

# Belgian business investment in the context of the crisis

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## Introduction

For almost five years now, the Belgian economy has suffered a succession of exceptionally large shocks. Although the shocks are interrelated since they were all connected initially with the rapid development of the financial crisis and the severe global recession, and subsequently with the difficult – and not yet achieved – transition towards a new economic and financial equilibrium, those shocks have been felt at various levels. Late 2008 and early 2009 brought a slump in demand and global activity, severe tensions emerged on the financial markets – first in inter-bank transactions, then in respect of euro area sovereign debt –, the appetite for risk evaporated in a context of great uncertainty over short-term developments and the reappraisal of the long-term outlook, and a lengthy restructuring process began. That will need to continue in most economies, in order to rectify unsustainable debt positions of various sectors and/or competitiveness and growth potential in the long term.

All these developments had a direct impact on corporate investment decisions. In the short term, those decisions are strongly influenced by cyclical fluctuations in GDP, and the procyclical profile of investment in turn amplifies those fluctuations. Furthermore, long-term investment is decisive for the rate of increase in the capital stock, thus influencing the economy's growth potential. It is therefore essential to have a clear understanding of the factors which determine investment in order to assess macroeconomic developments in the economy. Against the backdrop of the most serious economic crisis since the Great Depression of the 1930s, it is therefore

interesting to examine recent developments in business investment<sup>(1)</sup>.

The first chapter of this article analyses the business investment picture since 2007, including from a historical and international perspective. Next, in order to explain recent developments, the second chapter considers why the decline in business investment in Belgium during the crisis, though significant, was nevertheless relatively moderate compared to other euro area countries. The third and final chapter sums up the main findings and sets out a number of points of attention for the future.

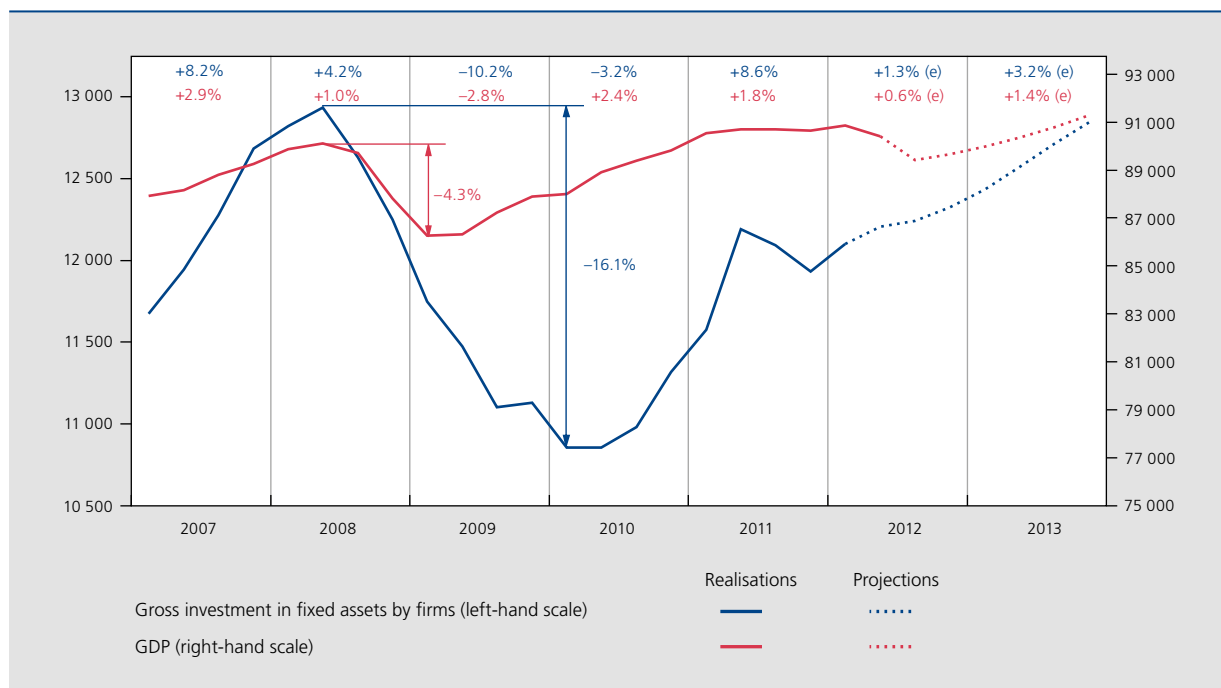
## 1. Recent developments in business investment

Just before the crisis, there was a strong surge in Belgian corporate investment. In 2007, it expanded by 8.2 % in volume, and that growth continued until it reached a peak in the second quarter of 2008. However, after the collapse of Lehman Brothers in September 2008, business investment slumped in the third quarter of 2008, and a steep decline ensued which persisted for more than a year. In the first quarter of 2010, investment was 16.1 % below the peak level seen in the second quarter of 2008. After stabilising briefly at a low level during the second quarter of 2010, investment began to pick up from the third quarter of 2010. That recovery

(1) In this article, unless otherwise stated "investment" is used in the sense of business investment. The "business investment" series concerns the gross fixed capital formation of firms, self-employed persons, and non-profit institutions in the national accounts. Government investment and household investment in housing are therefore disregarded.

