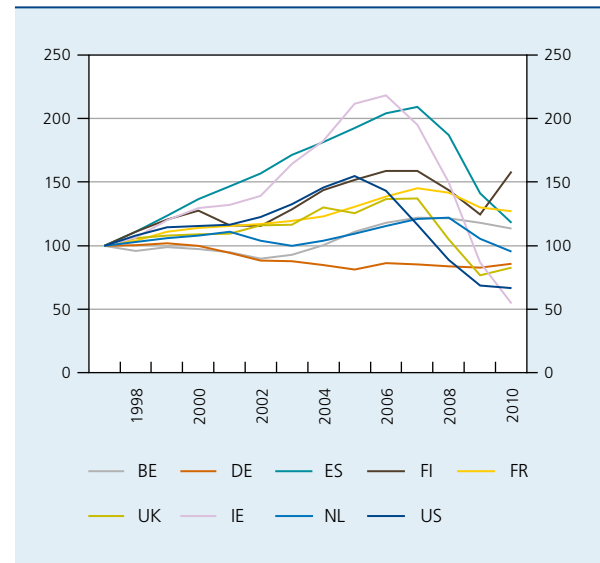
During the course of the year 2007, the downward phase in the current cycle was triggered by the increase in interest rates and the financial and economic crisis. Since then, house prices have fallen by 9% on average in the advanced countries, a sharper decline than in the previous downward phases recorded since the 1970s.

Compared to the preceding upward phase, there has been less synchronisation between countries. In the United States, prices had already peaked in the fourth quarter of 2006. House sales had actually already begun to decline during 2005. The rise in interest rates is a significant explanatory factor, as the Federal Reserve increased its key policy rates by a total of 425 basis points between June 2004 and June 2006. Long-term interest rates also rose, though less steeply. Thus, average rates on mortgage loan agreements increased by around 100 basis points during this period. The slow-down in economic growth in the United States from the second half of 2004 also played a role. Partly as a result of these factors, arrears on mortgage payments, and more specifically on subprime mortgage loans had already begun to increase during 2005. This development was one of the reasons behind the financial crisis which erupted during the summer of 2007. In most other countries, the housing market correction did not begin until 2007 or 2008.

Prices thus entered a downward adjustment phase which varied in severity from one country to another. The cumulative price fall has exceeded 35% in Ireland, with figures of between 15 and 20% in the United States, the United Kingdom and Spain. In France, the Netherlands and Finland, the cumulative price reduction was between 5 and 10%. Finally, it is notable that in Belgium the real price correction was the shortest in time (2 consecutive quarters) and the smallest (-1.8%). The developments recorded in the last few quarters further highlight the heterogeneous response of the housing markets after the crisis. Some countries – such as France, Finland and Belgium – were already in a stabilisation or recovery phase during 2009 or 2010. In other countries, the price correction was still ongoing during the last quarter of 2010.

CHART 2 HOUSING INVESTMENT

(annual data, indices 1997 = 100, in volume)



Source: OECD.

It is interesting that the largest and most persistent adjustments today concern precisely some of the countries which had seen the most sustained price rises during the pre-crisis period, namely Spain and Ireland. Although a strong rise in house prices may in some cases be justified by the course of economic fundamentals, the increases recorded tend to suggest excessive developments which subsequently require greater and more permanent adjustment.

A positive link is generally seen between the trend in house prices and investment in housing. The choice between buying an existing property or building a new home involves what is generally known as Tobin's Q. This ratio compares prices on the secondary market with the cost of new building. An increase in the market value of existing properties compared to construction costs encourages investment in new buildings. Thus, housing investment also expanded strongly in most of the advanced countries in the decade from 2000. In Spain and Ireland, where the price rise was particularly steep, the expansion of housing investment began sooner and was extremely vigorous. In those two countries, the weight of the construction sector in total value added increased very rapidly. Elsewhere, and especially in the United Kingdom, France, Belgium and the Netherlands, housing investment expanded more modestly in comparison with the surge in prices. That indicates that there may be differences between countries in the sensitivity (or elasticity) of the housing supply to secondary market prices.

The OECD recently estimated the long-term price elasticity for a number of countries. According to the estimates, the supply of new housing is relatively more flexible in the United States, Finland and Ireland, whereas it is more rigid in continental European countries (such as Belgium) and the United Kingdom. The sensitivity of supply is considerably influenced by government policy, such as urban planning and land use regulations. A positive shock affecting demand for housing will vary in its macroeconomic effects according to the degree of supply elasticity. When the activity of the construction sector reacts promptly and/or strongly to the initial demand shock, the pressure on prices is tempered, but that tends to amplify the movements in economic activity. When the supply of new housing is slow and/or weak in its response to rising demand, that tends to exacerbate the stress on prices, making them more volatile, with potentially negative implications for the affordability of housing.

The strong growth of housing investment was followed by a decline which set in sooner in the United States and Ireland than in the other countries. The crisis triggered a widespread slump in housing investment, but the scale of the decline varied between countries; it was much more severe in the countries where housing investment had risen the most, namely Ireland and Spain, and was also considerable in the United States and the United Kingdom. The adjustment in the United States, Ireland and the United Kingdom reduced housing investment to a level below that prevailing before the last housing cycle.

In a number of advanced countries, governments introduced measures to curb the collapse of the housing market, as part of the recovery plans following the economic and financial crisis. Some of these measures consisted of support for construction, via a reduction in VAT or the acceleration of social housing programmes; other measures were designed to assist households burdened by debt, such as the possibility of deferring interest payments on their mortgage loan in order to avoid default or an increase in the funds made available for reduced-rate loans. Some countries gradually withdrew these measures as the economic climate improved.

## 2. Principal determinants of house prices

### 2.1 Theoretical considerations

In view of the mentioned short-term rigidity of supply, house prices tend to be determined more by demand in the short term, and even in the medium term. The

number of households is the most obvious factor behind fluctuations in demand for housing. That in turn is influenced by other demographic variables, such as household size and migratory flows.

Households have a choice between renting or buying their home. That choice is made by comparing the user cost of purchasing and the rent. Investors, for whom the rent constitutes a return, weigh up the same options. The user cost comprises the interest charges on the value of the property, the cost of maintaining the property (including taxes), and the gains or losses to be made on resale of the property. If the user cost of a house is significantly larger than the rent on an equivalent property, renting is preferable. House prices and rents obviously have a very great influence on this equation. The price-to-rent ratio is therefore a proxy for this balance, which has a stabilising effect on the two markets. The ratio is often used to measure the degree of under- or overvaluation of house prices (see below). However, various factors limit the substitution between the two types of housing, and the significance of this price-stabilising mechanism:

- residential property transaction costs are often very high. In that regard, in a very flexible labour market, households may prefer to rent rather than buy;
- the tax treatment of house purchases is generally very favourable;
- the supply of (good-quality) houses for rent is often limited;
- in the case of renting, the time horizon is much shorter. Households therefore do not need to have an exact idea of their future position (over 10 to 20 years) in terms of disposable income, place of residence, household size, etc. That advantage is therefore all the more significant the greater the macroeconomic uncertainty;
- finally, in many cultures, even if the overall cost is the same, households prefer to own their home because of the associated social status or the freedom to do as they wish with the property.

Thus, rent and price are not the only two factors influencing a household's decision whether to buy or rent a home. The other variables involved in that decision are:

- the household's disposable income<sup>(1)</sup>: a household must have the necessary financial resources to acquire a home. The ratio between house prices and disposable income, known in the literature as crude affordability, is often used to estimate the affordability of housing and

(1) Since the decision to buy concerns a long horizon, it is not current disposable income that matters, but permanent income, i.e. the average disposable income expected over the period of ownership of the property (or at least over the mortgage loan repayment period). Since the permanent income is not observable, current disposable income is generally used. But in that case, it is necessary to bear in mind that both its expected increase and its variance play a key role in shaping demand.

hence the degree of under- or overvaluation of house prices (see below);

- the interest rate<sup>(1)</sup>, given that, in most cases, a loan is contracted in order to finance the purchase of a home. This variable refers more specifically to the cost of repaying a loan and, combined with the house price and disposable income, it gives an idea of the interest-adjusted-affordability;
- interest charges make up only part of the cost entailed in investing in housing. It is also necessary to take account of other costs, such as administrative expenses and the cost of maintaining the home, as well as the tax treatment of house purchases. These costs or tax advantages have to be compared with those associated with other types of real and financial investment;
- as already stated, the fact that a residential property is a real asset implies that its expected future yield may be a central factor affecting the decision to buy or keep the property. The expected variations in house prices therefore play a crucial role in demand. They may trigger further price rises, and create a process which ultimately generates speculative bubbles. In that regard, a number of studies have shown that households' expectations are adaptive and in line with past trends in prices. Thus, while an increase in real prices may initially be justified by the fundamentals (interest rates, income, etc.), its continuation is often based on the expectation that the trend will be maintained. The current price rise therefore causes the future increase. The situation in Germany and Japan illustrates this mechanism in reverse. There, prices are expected to fall. The expected movement in house prices is one of the main reasons why the real price of houses may deviate from its fundamental value for a lengthy period, in either direction. An upward trend may persist until an external factor triggers a sometimes dramatic fall in prices, going hand in hand with the contraction of demand for housing and the credit supply;
- the expectations mechanism may be reinforced by its effect on bank credit, if, in a context of constantly rising prices, the banks also consider that they only face a small financial risk in the event of a repayment default. That may drive banks to relax their lending conditions (loan-to-value ratio, ratio between repayments and disposable income, duration of the loan, etc.). The functioning of credit markets is therefore a major factor influencing demand for housing.

(1) In this connection, the expected real interest rate over the term of the loan should ideally be taken as the basis, but since there is no reliable information available on long-term inflation expectations, it is common to use the nominal mortgage interest rates prevailing, adjusted for the change in the consumer price index over the past year.

## 2.2 Global factors

The worldwide increase in house prices from the mid-1990s onwards was due to both global factors and to country-specific factors. The importance of these two types of factors varies from one country to another.

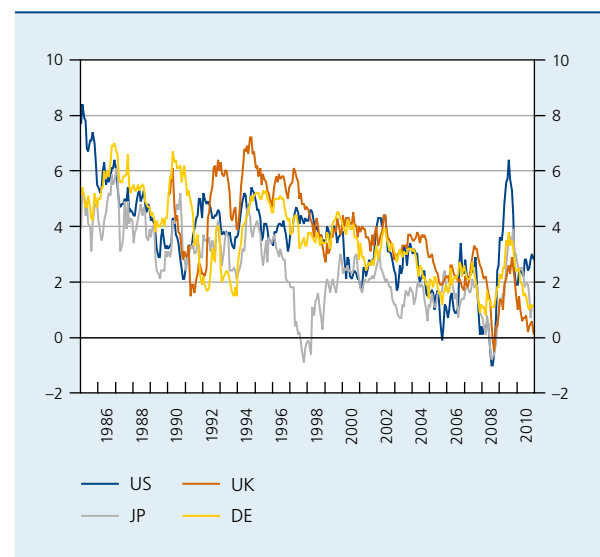
### 2.2.1 Interest rates

The fall in interest rates was one of the main factors underpinning the residential property market. This trend occurred in the context of the decline in inflation which began after the 1970s and was attributable to the greater commitment of monetary policy to maintain price stability, a more prudent fiscal policy and the liberalisation of the product and labour markets, which led to keener competition. The moderation of inflation and attenuation of its volatility contributed to a marked reduction in both nominal and real interest rates over that period.

The steady decline in real interest rates is also due to excess savings at global level: the "saving glut". Following the Asia crisis of 1997-1998, the accumulation of surplus savings by the emerging countries, especially China, and by the oil-exporting countries since the rise in oil prices during the 2000s, also depressed global interest rates.

The downward trend in interest rates at global level was combined with a process of convergence in nominal interest rates at European level which mainly benefited the

**CHART 3** REAL LONG-TERM INTEREST RATES<sup>(1)</sup>  
(monthly data, percentages)



Source: Thomson Reuters Datastream.

(1) Yield on 10-year government bonds, deflated by the CPI.

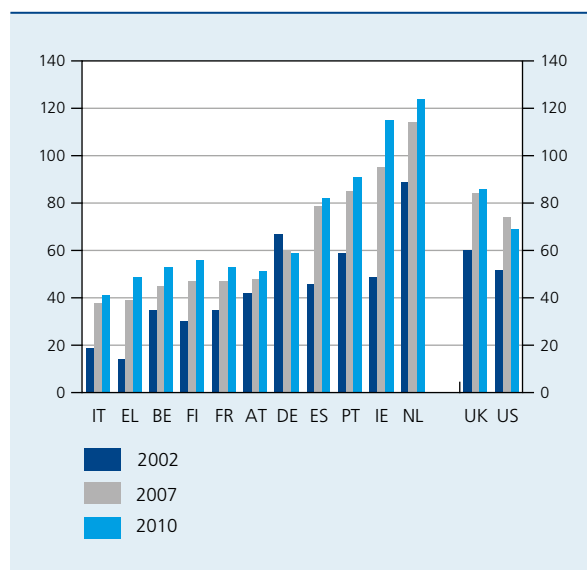
southern European countries. The announcement of the introduction of the euro encouraged the convergence of nominal long-term interest rates, which was almost totally achieved by 1998 in the case of the countries which were to adopt the euro in 1999. Taking account of inflation differentials, many countries which had previously recorded higher real long-term interest rates than Germany saw the real rate fall below the German level. These differentials persisted until the financial crisis erupted in 2008. In those countries, the exceptionally low real interest rates generally fuelled the growth differential by supporting domestic demand and the rise in asset prices, particularly in the real estate sector.

### 2.2.2 Deregulation and financial innovation

The deregulation of the financial markets from the early 1980s also contributed to the expansion of the housing markets. The new products were a key factor here. Some developments on the credit markets were particularly significant in boosting the borrowing capacity of households, and therefore increasing their ability to buy, thus compensating for the price increases. Examples include :

- extension of the loan term, up to 50 years in some countries such as France, Spain and the United Kingdom ;
- increase in the loan-to-value ratio, which often exceeded the usual limit of 80 % in many countries. In the Netherlands and the United Kingdom, contracts were frequently concluded with a loan-to-value ratio of over 100 % ;
- wider use of variable-rate mortgages. With this type of loan, the initial advantage must be weighed up against the risk of a rise in rates ;
- development of schemes for the repayment of the principal in a lump sum at the end of the loan period. Originally, these schemes were linked to an investment product intended to permit the ultimate repayment of the principal (as in the UK and the Netherlands). More recently, identical schemes but without any link to an investment product have also emerged (in Ireland and the United States) ;
- development of mortgage equity withdrawal (mainly in the English-speaking countries) enabled households to relax their financing constraints by making flexible use of their home as collateral : by mortgaging their home in whole or in part, they could obtain cheap credit to finance their consumption ;
- finally, and above all, the development of securitisation and the originate-to-distribute model permitted the expansion of lending, especially in the United States. The originate-to-distribute model may have reduced the incentives for lenders to be diligent in performing their central function in the lending process : selection of the best risks and monitoring of the debtors. In the other

**CHART 4** LONG-TERM DEBT<sup>(1)</sup> OF HOUSEHOLDS  
(in % of GDP)



Sources : Federal Reserve, EC, ECB.

(1) Outstanding amount in the 4<sup>th</sup> quarter of each year, except for 2010 (where the figures concern the 3<sup>rd</sup> quarter). For the United States: mortgage debt rather than total long-term debt.

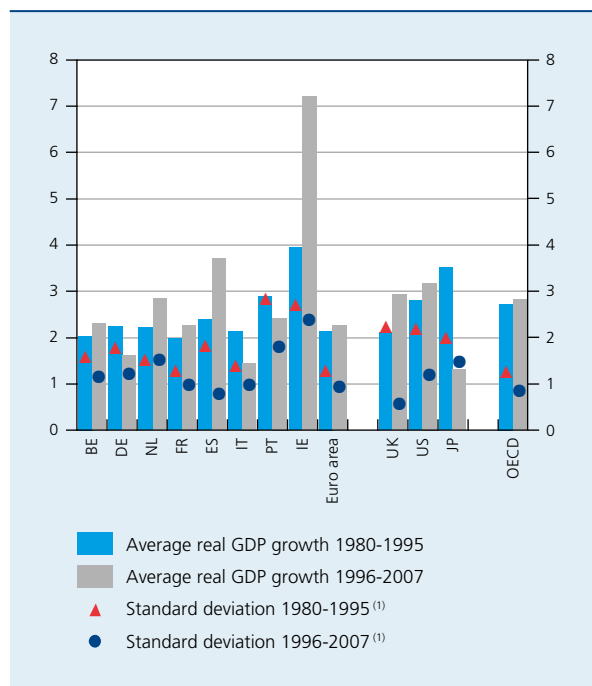
OECD countries, the percentage of securitised mortgage loans was smaller, but with considerable variations between countries. However, in Europe, owing to the more stringent prudential framework, securitisation had a less detrimental effect on the incentives for banks.

An easing of lending conditions combined with very low interest rates has often led to a significant rise in house prices and long-term debts of households. The expansion of this debt (consisting mostly of mortgage debt) has been very marked in most of the OECD countries in recent years. At the end of 2010, the long-term debt of households exceeded 80 % of GDP in Spain, Portugal, Ireland and the Netherlands, and its growth between 2002 and 2010 was often considerable in these countries. That debt expansion also increased the vulnerability of indebted households to shocks affecting their disposable income or interest rates, depending on the type of mortgage loan and the characteristics of the household. In some countries, easy access to credit also led to an increase in the proportion of owner occupiers, by enabling lower-income groups to borrow.

### 2.2.3 Disposable income

Between the mid-1990s and 2007, most of the developed economies experienced a period of "great moderation", in which real average GDP growth gathered pace and its

**CHART 5** GROWTH AND VOLATILITY OF ECONOMIC ACTIVITY  
(percentage annual change, unless otherwise stated)



Source: OECD.  
(1) Percentage points.

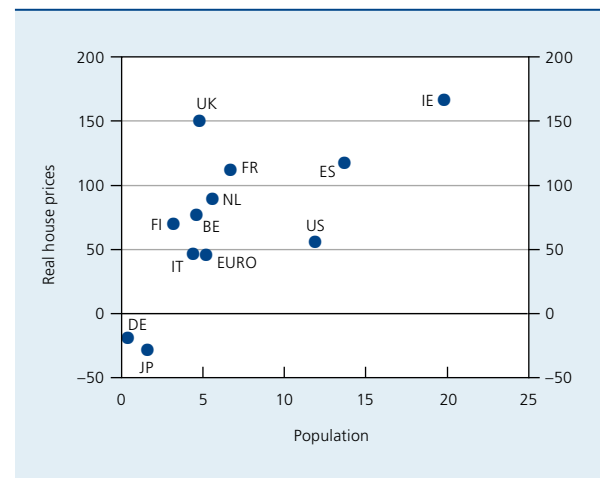
volatility declined, compared to the period 1980-1995. Households revised their income expectations upwards and downgraded their expectations regarding economic uncertainty, leading to an increase in their permanent income. This factor bolstered demand for housing in most countries.

### 2.2.4 Demography

Demography has been another common factor behind the movement in house prices in most of the developed countries. Population growth, not least as a result of immigration, has shown a positive correlation with the rise in real prices in the OECD countries. On the contrary, Japan and Germany, where population growth was very low, have recorded a decline in real house prices. In the case of Ireland, the strong population growth was combined with a structural effect caused by the age pyramid, since the proportion of the population reaching the age to set up a household increased sharply at the beginning of the 2000s.

The number of households also increased among the OECD countries during the period considered, because average household size has fallen as a result of the decline

**CHART 6** REAL HOUSE PRICES AND POPULATION  
(cumulative changes during the period 1996-2007, in %)



Sources: OECD, World Bank.

in the number of children per family, the increase in the proportion of single person households, and the increased independence of elderly persons.

Demand for housing by non-residents has also played a growing role in some European countries, such as France and Spain.

### 2.3 Country-specific factors

Regarding the latest upward phase in house prices, apart from the global factors listed above, there are also a number of national factors that should be mentioned. Furthermore, the impact of global factors has differed from one country to another. These factors are listed below for a selection of countries.

#### UNITED STATES

In the United States, the following factors have contributed to the price rise of recent years:

- in terms of both real disposable income per capita and demographics, the United States recorded a larger increase than most other advanced countries: during the period between 1996 and 2007, annual growth averaged 2.3% and 1% respectively (compared to less than 2% and 0.4% respectively in the euro area, for example);
- a number of complementary measures were taken to stimulate home ownership: the capital gains made on the sale of a house were tax exempt under certain



conditions from 1997 onwards, and the development of the non-conforming mortgage sector (Alt-A and subprime loans) was encouraged;

- after the bursting of the dotcom bubble in the year 2000, the Federal Reserve made drastic cuts in the federal funds target rate, slashing it from 6.5% in December 2000 to 1% in June 2003, a monetary easing that was more pronounced than in other advanced countries;
- borrowing conditions on the mortgage market were relaxed considerably from 2003 onwards, more so than in other countries. This was due in particular to the following factors: as mentioned above, the non-conforming sector gained in importance, criteria concerning income and collateral were eased (lenders focused more on the increase in the underlying value of the mortgaged property), a series of new practices (teaser rates – interest rates which are low at first but then increase considerably), and interest-only loans (in which during the initial phase of the loan only interest is paid) made loans more affordable, second mortgages proliferated, and there was a sharp increase in the loan-to-value ratio on new loans;
- strong speculative demand (primarily in large towns and fashionable resorts). It is estimated that this accounted for 15% of total demand for housing, taking all purchases together in 2004, compared to a long-term average of 5%.

However, the rise in house prices was curbed by the substantial, rapid increase in housing investment (high price elasticity) so that, overall, the house price rise in the United States during the period 1996 to 2006 was moderate in comparison with the rest of the world.

#### GERMANY

Germany is an atypical case. House prices there have tended to decline steadily over the past fifteen years, in sharp contrast with the increases elsewhere before 2007 or 2008. At the same time, Germany has undergone a structural crisis in the building industry: since the mid-1990s, housing investment had been in constant decline, and only recently became stable. There are several factors which may account for these developments.

On the supply side, German reunification initially led to an acceleration in housing investment, leading to surplus capacity (especially in the eastern Länder) from the mid-1990s onwards. There followed a lengthy process of adjustment which was reflected in the weakness of the construction sector.

On the demand side, in comparison with other European countries, there were few innovations in mortgage products, the only major change being the extension of the loan repayment period to 30 years. Changes in the disposable income of German households may also be part of the explanation for the sluggishness of the housing market. During the decade preceding the crisis, as a result of the slowing pace of employment growth, household disposable income increased more slowly than in other European economies. Also, the percentage of home owners in Germany is particularly low, whereas the rental market accounts for a substantial proportion of residential property, making it more attractive and tending to moderate the demand for properties to buy. Finally, in regard to taxation, while a tax allowance for first-time buyers (*Eigenheimzulage*) was introduced in 2004, it was withdrawn altogether in 2006. Also, in 2007, the general increase in the VAT rate by 3% to 19% drove up the cost of new buildings. Finally, the low rate of population growth is another factor which has depressed demand for housing.

#### SPAIN

Until 2007, the Spanish housing market boom was one of the most notable in the euro area. One of the main explanatory factors was the very strong surge in household disposable income, as a result of economic catching-up after the country joined the European Union. Income growth was also supported by vigorous expansion of employment, encouraged by labour market reforms. In addition, interest rates there fell very sharply, considerably improving access to credit. In fact, Spain clearly benefited from the convergence of its nominal interest rates in anticipation of its accession to EMU, and – as a result of its inflation gap in relation to the euro area average – it enjoyed a decline in real interest rates even after the introduction of the euro. The decline in interest rates probably played a non-negligible role in the increase in household debt levels, thus fuelling the expansion of the housing market. Moreover, the change in the mortgage landscape brought about by the introduction of product innovations (for example, the possibility of extending the loan term to 50 years), the deregulation of the banking sector and a tax regime which encouraged the purchase of houses (such as the various tax allowances for buyers, and a special lower VAT rate of 7% on the purchase of new housing) facilitated and stimulated home ownership. Finally, the demographic factor was particularly important in Spain, where European non-residents and the influx of immigrants have provided additional support for demand.

## FRANCE

Up to 2007, the French housing market was among the most flourishing in the euro area. Demand was underpinned in particular by the dynamism of incomes and employment, in line with the implementation of policies targeting the labour market. Moreover, the home ownership rate, which was relatively low, has tended to rise and has boosted demand for housing. Demand from European non-residents also drove up prices, though not on a comparable scale to what happened in Spain. As in other countries, a number of innovations appeared on the mortgage market, such as the possibility of extending the term of the loan to 50 years, and the increased use of variable-rate loans, easing credit conditions. Moreover, financing sources subsidised by the State supported buyers' demand for housing, e.g. via the *Prêt à Taux Zéro* (zero-rate loan) already introduced in 1995 and then relaunched in 2005, making home ownership easier for first-time buyers with modest incomes. In 2007, just before the end of the boom, a tax credit on loan interest was introduced.

## IRELAND

During the upward phase in the latest property cycle, Ireland appeared to be an outsider, with prices almost tripling since 1996 despite substantial investment in housing. The steep increase in prices was due to strong demand which outstripped that in the rest of the euro area, one of the root causes being demographic trends: strong growth of a young population, net immigration, and changes associated with lifestyles (break-up of the nuclear family). In addition, from the 1990s onwards, a twofold catching-up effect occurred, not only in regard to the disposable income of households, but also directly in respect of housing prices which were relatively lower than those of Ireland's European neighbours. Moreover, the tax rules favoured the acquisition of houses. The financing constraints facing households were eased, and that may have stimulated demand for mortgage loans. On the one hand, the process of convergence with the prospect of Ireland's entry into EMU led to a fall in nominal and real interest rates, making it substantially cheaper to borrow. Also, the mortgage loan market was liberalised and deregulated during the 1980s and 1990s. However, while such innovations were also present on other European markets, in Ireland the aggressive marketing of mortgages encouraged record levels of private debt. The business model of the Irish banking sector in fact differs from other European models in its over-exposure to the residential housing market. The fact that the high degree of financial openness in Ireland attracts a large volume of capital, plus recourse to international wholesale funding, enabled the financial sector to access a pool of abundant liquidity

and thus expand the supply of credit. The financial sector consequently came to represent an exceptionally large proportion of the Irish economy as a whole.

## NETHERLANDS

The Netherlands initially saw a period of rapidly rising house prices in the second half of the 1990s, followed by a more moderate rise during the 2000s. During the earlier period, the expansion of the housing market had been accompanied by strong job creation and a sustained growth of household disposable incomes. During the whole period, the price boom was also encouraged by the growing competition between mortgage lenders, and by developments on this market (such as the increased recourse to variable-rate loans). In addition, the loan-to-value ratio is particularly high in the Netherlands (approaching 100%) compared to other euro area countries (where the average was 79% in 2007). An accommodating tax regime, notably via a tax credit on loan interest, also acted as an incentive to taking on mortgage debts. All these factors may have contributed to the accumulation of record levels of mortgage debt by households in the Netherlands compared to their neighbours in the euro area. As in France, the increase in the particularly low percentage of owner-occupiers compared to other countries (such as Belgium, Spain, and Ireland) may have fuelled the rise in house prices compared to rents.

## UNITED KINGDOM

The specific features of the United Kingdom's housing market concern both supply and demand. First, the supply of housing is particularly price inelastic, the main reason being the tight control on supply by strict land use regulations and urban planning rules. The fact that these rules are passed mainly at local level explains their restrictive character, since local residents may have an interest in limiting the increased density of housing in their district. In 2004, a parliamentary commission of inquiry published a report on this subject (the Barker Report) which makes recommendations on increasing the supply of new housing and, more generally, making the housing market more flexible.

While supply was limited, a number of specific factors helped to support demand for housing and accentuated the price rises. As in the United States, the disposable income of British households grew more strongly than in most other advanced countries. Moreover, households' access to credit was made particularly easy by financial deregulation, which was both early and very far-reaching, and by fierce competition between credit institutions, leading to very flexible credit conditions.

This limited supply of housing coupled with demand strongly buttressed by an aggressive credit supply made the British situation similar to that in the Netherlands. In both countries, house price fluctuations exceeded the average in the other advanced economies.

## BELGIUM

In Belgium, some specific factors contributed to the rise in house prices during the decade preceding the economic crisis, and more particularly during the period 2004-2007.

First, changes in residential property taxes tended to favour access to ownership and stimulate the number of transactions. For instance, registration fees were reduced in Flanders and Brussels in 2002 and 2003<sup>(1)</sup>; in Flanders, the cut in registration fees was accompanied by fee portability, encouraging (young) households to invest relatively early in their first property, even if they later switch to a more expensive property as their income increases sufficiently to make it affordable. Moreover, the fact that cadastral income on existing properties is hardly affected by changes in the market tends to reinforce the bias in favour of existing dwellings rather than new.

Second, the tax amnesty (DLU/EBA) applied in 2005 encouraged Belgian households to repatriate funds, and part of that was certainly reinvested in residential property. That factor is behind the marked rise in personal contributions towards house purchases since 2005.

Third, the Federal State and the Regions introduced tax incentives to improve the energy efficiency of residential buildings. These measures had the effect of increasing the amounts invested by households in renovating their homes. In 2008 and 2009, when house building recorded a marked decline, which persisted in 2010, albeit to a smaller extent, the amount invested in renovation continued to increase at a sustained rate. Renovation enhances the quality of the properties, boosting their resale value.

## 3. Measures for the assessment of house prices

### 3.1 General

The empirical literature refers to a number of methods of linking changes in house prices to changes in the fundamental determinants, permitting an assessment of the residential property market valuation.

The first approach compares the movement in prices with the change in disposable income (price-to-income), so as to reveal the affordability. This yardstick can be adjusted to take account of the movement in interest rates (and more specifically, mortgage interest rates), since they have a big influence on the repayment cost and hence on the borrowing capacity of individuals. This is the concept of interest-adjusted-affordability. In addition, the influence of demographic factors – population growth exerts upward pressure on house prices if the supply is constant – can be introduced into such a yardstick, which will then cover the main macroeconomic determinants of demand for housing.

The second approach compares house prices with rents (price-to-rent), to gauge how a person wanting a home decides between house purchase and rental.

In the long term, these ratios (price-to-income, price-to-rent, interest-adjusted-affordability) tend to revert to their equilibrium value, while in the short (and medium) term they may deviate from it to varying degrees. Large deviations from the equilibrium value of these ratios therefore point to under- or overvaluation of house prices. Thus, if the price and/or repayment cost associated with the house increases relative to households' disposable income, it is much harder for them to buy a property, their demand declines, and that drives prices down, causing the ratio to revert to its equilibrium value. Similarly, if house prices rise much faster than rents, it becomes more attractive for potential buyers to rent, driving up rents while prices on the secondary market tend to fall.

The most important advantage of these methods lies mainly in the simplicity of calculation and in the fact that they are based on macroeconomic data published in the relatively short term, available for a large number of countries. International institutions (OECD, ECB, IMF) also refer frequently to the concepts of price-to-income and price-to-rent in their analysis of the housing markets.

But these tools also suffer from many defects, so that the findings must be interpreted with caution. First, they take no account of some key determinants of house prices, and approximate values often have to be used for others: this applies to taxation (for example, the deductibility of borrowing costs, which supports the affordability of housing), the characteristics of mortgage contracts (a longer

(1) In Wallonia, registration fees were not reduced until 2009.

loan term or a higher loan-to-value ratio increases affordability), rents<sup>(1)</sup>, etc.

Second, the concept of the equilibrium value, used to measure the scale of the under- or overvaluation, is itself difficult to establish. A long-term average is generally used for this purpose, but on the one hand, that average value depends on the period considered, and on the other, there is no guarantee that the equilibrium value will be constant over time. That applies in particular if there are changes over time in the tax rules, the operation of the mortgage markets (loan-to-value ratio, maturity, etc.), or the preferences of the parties involved. As already mentioned, the developments on the mortgage markets over the past decade led, among other things, to an extension of the loan term and an increase in the loan-to-value ratio. For example<sup>(2)</sup>, the average loan term in Belgium was traditionally estimated at 20 years, but data from the Central Individual Credit Register, which records all new contracts for mortgage loans granted to resident households, broken down by their term and their average amount, suggest that the term is increasing. Thus, in 2007, the average duration of mortgage contracts for a sum between € 100 000 and € 150 000 was estimated at 266 months, or 22.2 years, reflecting

an increase in the average term during the period preceding the crisis. Thereafter, the average term seems to have stopped increasing, standing at just under 22 years in 2010.

Finally, these methods supply *ex-post* valuation indicators, but do not show whether any deviations may give rise to substantial corrections in the near future.

In view of the above, it is better to draw lessons from these methods to assess the change in the affordability of housing rather than the level of affordability. Comparisons between countries must also adopt that approach.

(1) More specifically, as regards the measure which links the movement in prices to the movement in rents, there is an important conceptual difference in that the house price (in the numerator) is calculated on the basis of new transactions on the secondary market and therefore reflects market conditions, while rents (in the denominator) correspond – particularly in Belgium – to the rent component of the HICP, and usually reflect the movement in rents under existing rather than new leases. Existing rents are generally linked to the health index and are subject to various legal rules limiting increases during a multi-annual contract.

(2) Regarding the loan-to-value ratio, the pattern in Belgium seems to have differed from that in other countries, as that ratio has declined over the past 15 years. Whereas the loan-to-value ratio hovered around 80 % from 1996 to 2004, it began to fall rapidly from 2005, dropping to 65 % in the first half of 2010. In other words, the personal contribution towards a house purchase increased from around 20 % in the mid-2000s to 35 % in recent years. One of the reasons often cited to account for this trend is the repatriation of funds under the tax amnesty (DLU/EBA) implemented in 2005, part of those funds having been reinvested in residential property. It must also be stressed that the developments discussed above were seen on average. The increase in the average personal contribution over the past 15 years does not exclude the fact that for an increasing amount of households a home has become less affordable.

**TABLE 1** MEASURES OF HOUSE PRICE OVERVALUATION: INTERNATIONAL COMPARISON  
(in % of deviation from the long-term average<sup>(1)</sup>; average for the 3rd and 4th quarters of 2010)

	ECB				OECD		NBB
	Ratio between house price and disposable income	Ratio adjusted for the interest rate and population growth	Ratio between house price and rent	Ratio adjusted for the interest rate	Ratio between house price and disposable income	Ratio between house price and rent	Ratio between house price and disposable income adjusted for the interest rate and population growth
United Kingdom .....	20	22	-17	-8	29	42	-2
France .....	47	1	48	13	36	42	13
Belgium .....	-	-	-	-	48	66	15
Spain .....	28	1	22	14	25	35	-12
Ireland .....	-	-	-	-	7	22	-30
Netherlands .....	21	7	25	6	41	38	6
Finland .....	4	6	22	10	3	39	-15
Italy .....	20	13	10	9	18	7	-9
United States .....	-	-	-	-	-8	7	-25
Germany .....	-28	-1	-13	-2	-24	-21	-
Japan .....	-	-	-	-	-36	-36	-

Sources: ECB (2011), OECD, NBB (own calculations).

(1) 1980-2010 average for the ECB and OECD indicators; 1995-2010 average for the NBB indicator.

## 3.2 International comparison

Recently, the OECD and the ECB have both assessed the housing markets in a number of countries in the light of the affordability indicators. The Bank has made similar calculations on the basis of an interest-adjusted-affordability model<sup>(1)</sup>. As table 1 shows, the findings may vary substantially according to the indicators. Compared to their long-term value, these results indicate that, for Belgium on average, in the third and fourth quarters of 2010, house prices were overvalued by between 15 and 66 %, depending on the approach adopted. This demonstrates the degree of uncertainty surrounding these measurements. On the basis of the approaches linking the movement in house prices to disposable incomes or rents, disregarding interest rates, an international comparison shows that Belgium is among the most overvalued European countries (between 48 and 66 %). Prices also seem to be seriously overvalued in France (36 to 48 %), Spain (22 to 35 %) and the Netherlands (21 to 41 %). Conversely, in Germany, Japan and – according to one of the indicators – the United States, prices appear to be below their equilibrium value. The introduction of interest rates into the equation reduces the overvaluation of these prices by about ten percentage points on average in the countries with overvaluation. In Belgium, the overvaluation of residential property would then come down to around 15 %.

In Belgium, it appears that housing became seriously less affordable between 2004 and the third quarter of 2008, mainly on account of the price surge; in September 2008, house prices were almost 25 % overvalued. The affordability of housing then improved rapidly between the end of 2008 and the second quarter of 2009, despite the slower pace of household disposable income growth, as prices on the secondary market increased more slowly and then declined, and interest rates fell sharply. Just under half of the cumulative overvaluation since 2004 was thus reabsorbed. From the second half of 2009, the affordability of housing remained more or less stable, as the rise in prices was offset by the continuing decline in interest rates. However, since the third quarter of 2010, there have been signs of a renewed deterioration in the affordability of housing, owing to the price rebound, while interest rates have begun to increase slightly.

(1) These estimates are based on assumptions of an average maturity of 20 years and a loan-to-value ratio of 80 %. Results are expressed in deviation from the 1995-2010 average.

## 4. Risk factors

### 4.1 General risk factors

Despite the price correction which has already taken place, and the gradual consolidation of economic growth in many countries, a number of risk factors at global level could weigh on the housing markets in the short and medium term.

The first is the return to more normal interest rates. In the past decade, interest rates have been very low as a result of various factors already mentioned, such as the highly accommodating monetary policy and excess savings in the emerging Asian economies and the oil-exporting countries. That was accompanied by an increase in the debt level of the non-financial private sector, particularly households, and an accumulation of macroeconomic imbalances in numerous economies. The eruption of the financial crisis led to a renewed easing of monetary conditions at global level. Establishing a new, more balanced growth model at global level will involve, in particular, a return to more normal monetary policies and real interest rates, both short- and long-term. That will naturally have a dampening impact on recourse to mortgages, demand for which is likely to fall, and drive up the cost of repaying variable-rate loans, implying a risk of rising default rates in countries where that type of loan is common.

The second risk factor concerns potential GDP growth, which could prove to be lower than in the previous decade. A decline in potential growth causes a slowdown in disposable income of households and depresses demand for housing. The two main reasons for a reduction in potential growth are as follows:

1. The normalisation of interest rates already mentioned could restrain investment compared to the pre-crisis period. That effect could be reinforced by the essential process of deleveraging, which could limit the supply of credit by financial institutions.
2. If the rise in unemployment triggered by the crisis becomes permanent (hysteresis), that could lead to the destruction of human capital. High and persistent uncertainty on the labour market also applies a direct brake on demand for housing.

Finally, the financial crisis led to a rapid rise in government debt levels in most of the advanced economies. The sustainability of public finances requires speedy correction of budget deficits. That may imply an economic slowdown in the short term, and will probably depress the disposable income of households. However, that risk should not be exaggerated: fiscal consolidation may also

boost household and business confidence, providing support for consumption and investment respectively. In the medium term, this positive effect on aggregate demand (crowding-in) could outstrip the recessive effects of the consolidation.

## 4.2 Specific risk factors

This section addresses the risk factors specific to the American and Belgian housing markets.

### 4.2.1 United States

The valuation analysis shows that, if account is taken of a number of fundamental factors, such as disposable income or rents, house prices in the United States are currently quite close to their equilibrium level. Taking account of interest rate levels, house prices are even well below this equilibrium. In those circumstances, the housing sector could be expected to recover. While government measures nurtured a recovery between the spring of 2009 and the spring of 2010, once most of the support measures expired, activity and prices both subsided. Since the financial and economic crisis of 2007-2009 originated on the US housing market and had a serious impact there, the government had taken numerous measures at the time to support that sector<sup>(1)</sup>.

At present, the American housing sector is still not showing signs of a lasting recovery. It is thus one of the few sectors which has not contributed to the current economic revival, whereas in the past it was always one of the engines of recovery. Several important factors are still impeding the recovery today.

First, the stock of unsold houses is currently substantial. One reason is that supply is very elastic to prices in the United States, so that the supply responded (too) sharply to the fluctuation in underlying demand. A BIS simulation shows that, taking account of the changes at the level of certain fundamental data (real per capita disposable income and population), the excess supply during the period 2000-2006 can be estimated at 1.1% of GDP<sup>(2)</sup>. Thus, while the stock of unsold houses stood at around 2 million homes in 2000, the figure climbed to over 4 million on more than one occasion in recent years. Expressed in monthly sales, the stock increased from around 4 months to more than 8 months. Apart from this backlog, it is necessary to take account of the homes that are likely to come onto the market shortly. This "shadow inventory" can be calculated on the basis of the total mortgage loans significantly in arrears (90 days or more) and foreclosures. The shadow inventory is currently

estimated at over 2 million homes. Finally, the price falls seen in recent years have taken a good many mortgaged houses into negative equity (when the amount outstanding on the mortgage exceeds the market value of the property) by reducing the underlying market value of the property. The "non-recourse" scheme<sup>(3)</sup> applicable in some States may tempt some households to terminate their mortgage loan and assign their home to their mortgage agency. According to the available figures for the third quarter of 2010, loans in negative equity could make up almost 25% of the total.

Also, a second risk factor threatening the housing market is the uncertainty currently surrounding the reform of this sector. The crisis has in fact demonstrated that structural changes are needed in the way in which this market operates. In recent years, the Federal Reserve has thus made several suggestions to encourage in-depth reform of the US mortgage markets<sup>(4)</sup>. A number of international

- (1) Apart from initiatives such as a reduction in key interest rates and the provision of abundant, flexible liquidity for credit institutions and financial markets, initiatives which also benefited the housing sector, the Federal Reserve introduced a number of targeted measures designed specifically to reduce the interest rates on mortgage loans and improve the functioning of the credit markets (takeover of part of the debt of the government-sponsored US mortgage finance companies, such as Fannie Mae and Freddie Mac, and purchase of a substantial volume of mortgage-backed securities from those agencies). The federal government also took a number of important measures. The *Making Home Affordable* programme made it easier to repay mortgage loans, notably by rescheduling the cost of the loan. In 2009, a tax credit for house purchase was also introduced. It was abolished in the spring of 2010.
- (2) Ellis L. (2008) shows that housing investment in the United States represented 4.9% of GDP, on average, during this period compared to an estimated 3.8% on the basis of the fundamentals.
- (3) This means that, in a negative equity situation, the lender cannot demand repayment of the total amount of the loan, but only the value of the underlying residential property.
- (4) See f.e. Hoenig T. (2010).

**CHART 7** STOCK OF UNSOLD HOUSES IN THE UNITED STATES



Source: Thomson Reuters Datastream.

institutions, such as the IMF and the OECD, have also put forward various proposals for reforming the housing policy<sup>(1)</sup>. In recent years, it has in fact become apparent that, in comparison with the situation in other countries, the current system of government support is complex, expensive and poorly targeted, if the aim is to encourage home ownership and to ensure that housing is affordable. In an international perspective, the percentage of home ownership in the United States is not in fact exceptionally high. In mid-February 2011, the US Treasury Secretary announced a government plan to reform the mortgage market<sup>(2)</sup>. The main aspect of this plan concerns the removal of government involvement via the gradual dismantling of Fannie Mae and Freddie Mac<sup>(3)</sup>. The plan also includes proposals for improving the operation of the mortgage market and assigning a new role to the government in the housing sector. Congress has yet to decide on these proposals.

#### 4.2.2 Belgium

As in some other European countries, such as France and Finland, the housing market in Belgium featured a limited price correction during the financial crisis and a certain level of overvaluation, according to a number of indicators. In that context, the question is whether the factors which have hitherto helped to underpin prices will continue to exert such an influence in the future. Some of these factors which had contributed to that support in the mid-2000s could go into reverse. In that regard, apart from the general risks already mentioned, and especially the prospect of an interest rate rise, the following risks should be noted:

- an increase in residential property taxes, via a reform of cadastral incomes or a reduced allowance for loan expenses, might be envisaged, especially in a context of long-term fiscal consolidation. That would be in line with the recommendations of certain international institutions (particularly the OECD);
- certain measures providing support for renovation and building have already been scaled down or even abolished, and that process could be intensified, curbing housing investment and particularly expenditure on renovation.