**CHART 1** DEVELOPMENT OF BUSINESS INVESTMENT AND GDP IN BELGIUM

(quarterly volume data, in € million, reference year: 2009, data adjusted for seasonal and calendar effects)



Sources: NAI, NBB.

Note: percentages in the upper part of the chart: real annual growth.

culminated in the second quarter of 2011, when investment was 12.3% above the level reached in the same quarter of the previous year. However, within a few weeks the climate deteriorated again. The stabilisation since the third quarter of 2011 is due to renewed uncertainty over the growth forecasts and, according to the macroeconomic projections which the Bank published in June 2012, it is likely to persist throughout the current year. Only after that is investment likely to begin rising gradually again.

The trend in business investment can also be compared with the movements of GDP. It appears that investment and GDP follow a similar pattern, though investment fluctuates more widely. Between early 2007 and the second quarter of 2008 for example, both business investment and GDP rose strongly, but in 2007 the expansion of investment was triple the rate of GDP growth, and in 2008 it was four and a half times higher. The recession also occurred simultaneously: both variables dipped sharply from the third quarter of 2008. Here, too, investment proved more volatile than GDP: in 2009, investment dropped by 3.7 times as much as GDP. However, it took longer for investment to recover: while GDP had picked up by mid-2009, investment only began rising again in the third quarter of 2010.

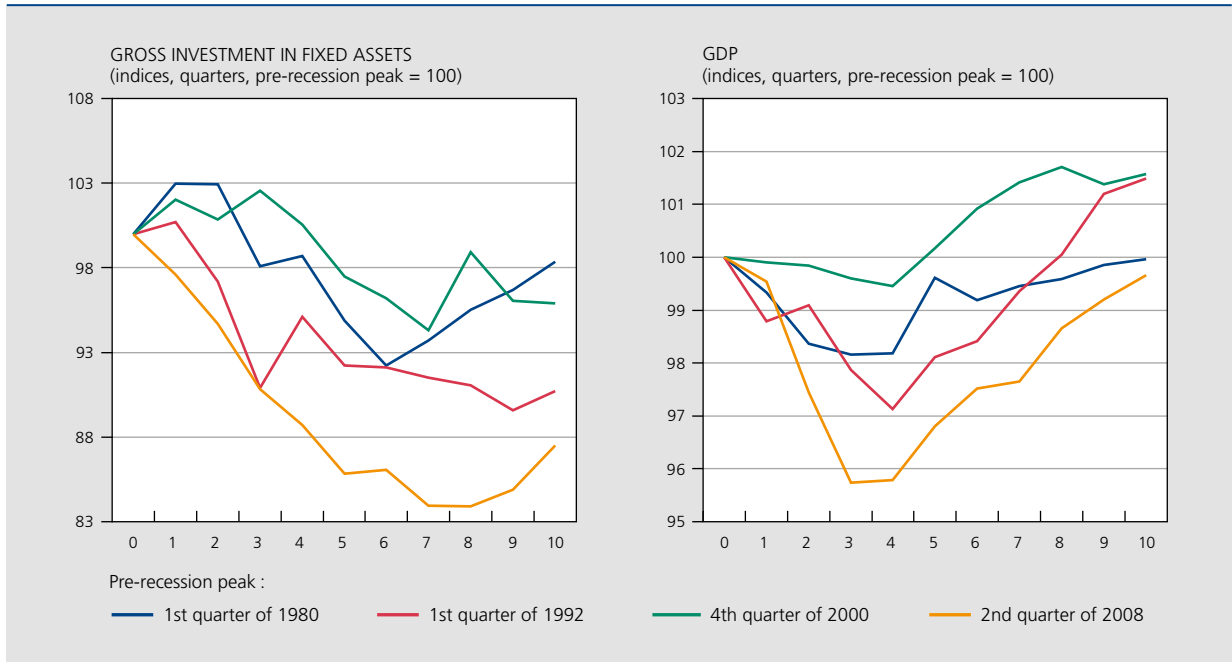
To place the current conditions in context, it is also instructive to examine what happened to investment during previous recession periods<sup>(1)</sup>. Apart from the episode from mid-2008 to early 2009, there have been three other recessions since 1980, namely the one in the early 1980s<sup>(2)</sup>, the 1992-1993 recession and the 2001 recession. The 2008 crisis was clearly more severe than the previous episodes. First, both GDP and investment were more seriously affected during the recent crisis than in previous recessions. Moreover, recovery was much slower. Ten quarters after the peak which immediately preceded the crisis, GDP and investment were still below pre-crisis levels. Investment actually remained at more than 12% below the pre-crisis peak. In each of the three previous crises, GDP had already recovered after ten quarters and, in the case of the 1993 and 2000 crises, GDP had already exceeded its pre-crisis peak after ten quarters. Although the 2009 decline in investment was therefore the most marked since 1980, that extreme movement needs to be viewed in perspective by comparing it with the evolution of GDP.

(1) A recession is defined as two consecutive quarters of declining GDP.

(2) In the early 1980s, formal recessions occurred in 1980-1981 and in 1983; in 1982, GDP growth was positive, but weak (0.6% year-on-year). This article refers to this period as "the crisis of the early 1980s".

**CHART 2** EVOLUTION OF GDP AND INVESTMENT COMPARED TO PREVIOUS CRISIS PERIODS

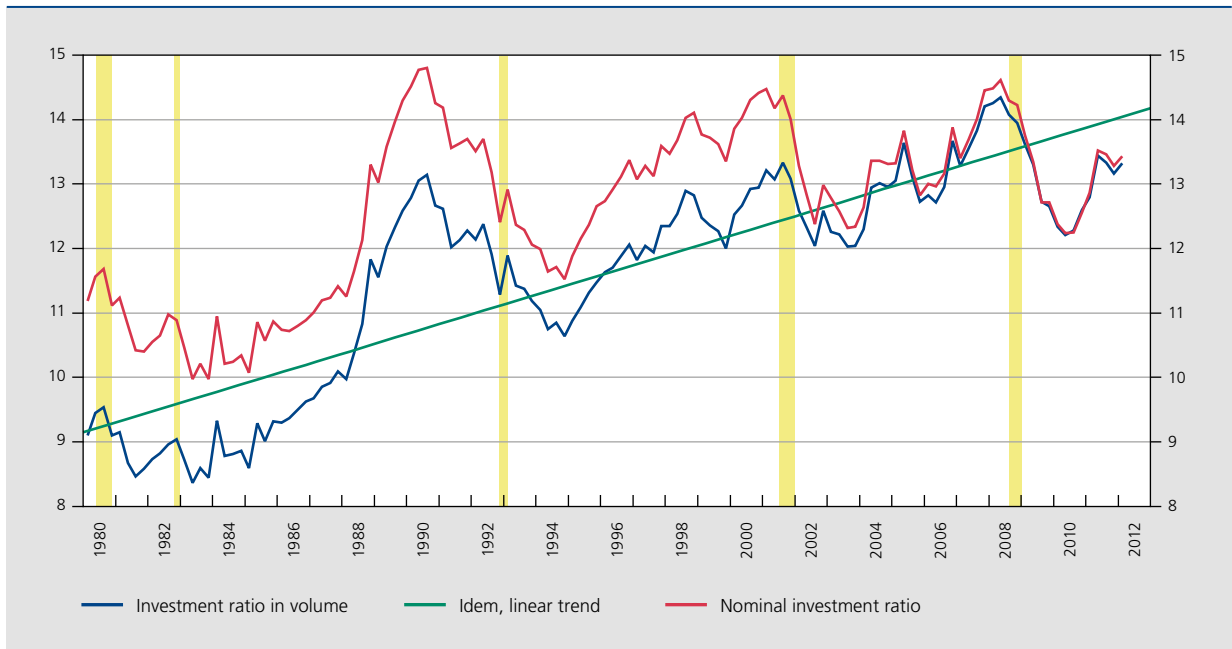
(indices, pre-recession peak = 100, quarters since the peak on the horizontal axis)



Sources: NAI, NBB.

**CHART 3** INVESTMENT RATIO

(gross fixed capital formation by firms in % of GDP, adjusted for seasonal and calendar effects)



Sources: NAI, NBB.

Another way of demonstrating the link between investment and economic activity is to examine the investment ratio. The real investment ratio, defined here as the ratio between real business investment and real GDP, has risen since 1980, though the trend was interrupted during recessions. On the one hand, one reason behind that trend might be price effects: during the period examined, the investment deflator was structurally less dynamic than the GDP deflator, and that difference contributed to the upward trend. On the other hand, the Belgian economy faced structural competitiveness problems in the early 1980s which led to a very low investment ratio. That effect is also evident from the nominal investment ratio, which likewise recorded a marked rise at the end of the 1980s, once those structural problems had been resolved. Subsequently, from 1990 onwards, the nominal investment ratio hovered continuously around an average of 13.3% of GDP.

The cyclical fluctuations in the investment ratio reveal that Belgian business investment withstood the recent recession fairly well. In relation to the pre-crisis peak (second quarter of 2008), the investment ratio only dropped by 2.4 percentage points in nominal terms, and just 2.1 percentage points in real terms. At the time of the 2001 recession, it fell by 2.1 percentage points in nominal terms and 1.2 percentage points in real terms. During the current crisis, the decline in business investment was therefore not much greater in relation to GDP than during previous recessions. The order of magnitude of the

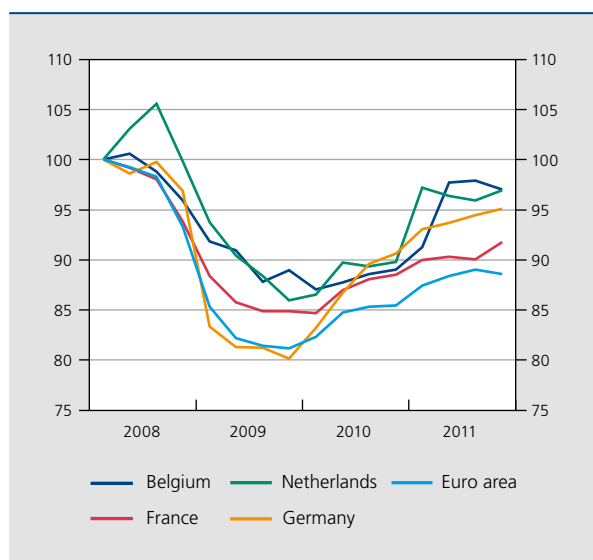
decline in investment during the crisis therefore appears normal, in view of the very large and unexpected fall in GDP, the high degree of uncertainty and the unstable expectations.