Conversely, other factors could continue to support prices in the medium term:

- the general economic outlook, and hence the outlook for unemployment and household disposable income, now looks fairly positive in Belgium, and slightly better than the euro area average;
- although the household debt level has continued to rise in Belgium over the past two years – in contrast to the euro area, where the level has been stable since the

**CHART 8** MORTGAGE LOAN DEFAULT RATE IN BELGIUM  
(in % of outstanding contracts<sup>(1)</sup>)



Source: NBB (Central Individual Credit Register).

(1) Based on the number of contracts.

beginning of 2009 –, it is still low (55 % of GDP at the end of 2010) in comparison with the euro area (65 % of GDP);

- the mortgage loan default rate has so far been relatively low. After having declined in 2007 and up to mid-2008, reaching a low point of 1.65 %, the default rate climbed back in the second half of 2008, in 2009, and up to April 2010 when it stood at 1.72 %. Since then, the default rate has edged downwards, reaching 1.67 % in April 2011.

Finally, the influence of certain factors on the future dynamics of house prices is uncertain:

- in addition to the likely interest rate rise, banks might consider tightening their (other) lending criteria (duration of the loan, loan-to-value ratio, collateral required, etc.). As already mentioned, the data reported by the banks to the Central Individual Credit Register show that the average term of new mortgage loans stopped increasing in 2008, and has even tended to decline. Nevertheless, the latest results of the bank lending survey for Belgian banks show no perceptible tightening of mortgage lending standards. The refocusing of banks on their core business is certainly a factor supporting mortgage activity;
- according to the Federal Planning Bureau's demographic outlook, the annual rise in the total population over the

(1) IMF (2010c), OECD (2010b).

(2) Department of the Treasury, Department of Housing and Urban Development (2011).

(3) Fannie Mae and Freddie Mac are government-sponsored mortgage finance companies which dominate much of the US mortgage market.

next ten years, on average, will be higher (at 0.64% per annum) than in the previous fifteen years (0.45% per annum). The population group aged between 25 and 44 years, more representative of potential property buyers, contracted in the past ten years but should begin to expand from 2013. Finally, the number of households could continue to grow more strongly than the population in general, in view of the structural trend towards a reduction in household size;

- also, the supply of housing could increase temporarily in 2011 and 2012, as the building permits issued in 2010 take effect, partly as a result of the VAT reduction – which has now been abolished – on the first € 50,000 tranche of construction invoices. If demand for housing were to slow down at the same time (e.g. owing to a rise in interest rates), that could amplify the deflationary effect on prices.

## Conclusion

The latest house price cycle, which began in the mid-1990s in most of the advanced countries, is different from previous cycles in its exceptional duration, scale and synchronisation. The low level of interest rates, financial innovations, easy credit conditions and demographic factors bolstered demand for housing and caused a strong surge in house prices and residential investment. The rise in house prices was most marked in the United Kingdom, Spain, Ireland and France. Prices also recorded a significant, albeit smaller, rise in Belgium, the Netherlands, Finland and the United States. In Spain and Ireland, this rise clearly stimulated the demand for new housing and activity in the construction sector, which came to represent an exceptionally large proportion of total value added. At the same time, the household debt ratio reached unprecedented heights, making households vulnerable to negative shocks.

House markets overheated in the middle of the last decade. The problems already apparent in 2006 on the subprime segment of the American housing market triggered an economic and financial crisis which plunged the global economy into the most serious recession since the end of World War II. The residential property bubbles also burst in other countries.

Compared to what had happened during the upward phase of the cycle, the synchronisation of price movements between countries diminished. Thus, in some countries – namely Belgium, Finland, France – prices bottomed out and began rising again in the second half of 2009. Conversely, prices are still falling in Spain, Ireland and the Netherlands. The excesses accumulated during the

expansion period are clearly depressing economic growth. Thus, the reduction in the heavy household debt level and the fall in house prices are still curbing the dynamism of domestic demand in a number of countries. Spain and Ireland also face the difficult challenge of restructuring their economy on account of the malaise afflicting the construction sector.

This article has used a series of simple indicators to examine the degree to which house prices are under- or overvalued. If account is taken of fundamental factors like disposable income, population growth and the current extremely low level of interest rates (interest-adjusted-affordability), house prices do not seem to be too far away from their equilibrium value in most countries. However, they are still overvalued to a certain extent in Belgium. Nevertheless, these simple methods have their limitations, so that the results must be interpreted with caution. Also, it is possible that the current low level of interest rates – which accounts for the relatively good affordability of housing – may in reality cease to be a good approximation of general conditions for access to credit, which have been tightened considerably since the crisis in most countries. Normalisation of the level of interest rates is also one of the main risk factors for the housing market, in addition to the uncertainty over a possible negative impact of the crisis on potential growth and the consequences of the consolidation of public finances.

Although it is evident from this analysis that the decline in house prices in the United States was enough to correct the past imbalances, one can expect a number of factors to continue to impede the recovery of the housing market in the short to medium term. Thus, a large actual and hidden stock of unsold houses still remains, and there is uncertainty over the reform of the American mortgage markets, while the high unemployment rate continues to dent the confidence of American households. Where Belgium is concerned, the essentially fiscal factors which supported prices during the past decade will probably not have the same effect in the future. Conversely, the general economic conditions remain sound, in regard to both income and debt levels of households. In this uncertain context, however, the developments of the housing market will still need to be regularly monitored.

Finally, the crisis has undeniably highlighted the need for better supervision of the financial sector and stricter regulation. Several initiatives have already been taken to that end at global and European level. International institutions such as the IMF and the OECD have also addressed recommendations to various countries aimed at reforming the housing policy and the operation of the mortgage and housing markets.



Moreover, the public debt crisis which has shaken the euro area since 2010 has led to the establishment of stronger economic governance in the European Union. It has in fact become clear that, to prevent excesses and ensure the stability of EMU, it is essential to strengthen fiscal, structural and macroeconomic governance in the EU. Apart from stronger budgetary discipline, via reinforcement of the stability and growth pact, a new mechanism for monitoring macroeconomic imbalances and competitiveness will become a vital pillar of this new economic governance. In the preventive stage of this new

mechanism, the risks will be assessed annually by means of a warning signal based on a scoreboard comprising a small number of indicators. Recent history has shown that housing markets can be a key factor not only in imbalances but also in divergences between countries: the early detection of bubbles forming on these markets is thus crucial. For this reason, the movement in real house prices could be incorporated in this scoreboard. The vulnerability of the private sector could be assessed by the ratio between the private sector's debt level and GDP, or by the expansion of lending to the private sector.

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# Behaviour of Belgian firms in the context of globalisation: lessons from the conference on “International Trade: Threats and Opportunities in a Globalised World”

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## Introduction

External trade and foreign investment have long been an important field of analysis for economists. Yet, unprecedented growth in international trade and foreign direct investment, and the rising power of a number of emerging economies have attracted considerably more attention to these topics over the last twenty years.

These developments have major consequences for industrialised countries. Their firms can take advantage of new outlets, but they are now also faced with competition from products made in countries where labour costs are much lower. This competition often induces them to adjust the structure of their business activities, by gradually abandoning production of standardised goods, that are labour-intensive, to move towards products incorporating more advanced technologies, which are thus less exposed to competition from low-cost nations. Alternatively, they break up their production processes internationally, so as to reduce costs of intermediate inputs by benefiting from the advantages of the different locations. Such strategies do of course give rise to sizeable shifts in the structure of the labour market, which can prove to be quite damaging, in particular for workers with a low skill level. These deep changes in the world economy, and the need for

the industrialised countries to adapt to them, now call for appropriate reactions, not only from firms, but also from workers and policy-makers.

These issues are becoming increasingly apparent in Belgium's case, owing to the economy's particularly high degree of openness. Its economic development is therefore still closely linked to the competitiveness of firms based on its territory and their capacity to adjust to changes in world demand and competition.

These various aspects are generally analysed in the light of macroeconomic or macro-sectoral data. For example, the competitiveness of the economy is frequently assessed by using performance indicators on export markets or statistical series relating to trends in wage costs and producer prices. As was shown in an article devoted to Belgium's position in world trade which appeared in this Review in June 2010, factors related to production costs, such as relative wage costs, are not the only things explaining changes in market share<sup>(1)</sup>. In other words, there are other elements in competitiveness than prices or costs which also contribute to export performance.

(1) See Baugnet et al. 2010.

Still using an aggregate as opposed to sectoral approach, innovation potential and investment in human capital – two elements that are essential for adapting to changes in comparative advantage – are measured on the basis of expenditure on R&D or by the number of workers in continuing training.

However, an aggregate analysis does not provide a full picture of the factors determining the competitiveness of an economy. Since the structural elements are often entrenched in firms' individual characteristics, the scientific literature in this area over the last few years has endeavoured to understand the differences between them in terms of internationalisation strategies and performance on foreign markets. The theoretical work has pointed up the fact that firms' behaviour as regards the choice of internationalisation is connected, *inter alia*, to their productivity level. The models that have been developed in this context offer, for example, an explanation why some firms within the same branch of activity export while others only sell their goods on the domestic market. In order to assess the validity and predictions of these theoretical models, researchers have started using microeconomic databases gathering detailed firm-level information, as well as the countries with which they trade, and even the products that they are trading on international markets.

In view of the interest generated by a microeconomic approach to gaining a better understanding of the causes and consequences of globalisation, the Bank wanted to promote research in this area by devoting the 2010 edition of its biennial conference to this subject. This conference was held in Brussels on 14 and 15 October 2010 under the banner of "International Trade: Threats and Opportunities in a Globalised World".

This article presents the main empirical findings from this conference. It draws a series of recommendations from it as regards economic policy direction. The following section first of all looks back at the main stylised facts that emerge from empirical research carried out previously.

## 1. Internationalisation of firms: some stylised facts

Over the last fifteen years or so, there have been many studies documenting the behaviour and characteristics of exporting firms (for example, Bernard and Jensen, 1995, 1999, 2004, Aw and Hwang, 1995, Bernard, Eaton, Jensen and Kortum, 2003, Bernard, Jensen and Schott, 2005, for the United States, Eaton, Kortum and Kramarz, 2004, for France, Muûls and Pisu, 2007, for Belgium, and Mayer

and Ottaviano, 2007, at European level). All this research has relied on theoretical models that take account of the heterogeneity of the population of firms and which drop the simplifying assumption of the existence of a standard firm – whose behaviour is supposed to be representative of the whole of a sector or the economy – which generally tends to be used in macroeconomic approaches. A series of stylised facts can be identified from empirical research focusing on the internationalisation of firms. We have singled out three of these, based primarily on figures relating to Belgium. These findings correspond to those obtained for other advanced economies.

First of all, the characteristics of firms differ considerably according to whether they operate exclusively on the domestic market or are active on the international markets. A kind of hierarchy of firms depending on their degree of internationalisation can be discussed from an analysis of microeconomic data for Belgian manufacturing firms that file full-format accounts. In particular, the greater a firm's presence on international markets – either

**TABLE 1** CHARACTERISTICS OF FIRMS ACTIVE AT INTERNATIONAL LEVEL  
(in % of differences compared with firms solely active on the domestic market<sup>(1)</sup>)

Degree of internationalisation	Employment	Value added	Labour productivity <sup>(2)</sup>
Firms solely active in international trade			
Exporting .....	20	32	13
Importing .....	44	57	17
Both exporting and importing .....	96	111	25
Belgian multinationals			
With no international trade business .....	128	149	33
Exporting .....	148	181	46
Importing .....	172	206	50
Both exporting and importing .....	224	260	58
Subsidiaries of foreign multinationals			
With no international trade activities .....	133	172	49
Exporting .....	153	204	62
Importing .....	177	229	66
Both exporting and importing .....	229	283	74

Source: NBB.

(1) Results of regressions over the period 1995-2005.

(2) Taking size differences into account.

by its involvement in trade, or the existence of foreign direct investment –, the bigger and more productive it tends to be. Compared with the average workforce of a firm geared exclusively to the domestic market, that is, 35 people in the sample considered, a company involved in both exporting and importing and a company belonging to a foreign multinational will have respectively 96% and 133% more staff. In cases where a multinational enterprise is also active in both export and import activities, its workforce is, on average, 229% bigger than that of a domestic firm. The differences in terms of labour productivity are respectively 25 and 49%, or 74% in the case of a foreign multinational that exports as well as imports. Firms active in international markets differ from purely domestic firms not only in terms of size and productivity, but also as regards capital intensity, wage levels and research and development efforts.

Secondly, a small number of exporting firms account for a major share of exports. Those referred to as the “superstars” are very big, highly productive, and export a lot of different products to many destinations. This is just one finding of a study conducted by Bernard, Van Beveren and Vandenbussche (2010). This research project, which relates to the year 2005, covers 25 248 exporting firms out of 710 252 enterprises subject to VAT. Export business is therefore in the hands of just 3.6% of all firms. A closer analysis shows a very strong concentration of

these activities within exporting firms themselves. Indeed, if we differentiate between these firms according to the number of products exported, it can be seen that 1 094 companies exporting more than 50 different products to more than 23 different destinations make up 33.2% of total exports. If we focus on firms exporting more than 20 products, it can be observed that 12.1% of all exporters account for 61% of the exports. On the other hand, firms that only export one product, and to 1.6 destinations on average, contribute no more than 2% of the total exports, even though they make up 34% of the exporting firms in number.

The third stylised fact concerns the sources of export growth. The total volume of exports that can be defined as the value of exports traded by all exporting firms taken together, the growth in this total can be broken down in such a way as to obtain the extensive margin, i.e. the growth in exports attributable to the increase in the number of exporting firms, and the intensive margin, namely the growth in exports due to the increase in the average value of exports per enterprise. The respective roles of the extensive and intensive margins vary according to the time frame. In fact, over the period from 1998 to 2005<sup>(1)</sup>, the main source of annual growth in the total

(1) This period has been chosen because the reporting thresholds for international trade data remained constant then.

**TABLE 2** CONCENTRATION OF THE NUMBER OF EXPORTERS AND THE VALUE OF EXPORTS  
 (data for 2005)

Number of products exported <sup>(1)</sup>	Exporting firms		Value of exports		Average number of destinations
	Number	In % of total exports	Number	In % of total exports	
1 .....	8 596	34.1	4 487	2.08	1.6
2 .....	3 401	13.5	4 157	1.93	3.1
3 .....	2 026	8.0	3 952	1.83	4.4
4 .....	1 392	5.5	4 032	1.87	5.4
5 .....	1 102	4.4	6 764	3.13	6.7
6-10 .....	3 187	12.6	21 947	10.17	9.6
11-20 .....	2 483	9.8	38 655	17.92	12.9
21-30 .....	1 068	4.2	31 483	14.59	15.9
31-50 .....	899	3.6	28 693	13.30	18.7
> 50 .....	1 094	4.3	71 591	33.18	23.6
Total .....	25 248	3.6 <sup>(2)</sup>	215 761	100.0	6.7

Source: Bernard, Van Beveren, Vandenbussche (2010).

(1) Based on the 8-digit Combined Nomenclature. This has around ten thousand positions.

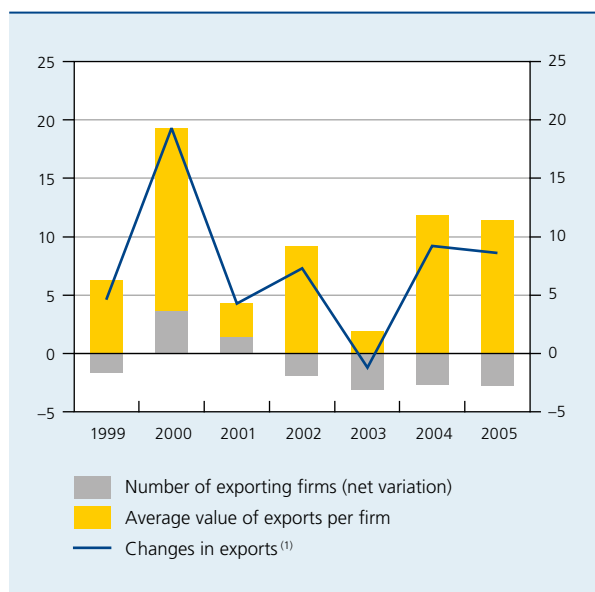
(2) In % of the number of firms that had to pay VAT in 2005.

amount of exports was the increase in the average value of exports by exporting firms. Variations in the number of exporting firms actually have very little impact on annual export growth rates. On the other hand, the extensive margin is a key element in explaining long-term export dynamics, since the population of exporting firms changed significantly between 1998 and 2005. For instance, 55 % of companies that exported back in 1998 no longer did so in 2005 and 51 % of firms exporting in the year 2005 did not in 1998.

The international trade crisis of 2008-2009 is a perfect example of the importance of the intensive margin in explaining short-term changes in exports from Belgium. In parallel with the sudden paralysis of a segment of world trade at the end of 2008 and the beginning of 2009, exports from Belgium in volume terms fell back by 2.1 % in the first half of 2009 compared with the same period of the previous year. In nominal terms, exports declined by around 27 %. On the basis of individual data for Belgium, Behrens, Corcos and Mion (2010) showed that this drop was almost entirely due to the intensive margin. It even appears that the number of exporting firms actually increased slightly between 2008 and 2009, and they continued to supply the same markets and export the same amount of goods as before the crisis. Still having a foothold in these markets, the companies have therefore

**CHART 1** BREAKDOWN OF MOVEMENTS IN BELGIUM'S EXPORTS

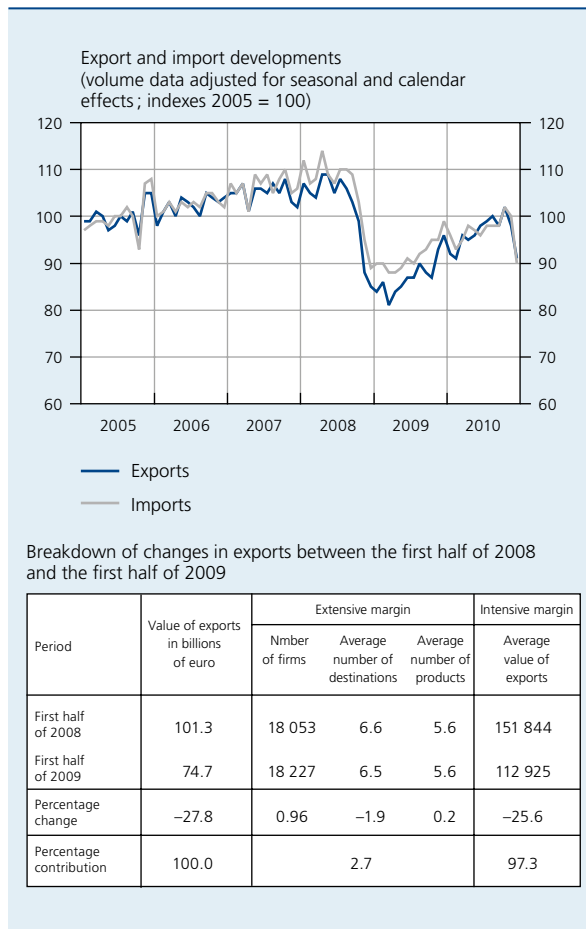
(contribution to changes in exports in value; percentage points, unless otherwise stated)



Sources: NAI, NBB.

(1) Percentage changes.

**CHART 2** BELGIUM'S EXTERNAL GOODS TRADE DURING THE CRISIS



Sources: Behrens, Corcos, Mion (2010), NAI, NBB.

been able to benefit more easily from the pick-up in foreign demand.

The findings of a study by Eaton, Kortum, Neiman and Romalis (2010) covering most industrialised countries confirm those obtained by Belgium. Noting that the international trade crisis was accompanied by a big drop in the international trade/GDP ratio in all the industrialised countries, these authors use a multisectoral general equilibrium model calibrated on data from 22 countries accounting for 75 % of world trade to find out whether this decrease reflects any specific frictions in international trade. They drew the conclusion that the contraction in trade had its origins in a sharp reduction in world demand, which has been particularly strong in the case of manufactured goods, and especially durable consumer goods (such as motor vehicles). However, they did not detect any significant effects related either to the resurgence of protectionist measures, or to the widespread problems of restrictions on export credit.



## 2. Findings of research papers presented at the Bank's 2010 conference

For the 2010 conference devoted to the analysis of the internationalisation behaviour of firms, the Bank permitted the use of firm-level data that it either gathers itself – namely annual accounts, the results of the survey on direct investment and data on foreign trade in goods and services – or that it possesses as part of its task of compiling statistics, such as data held in the Crossroads Bank for Enterprises and the response to the survey on industrial production carried out by FPS Economy. In order to respect the legislation on private data, it is nevertheless necessary to insist on the fact that all these data have been handled at the Bank, by members of its staff, on the basis of instructions and computer programs provided wherever necessary by external researchers.

Six external research projects and two projects from the Bank were selected for presentation to the conference. The Bank also invited four internationally-renowned pioneers in the field of theoretical development and empirical application of microeconomic-dimension models of international economy, namely Andrew Bernard, Jonathan Eaton, Marc Melitz and Gianmarco Ottaviano. Their interventions enabled the findings for Belgium to be put into a wider context. Contributions covered a wide variety of aspects. The following is a summary of the main results obtained. In order to get a better idea of useful lessons to be drawn for the purpose of analysis and economic policy, they have been put into five theme-based categories.

### 2.1 Determinants and strategies for entering international markets

One of the first research topics broached by some of the contributions to the conference was the analysis of the determinants of the decision to go into international markets, either by exporting or through direct investment abroad, as well as the identification of strategies followed by Belgian firms in order to gain a lasting foothold in foreign markets.

In the economic literature, the decision to go into a foreign market is based on a comparison between the firm's anticipated profitability on this market, often measured empirically by the productivity of the company in question, on the one hand, and the cost of going into this market, on the other.