Belgium also seems to have been relatively resilient to the recession from an international perspective. In neighbouring countries, investment fell more sharply than in Belgium during the crisis. However, in the Netherlands and Germany, the post-crisis recovery was stronger and faster. From the end of 2009, both countries saw a robust revival, while Belgian business investment still remained stable. However, since the beginning of 2011, the growth of business investment has slowed in both countries, whereas in Belgium that did not happen until the second quarter of 2011. French business investment largely mirrored the Belgian picture, except for the acceleration in 2011, which does not seem to have occurred in France.

## 2. Explanation for the recent pattern of investment

In this chapter, the Bank's quarterly model<sup>(1)</sup> for the Belgian economy – which is also used for the Bank's macroeconomic projections – will serve as a guide for a general explanation of the pattern of business investment over the past five years. Next, we look for an explanation for two apparently contradictory findings of the descriptive analysis in the previous chapter, and examine a number of variables which may account for the steep decline in investment in the wake of the crisis. We also consider factors which may explain why the decline in business investment was nevertheless limited.

**CHART 4** COMPARISON OF BELGIAN BUSINESS INVESTMENT WITH NEIGHBOURING COUNTRIES AND THE EURO AREA  
(indices, first quarter of 2008 = 100)



Source : OECD.

### 2.1 Recent profile of business investment examined via the Bank's econometric model

The production of goods and services requires an optimum allocation of capital and labour, described in the econometric model by a CES production function with constant returns to scale. The optimum demand for both capital and labour can be simultaneously deduced from the model. The relevant determinants of the equilibrium demand for investment in this model are: total demand for goods and services from the private sector; the real capital cost of investment, i.e. the capital cost measured against the total production cost of firms; the constantly rising efficiency of the production factors capital and

(1) Cf. Jeanfils, Ph. and K. Burggraeve, May 2005, *Noname, A New Quarterly Model For Belgium*, Working Paper Research n° 68.

labour, whereby the same quantity of goods and services can be produced with a constantly declining amount of production factors; the rate at which past investment is written off; the elasticity of substitution between labour and capital, plus the distribution parameter which compares the relative proportions of labour and capital; and the variable mark-up used by firms.

Effective demand for investment is incorporated in an error correction model whereby deviations from optimum investment demand in the previous period are gradually adjusted in the direction of equilibrium demand. Attention is also paid to typical delays in the investment process. An additional determinant is introduced in the equation via the cash flow channel, which only influences investment demand in the short term: the bigger the firms' cash flow, the less their need to resort to external funding – which may entail greater uncertainty over the outcome of the decision-making process – and therefore the easier it is to actually implement new investment projects.

Analysis of business investment according to the above determinants shows that the largest contribution to the drop in investment following the outbreak of the financial crisis came from the negative development of demand<sup>(1)</sup>.

From the second half of 2009, the demand outlook improved again, thus boosting investment demand. Business cash flows and the associated operating profits, which had made a rather modest negative contribution to investment growth in 2008, seriously curbed investment demand in 2009. These disappointing business profits were evidently caused by the marked deterioration in demand combined with an initially rather inelastic total wage bill. It was only after firms were able to reduce their demand for labour (aided by recourse to the system of temporary lay-offs) that they gradually managed to restore their profitability. However, it was not until the second half of 2010 that these cash flows again made a positive contribution to investment growth. The marked fall in short-term interest rates (and, to a lesser extent, in long-term interest rates) in 2009 and its transmission to the rates on business loans and the total cost of business capital certainly bolstered business investment in the second half of 2009 and in 2010. When interest rates ceased to decline in 2010 and the rise in hourly wages in the private sector began to weaken, the contribution of the real cost of capital to investment growth gradually diminished.

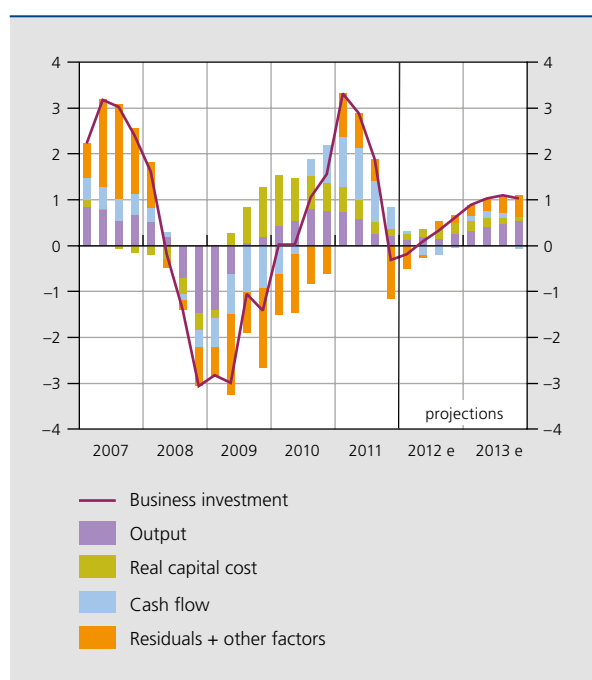
In Belgium, the period prior to the collapse of Lehman Brothers featured decidedly favourable forecasts for growth and investment. The positive contribution of the residuals therefore shows that, during that period, investment grew faster than can be explained by the model's determinants. However, after the eruption of the financial crisis, the contribution of the residuals was reversed and became negative. The greatly heightened uncertainty and loss of confidence in the international and financial markets seriously dampened the expansion of investment, driving it down well below the level which can be explained by the classic determinants of the model.

From the second half of 2010, the lack of business confidence slowly improved and Belgian firms again reported positive investment growth figures. During much of 2011, investment again grew faster than can be explained by the classic determinants.

The renewed uncertainty at the end of 2011 and the beginning of 2012 was accompanied by a new dip in investment growth. According to the Bank's macroeconomic projections, the gradual easing of uncertainty on the domestic market – resulting from the clarity created by the government measures in favour of fiscal consolidation, the much smaller rise in long-term interest rates in Belgium compared to the southern euro

**CHART 5** PATTERN OF INVESTMENT AND ITS DETERMINANTS

(contributions to quarter-on-quarter growth<sup>(1)</sup> of investment according to the Bank's quarterly model, in percentage points)



Source : NBB.

(1) Smoothed series: centred moving average over three quarters.

(1) To smooth out erratic fluctuations in quarter-on-quarter investment growth, use is made of a centred moving average for growth in the current quarter, the previous quarter and the following quarter. Of course, the same filter was used to calculate the contribution of the individual determinants to total investment growth.

area countries, and the expected steady improvement in the euro area's business climate – will form the basis for the expected slow recovery of investment growth during the period 2012-2013. Initially, that growth rate is likely to be supported mainly by demand expectations, but the real cost of capital and, to a lesser extent, the cash-flow effect, will also make a positive contribution to growth. Since the effective investment demand is set to remain constantly below the equilibrium demand during that period, a gradual convergence towards that equilibrium will also provide additional support for growth.

## 2.2 Why has investment declined since mid-2008?

### 2.2.1 Demand and economic activity

The accelerator theory offers a clear explanation of the importance of macroeconomic demand for business investment. According to that theory, on which the investment modelling in the Bank's quarterly model is based, if demand for a firm's production increases, the firm must increase its capital input in order to realise that additional production. In principle, the basic assumption is therefore a production function with constant returns to scale<sup>(1)</sup>.

The accelerator model is based on an unchanged capital-output ratio in which the capital input increases/decreases in proportion to the change in economic activity. Since the level of investment reflects the change in the capital stock, and the changes in investment reflect the acceleration or deceleration of growth or decline in the capital stock (second derivative), in percentage terms the change in investment is therefore a multiple of the percentage change in the capital stock and economic activity. That is what is known as the accelerator effect.

The accelerator effect seems to apply to Belgian investment, as investment does follow a pattern similar to that of GDP, but is much more volatile. Between 1980 and 2011, the correlation between GDP and investment was 0.98; investment was therefore highly pro-cyclical. The standard deviation of the investment growth percentage was roughly 4.3 times greater than that of GDP. This theory could therefore explain why Belgian business investment slumped from the third quarter of 2008, when business leaders saw a deterioration in the economic climate.

In contrast, if the correlation between GDP and investment is calculated only for the period 2007-2011, it is clearly much lower: in that case, it is only 0.4, and the

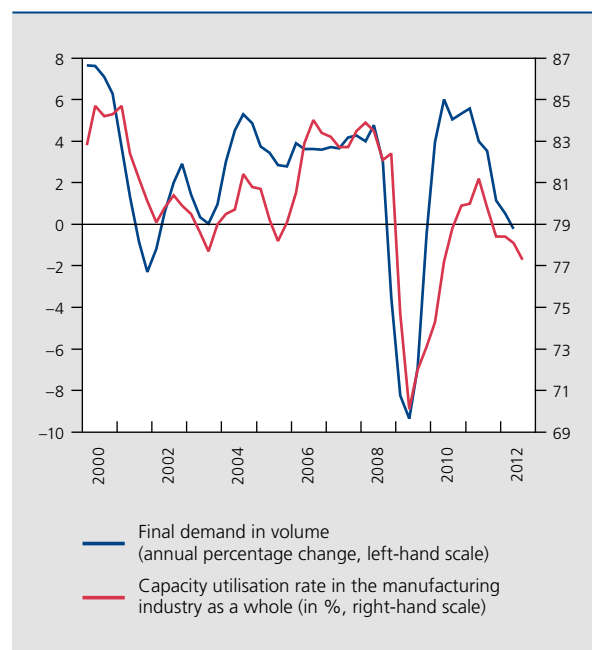
standard deviation is only 3.1 times as great. Taking into account that this correlation is based on far fewer observations, it may nevertheless indicate that during that period factors other than the assessment of demand may have played a role in the determination of business investment.

However, the fall in demand following the economic and financial crisis which erupted in 2008 had both short- and long-term repercussions. In the short term, the sharp and unexpected decline in demand and economic activity had an impact on capacity utilisation rates. In the longer term, it led to a downgrade of potential growth forecasts. Since potential growth forecasts may reflect firms' expectations regarding future demand and the capital stock needed to meet it, the downward revision of potential growth also affected investment decisions in the longer term.