A company will have to face different kinds of entry costs depending on whether it wants to move into a foreign market by exporting or by direct investment. If it opts to export its products, it will have to bear fixed entry costs and variable costs associated with the volume of exports. The fixed costs can include such things as costs associated with finding a local partner, regulations in force on the foreign market and the presence of non-tariff barriers. Classic elements of variable costs are transport-related costs and tariff barriers.

If, on the other hand, the Belgian firm chooses to set up a production unit in the foreign market, it will only have to bear one fixed entry cost, related *inter alia* to the acquisition or construction of an assembly plant. This fixed cost is generally higher than the fixed cost associated with exports.

These various costs divide the population of firms in a country into three groups.

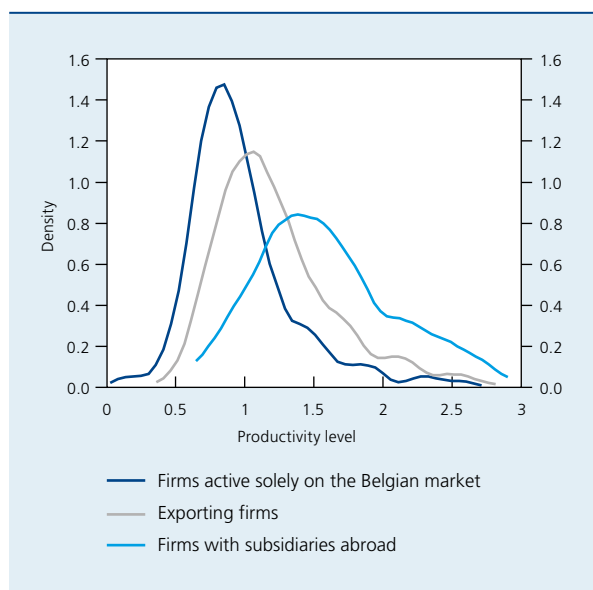
Not being able to meet either the export entry costs or the cost of any direct investment abroad, the least productive firms will remain purely domestic firms, or end up going out of business if their productivity is so low at this stage that they become unviable on the domestic market too. For their part, the most productive firms will be able to bear the cost of direct investment abroad and will become multinational enterprises.

Firms that will be in a position to bear the entry costs of exporting but whose expected profitability (productivity) is not enough to enable it to meet the cost of a direct investment will become exporting firms.

This ranking is visible, *ex post*, in the Belgian firm population, since the distribution of productivity levels of firms that have foreign direct investment relationships overrides that of firms involved in the export business. Likewise, this distribution dominates that of firms geared exclusively to the Belgian market.

While it enables some form of heterogeneity to be given to the behaviour of firms as observed in practice, this modelling of firms' decisions to go international is still a simplification of real life. By supposing advance knowledge of the costs and gains involved in having a presence on foreign markets, either by exports, or by investment, this approach presumes that, because there are fixed costs at stake, involvement on foreign markets will be major and sustainable as soon as it becomes profitable. In fact, a firm that chooses to export to a particular market should not first have to export a small amount there, but must be able to continue to trade there once the fixed entry

**CHART 3** TOTAL FACTOR PRODUCTIVITY ACCORDING TO THE DEGREE OF INVOLVEMENT IN FOREIGN MARKETS  
(data for 2005)



Source: NBB.

Note: The productivity levels given in this chart have been calculated on the basis of the so-called index method. For more details on the method of calculation, see Dumont et al. (2010).

costs have been borne. Yet the microeconomic data show that some firms start by exporting very small amounts on a given market, before either increasing their sales there or pulling out.

Recent theoretical literature takes such behaviour into account. The dynamics observed may be due to the fact that the company's profitability on the external market is uncertain. Conconi, Sapir and Zanardi (2010) have taken this uncertainty into consideration in a model explaining, in an integrated manner, decisions to export or to go into direct investment. In such context, a company could use exports as a means of assessing its profitability on the international markets. It would therefore test a specific market through exports and would then decide either to pull out of this market, or to expand there via exporting or direct investment.

This sequential plan for entering international markets seems to fit in relatively well with the facts observed. By using data on export and FDI decisions by individual country of destination for Belgian-registered companies over the period 1997-2008, the authors observe that foreign direct investment is almost systematically preceded by a period of export to the country targeted.

This model also enables the impact of any change in costs associated with exports and foreign direct investment to be examined. Conconi, Sapir and Zanardi (2010) note that, in an uncertain environment, breaking down barriers to export markets will not just have a positive impact on the share of exporting firms (companies initially geared towards the domestic market and later becoming exporters), but also on the share of firms that become multinationals, after a trial export period.

Even though a reduction in export costs is mainly obtained through multilateral agreements, it appears that the firms themselves implement their own strategies for cutting the costs of entering international markets. In this respect, two contributions presented during the Bank's conference seem to indicate that firms whose productivity levels are not high enough to export their products directly tend to go into international markets indirectly, and via two channels.

The first consists of using commercial intermediaries (wholesalers, retail traders) who can take advantage of lower entry costs on foreign markets, thanks to their knowledge of these markets or to economies of scale which tend to favour their goods trade. In the United States, commercial intermediaries are responsible for 10 % of exports and 23 % of imports. Similar proportions can also be observed in the case of Italy.

The second channel consists of what Bernard, Van Beveren and Vandebussche (2010) call "carry-along trade". On the basis of export and production data per product from Belgian manufacturing firms in 2005, these authors noted that a large proportion of a company's exports was concentrated on products that it does not produce itself. In 2005, 90 % of exporting firms were exporting at least one product that they did not manufacture themselves and 30 % of the export volume was made up of these products.

So, how can the existence of carry-along trade be explained? Bernard, Van Beveren and Vandebussche (2010) mention, among other things, the fact that a firm could export products made by other firms if these goods are necessary for the consumption or use of its own products (complementary products). Through carry-along trade or the use of intermediaries, a domestic firm's goods can thus gain access to foreign markets without it having to bear the entry costs directly.

As well as characterising the different ways of entering foreign markets, one of the contributions attempted to demonstrate the main strategies for SMEs to move into foreign markets.

**TABLE 3** THE MAIN INTERNATIONALISATION STRATEGIES OF SMES

Number of international markets	Age at which the firm starts its international development	
	5 years or less	More than 5 ayears
At least 5 markets	<i>Born global</i> (21 % of firms)	<i>Born-again global</i> (less than 1 % of firms)
Less than 5 markets	<i>Born international</i> (31 % of firms)	<i>Traditional internationalizers</i> (48 % of firms)

Source: Onkelinx and Sleuwaegen (2010).

Even though export business is concentrated in the hands of a few big firms, an analysis of the microeconomic data shows that, in the long run, the extensive margin (i.e. entry of new exporters) is an important element in Belgium's export growth. Yet, according to Onkelinx and Sleuwaegen (2010), almost 70 % of these new exporters are SMEs. It is therefore important to determine what their entry strategies are for gaining a foothold on international markets.

Onkelinx and Sleuwaegen (2010) identify two main ways of entering international markets: the so-called "water-fall" entry into one market at a time, and a "sprinkler" strategy with entry targeting several markets at once. By combining these two market entry methods and the age of the SMEs in question, the authors single out four types of exporting SMEs:

- Almost half (48 %) of these SMEs are what the authors call *traditional internationalizers*, that is, firms which decide to go into a limited number (less than five) of foreign markets after a period of more than five years of growth based on exclusively domestic-market-oriented business;
- 31 % of exporting SMEs are referred to as *born international*. These are young firms (less than five years old) that are active on a limited number of foreign markets;
- 21 % of exporting SMEs belong to the *born global* group. These are young firms that rapidly expand into many different markets;
- and the last group, which is more marginal because it consists of less than 1 % of exporting SMEs, is the *born-again global group*, firms that have witnessed some internationalisation by exporting to at least five foreign markets, after a long period of domestic growth.

The born globals are particularly important for the development of long-term exports, because they bear all the features of future "superstars", in other words, they

are more productive and they enjoy faster growth than the other SMEs. However, the findings of Onkelinx and Sleuwaegen (2010) suggest that this strategy is riskier than the other two: while it is more profitable, it also comes with a higher risk of failure. Given the importance of these firms for the economic potential, they should therefore request specific back-up from the public authorities.

## 2.2 Trade in services

Services trade is not usually analysed very much in research work concerning globalisation and performance of the external sector. And yet services play a predominant role in advanced economies' activity, with a share of around 70 %. Furthermore, new information technologies make them easier to trade. Besides traditional services like transport or travel, the provision of certain services accross national borders have been greatly facilitated.

**TABLE 4** CHANGES IN THE NUMBER OF FIRMS EXPORTING SERVICES BETWEEN 1995 AND 2005

Number of exporting firms in 1995	5 346
Changes between 1995 and 2005	
New exporting firms	6 360
New exporters among existing firms	4 808
Existing firms ceasing to export	-1 852
Disappearance of exporting firms	-1 633
Number of exporting firms in 2005	13 029

Source: Ariu and Mion (2010).

By combining data for Belgium on trade in services over the period from 1995 to 2005 and German figures on the development of the type of tasks performed during the production of various services, Ariu and Mion (2010) obtained the following results.

First of all, a large number of firms launched into the services export trade between 1995 and 2005. The number of companies providing cross-border services has risen from 5 346 to 13 029, a net increase of more than 140 %. This contribution from the extensive margin (the number of exporters) has contributed hugely to the expansion of revenue gained from exports of services.

Generally speaking, it appears that intensive use of information technologies favours international trade in services. However, this is by no means a uniform finding, as it varies according to the kind of services provided. Detailed figures on the type of tasks carried out in the different branches of activity in fact show that more intensive use of computer technology has resulted in an increase in both analytical and interactive tasks, to the detriment of routine manual or cognitive jobs (e.g. simple administrative tasks).

While analytical jobs can be done from a distance, and therefore make international trade in services possible, interactive tasks more often require the presence of the supplier and beneficiary of the service in the same place. The empirical analysis confirms that the first type of task

has a positive impact on the development of cross-border trade in services, while the second slows it down. These differences make clear that, among Belgium's new services exporters, a large number of firms can be found in the professional services or consultancy sector, as well as firms active in the field of information and communication. On the other hand, the hotels, restaurants and catering sector and health care, for example, are still lagging behind. For this kind of business, internationalisation instead appears to take place through the establishment of subsidiaries abroad, or by the service provider moving, which gives rise to higher transaction costs. These developments are confirmed by the aggregate results for the whole of the economy. Thus, according to balance of payments figures for Belgium, the significance of exports of services rose from 10.4% of GDP in 1995 to 14.9% in 2005. This growth originated not only in travel-related revenue, but also in that related to professional services (advisory services, marketing, research and development) and communication.

### 2.3 Strategies in response to growing competition from emerging economies

When they decide to launch into internationalised activities – whether through goods trade or FDI –, firms have to take account of the importance of foreign competition. This competition, which comes into play on both the domestic and external markets, obviously influences their profitability. One finding that the microeconomic analysis has been able to highlight is that exposure to external competition affects the average productivity of an economic sector through various channels.

Firstly, it exerts a crowding-out effect on the least productive firms. The most productive companies expand their market share, on the domestic market and on external markets, while the least productive ones close down. Either way, this boosts the average productivity of the sector.

Secondly, external competition tends to stimulate productivity among firms that remain in business. In order to face up to new competitors, they can develop strategies designed to improve the quality of their products or concentrate on niche markets for products in which they are more competitive.

This is highlighted in several research papers. An analysis carried out by Pavcnik (2002) on trade liberalisation in Chile, for instance, suggests that around one-third of the increase in productivity in the manufacturing sector can be attributed to an improvement in the productivity

**TABLE 5** DEVELOPMENT OF SERVICES EXPORTS, BY BRANCH OF ACTIVITY

(changes in the number of exporting firms between 1995 and 2005)

Sector	Changes in the number of firms
Professional, technical and scientific activities . . .	3 539
Information, art and communication . . . . .	766
Construction . . . . .	660
Transport services . . . . .	639
Wholesale and retail trade . . . . .	620
Other services . . . . .	572
Hotels and restaurants . . . . .	257
Insurance, reinsurance and pension funds . . . . .	158
Health . . . . .	144

Source: Ariu and Mion (2010).  
Note: A firm can be active in several sectors.

of the firms remaining in business, and that the other two-thirds come from the weakest-performing firms ceasing their activity and from the growth of the most productive firms' market share. In the case of the United States, Bernard, Jensen and Schott (2006) find that the exit probability of companies in the manufacturing sector increases after a cut in customs tariffs, but to a lesser extent for those firms whose productivity is relatively high compared with the average for the sector. The results obtained for a panel of firms from twelve European countries by Blomm, Draca and Van Reenen (2011) indicate that stronger competition from goods coming from China has gone hand in hand with firms going out of business, especially in the case of relatively low-technology companies, while productivity and innovation among firms remaining in business have risen.

The study by Mayer, Melitz and Ottaviano (2010) that was presented to the conference highlights the fact that firms adjust their core product range and quality to the specific conditions of each market<sup>(1)</sup>. In particular, they tend to concentrate on their core products, when it comes to exports to distant markets and those where competition is fiercer. Their findings show that more intense competition tends to increase the productivity of firms because they focus on the products for which they are more productive and export in larger volumes.

As regards Belgium, the results obtained by Abraham and Van Hove (2010) for manufactured goods indicate that competition from Asian countries is being felt on Belgian firms' main export markets. Generally speaking, exports of these products are concentrated on the biggest and closest countries, and in neighbouring countries. Furthermore, Belgian firms export a wider range of products to nearby nations such as the neighbouring countries and members of the European Union, and also rich nations with a high GDP per capita. There is nevertheless some evidence of differentiation between the Asian countries according to the destination market. As in the case of Chinese goods, competition from South Korea is strong on the European and Asian markets; Singapore competes with Belgian exports in Europe and in North America, while competition from Taiwan is only significant on some specific markets.

(1) When they export to more distant or more competitive markets (typically towards larger countries that are more open to international trade), there is a tendency among firms to refocus on their core products, those in which they are in principle more productive. These findings have been confirmed for the French manufacturing sector. Exports of a firm's main product compared to exports of its second product tend to be all the more higher when the country of destination is bigger and enjoys a higher degree of trade liberalisation.

The increasing competition from the emerging economies, and the Asian nations in particular, which initially concerned products which are very low-skilled-labour-intensive, now extends to a wider range of products and sectors, including those with high value added. Certain sectors, like chemical plastics, the leather industry and the food sector nevertheless seem to have resisted competition from the Asian countries rather well overall.

This strong presence is not without impact on Belgian firms' performance and, consequently, on their strategies. The scale of competition from the Asian nations, measured in terms of destination market share, is weighing on the value of Belgian firms' exports and product range. This is particularly true with competition from China, alternatively via Hong Kong, and Taiwan. Moreover, Belgian firms tend to scale back their product range in areas where competition from China and South Korea is the greatest. A one percentage point increase in Hong Kong's market share in a given country reduces the value of Belgian exports to this country by 1% and the number of products exported to this market by 0.34%.

In addition, strategies aiming to step up the quality and/or the variety of products exported have made it possible to offset losses, at least in part, in terms of exports as a result of competition from the Asian nations. By only taking firms that have improved their product quality into consideration, it can be noted that the growth in exports between 1998-2001 and 2002-2006 was all the greater because companies had made major strides in developing the quality and/or the variety of products exported.

**TABLE 6** IMPACT OF THE PRESENCE OF ASIAN COUNTRIES ON BELGIUM'S EXPORT MARKETS

(influence of a 1 percentage point growth in market share of the Asian countries by product and by destination market)

	Annual value of exports per Belgian exporter, by product and by country of destination	Number of products exported annually per Belgian exporter by country of destination
China .....	-0.69 (***)	-0.20 (***)
Korea .....	0.52	-0.42
Taiwan .....	-1.07 (***)	0.29 (***)
Singapore .....	0.32	0.15
Hong Kong .....	-1.00 (***)	-0.34 (***)

Source: Abraham and Van Hove (2010).

The results take account of the features of the country of destination (GDP, GDP per capita, distance, existence of a common border, membership of the EU-15 and EU), of firms' individual characteristics (number of employees, average wages, value added per person, stock of capital per person, intangible fixed assets per person). Products are defined on the basis of the 8-digit Combined Nomenclature. (\*\*\*) : refers to a 1% significance threshold.

## 2.4 The impact of internationalisation on domestic firms

So far, this article has dealt with questions mainly concerning firms involved in international activities. However, the consequences of opening up to external markets go beyond internationally-active companies, and can have positive effects on the rest of the economy.

One of them lies in the spillover effects that firms already present on the export markets have on the productivity and development of other firms' activities. In their contribution, Dumont, Merlevede, Piette and Rayp (2010) sought to establish whether such effects are apparent among Belgian firms, first by examining whether geographical or economic proximity – through supplier-client relations or via competition effects – influences other firms' productivity. Looking beyond the impact on productivity, they then analysed the potential impact on the perception of entry costs for going into foreign markets.

The econometric analysis carried out in this research paper pointed up the fact that there are indeed such spillover effects among Belgian firms at various levels. As far as productivity is concerned, the authors made the following observations:

- the fact that intermediary inputs are supplied to multinational enterprises exerts positive spillover effects on productivity. For instance, it could simply be the know-how acquired by an entrepreneur by adapting his production processes, since multinationals tend to require a higher quality from their suppliers;
- geographical proximity with firms operating at international level can have a favourable impact on productivity. The analysis actually reveals that, in a given district, the number of exporters helps to improve the productivity of domestic firms. This can notably result in positive fallout related to worker mobility, in other words, companies can benefit from the know-how that some employees have acquired from their previous employers. To some extent, this geographical dimension can also reflect relations between customers and suppliers, if they are located close to each other;
- on the other hand, some of the findings suggest that the multinational enterprises operating in the same branch of activity exert strong competitive pressure on non-exporting firms. Instead of triggering a spillover effect, this pressure has a negative influence on the latter's productivity levels. One of the factors that this can be attributed to is that international firms tend to monopolise the best production inputs, to the detriment of their rivals.

Looking beyond the direct impact on the productivity of firms geared towards the domestic market, the proximity of firms operating at international level also has derived effects on their opening up to foreign markets. First and foremost, when this works in favour of the productivity levels of local firms, it raises the possibility for the latter to bear the fixed costs associated with going into export markets and to do so profitably. Furthermore, proximity to exporting firms also leads to a direct reduction in these costs. For example, a firm that gets its supplies from an exporting firm can obtain useful information about markets served by this same company. Likewise, information concerning external markets exchanged among entrepreneurs active in the same region, for example through a federation of enterprises, can bring down the costs associated with moving into these same markets.

## 2.5 Impact of globalisation on the labour market

By prompting companies to adapt their strategy for boosting productivity, globalisation also has important consequences for employment in the advanced economies. This section looks at the impact of competition from low-wage countries and of offshoring on demand for skilled and unskilled labour, as well as the role of multinational enterprises in adjustment of employment in Belgium.

Many macroeconomic studies point up a negative relationship between competition from low-wage countries and demand for low-skilled labour in industrialised countries, with varied effects depending on the technological level of the different branches. A complementary micro-economic analysis makes it possible to check whether these shifts in labour towards skilled employment can also be observed within the firms themselves.

In Belgium's case, a study (Mion and Zhu, 2011) has already taken an in-depth look into the impact of imports from low-income countries on demand for labour and on the composition of the workforce. The findings of this research show that China plays a very specific role here. The growth of imports from this country does actually strongly affect both employment growth in Belgian firms and the composition of their workforce, while growth in imports from other low-cost countries does not seem to have much impact on these two variables. Most notably, in response to the increase in imports from China, Belgian firms have tended to reduce their demand for labour and this trend has been particularly unfavourable for low-skilled workers. According to their estimates, the changes induced by Chinese imports accounted for a major proportion of the observed change in the share

of skilled manpower in total employment between 1998 and 2007.

Instead of taking the direct impact of new competitors in emerging countries as a starting point in their research work for the conference, Cuyvers, Dhyne and Soeng (2011) endeavoured to analyse the consequences of Belgian firms' internationalisation strategies on demand for labour, by distinguishing between their three main channels: importing intermediary inputs, exporting production or establishing FDI relationships.

It emerges from this analysis that imports of inputs from low-income and low-production-cost countries, as well as exports to these nations, tend to benefit skilled employment in Belgium rather than unskilled jobs, something which confirms the aforementioned findings.

On the other hand, growth in exports to high-income countries seems to have a positive effect on demand for low-skilled employment, while an increase in imports of intermediary inputs from high-income countries only appears to have the effect of substituting domestic inputs by foreign inputs, without affecting the importing firm's demand for labour. However, this substitution of domestic inputs by foreign inputs is not employment-neutral in Belgium since it entails a reduction in demand for labour by the firms that produce these domestic inputs.

As regards establishing new FDI relationships abroad via a subsidiary or other types of stakeholdings, the expansion of such investment in a low-cost country should not have any significant impact on firms' demand for labour, according to the findings of the study. However, new investment in high-income countries seems to boost demand for skilled employment, no doubt because of the

increase in supervision and coordination functions, to the detriment of low-skilled labour.

As the two above-mentioned studies seem to suggest, the import of intermediary products from low-wage countries, or offshoring, has a direct negative effect on employment. This means that offshoring is a substitute for intermediary inputs produced locally by a supplier, or that it involves part of the production that had originally been carried out within the company concerned. However, this direct negative effect may be offset by cutting production costs, thus generating gains in terms of market share, and, consequently, an increase in production and employment.

A paper by Ottaviano, Peri and Wright (2010) on the manufacturing sector in the United States actually reveals a positive impact from offshoring on the employment of low-skilled and highly-qualified workers, but job losses for highly unskilled labour. The authors come to the conclusion that, between the more manual and routine-intensive tasks that are usually passed on to highly unskilled workers and the more cognitive and non-routine jobs generally done by skilled workers, it is average-complexity work that is most frequently subject to offshoring. Their findings show that offshoring does not replace employment of skilled workers. On the other hand, wider use of offshoring tends to push low-skilled workers towards more manual and routine-intensive jobs, from which they force highly unskilled workers out. Conversely, the transition towards more complex tasks is limited. All in all, the rise in offshore production is therefore proving to be to the detriment of highly unskilled labour.