#### Short-term impact: adjustments to capacity utilisation rates

A fall in demand does not have an immediate influence on investment, as in the short term firms can adjust the capacity utilisation rate in order to absorb initial fluctuations in demand. For example, when demand increases firms will make better use of existing production capacity in the first place and wait and see whether the trend

CHART 6 FINAL DEMAND AND CAPACITY UTILISATION RATE



Sources: NAI, NBB.

(1) An increase in the production factors labour and capital will thus generate a proportional increase in output.

persists before committing resources which will be tied up for longer periods in an investment project. Investments in fact entail considerable adjustment and opportunity costs. In Belgium, the pattern in the capacity utilisation rate is closely linked to the pattern of final demand. The period preceding the financial and economic crisis featured very strong final demand and a high capacity utilisation rate. When final demand declined from the second quarter of 2008, mainly on account of the steep fall in demand for exports, the capacity utilisation rate showed a similar fall. Both these variables continued to decline until mid-2009, after which they both picked up.

The capacity utilisation figures in 2011 also provide a good indication of the interaction between capacity adjustments and investment decisions. Up to the second quarter of 2011, capacity utilisation increased, before a decline set in. Following a sharp rise in the first two quarters of 2011, business investment began falling from the third quarter of 2011. That finding shows that, between the second and third quarters of 2011, firms initially adjusted their capacity utilisation rates and only later cut their investment once it became clear that the slowdown in activity would persist. After stabilising in the first quarter of 2012, the capacity utilisation rate declined further in the second quarter, against the backdrop of the persistent deterioration in economic activity in the euro area.

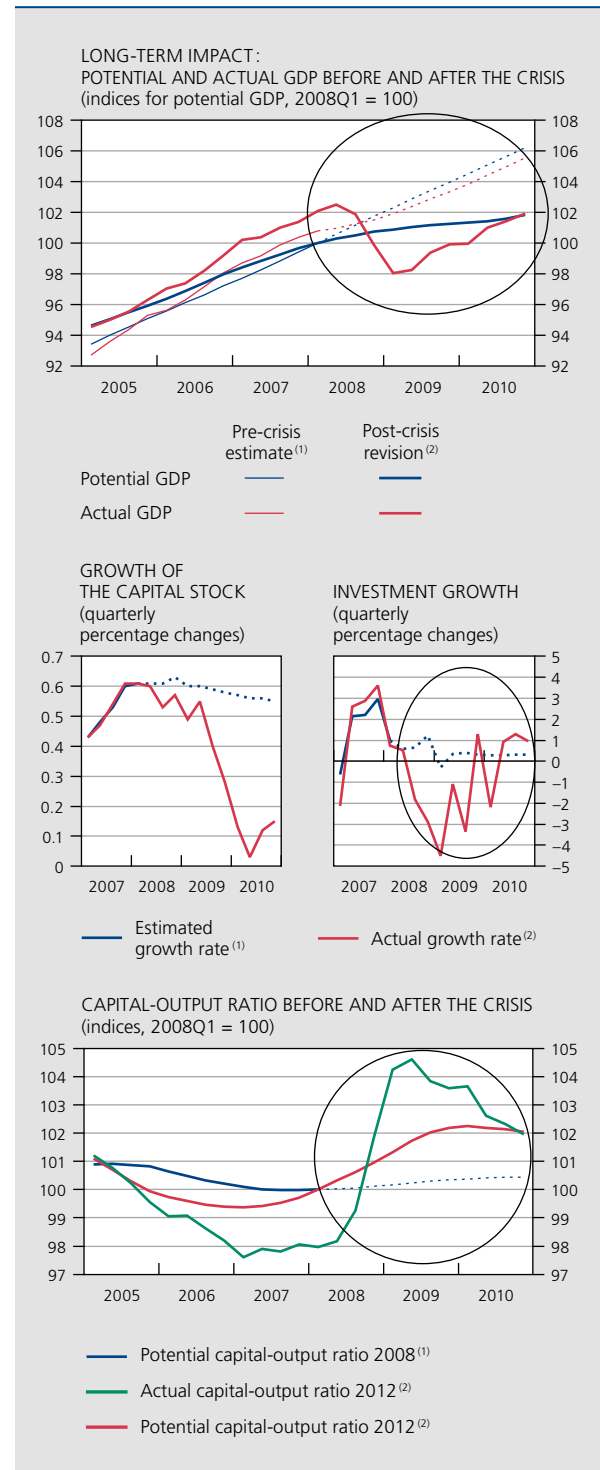
#### Long-term impact: adjustment of investment decisions

The crisis had a significant and unexpected impact on the Belgian economy. While the Bank's June 2008 macro-economic projections were still predicting real activity growth of 1.6% in 2008 and 1.5% in 2009, the actual figures were well below those forecasts, at 1% and -2.8% respectively. The decline in GDP affected the estimate of potential GDP, which also underwent a marked downward revision compared to the June 2008 forecasts. The reason was that the adjustments on account of the loss of activity due to the crisis were so abrupt that they generated frictions, and hence temporary losses of efficiency (TFP), or had the effect of discouraging potential workers (decline in the number of hours worked) or raising the structural unemployment rate. These factors had, at the very least, a temporary influence on potential growth. Although the latter is expected to revert eventually to a growth rate comparable to the pre-crisis figure, it is assumed that the effect of the level shift during the crisis is irreversible.

Potential output reflects the growth that an economy is capable of generating without causing disequilibria on the market in goods and services and on the labour market. Although potential GDP cannot be measured

and can therefore only be estimated, it implicitly reflects the assessment made by the economic agents, including

**CHART 7** POTENTIAL GROWTH, CAPITAL STOCK AND INVESTMENT



Source: NBB.

- (1) Actual figures and estimates obtained from the June 2008 estimate of potential growth; estimates shown as a dotted line from the first quarter of 2008.
- (2) Actual figures obtained from the June 2012 estimate of potential growth.



firms, of future demand and their need for production factors in the longer term. Since potential growth was unexpectedly adjusted downwards, the same applied to the capital stock needed to generate output. The revision of the required capital stock in turn led to a downward revision of the investment needed to reach that capital stock. Here, too, the slower investment growth and slower growth of the capital stock were unexpected, since they were not indicated by the Bank's June 2008 estimates. The deceleration in the growth of the capital stock was particularly marked from mid-2009 to mid-2010. It was not until investment began rising again in the third quarter of 2010 that the growth of the capital stock picked up. The presence of the accelerator effect is also clearly confirmed in this case: while the growth of the capital stock dipped by only just under 0.6 percentage point on account of the crisis, the investment growth rate dropped by 5 percentage points. Despite the downward adjustment of the capital stock, according to current estimates the ratio between the capital stock and potential output is still significantly higher than was expected in 2008.

### 2.2.2 Profitability and internal financing scope: gross operating surplus of Belgian firms

Another possible cause of the sharp fall in gross fixed capital formation by Belgian companies in 2009 lies in the changes in their gross operating surplus. Since that

surplus is the main source of income for a company, it is in fact an indicator of the scope for internal funding. Moreover, the gross operating surplus is also regarded as an indicator of the profitability of businesses and of investment.

The gross operating surplus of Belgian companies remained relatively stable in 2008, before falling sharply in 2009. The stagnation during 2008 was due mainly to the massive rise in companies' costs, which in fact outpaced the rise in the selling prices of their products so that corporate margins were seriously squeezed. Although the margins increased again in 2009 – as costs fell more steeply than the selling prices of Belgian firms' products – it is evident that the marked contraction of demand nevertheless dented the gross operating surplus. Belgian companies ended the year 2009 with a reduction in their gross operating surplus, eroding the scope for internal financing. However, the year 2010 brought a vigorous though temporary recovery in the growth of the gross operating surplus, the main reason being a revival in demand for products, especially on the export markets. Although demand weakened again in 2011 and the margin remained unchanged, the gross operating surplus continued to expand. The rise is expected to be modest in 2012, on account of a deteriorating final demand. Both domestic demand and demand for products for export are expected to decline steeply this year. In 2013, there should be a slight improvement, due mainly to a revival in

**TABLE 1** GROSS OPERATING SURPLUS OF COMPANIES  
(percentage changes compared to the previous year)

|  | 2003-2007<br>Annual<br>average | 2008 | 2009  | 2010 | 2011 | 2012 e | 2013 e |
|--|--------------------------------|------|-------|------|------|--------|--------|
| Gross operating surplus of companies       | 7.9                            | 0.1  | -5.3  | 12.6 | 3.8  | 1.1    | 2.8    |
| Gross operating margin per unit of sales   | 4.3                            | -2.1 | 1.7   | 6.4  | 0.0  | 5.7    | 0.1    |
| Unit selling price                         | 2.2                            | 3.9  | -3.9  | 3.7  | 4.0  | 7.5    | 1.5    |
| On the domestic market <sup>(1)</sup>      | 2.6                            | 4.4  | -2.4  | 2.5  | 3.3  | 6.4    | 1.5    |
| On the export market                       | 1.9                            | 3.4  | -5.3  | 5.0  | 4.6  | 8.5    | 1.4    |
| Costs per unit of sales                    | 1.9                            | 5.0  | -4.8  | 3.7  | 4.8  | 7.8    | 1.7    |
| Imported goods and services <sup>(1)</sup> | 2.3                            | 6.0  | -8.5  | 6.1  | 6.2  | 10.3   | 1.4    |
| Domestic costs per unit of output          | 0.7                            | 1.9  | 2.6   | -0.4 | 1.5  | 3.4    | 1.3    |
| of which: Unit labour costs                | 0.8                            | 3.5  | 3.3   | -0.9 | 2.1  | 2.9    | 1.5    |
| Final sales, in volume                     | 3.4                            | 2.2  | -6.9  | 5.8  | 3.8  | -4.4   | 2.7    |
| On the domestic market <sup>(1)</sup>      | 2.5                            | 2.3  | -2.3  | 2.1  | 2.0  | -2.8   | 0.8    |
| On the export market                       | 4.2                            | 2.1  | -11.1 | 9.6  | 5.5  | -5.8   | 4.5    |

Sources: NAI, NBB.

(1) Including change in inventories.



export demand, while domestic demand would continue to be modest. Overall, the gross operating surplus of companies is likely to grow more slowly than in the years preceding the economic and financial crisis, in a general environment of moderate economic growth and high uncertainty.