By its very nature, offshoring, linked to the relocation of part of the production base, is the result of the multinationals. Their impact on employment is nevertheless wider.

**TABLE 7** IMPACT OF FIRMS' INTERNATIONALISATION STRATEGIES ON THEIR STAFF

(results by type of counterparty country, manufacturing industry only<sup>(1)</sup>)

	Increase in the share of imported inputs		Increase in the share of exports in turnover		Increase in the number of FDI relationships	
	Skilled employment	Low-skilled employment	Skilled employment	Low-skilled employment	Skilled employment	Low-skilled employment
High-income countries	0.048	-0.032	-0.168 (**)	0.114 (**)	0.021 (**)	-0.014 (**)
Low-income countries	0.546 (**)	-0.374 (**)	0.663 (**)	-0.448 (**)	-0.018	0.012

Source: Cuyvers, Dhyne and Soeng (2011).

(1) In % of increase in skilled or unskilled jobs following a 1 percentage point change in the share of imported inputs or in the share of exports in turnover or after a one-unit increase in the number of foreign direct investment relationships. These elasticities are adjusted for influence of changes in wages per type of job, capital stock, value added. (\*\*): 5% significance threshold, (\*\*\*): 1% significance threshold. The authors have separated jobs between skilled and low-skilled on the basis of segmentation between clerical employees and manual workers.

The analysis by Dhyne, Fuss and Mathieu (2011) shows that foreign multinationals played a significant role in job creation in Belgium over the period from 1998 to 2005. In the sample under consideration, it is true that the purely domestic firms have generated the most jobs in net terms, i.e. some 57 600, but this result reflects the high proportion of these firms in the sample. Companies with no FDI ties created 0.74 jobs on average.

Far from having had a dampening effect on employment, the foreign multinationals' subsidiaries – that is, firms at least 50 % owned by a foreign investor – were actually responsible for creating roughly 5 900 jobs over the same period. However, the Belgian multinationals (at least 50 % owned by a foreign investor but with stakeholdings abroad) cut employment by about 16 500 units in the same time span.

If these changes in employment are broken down between the effect of companies going out of business as a result of closures or corporate takeovers on the one hand, and the effect of shifts in staff within the firms in place on the other hand, this second channel is generally shown to be predominant in the case of the multinationals, whether they are Belgian or foreign. There have been only two incidents leading to a marked loss of employment because

of the disappearance of firms: in 2003, several foreign multinationals ceased their activity, but some were taken over by other non-Belgian multinationals, which explains why the impact on employment was limited; and in the year 2000, the bankruptcy of a large company contributed to the loss of about 9 800 jobs recorded for Belgian multinationals.

Besides these closures or corporate takeovers, Dhyne, Fuss and Mathieu (2011) show that the multinationals currently trading have a more flexible management of manpower than purely domestic companies. Estimates of adjustment costs established on the basis of net employment flows observed at firm level reveal a particularly wide gap between multinational enterprises and purely domestic firms in the case of clerical workers. The cost of adjusting blue-collar employment in the case of multinational enterprises is about 30 % lower than for domestic companies. In the case of white-collar workers, multinational enterprises' adjustment costs come to less than 45 % of those borne by domestic firms.

In order to explain these gaps, additional econometric analyses have been carried out. These show that the Belgian multinationals are not significantly different from the foreign multinationals in terms of adjustment costs.

**TABLE 8** COMPARISON OF EMPLOYMENT TRENDS IN BELGIUM ACCORDING TO FIRMS' FDI STATUS  
(sample of firms that have filed full-format annual accounts)

	1998	1999	2000	2001	2002	2003	2004	2005	Total	Average
<b>Non-multinational Belgian firms</b>										
Total net creation (thousands) . . . . .	16.7	15.4	19.7	3.1	0.4	-1.0	6.1	-2.8	<b>57.6</b>	
Established firms . . . . .	20.0	22.3	25.0	8.5	4.2	5.6	8.6	5.5	<b>99.7</b>	
Exiting firms . . . . .	-6.8	-10.2	-8.5	-8.6	-8.0	-7.3	-4.0	-8.6	<b>-62.0</b>	
Average net creation (units) . . . . .	1.7	1.6	2.0	0.3	0.0	-0.1	0.7	-0.3		0.74
<b>Belgian multinationals</b>										
Total net creation (thousands) . . . . .	0.3	-2.3	-7.6	-2.9	-4.1	3.7	-2.4	-1.2	<b>-16.5</b>	
Established firms . . . . .	0.6	-2.1	2.2	-1.3	-4.0	3.7	-1.7	-0.7	<b>-3.3</b>	
Exiting firms . . . . .	-0.3	-0.2	<b>-9.8</b>	-1.6	-0.1	0.0	-0.7	-0.5	<b>-13.2</b>	
Average net creation (units) . . . . .	0.9	-6.6	-22.3	-6.7	-9.5	8.9	-5.9	-3.5		-5.59
<b>Subsidiaries of foreign multinationals</b>										
Total net creation (thousands) . . . . .	6.1	0.7	9.3	0.7	-9.9	-3.8	4.0	-1.2	<b>5.9</b>	
Established firms . . . . .	7.1	1.6	10.0	1.8	-9.4	-0.2	5.5	0.7	<b>17.1</b>	
Exiting firms . . . . .	-1.1	-0.9	-0.7	-1.1	-0.5	<b>-4.0</b>	-1.5	-2.1	<b>-11.9</b>	
Average net creation (units) . . . . .	6.2	0.8	8.8	0.5	-7.1	-2.6	2.9	-0.9		1.08

Source: Dhyne, Fuss and Mathieu (2011).



Then again, using temporary employment contracts and early retirement schemes enable adjustment costs to be reduced for non-clerical employment, and go a long way towards explaining the differences in adjustment costs between multinationals and domestic firms as far as manual workers are concerned. Indeed, if one considers firms with an identical temporary job turnover rate equal to the average, the difference between multinationals and domestic firms in terms of adjustment costs is no more than 3% for production employment. However, the difference as concerns salaried staff is still of the same order of magnitude as when no use is made of such types of contract. A similar conclusion can be drawn by comparing firms that made use of early retirement schemes during the period analysed.

Differences in scale of production could offer an explanation for part of the variations in adjustment costs observed for white-collar workers between multinational enterprises and purely domestic firms. However, if companies with 200 workers are considered, the adjustment costs for clerical workers of multinational enterprises only account for 55% of those of domestic firms.

## Conclusion

An economy's capacity to integrate positively into the trend towards globalisation and the emergence of new growth poles and competitors depends both on macroeconomic conditions and microeconomic characteristics of firms. From a macroeconomic viewpoint, changes in production costs – notably those concerning labour or energy – and exchange rate movements influence prices. From a microeconomic point of view, the general efficiency of firms and the type of product that they have to offer determine their chances of success and their performance on foreign markets. The two types of analysis are thus largely complementary, and need to be taken together in order to understand all the various facets of the economy's competitiveness.

The main contribution that the microeconomic approach has to make lies in the fact that individual firm-level data enable phenomena that do not appear in aggregate figures to be flagged up. Taking account of the heterogeneity of firms really does bring added value to the understanding of foreign trade dynamics and, more widely, to understanding how the economy works.

One of the most graphic examples is that, in each branch of activity, firms of different sizes and performance levels exist alongside each other. The analysis of characteristics specific to each firm makes it possible to isolate the factors

that determine why some are more able than others to get into foreign markets. Likewise, useful conclusions can be drawn on strategies likely to guarantee success on these same markets by examining those followed by firms that have managed to gain a lasting foothold there, and by matching them against those followed by exporters who have given up trying to do so.

Another lesson that can only be drawn from an analysis of companies is that, in a given region or sector, internationalisation of just some of the firms can have repercussions on the others. Local suppliers have to raise their productivity when their customers step up their requirements in response to competition on international markets. The (technological or geographical) proximity of the firms can also serve to encourage the exchange of technological know-how and information on foreign markets.

Furthermore, the microeconomic analysis points up the sheer size of production factor reallocation by the less successful firms in favour of those whose business is growing more rapidly. Among other things, this helps to get a better grasp of the consequences of globalisation on the labour market.

While these remarks may sometimes seem to go without saying, the research work carried out for the Bank's conference has enabled significant effects for Belgian firms to be pinpointed. A quantified assessment on the basis of statistical methods makes it possible to be more objective about the often contradictory impressions that emerge from one or another case study, and to emphasise the most important elements that make up the non-cost structural competitiveness of the economy.

By understanding and quantifying the determinants of and the fallout from internationalisation, it is possible to single out a series of economic policy recommendations and, against a backdrop of limited public funds, set priorities.

Action can be taken at several levels. First of all, aid for overseas market research has been identified as one of the elements favouring the internationalisation of firms. It could prove to be particularly useful for smaller-sized enterprises that are venturing out on their international business. Indeed, the existence of "superstars" must not conceal the importance of SMEs in the globalisation process and in terms of job creation. While the intensive margin dominates short-term fluctuations in international trade, the extensive margin is the determining factor in the longer term. The analyses mentioned above also show that targeted policies are needed. Strategies must be adapted to both the sector and the market.

Productivity is a determining factor when it comes to access to international markets. Measures that can boost it are thus essential; for example, policies that promote the development of products that are adapted to each type of market and of a sufficiently high quality to face up to growing competition from emerging nations. Furthermore, with competition from low-wage countries affecting low-skilled jobs in particular, it is of primordial importance for preserving jobs to ensure the development of skills by setting up manpower training policies.

The public authorities also have a role to play in making Belgium more attractive for foreign investors. Indeed, the findings set out above suggest that while the multinationals can adjust their employment levels more easily than domestic firms, the foreign multinationals have made a substantial contribution to net job creation in Belgium.

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# The Belgian labour market during and after the crisis

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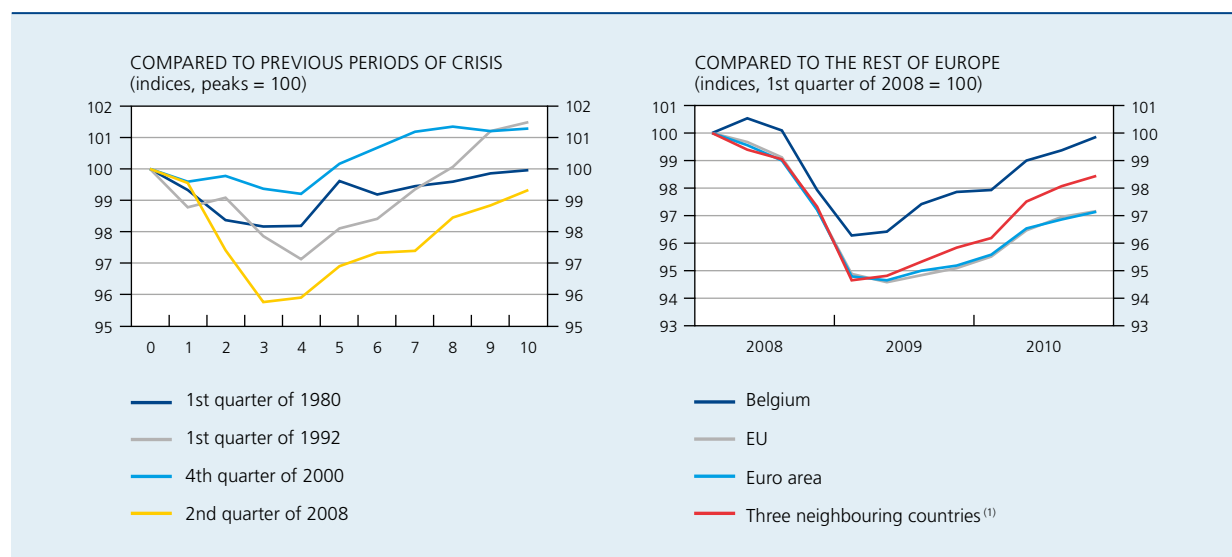
## Introduction

The global economic and financial crisis that was unleashed at the beginning of 2008 was not without consequences for the labour market in Belgium. Indeed, this crisis was the most severe since the Second World War. Whereas the last three crises beginning in 1980, 1992 and 2000 were characterised by a maximum decline in volume of GDP of around 2 %, 3 % and 1 % respectively compared to the previous peak, the activity recorded at

the start of 2009 was a little over 4 % lower than that in the second quarter of 2008. This recession subsequently gave way to a gradual recovery, but at the fourth quarter of 2010, that is to say ten quarters after the beginning of the crisis, GDP in volume terms still stood 1 % below the level before the crisis.

Nevertheless, the crisis treated Belgium slightly less harshly than other European countries. The average decline in volume of GDP recorded since the beginning

**CHART 1** THE CRISIS IN BELGIUM IN THE HISTORICAL AND INTERNATIONAL CONTEXT: TREND IN VOLUME OF GDP



Sources: EC, NAI.  
(1) Weighted average of Germany, France and the Netherlands.

of 2008<sup>(1)</sup> within the EU, the euro area and Belgium's three main neighbours – Germany, France and the Netherlands – was larger than in Belgium, amounting to more than 5%. Activity has subsequently recovered but although growth has been stronger recently in the three neighbouring countries, it has remained less favourable within the European reference areas than in Belgium. Furthermore, the period over which GDP has showed a downturn in Belgium, which extends over three quarters, is a little shorter than in the rest of Europe.

This article looks at the impact that the crisis had on the Belgian labour market and whether that impact differs from the impact in other countries<sup>(2)</sup>, whilst taking account of the differences in terms of scope and duration of the economic recession. The negative demand shock that characterised the crisis forced enterprises to reduce their costs, and more particularly to cut back on those for labour, which often constitutes the main cost factor. The article also looks into the way in which the cost of labour has been reduced: was this done by way of an adjustment in salaries or in the volume of labour? What were the consequences of a possible adaptation of the volume of labour on productivity and employment? The results of a recent study based on surveys carried out amongst enterprises established in various European countries deserve to be mentioned in this context. The results of these surveys, carried out during a period of normal growth, reveal that when faced with a decrease in demand, Belgian enterprises have a tendency to revise their prices and/or their costs downwards. A reduction in costs is mainly realised via a contraction in the volume of labour in terms of number of persons and/or number of hours per person, the reaction for salaries being, for its part, virtually zero. This type of tendency seems to be much more marked in Belgium than in the other European countries studied (cf. Dhyne and Druant, 2010). The question now is whether these results have been confirmed during the recent crisis.

Not all branches of activity and all groups of workers have been affected to the same extent by the crisis. This article attempts to determine whether the crisis has led to a fundamental alteration in the composition of employment or not.

Lastly, labour – together with the stock of capital actually available and the total factor productivity – constitutes one of the three channels by which the crisis may have a

downward effect on the growth potential of the economy. In fact, there is a risk that part of the rise in unemployment due to the business cycle may turn into a structural rise. This phenomenon, which is referred to as the hysteresis effect, is explained by the fact that those persons leaving the labour market for a relatively long period see their human capital decrease, are of less interest to potential employers and look less actively for a new job. Their reintegration into the labour market therefore becomes a more complicated matter. Furthermore, an unfavourable economic context may discourage potential participants in the labour market, such as young people and housewives, therefore bringing about a fall in the activity rate. However, these unfavourable circumstances may likewise contribute to a rise in the activity rate, in that they may prompt the second non-working member of a household to join the labour market when the household in question experiences a fall in income owing to the crisis.

## 1. Effects of the crisis on employment

### 1.1 Trends in Belgium

The decline in economic activity on an annual basis was strongest during the first half of 2009, when the volume of GDP was 3.9% lower than in the previous year. The total number of hours worked in the economy likewise showed a clear downturn during that year, of around 2% compared to the previous year. Employment expressed as the number of persons responded after a certain time lag as is customary: the lowest level was recorded during the second half of 2009, with 0.8% fewer workers compared to the corresponding period of the previous year.

As a result, the decline in resources used in the labour market, both in terms of number of hours of work and number of persons, proved to be much less pronounced than that in GDP. Therefore, productivity (of labour), which represents the volume of production generated per unit of the factor labour mobilised, was subject to a downward influence following the crisis. In 2008, a year characterised by GDP growth that was still positive on average, productivity per hour worked had already decreased, which is the reason why the slowdown in the rise in the total volume of labour proved markedly weaker than that for GDP. The fall in productivity continued at the start of 2009, at the height of the crisis, thus damping down the impact of the crisis on the volume of labour. From the second half of that year onwards, productivity went back to the upward structural tendency, anticipating the trend in the other variables relating to activity and the labour market.

(1) For the purpose of international comparisons, the first quarter of 2008 has been taken as the common reference point; this corresponds to the quarter when GDP in volume was at its maximum both in the EU and the euro area and also within the three main neighbouring countries.

(2) The choice of reference countries – EU, euro area or the three neighbouring countries (Germany, Netherlands and France) – is dependent on the topic being examined.

**TABLE 1** ACTIVITY, VOLUME OF LABOUR AND EMPLOYMENT  
(percentage changes compared to the corresponding half of the previous year)

	2008		2009		2010	
	1st half year	2nd half year	1st half year	2nd half year	1st half year	2nd half year
GDP in volume terms	1.7	-0.1	-3.9	-1.4	2.2	2.0
Volume of labour <sup>(1)</sup>	2.1	0.8	-1.7	-2.0	0.3	1.4
Employment	1.9	1.6	0.1	-0.8	0.2	1.2
Hours worked per person	0.2	-0.8	-1.9	-1.1	0.1	0.2
Productivity per hour worked	-0.4	-0.9	-2.2	0.6	1.9	0.7

Sources: NAI, NBB.

(1) Total hours worked, that is to say the sum of the volume of labour of employees as published by the NAI and the volume of labour estimated for the self-employed.

In other respects, enterprises similarly revised the duration of work per employee downwards during the crisis, which allowed the number of employed persons to evolve in a more favourable manner than the volume of labour in 2008 and 2009. When activity decreases, an enterprise has several options at its disposal in order to adapt its utilisation of labour and, consequently, labour costs. So as not to compromise the future production potential of the enterprise, an attempt is normally made to keep the workforce unchanged (*labour hoarding* or the practice of retaining the workforce) at the beginning of a period of economic slowdown, owing to the uncertainties surrounding its scope and duration, and not to make redundancies until the slowdown shows a tendency to persist. This is explained in particular by the fact that redundancies, and also possible (re-)engagements when activity picks up again, entail costs, but also by the difficulty of recruiting qualified staff for certain functions ("critical functions"); this problem will certainly not be improving, given demographic ageing. Naturally, a strategy of this kind can only work if the activity of the enterprise is only reduced in temporary fashion and the enterprise is sufficiently well-equipped to be able to exercise a profitable economic activity again once the crisis has passed.

In the first instance, enterprises can opt for a relatively natural reduction in the total volume of labour, by way of a steady decrease in the overtime hours regularly worked and the taking of days of holiday saved up previously, etc. If the slowdown in activity continues, the existing systems for reducing working time can be used (in a more intensive manner), such as part-time working and the time-credit scheme. In order to keep the permanent workers, who constitute the core enabling activity to continue, enterprises will prefer to opt for the non-renewal of temporary employment contracts, including agency staff contracts, for example.

To avoid having to make redundancies amongst the staff employed on a permanent employment contract, Belgian legislation since long provides for the option of placing blue-collar workers in temporary unemployment. In addition, a certain number of supplementary measures to combat the crisis were introduced at the beginning of 2009 and extended in several stages up to the end of 2011: the "temporary collective scheme for total or partial suspension of employment contracts", a measure which could be described as temporary unemployment for white-collar workers; the "crisis time credit" scheme, which is aimed at an individual and temporary reduction in work commitments for a fixed period; and the "temporary adjustment to working time in a crisis", which consists of a fall in working time applied to all the workers in an enterprise or a specific category amongst them.

As a last resort, if the enterprise is forced to reduce its permanent workforce, it can make its workers redundant individually or collectively. Under certain conditions, it is possible in this case to make use of pre-pensions for the elderly workers.

During the crisis, Belgian enterprises turned to these different devices to various degrees. The system of temporary unemployment for economic reasons is the one which has been most used, and which reached a peak in the first half of 2009 affecting some 200 000 workers at that time, that is to say more than twice the number before the crisis. The similar new system applicable to white-collar workers has met with a much more qualified success: at its maximum level at the beginning of 2010, only around 8 000 persons were involved. Employers likewise only had limited recourse to the crisis time credit and the temporary adjustment to working time, which only involved some 2 500 and 2 000 persons respectively

at the end of 2009. With the end of the crisis, the use of these devices is in clear decline.

The number of those taking early retirement on a full-time basis has shown little growth<sup>(1)</sup> since the beginning of the recession, rising from 115 000 at the start of 2008 to 121 000 in the first quarter of 2011. Around 3 700 of these persons were not exempted from registering as job-seekers; at the start of 2008, barely 900 workers were involved. The different systems and the use made of them by Belgian enterprises are described in more detail in box 4 of the Bank's Report for 2010 (National Bank of Belgium, 2011).

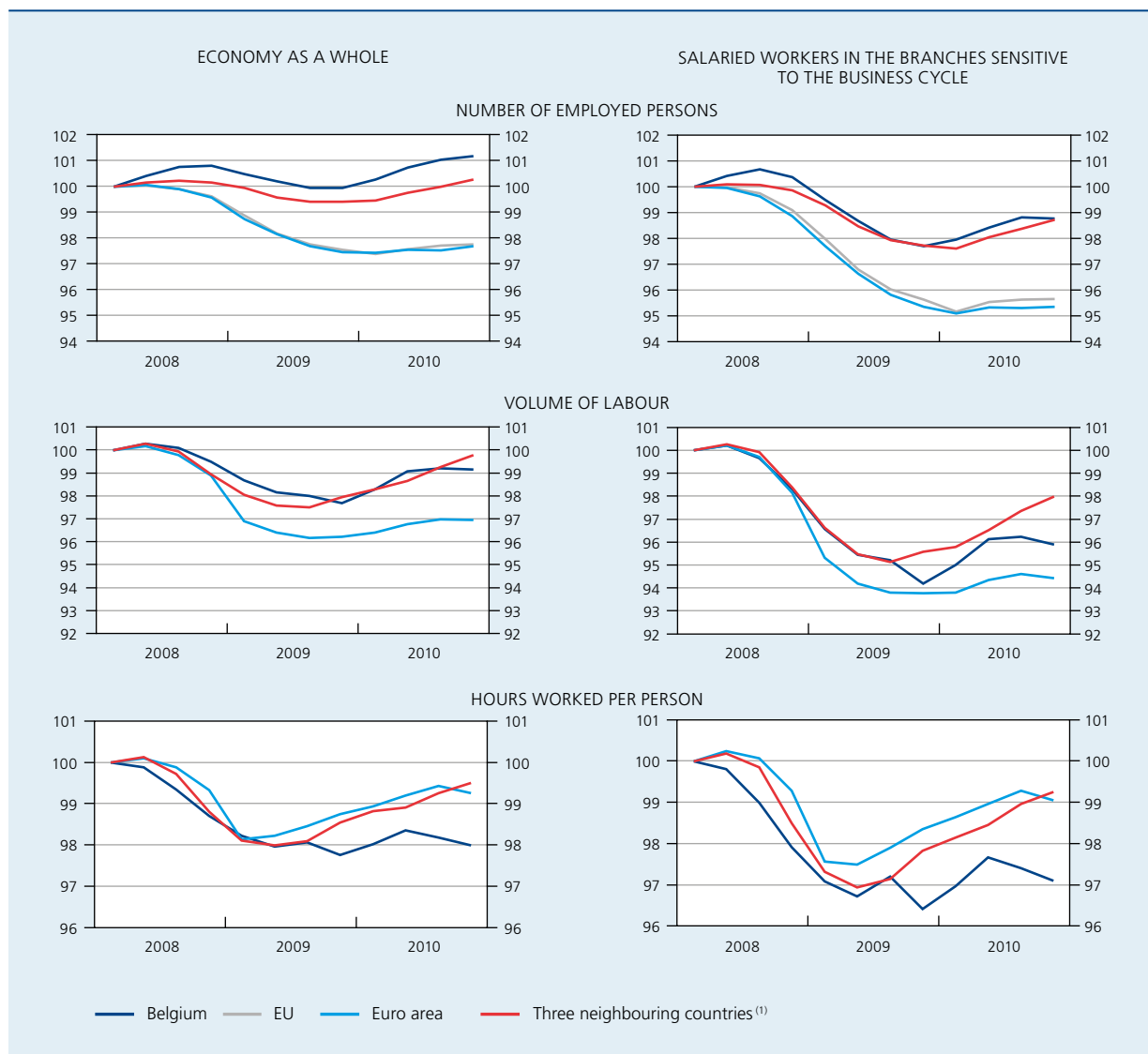
## 1.2 International comparison

In the European context, employment seems to have been left relatively untouched by the crisis in Belgium. A decrease in the number of employed persons was recorded with effect from 2009, but the low point reached in the second half of 2009 was no lower than the level observed at the beginning of 2008 and, by the end of 2010, employment was again 1 % higher than prior to the crisis.

(1) This rise has remained all the more limited as the age group in question undergoes a marked increase owing to demographic ageing.

**CHART 2** EMPLOYMENT IN BELGIUM IN THE INTERNATIONAL CONTEXT

(indices, 1st quarter of 2008 = 100)



Sources : EC, NBB.

(1) Weighted average of Germany, France and the Netherlands.



Employment evolved in a similar way in Germany, due in particular to the very widespread recourse to measures allowing the average duration of work to be reduced, such as short-time working (*Kurzarbeit*). Following the decline in the number of jobs in the Netherlands and especially in France, the average fall within the three neighbouring countries was nevertheless slightly higher than that recorded in Belgium. The impact of the crisis was even more significant on average in the EU and the euro area, given that the number of employed persons there decreased by some 2.5 % at most.

Despite the less pronounced slowdown in activity referred to above, the fall in the total volume of labour in Belgium is similar to that observed on average in the neighbouring countries. The fact that employment might have suffered less in Belgium than in the three neighbouring countries may therefore be explained by the slightly higher correction in the duration of work per person. The reduction in the number of hours of work per employed person found on average in the euro area<sup>(1)</sup> was comparable to that in the three neighbouring countries.

In certain branches of activity such as the public administrations and health care, which is subsidised by the public authorities, employment is less sensitive to the changes in the business cycle; the differences between the countries in terms of employment structure may therefore exert an influence on the overall impact of the crisis. If salaried employment in the branches of activity sensitive to the business cycle<sup>(2)</sup> is taken as the basis, the impact of the crisis has been much more pronounced in the latter than in the economy as a whole, both in Belgium and in the rest of Europe. The gap between Belgium and the other European countries in the area of adapting individual work duration has similarly been more marked in those branches; furthermore, the downward correction continued over a longer period in Belgium, an aspect which reflects the significant recourse to measures for reducing the duration of work.

(1) There are no data available for the EU average with regard to the volume of labour and, consequently, the duration of work per person, in particular owing to the absence of statistics for the United Kingdom.

(2) This involves the branches "agriculture and fishing", industry, construction, "commerce, hotels & restaurants and transport" and "financial and real-estate services".

(3) In other respects, there are no seasonally adjusted data available at all for the LFS, with the result that comparisons over time must necessarily refer to the corresponding period of the previous years. This does not pose a problem in the context of the present analysis, therefore, which refers systematically to the first half year.

(4) However, this virtual stabilisation hides a clear downward tendency in 2009 as well as an equally marked upward tendency in 2010.

### 1.3 Effects on the structure of employment in Belgium

This section of the article draws a comparison between the data relating to the first half of 2008, 2009 and 2010, which correspond respectively to the situation before, during and at the end of the crisis. To be able to evaluate the impact of the crisis on employment correctly, it is necessary in principle to use the comprehensive data of the national accounts. In particular, these include a breakdown according to the branch of activity. However, there are no statistics in the national accounts for certain other breakdowns of interest, like by gender, age and educational level, and it is appropriate in this case to refer to the data in the labour force survey (LFS)<sup>(3)</sup>.

According to the data in the national accounts, total employment in Belgium reached a level more or less identical to that before the crisis<sup>(4)</sup> during the first half of 2009 and 2010. However, this virtual stabilisation on average hides divergent trends between the different branches of activity. Whilst employment in non-market services continued to expand, the number of jobs within the branches of activity sensitive to the business cycle decreased considerably, by 0.6 to 0.7 % in both periods, mainly by virtue of the pronounced decline in industry.

**TABLE 2** EMPLOYMENT IN BELGIUM:  
BREAKDOWN BY BRANCH OF ACTIVITY

(percentage changes compared to the corresponding half of the previous year and, in parentheses, percentage changes in added value compared to the corresponding half of the previous year)

	1st half of 2008	1st half of 2009	1st half of 2010
Total .....	1.9 (2.1)	0.1 (-3.8)	0.2 (2.0)
Branches sensitive to the business cycle <sup>(1)</sup> .....	2.2 (2.2)	-0.7 (-5.3)	-0.6 (2.1)
of which:			
Industry .....	0.0 (1.4)	-2.9 (-9.7)	-4.5 (3.8)
Construction .....	2.9 (-0.9)	0.0 (-4.1)	0.0 (-1.7)
Market services <sup>(2)</sup> .....	3.0 (3.0)	-0.1 (-3.7)	0.5 (1.9)
Non-market services <sup>(3)</sup> .....	1.4 (1.6)	1.8 (1.2)	1.7 (1.5)

Source: EC.

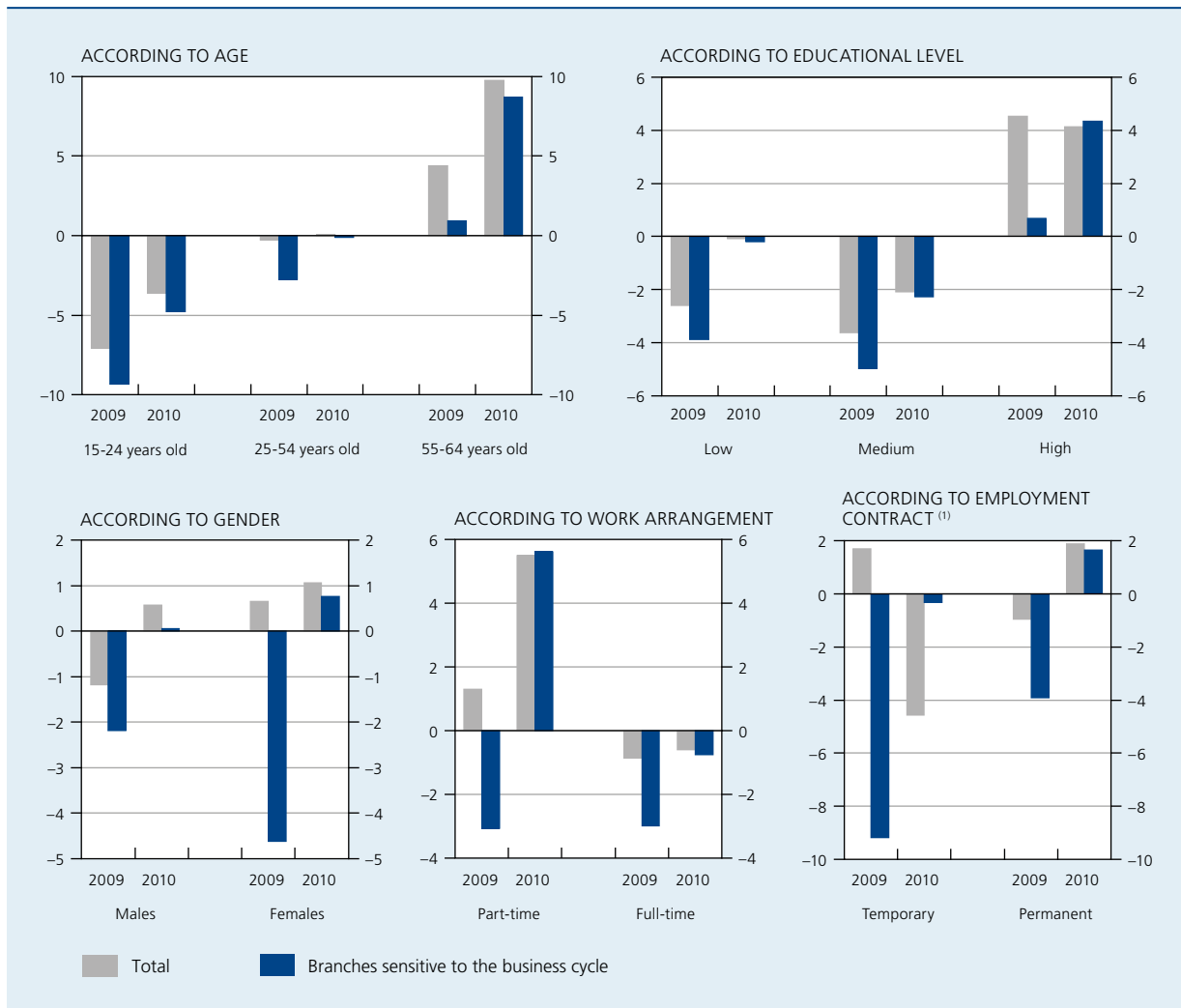
(1) The branches "agriculture and fishing", industry, construction, "commerce, hotels & restaurants and transport" and "financial and real-estate services".

(2) The branches "commerce, hotels & restaurants and transport" and "financial and real-estate services".

(3) The branches "public administration and education" and non-market private services.

**CHART 3 EMPLOYMENT IN BELGIUM: BREAKDOWN ACCORDING TO VARIOUS CRITERIA**

(data relating to the first half of the years under consideration ; percentage changes compared to the corresponding half of the previous year)



Source: EC.  
(1) Employees only.

Consequently, it seems appropriate to draw a distinction between the branches of activity that are sensitive to the business cycle and the non-market services in order to analyse the trend in employment.

The differing employment trend in the various branches of activity is linked to differences in terms of the trend in the activity. Thus, added value in industry suffered a fall amounting to 10%, whilst in construction and market services it was around 4%. On the other hand, the added value in non-market services has continued to increase. In industry and construction primarily, it proved possible to moderate the consequences of the clear slowdown in activity on employment by means of a marked reduction in the number of hours worked per person.

Based on the data relating to employment by branch of activity available from the LFS, it is possible to infer, alongside the general trend, the trend arising within the branches of activity sensitive to the business cycle. As might be expected, the trend in employment during the crisis was markedly less favourable in those branches than in the economy as a whole; at the end of the crisis, the two movements largely converge.

The available data indicate a diverging trend in employment according to age. Employment amongst young people showed a marked decline during the crisis and this tendency continued subsequently. This age group is traditionally much more sensitive to fluctuations in the business cycle, given that young people frequently

do not yet have a permanent job or only have a small amount of professional experience. Even highly qualified young people were not spared, either in 2009 or in 2010. On the other hand, employment amongst persons between 55 and 64 years of age increased considerably during these two periods, thus perpetuating the upward structural tendency observed for a number of years. This is linked in particular to the increase in the legal pension age for women, the measures taken in the context of the Generation Pact and the greater recourse to part-time working, for example by way of the time credit system, in order to remain active up to an older age.

Furthermore, the level of education proves once again to be critical. As early as the beginning of 2008, employment amongst persons with few qualifications had suffered the repercussions of the slowdown in the business cycle, with the result that the fall observed during the first half of 2009 remained fairly limited. At this highest point of the crisis, it was employment amongst persons with medium qualifications that recorded the most marked decline; within this group, employment decreased again at the beginning of 2010. On the other hand, employment amongst highly-qualified workers grew during and after the crisis. An inverse relationship can consequently be observed during the crisis between the sensitivity of employment to the business cycle and the level of education: the least qualified workers are the first to suffer the consequences of the fluctuations in activity and are the most severely affected. The most qualified workers, for their part, are often in possession of specific knowledge and expertise and are less easily replaced. They are only made redundant as a last resort, therefore, if the fall in activity persists and there is no immediate prospect of recovery.

Within the branches of activity sensitive to the business cycle, employment amongst women has declined more markedly than amongst men during the crisis. However, since these branches have a majority of male workers, the impact of this decrease on the employment of women as a whole remained relatively limited and the latter therefore continued to grow. On the other hand, the total number of male workers has decreased, given the considerable representation of the branches of activity sensitive to the business cycle amongst men. With regard to women, the structural tendency seen in the past has thus continued: their employment rate has in fact steadily increased, due in particular to the raising of the legal pension age, but also owing to a cohort effect since those women with a higher level of education are more active on the labour market and remain so up to an older age. During the first half of 2010, employment amongst both women and men increased.

During the crisis, the number of full-time jobs decreased but this decline was partially offset by an increase in part-time employment. However, within the branches of activity sensitive to the business cycle, both these working arrangements declined in a similar way. In the course of the first half of 2010, the number of part-time jobs nevertheless turned markedly upwards again, unlike full-time employment: thus, according to the data, the upturn in employment seems to have been primarily stimulated by part-time work.

Lastly, the breakdown according to employment contract naturally only refers to salaried employment. As might be expected, it is essentially those employees with a temporary contract who have been affected by the crisis in the branches of activity sensitive to the business cycle: the fall in their employment in these branches was more than twice as high as for employment of staff on a permanent contract. Even if it could be expected that temporary employment contracts, including agency staff contracts, would, due to their flexibility, be used all the more when activity took off again, the trend in employment has continued to be more unfavourable for temporary workers up to the first half of 2010, according to the data from the LFS.

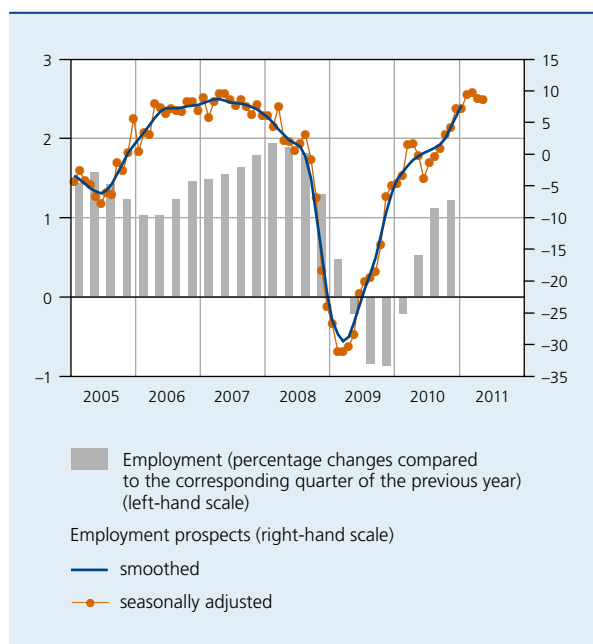
## 2. Effects of the crisis on the demand for labour

It is particularly difficult to evaluate the precise scope of the total demand for labour, owing to several factors. Indeed, employers have different channels at their disposal, both formal and informal, to (attempt to) fill their job vacancies and the regional placement services each use their own methodology with regard to the registration of job vacancies. It is therefore impossible to gain a complete picture of the total demand for labour in Belgium.

Given this fact, estimating the trend in the demand for labour during the crisis is a particularly difficult task. The indicators coming out of the Bank's business cycle surveys and the statistics of the regional placement services with regard to the number of job vacancies must in fact be seen as purely indicative, given the limits inherent to the data sources.

In the context of the Bank's monthly business cycle surveys, the enterprises in the different branches of activity covered by these surveys – manufacturing industry, building industry, trade and business-related services – are asked to state their expectations regarding the trend in employment. The corresponding results can then be combined – by proceeding in the same way as for aggregating the synthetic curves for each branch of activity and obtaining the Bank's overall synthetic curve

**CHART 4** EMPLOYMENT PROSPECTS IN BELGIUM ACCORDING TO THE BANK'S BUSINESS CYCLE SURVEYS<sup>(1)</sup>  
(seasonally adjusted data)



Sources: NAI, NBB.

(1) Weighted average of employment prospects in manufacturing industry (65 %), building industry (15 %), trade (5 %) and business-related services (15 %).

for the business cycle – into an overall curve relating to employment prospects.

Even if this curve had already begun to falter in mid-2007, it was in the course of the second half of 2008 that it showed the most marked decline, falling back well below the lowest levels recorded since the start of 1995, the year from which it is possible to calculate this combined curve. In other respects, it has turned out to be a good indicator of the trend in employment within the Belgian economy in the past. Moreover, the weakening of this curve during the crisis allowed a fairly precise estimate of the extent to which employment was going to decrease, with a time lag of around two quarters. Having reached its lowest point at the beginning of 2009, the smoothed curve, which reflects the underlying tendency, has shown nothing but substantial growth. The raw data continue to indicate a favourable trend in the demand for labour up to the beginning of 2011.

The quarterly surveys organised by the Bank also provide useful information on the demand for labour. The survey relating to the use of production capacity includes a question on the obstacles to production arising from a lack of qualified labour, an aspect that provides an indication of

the tensions present on the labour market owing to the existence of an unsatisfied demand for labour, for which there is no corresponding supply. These distortions began to fade away with effect from the end of 2007 in all the branches of activity covered by the survey. In 2009, the different branches of activity reported very few obstacles to production linked to labour, but with effect from 2010, these curves turned markedly upwards again. In fact, a number of employers suspended their search for qualified labour during the recession and then started looking for staff again when activity started up again; they were then faced with the same problems as before the crisis. Since employers were continuing to resort widely to the system of temporary unemployment in particular, the additional supply of labour remained insufficient to meet this demand. Thus, the system of temporary unemployment allowed a collapse in employment to be avoided, but at the same time certain enterprises postponed the necessary restructuring measures or abandoned them. Furthermore, this system prevented a reorientation of employment towards activities looking to the future or activities where there is a shortage of labour, as shown by the persisting structural problem of the critical functions.

In fact, according to a study by the VDAB (VDAB, 2010), the crisis had practically no effect at all on the list of critical functions: during 2009, the year characterised by the crisis, this service recorded 194 critical functions, thus representing a quarter of the overall set of professions for which the VDAB receives job offers and corresponding to half the total number of job offers received. Moreover, the offers relating to these professions showed a less significant decrease than those relating to the other professions during the crisis, a fact which shows once again that this involves a persistent structural problem.

### 3. Effects of the crisis on the supply of labour

The actual supply of labour can likewise be affected in the event of an economic recession. In fact, faced with difficulties in finding work, there is a possibility that the unemployed look less actively for a job. In any case, that is what is indicated by the data from the LFS, in the context of which these persons are no longer regarded as job-seekers in accordance with the criteria of the International Labour Office (ILO)<sup>(1)</sup>. The crisis may therefore affect the activity rate recorded, which represents the share of the active population within the population of working age<sup>(2)</sup>.

(1) According to the criteria of the ILO, a person must satisfy three conditions to be regarded as a job-seeker: the person must not be in employment, must be available for the labour market and must be actively looking for a job.

(2) This involves the population of 15 to 64 year-olds.

Since the active population encompasses all workers and job-seekers, the activity rate corresponds to the sum of the employment rate and the unemployment rate expressed as a percentage of the population of working age. Based on the data from the LFS, it is furthermore possible to analyse the inherent trends by group of population. The data used refer once again to the first half of 2008, 2009 and 2010 and therefore to the situation before, during and at the end of the crisis.

In 2009, the activity rate remained relatively stable: the fall in employment following the crisis therefore had been almost entirely reflected in an increase in unemployment at the time. In parallel with the recovery in economic activity, the activity rate turned upwards again during the first half of 2010. Thus, although the number of jobs stopped declining, unemployment increased considerably again.

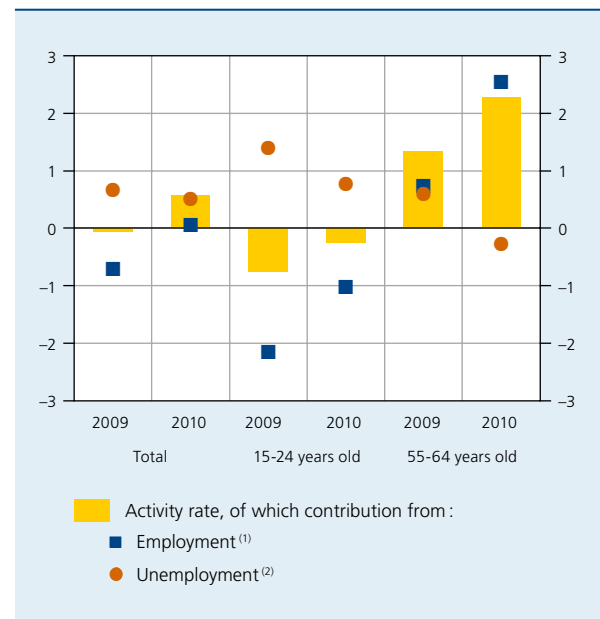
The different age groups were affected to various degrees by the crisis. The activity rate among young people fell both during and after the crisis, implying that the decrease in the number of young workers referred to above was not reflected in a proportional rise in unemployment. However, it was for this age group that unemployment recorded the strongest rise in the course of these two periods. This emphasises once again the relatively greater sensitivity of the labour market situation of young people to the business cycle.

The group of 55-64 year-olds is the only one whose activity rate and employment rate increased during the crisis. This upward movement continued vigorously in the subsequent period, once the worst of the crisis was over. The group of elderly workers is likewise the only one whose unemployment rate decreased in 2010. The economic crisis did not therefore interrupt the upward tendency that has characterised the participation of senior citizens in the labour market for a number of years. This does not take away the fact that fewer than four in ten persons between the ages of 55 and 64 were active in the labour market in Belgium in the first half of 2010.

Moreover, the crisis not only had an effect on the unemployment rate but also on the distribution of the number of job-seekers according to the length of their period of unemployment. In order to illustrate this, reference is made to an unemployment ratio which relates the number of job-seekers to the total population of working age and not to the active population, as is generally the case. In effect, as indicated before, the latter is itself influenced by the business cycle, an aspect which could skew the conclusions. In the first half of 2008, prior to the outbreak of the crisis, 4.5 % of the population of working age was looking for a job in Belgium. One year later, this

**CHART 5** ACTIVITY RATE AND CONTRIBUTIONS OF EMPLOYMENT AND UNEMPLOYMENT: TOTAL AND BROKEN DOWN ACCORDING TO AGE

(population of working age; changes in percentage points compared to the corresponding half of the previous year)



Source: EC.

(1) This contribution is equal to the change in the employment rate.

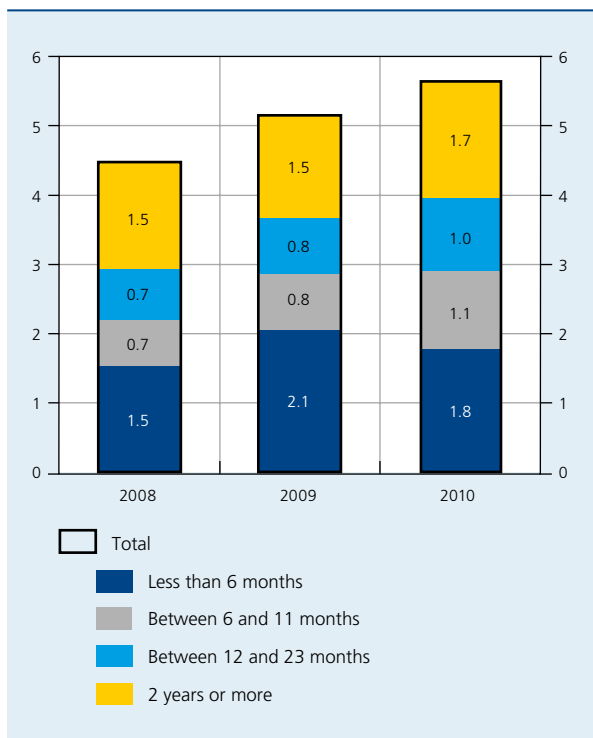
(2) This contribution differs from the change in the traditional unemployment rate, given that the latter is expressed in % of the corresponding active population and not, as is the case here, in % of the corresponding population.

ratio had increased to 5.2 %. In fact, the crisis brought about a greater influx of newly unemployed in the wake of the redundancies and the non-renewal of temporary contracts, as well as the arrival on the labour market of young people who had not found a job at the conclusion of their studies. In effect, the proportion of the population of working age recording a period of unemployment of short duration (six months at the most) climbed substantially from 1.5 to 2.1 %, whilst the effect on the other groups, broken down as a function of the duration of unemployment, remained limited initially. The situation changed over the course of time, given that a greater number of persons remained unemployed owing to the smaller number of employment opportunities and therefore steadily joined the groups characterised by a longer duration of unemployment. This situation was expressed in a rise amongst all the groups showing at least six months' duration of unemployment. Notwithstanding the decrease in the influx of newly unemployed, the total unemployment ratio continued its rise in the course of the first half of 2010, reaching 5.7 % of the population of working age. However, the rise in the overall unemployment rate observed in Belgium was relatively limited in comparison to that recorded in the other Member States

**CHART 6**

**UNEMPLOYMENT ACCORDING TO DURATION IN BELGIUM**

(data relating to the first half of the years under consideration; in % of the population of working age)



Source: EC.

of the EU: between the first half of 2008 and the corresponding period of 2010, unemployment expressed as a percentage of the population of working age increased by 1.2 percentage points in Belgium as against 2.1 percentage points on average in the EU.

The share of very long-term unemployment, for two years or more, which is an indication of structural unemployment, remained markedly lower within the EU, at 1.2% of the population of working age in the first half of 2010, compared to Belgium where it reached 1.7%. Even when the economy picks up again, these long-term unemployed encounter the greatest problems in rejoining the labour market: not only might they have lost certain skills and abilities that are necessary in order to match up to the conditions of the demand for labour, but in addition there is a possibility that certain employers – starting from the principle that this will in fact be the case – use long-term unemployment as a negative selection criterion and therefore give preference to other job-seekers. Faced with so few employment opportunities, the long-term unemployed may become discouraged and reduce their efforts to look for a job.

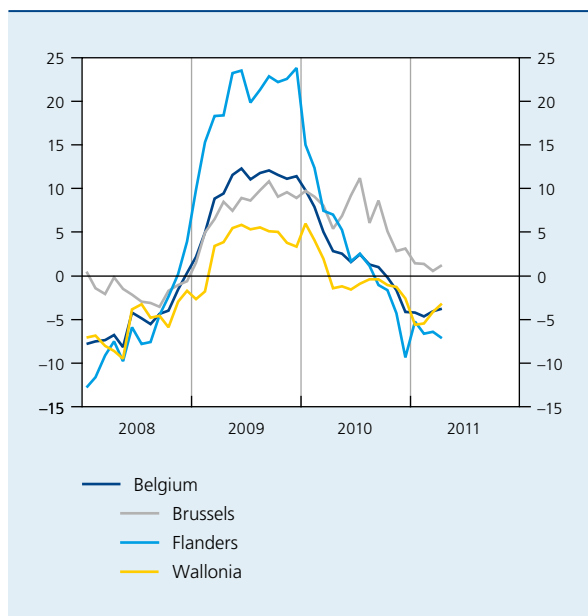
**4. Effects of the crisis at the regional level**

According to the administrative data of the NEO, the rise in the number of unemployed job-seekers on an annual basis stopped accelerating with effect from mid-2009, but it was necessary to wait for the beginning of 2010 for it to slow down significantly, and it was only with effect from October 2010 that the number of unemployed was lower than one year before. The decline in unemployment was most marked in Flanders, but it was also in this region that the impact of the crisis made itself felt the most: in 2009, the number of unemployed there had exceeded the level of the previous year by a fifth whereas in Brussels and Wallonia, this expansion had been limited to 8 and 3.5% respectively. Indeed, since the share of employment in the branches of activity sensitive to the business cycle is more significant in Flanders than in the other two regions, the labour market there is therefore more sensitive to step changes in the business cycle. Nevertheless, it was Wallonia that was the first to record a fall in the number of unemployed on an annual basis: with effect from April 2010, unemployment there was lower than in the previous year; in Flanders, this only became the case with effect from September. In Brussels, the rise in unemployment slowed down considerably with effect from mid-2010, but at the start of 2011, the number of unemployed job-seekers there was still higher than in the previous year.

**CHART 7**

**UNEMPLOYMENT IN BELGIUM AND THE REGIONS**

(percentage changes of the number of unemployed job-seekers compared to the corresponding month of the previous year)



Source: NEO.

In April 2011, the month for which the most recent observations are available, there were some 188 000 unemployed job-seekers in Flanders, which represents 35 % of the total number of unemployed job-seekers in Belgium. Wallonia recorded the highest number of unemployed at 238 000 persons; at the same time, 105 000 unemployed persons were recorded in Brussels. The harmonised unemployment rate for 15-64 year-olds, expressed as a percentage of the active population of working age and calculated on the basis of the results of the LFS, amounted to 4.2 % in Flanders in the fourth quarter of 2010 (most recent observations). This percentage was much higher at the time in Wallonia (11.7 %) and especially Brussels (17.4 %).

## 5. Has the crisis had an impact on labour costs ?

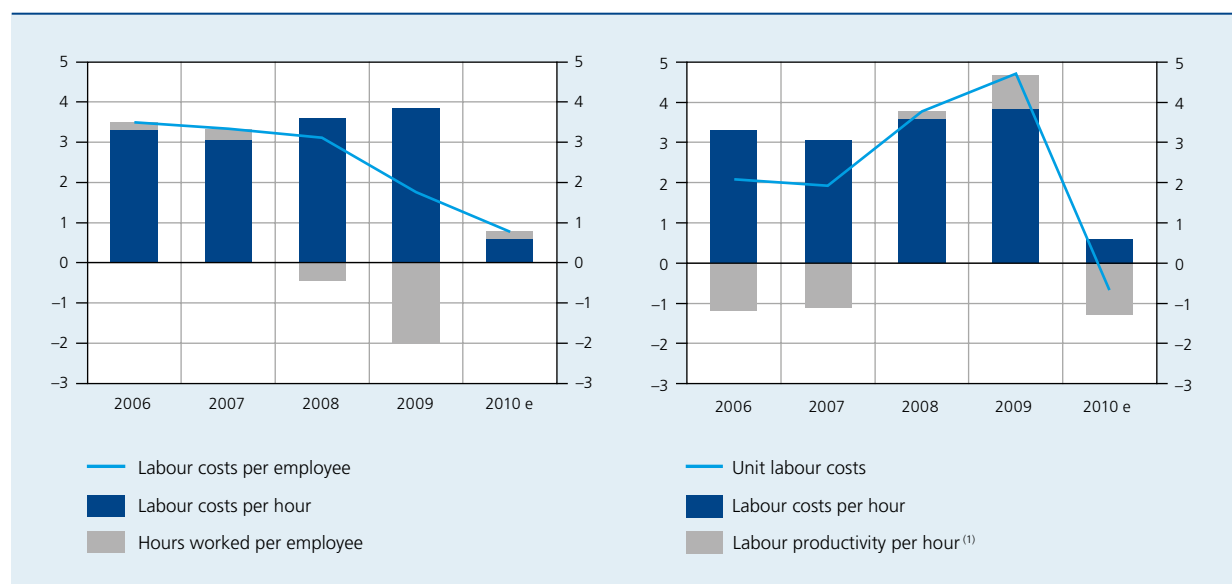
This section of the article attempts to determine whether the crisis which forced enterprises to reduce their costs, and more particularly their labour costs, likewise brought with it a reaction with regard to salaries. The analysis relates to the sector that is most sensitive to the business-cycle, namely the private sector. In the absence of equivalent statistics, the business sector is used in order to be able to establish an international comparison. In fact, this sector includes manufacturing industry, construction and market services and therefore constitutes an approximation to the private sector. The latter includes not only the

branches mentioned but also agriculture and fishing, as well as private non-market services.

The decrease in the volume of labour resulting from the crisis automatically led to a slowdown in the increase in labour costs for employers. Furthermore, the way that the overall wage bill responded was proportionally less significant than might have been expected on the basis of the trend in the volume of labour. This is explained by the fact that many employers paid the workers placed in temporary unemployment, whose numbers were increasing strongly, supplements on top of their unemployment benefit payments. Although no data are available regarding the overall impact of these payments on the trend in labour costs, it emerges from the information of the SPF Employment, Labour and Social Dialogue that many sector agreements contain provisions on the subject of payments granted to manual workers placed in temporary unemployment. The specific measures adopted during the crisis with a view to extending the system of temporary unemployment to employees provide for the disbursement of payments similar to those granted to manual workers, or the sum of €5 per non-working day if no additional payment is envisaged for the latter. The crisis has also affected the social contributions paid by employers for their staff; more particularly, it has resulted in a strong increase in redundancy payments. As mentioned in this article, the main consequence of the crisis has been a fall in the volume of labour in terms of hours worked, whilst

**CHART 8** LABOUR COSTS, WORKING TIME AND LABOUR PRODUCTIVITY IN THE PRIVATE SECTOR

(annual change in %)



Sources: NAI, NBB.

(1) A negative sign means that labour productivity increased and thus had a moderating effect on unit labour costs.

the number of employees only declined to a lesser extent. This means that the increase in labour costs per person slowed down between 2008 and 2009, falling back from 3.1 % to 1.8 %, whilst the growth in hourly labour costs speeded up, increasing from 3.6 % to 3.9 %.

In 2010, a new rise in the hours worked per employee was recorded. The growth in hourly labour costs then slowed down considerably and is expected to come to 0.6 % on average in 2010, this percentage being lower than that relating to the trend in labour costs per employee. The upward effect of the factors linked to the crisis referred to above on the trend in labour costs has in fact ended up petering out. Redundancy payments have decreased, in spite of the closure of the Opel plant at Antwerp, as well as temporary unemployment payments as a result of the downturn in its usage. The lower rise in hourly labour costs between 2009 and 2010 is mainly attributable to the automatic indexation mechanism. It was in 2010 that the impact of the marked slowdown in inflation observed in 2009 was fully visible in terms of the automatic indexation of salaries, which amounted on average to a fifth of that of the previous year. In fact, the adaptation of salaries to the trend in purchasing power, measured by means

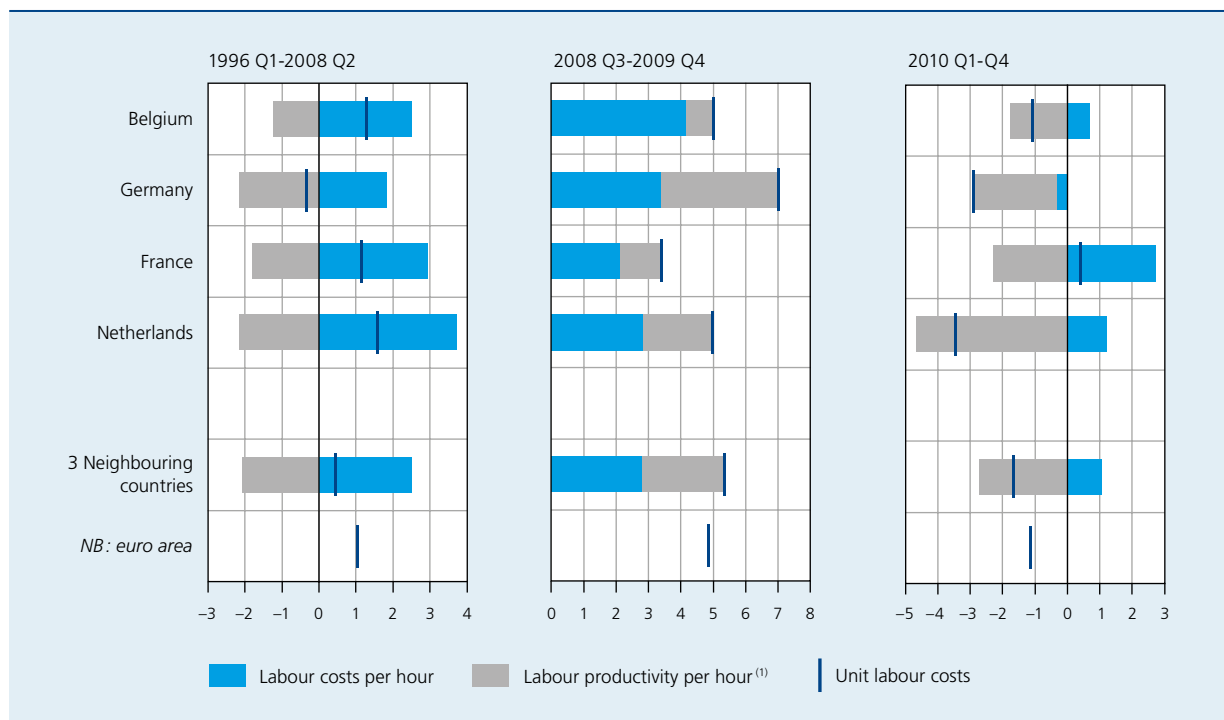
of the health index, takes effect with a certain time lag. However, in general terms, the slowdown in inflation did not result in negative indexations. Thus, the application of the system of indexation is not perfectly symmetrical: some of the joint committees which use the indexation mechanism at fixed intervals and with a high frequency in fact excluded or limited negative indexations. In Belgium, hourly labour costs grew by 4.5 % in cumulative terms over the period covered by the central agreement for 2009-2010.

Notwithstanding the decrease in the number of hours worked per person and, to a lesser degree, the contraction of the workforce, enterprises were not able to pass on the whole of the fall in production to the volume of labour. Consequently, the hourly productivity of labour declined by 0.8 % in 2009. This resulted in a considerable rise in unit labour costs, of 4.7 %. The slowdown in the growth of hourly labour costs in 2010, combined with the cyclical recovery in the productivity of labour, subsequently brought about a decline in unit labour costs.

Similarly in the three neighbouring countries, which have to be used as the reference for tracking the

**CHART 9** LABOUR COSTS AND LABOUR PRODUCTIVITY IN THE BUSINESS SECTOR IN BELGIUM AND THE THREE NEIGHBOURING COUNTRIES

(average change in % compared to the corresponding quarter of the previous year)



Source: OECD.

(1) A negative sign means that labour productivity increased and thus had a moderating effect on unit labour costs.



competitiveness of the Belgian economy in accordance with the 1996 law, the trends in hourly labour costs, in labour productivity and in unit labour costs all suffered the consequences of the crisis but not always to the same extent as in Belgium.

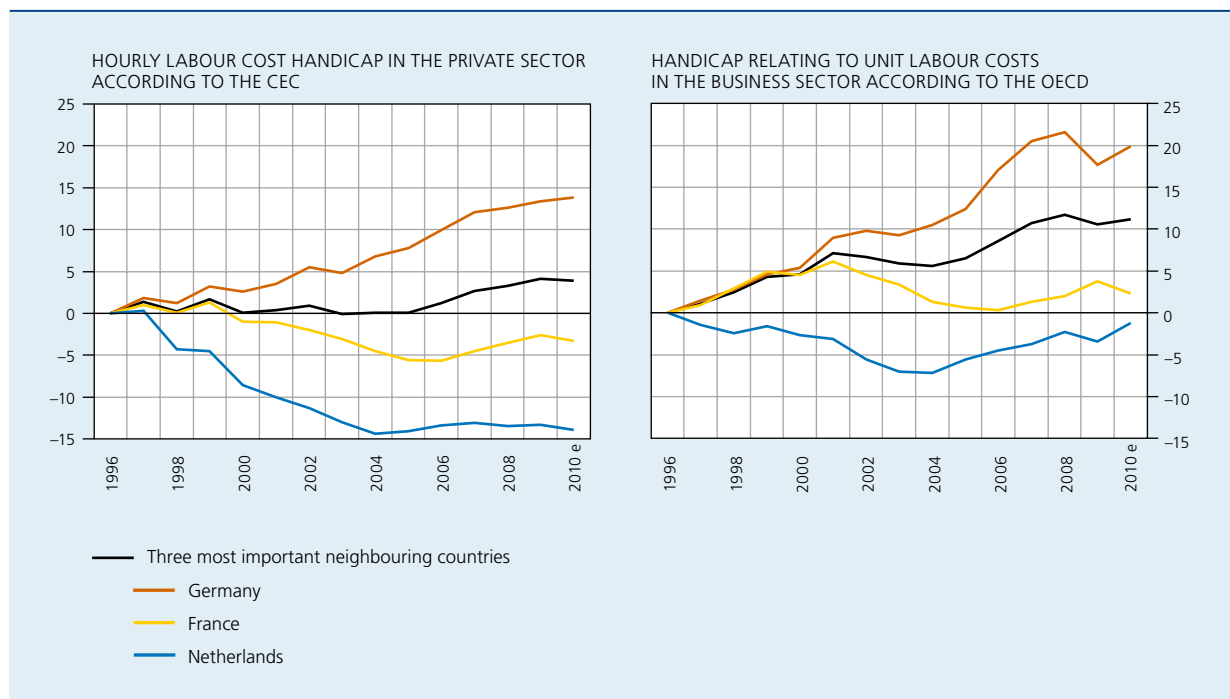
During the period extending from the first quarter of 1996 to the second quarter of 2008, hourly labour costs in Belgium enterprises grew by 2.5 % on average, that is to say at a pace that is virtually identical to that in the three neighbouring countries. Since the growth in productivity was weaker in Belgium (1.2 % as against 2.1 % in the three neighbouring countries), unit labour costs increased more rapidly, by 0.8 percentage points on average. The competitive handicap in terms of unit labour costs could be attributed essentially to the unfavourable position of Belgium compared to Germany, which recorded a fall in unit labour costs on average during this period, since the very moderate increase in hourly labour costs there was more than offset by the strong growth in labour productivity. Indeed, with effect from the second half of the 1990s, Germany operated a policy of moderation with regard to salaries. In addition, two important trends have left their mark on the labour market over these last ten years. The laws Hartz I to IV, which came into effect between 2002 and 2005, had the objective of

increasing the flexibility of the labour market and putting more people into work. In parallel, substantial changes came about with regard to the process of setting salaries. Clauses allowing divergent arrangements at the enterprise level proliferated in the collective pay agreements concluded at the sector level. In addition, the share of enterprises where negotiations are conducted at the level of the enterprise increased. All these factors favoured very limited growth in labour costs. Unit labour costs also increased more rapidly in Belgium than in France, even if the difference is much less marked than with respect to Germany. On the other hand, Belgium has a competitive advantage compared to the Netherlands.

During the crisis, which held sway from the third quarter of 2008 to the fourth quarter of 2009 inclusive, the cards were reshuffled. It was no longer a question of a competitive handicap in terms of unit labour costs in the business sector. The less unfavourable trend in productivity compared to the three neighbouring countries in fact offset the growing handicap with regard to hourly labour costs. The less pronounced productivity decline in Belgium compared to the three neighbouring countries is to a large extent explained by the developments in Germany. There, the adaptation of the total volume of labour remained relatively limited in the face of the particularly significant

**CHART 10** LABOUR COST HANDICAP OF BELGIAN ENTERPRISES

(differences in % compared to the index relating to the three main neighbouring countries, cumulative since 1996)



Sources: OECD, CEC.

decline in activity, and did so in spite of the considerable reduction in the number of hours worked per person. In fact, enterprises in Germany also made widespread use of reductions in working time whilst still keeping the staff in employment (in particular by way of short-time working – *Kurzarbeit*).

However, the more favourable trend in labour productivity has been of a cyclical nature and therefore temporary. In 2010, the recovery in the three neighbouring countries was more dynamic than in Belgium and the fall in unit labour costs was also more marked there, in spite of the relatively less favourable trend in hourly labour costs. The latter is attributable to the strong slowdown in Belgium, essentially due to the limited indexation of salaries which followed the downturn in the health index in 2009, and the dynamic growth in hourly labour costs in France and the Netherlands. In Germany, on the other hand, hourly labour costs showed a downward movement.

The trends referred to above in terms of unit labour costs brought about a labour cost handicap in the business sector, which, in cumulative terms since 1996, amounted to 11.2 % in 2010. This handicap is due to Belgium's unfavourable position with respect to Germany, and to a lesser degree, with respect to France. Belgium has a competitive advantage compared to the Netherlands which, however, has declined to 1 % in 2010.

In accordance with the law of 1996, the calculation of the labour cost handicap by the CEC has to be carried out in terms of hourly labour costs, that is to say without taking account of the trend in productivity. Calculated in this way, the labour cost handicap reached 4.1 % in 2009 and then declined slightly in 2010 to 3.9 %, a decrease that is attributable to the less pronounced slowdown in hourly labour costs in France and the Netherlands. On the other hand, the competitive position of Belgian enterprises compared to their German counterparts has continued to deteriorate, Belgium's labour cost handicap reaching 13.8 %.

## Conclusions

This article has examined the impact of the crisis on the labour market in Belgium, in terms of adjustment of the volume of labour and labour costs, and on the composition of employment.

The decline in economic activity was accompanied by a less than proportional contraction in the volume of labour, resulting in a fall in labour productivity. The reduction in the volume of labour was only partly reflected

in the trend in employment. The customary practice of labour hoarding, which consists of refraining from making redundancies assuming a rapid recovery in activity and in the light of existing shortages of qualified staff, was in fact reinforced by the system of temporary unemployment and the special measures to combat the crisis. These two forms of labour hoarding brought about a considerable decrease in the number of hours worked per employee.

The impact of the deterioration in economic conditions was not the same in all branches of activity and for all groups of workers. In general terms, it is evident that the crisis did not result in a fall in the activity rate. For women and elderly workers the structural tendency for employment to grow seems to have continued both during and after the crisis. Nevertheless, participation of elderly workers in the labour market is still insufficient. Young people, on the other hand, were badly affected by the crisis and even in 2010, their prospects of employment were still hardly rosy. The statistics show once again that the level of qualification is of fundamental importance and that the most qualified have been relatively better protected. The risk of discouragement is consequently highest among low-skilled young people. The growth in long-term unemployment underlines the threat of a rise in structural unemployment, which may compromise the potential for growth in the economy.

At the regional level, it is primarily the Flemish labour market that is influenced by developments in the economic cycle, owing to the relatively greater significance of employment in those branches of activity that are sensitive to the business cycle. It is therefore in Flanders that the slowdown seen from the beginning of 2010 with regard to year-on-year growth in the number of unemployed job-seekers is most marked. In April 2011, unemployment in Flanders and Wallonia has declined considerably compared to the corresponding period of the previous year, whilst it still increased slightly in Brussels.

The crisis did not have a moderating effect on the trend in hourly labour costs straight away. In 2009, it was actually an upward effect that was observed, more specifically owing to the supplements paid by numerous employers on top of the temporary unemployment benefit payments and the rise in redundancy payments. The slowdown in inflation, also a consequence of the crisis, did not result in a moderation of growth in labour costs until the beginning of 2010, due to time-lag effects inherent to the indexation mechanisms, and it has not been fully passed on (in fact negative indexations have only been applied in part or not at all). According to the calculations of the CEC, the labour cost handicap with respect to the three neighbouring countries, expressed in hourly labour costs,

reached 4.1 % in 2009 and decreased slightly in 2010, falling back to 3.9 %. After allowing for the productivity trend, the labour cost handicap, expressed in unit labour costs, narrowed in 2009. This was only a temporary phenomenon, however, due to the more marked business cycle linked decline in productivity in Germany than in Belgium. This handicap has deteriorated once again in 2010.

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# Summaries of articles

## Economic projections for Belgium – Spring 2011

At the beginning of 2011, the recovery phase seen in the global economy over the past two years reached a degree of maturity. Activity in the various economic regions should gradually progress from being export-led to become more broadly based. At the same time, the improvement in the economic situation, especially in the emerging countries, triggered a rapid rise in commodity prices.

However, serious factors of uncertainty still linger. The legacy of the 2008-2009 crisis, the seriously degraded public finances in most advanced economies on both sides of the Atlantic require consolidation measures. Similarly, financial institutions in general will have to continue their restructuring. These factors, which could hold back the economy, are compounded by the risks resulting from the natural disasters in Japan and political and social tensions in the Middle East and North Africa.

In the euro area, there are significant internal divergences, for instance the unexpected vigour of the recovery in Germany and, conversely, the decline in activity in the economies facing serious structural problems. The recovery is expected to continue, but less vigorously than at the beginning of 2011.

In Belgium, recent developments in economic activity have been better than previously predicted. The Belgian economy, in Germany's wake, has succeeded in taking advantage of the revival in global demand, while private consumption has rapidly picked up. Business and household investment should gradually recover too. Overall, growth came to 2.1 % in 2010; it is projected to reach 2.6 % in 2011 before subsiding to 2.2 % in 2012, thus outpacing growth in the euro area.

The continuing expansion of activity is likely to be supported by consolidation of the labour market. Job creation should be maintained as, in net terms, around 77 000 additional jobs will be generated between the end of 2010 and the end of 2011. The decline in unemployment which had begun in early 2010 is expected to continue steadily, reducing the average unemployment rate from 8.4 % in 2010 to 7.3 % in 2012.

In parallel with the clear recovery of activity and demand at global level, external inflationary pressures strengthened considerably in Belgium during 2010 and at the beginning of 2011. Overall, as an annual average, the rise in consumer prices is projected to increase from 2.3 % in 2010 to 3.4 % in 2011, before dropping back to 2.2 % in 2012, as energy price inflation is set to calm down. However, sustained wage growth could increasingly drive up underlying inflation.

According to the latest data, public finances ended the year 2010 with a deficit of 4.1 % of GDP. In the macroeconomic context described above, the deficit is projected at 3.5 % of GDP in 2011.

However, it is likely to increase again in 2012 to 4.1 % of GDP. The debt ratio is expected to fall from 96.6 % of GDP in 2010 to 95.4 % in 2012.

JEL Codes: E17, E25, E37, E66

Key words: Belgium, macroeconomic projections, Eurosystem

### Central bank rates, market rates and retail bank rates in the euro area in the context of the recent economic and financial crisis

The article addresses recent trends in the financing costs of various public and private sectors in the euro area and Belgium. It pays particular attention to the monetary policy transmission process via the interest rate channel during the crisis and notably examines the extent to which the process was affected by tensions on sovereign debt markets.

Overall, it appears that the interest rate cuts orchestrated by the ECB and the adoption of numerous non-standard monetary policy measures made it possible to maintain an effective transmission of monetary policy in the euro area during the crisis. Public debt market tension has had some impact on market borrowing costs for non-financial corporations, but this impact was relatively limited at the aggregate level. Because of its direct involvement in public sector financing, the financial sector was significantly affected, and while a portion of the impact was passed on in the rates offered to households and the non-financial private sector, it appears that banks' transmission of monetary policy was not profoundly affected in the euro area overall. Similar conclusions apply to Belgium, where it does however appear that mortgage loan rates were somewhat influenced by the rise in sovereign debt yields. In the countries bearing the brunt of the crisis, companies and individuals nevertheless saw their borrowing costs rise more significantly. In general, it appears that at the national level, private sector financing costs were amply influenced by those of the public sector, although some decoupling was observed, basically at the level of the non-financial sector.

These results are reassuring in that they demonstrate the relative effectiveness of the monetary policy measures adopted during the crisis and the relatively limited repercussions of the sovereign debt crisis on the rest of the euro area economy. Still, in the countries most affected by the crisis, the private sector has been hit hard by higher public sector financing costs and fiscal consolidation measures in those countries should therefore remain a top priority.

JEL Codes: E40, E43, E44, E52, E58, G01

Key words: monetary policy, financial & economic crisis, sovereign debt crisis, financing costs, market interest rates, bank retail interest rates, vector error correction model, cointegration, short-term interest rates, long-term interest rates, Belgium, euro area

### End of the crisis in the housing markets?

The article examines recent developments in international housing markets and makes an assessment of the current situation. The first section demonstrates that the last upward movement in house prices in advanced economies, that started during the mid-1990s, differed from previous upward phases because of its strength, duration and degree of synchronisation across countries. Low interest rates, financial innovation, relaxed credit conditions and demographic factors stimulated housing demand and led to higher prices and investment. The strongest increases were recorded in the UK, Spain, Ireland and France.

Starting around the mid-2000s, housing markets increasingly displayed signs of overheating and the American subprime crisis of 2006 triggered a downward correction in the US housing market. Housing markets elsewhere displayed a similar pattern around the same period. Nevertheless, developments were less synchronised during this downturn than during the upturn, as the fall in house prices seems to be over in some countries while the correction continues in other countries.

The degree of over- or undervaluation of recent house prices can be calculated on the basis of some frequently used measures. Taking into account fundamental factors like disposable income, population growth and the very low interest rate level, it appears that current prices in most countries are more or less in line with fundamentals. These simple measures have their limitations, and consequently one should be cautious when interpreting the results. Additionally, several common risk factors (normalisation of interest rates, lower potential growth after the economic crisis, fiscal consolidation) and some country-specific risk factors might hinder a further recovery of housing markets.

The recent crisis clearly demonstrated the need for stricter rules and control of the financial sector. Various initiatives have already been taken, and international institutions have also formulated recommendations for housing policy reform and the functioning of residential property and mortgage markets. Subsequently, the European government debt crisis that started in 2010 stimulated initiatives to strengthen economic governance in the European Union. In the new surveillance framework, macroeconomic risks will be monitored more closely and more broadly, and this will include the use of indicators related to the housing sector.

JEL Codes: E44, E60, N10, R21, R31

Key words: house prices, investment in housing, interest rates, financial innovation, demography, valuation, disposable income, United States, United Kingdom, euro area, Belgium

### [Behaviour of Belgian firms in the context of globalisation: Lessons from the conference on "International Trade: Threats and Opportunities in a Globalised World"](#)

The article summarises the main lessons of the Bank's 2010 conference which focused on international trade and foreign direct investment. The research is based on a microeconomic approach to the behaviour of Belgian firms, with reference to developments in the scientific literature on the subject.

Firms active internationally have specific characteristics: they are larger and more productive than firms concentrating on the home market. The costs of entering international markets determine their globalisation strategies, be it in terms of timing, the number of markets canvassed, or the choice between exporting and foreign direct investment. Information technologies have a key role in the development of trade in services, especially for analytical work. It is also shown that, in the face of increased competition from Asian products, firms are tending to concentrate their exports on their leading products and to upgrade quality.

The international activities of some firms also have positive repercussions on the productivity and globalisation decisions of firms active solely on the home market. Finally, the impact of globalisation on employment is analysed from various angles. In general, trade with low-wage countries tends to increase demand for skilled labour in Belgium and to reduce demand for unskilled labour. The effects of offshoring are comparable. Finally, while multinationals manage their workforce more flexibly than domestic firms, they have nevertheless been the source of substantial job creation, particularly where the subsidiaries of foreign multinationals are concerned.

JEL codes: F10, F11, F12, F13, F14, F16, F20, F21, F23, D20, D22

Keywords: international trade, foreign direct investment, microeconomic analysis, firm heterogeneity, internationalisation, spillovers, multi-product firms, multinational firms, offshoring, employment, skills

### The Belgian labour market during and after the crisis

The article looks at the impact that the 2008-2009 recession had on the Belgian labour market and, whilst taking account of the varying severity and duration of the economic downturn, draws a comparison with other European countries. More specifically, the consequences are investigated with regard to the adaptation of volume of labour and labour costs, and also the composition of employment. The analysis for Belgium shows that the crisis was accompanied by a less than proportional contraction in the volume of labour, resulting in a fall in labour productivity. The reduction in the volume of labour was only partly reflected in the trend in employment as the use of measures aimed at limiting working time, with a considerable fall in the number of hours worked per employee as a result, was accompanied by considerable labour hoarding. In general terms, the crisis did not result in a fall in the activity rate, but there is a major risk of discouragement among low-skilled young people. The increase in long-term unemployment points in turn to the threat of a rise in structural unemployment, which may adversely affect the potential for growth in the economy. The crisis did not have a moderating effect on the trend in hourly labour costs. After allowing for the productivity trend, the labour cost handicap, expressed in unit labour costs, narrowed temporarily with respect to the three neighbouring countries, but an increase in this handicap was once again posted in 2010.

JEL codes: J21, J23, J24, J30

Key words: labour hoarding, long-term unemployment, labour productivity, labour cost handicap, hysteresis



## Abstracts from the Working Papers series

### 209. Wage and employment effects of a wage norm: The Polish transition experience, by A. de Crombrughe, G. de Walque, February 2011

Most transition countries used tax-supported wage norms in the early 1990s, as a part of their market liberalisation programmes. The paper analyses how a firm-level tax (or subsidy) on deviations from a pre-set wage norm may promote employment by rotating the labour demand curve perceived by the workers' union around the value of the norm. The authors derive the conditions so as to yield a positive employment effect. They test the effect of the norm on wages using a sample of Polish firms in 1990 and 1991. The data support the role of the wage norm on the position of the perceived labour demand and the role of the tax rate on its slope.

### 210. Estimating monetary policy reaction functions: A discrete choice approach, by J. Boeckx, February 2011

The author proposes a discrete choice method for estimating monetary policy reaction functions based on research by Hu and Phillips (2004). This method distinguishes between determining the underlying desired rate which drives policy rate changes and actually implementing interest rate changes. The method is applied to ECB rate-setting between 1999 and 2010 by estimating a forward-looking Taylor rule on a monthly basis using real-time data drawn from the Survey of Professional Forecasters. All parameters are estimated significantly and with the expected sign. Including the period of financial turmoil in the sample delivers a less aggressive policy rule as the ECB was constrained by the lower bound on nominal interest rates. The ECB's non-standard measures helped to circumvent that constraint on monetary policy, however. For the pre-turmoil sample, the discrete choice model's estimated desired policy rate is more aggressive and less gradual than least squares estimates of the same rule specification. This is explained by the fact that the discrete choice model takes account of the fact that central banks change interest rates by discrete amounts. An advantage of using discrete choice models is that probabilities are attached to the different outcomes of every interest rate-setting meeting. These probabilities correlate fairly well with the probabilities derived from surveys among commercial bank economists.

### 211. Firm entry, inflation and the monetary transmission mechanism, by V. Lewis, C. Poilly, February 2011

The paper estimates a business cycle model with endogenous firm entry by matching impulse responses to a monetary policy shock in US data. The estimated VAR includes net business formation,

profits and markups. The authors evaluate two channels through which entry may influence the monetary transmission process. Through the competition effect, the arrival of new entrants makes the demand for existing goods more elastic, and thus lowers desired markups and prices. Through the variety effect, increased firm and product entry raises consumption utility and thereby lowers the cost of living. This implies higher markups and, through the New Keynesian Phillips Curve, lower inflation. While the proposed model does a good job at matching the observed dynamics, it generates insufficient volatility of markups and profits. Estimates of standard parameters are largely unaffected by the introduction of firm entry. The results lend support to the variety effect; however, no evidence for the competition effect is found.

#### 212. [The link between mobile telephony arrears and credit arrears](#), by H. De Doncker, March 2011

At the request of the Minister for Climate and Energy, Paul Magnette, who is also responsible for Consumer Affairs, the NBB's Microeconomic Analysis Service conducted an investigation into the link between payment arrears for mobile telephony and arrears on loan repayments. In this inquiry, which was carried out using data drawn from the Preventel records and from the Central Individual Credit Register (CICR), the profile of people with arrears for both types of debt was also analysed.

The profile analysis shows that defaulters with a Preventel registration form a specific group among CICR defaulters. People with payment arrears for both types of debt tend to have a demographic and credit profile which to a large extent matches that of CICR defaulters with no mobile phone payment arrears, but a few differences were also found between both groups of defaulters.

A number of trends in borrowing and repayment behaviour turn out to be much more pronounced in the first of these two defaulter groups, but it is above all in regard to the age aspect that the differences are most striking. In cases where people have fallen behind in their payments for both types of debt, it actually turns out to be a younger group. Generally speaking, these borrowers take out their first loan at an earlier age, and they also tend to run up their first arrears when they are younger.

The inquiry further revealed that there is a statistically significant link between payment arrears for mobile telephony and credit arrears, and this applies for various definitions of payment arrears. Repayment problems generally tend to emerge sooner in payment arrears for mobile telephony bills than in arrears on loans.

A simple logistic regression model indicates that dummy variables for a Preventel registration, and for the duration of that registration, still have a definite predictive value with regard to credit arrears, after controlling for a number of demographic and credit variables in the model. As the assessment of the credit risk of private individuals is based on a set of socio-economic variables, payment arrears for mobile telephony could therefore be a useful complementary variable in that assessment.

#### 213. [Development of a financial health indicator based on companies' annual accounts](#), by D. Vivet, April 2011

The paper describes the development of a financial health indicator based on companies' financial statements. This indicator is conceived as a weighted combination of variables, which is achieved through a model discriminating between failing firms and non-failing firms. The definition of failure is based on a legal criterion, namely that a company is considered to have failed if it has faced bankruptcy or judicial administration in the past. Based on the model results, companies are positioned in financial health classes, which are intended to be included in the "company files" designed by the Central Balance Sheet Office.

214. Wage structure effects of international trade: Evidence from a small open economy, by Ph. Du Caju, F. Rycx, I. Tojerow, April 2011

In the last few decades, international trade has expanded not only between industrialised countries, but also between high- and low-wage countries. This important change has raised questions on how international trade affects the labour market. In this spirit, the paper aims to investigate the impact of international trade on wage dispersion in a small open economy. It is one of the few to: i) use detailed matched employer-employee data to compute industry wage premia and disaggregated industry-level panel data to examine the impact of changes in exports and imports on changes in wage differentials, ii) analyse the impact of imports according to the country of origin. Looking at the export side, the authors find a positive effect of exports on the industry wage premium. The findings also show that import penetration from low-income countries has a significant and negative impact on inter-industry wage differentials, while imports from high-income countries seem to have a more ambiguous impact on the wage structure. The results suggest that trade with low-income and high-income countries has different effects on inter-industry wage differentials.

## Conventional signs

–	the datum does not exist or is meaningless
p.m.	<i>pro memoria</i>
e	estimate by the Bank
i.e.	<i>id est</i>

# List of abbreviations

## Countries or regions

BE	Belgium
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
NL	Netherlands
AT	Austria
PT	Portugal
FI	Finland
EA	Euro area
UK	United Kingdom
EU-15	European Union excluding the countries which joined after 2003
JP	Japan
US	United States

## Others

BIBOR	Brussels Interbank Offered Rate
BIS	Bank for International Settlements
CBPP	Covered Bond Purchase Programme
CEC	Central Economic Council
CEPR	Centre for Economic Policy Research
CPB	Centraal Planbureau (Netherlands)
CPI	Consumer Price Index
DGSEI	Directorate General of Statistics and Economic Information (FPS Economy)
DLU/EBA	Déclaration libératoire unique/Eenmalige Bevrijdende Aangifte (single tax return to secure a release from tax liability)

EC	European Commission
ECB	European Central Bank
EDP	Excessive deficit procedure
EMU	Economic and Monetary Union
Eonia	Euro Overnight Index Average
EU	European Union
Euribor	Euro Interbank Offered Rate
FPB	Federal Planning Bureau
FDI	Foreign direct investment
FPS	Federal Public Service
GDP	Gross domestic product
HICP	Harmonised index of consumer prices
HWWI	Hamburgisches WeltWirtschaftsInstitut
ILO	International Labour Office
IMF	International Monetary Fund
LFS	Labour force survey
MIR	Monetary financial institutions interest rates
NAI	National Accounts Institute
NBB	National Bank of Belgium
NBER	National Bureau of Economic Research
NEO	National Employment Office
NFCs	Non-financial corporations
NSSO	National Social Security Office
OECD	Organisation for Economic Cooperation and Development
OIS	Overnight Index Swap
OLO	Linear bonds
R&D	Research and development
RIR	Retail interest rates
SMEs	Small and medium-sized enterprises
SMP	Securities Market Programme
VAT	Value Added Tax
VDAB	Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding
VECM	Vector Error Correction Model

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