### 2.2.3 External financing costs of companies

Apart from economic demand and variations in the scope for internal financing, there are other factors which may be behind the slump in corporate investment. For example, firms' financing costs increased sharply from January 2008. Although yields on euro area corporate bonds had already been rising for some time, they recorded a further significant increase from the beginning of 2008<sup>(1)</sup>. Only the cost of bank loans did not really seem to gather pace at the beginning of 2008, keeping to the same upward trend that it had maintained since 2005. The marked increase in the cost of equity financing in a context of falling stock markets was a decisive factor behind the sharp rise in the weighted funding cost of non-financial corporations from May 2008 on. The increase in the cost of funding, even before the crisis, was due partly to the counter-cyclical monetary policy impulses. These adjustments to the key

(1) The same applied to Belgian corporate bonds. However, it was decided to base the analysis on euro area corporate bonds, since that market is deeper and more liquid.

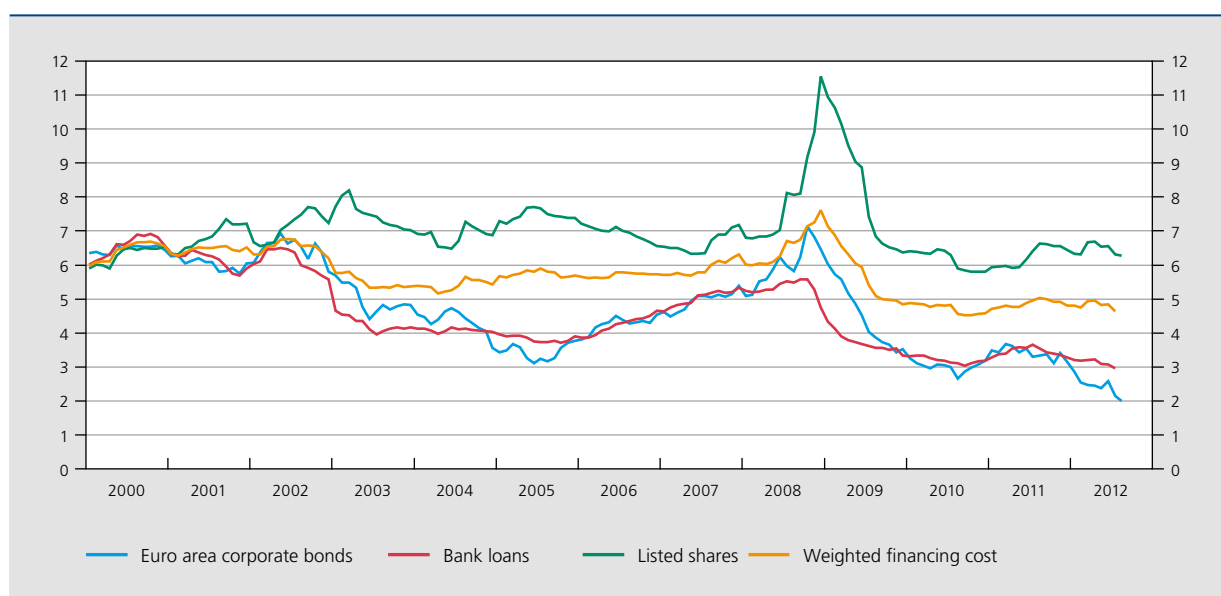
interest rates are progressively reflected in the interest rates charged to companies. This mechanism is part of the reason why, in boom periods, expanding corporate investment coincides with a rise in the cost of financing. After the eruption of the crisis, however, financing costs continued to rise, as banks and financial markets increased the risk premium included in the nominal interest rates they charged to companies to allow for the severe uncertainty and unstable expectations.

Although the financing cost had peaked in December 2008, it remained higher than before the crisis up to May 2009. The high financing costs during the economic and financial crisis therefore most certainly encouraged firms to delay or cancel some investment projects which could no longer be guaranteed viable. However, the cost of funding corporate investment subsequently declined to a historically low point, thus contributing towards the recovery. Yet the persistence of the historically low level of nominal financing costs cannot explain the slackening pace of investment expansion from mid-2011, which indicates once again that the cost of funds is only one of the investment decision determinants.

### 2.2.4 Credit conditions

Changes in credit conditions may also have played a role in the decline in investment following the financial crisis. In Belgium, the credit conditions on lending to non-financial corporations by financial institutions were systematically

**CHART 8** EXTERNAL FINANCING COSTS OF NON-FINANCIAL CORPORATIONS  
(in %)



Sources: NBB, Thomson Reuters Datastream.

tightened from mid-2007, reaching an absolute maximum at the end of 2008. Some Belgian banks continued to tighten their credit conditions up to mid-2009. In September 2008, following the collapse of Lehman Brothers, the inter-bank market also dried up for the first time. That event had a direct impact on many banks which were dependent on the operations of the interbank market to fund their lending. The resulting uncertainty prompted many institutions to maintain their more stringent credit conditions, or even to tighten them further in order to avoid problems, both because they were themselves having increased difficulty in raising finance and because they doubted the solvency of some of their borrowers.

However, with the exception of the second quarter of 2012, Belgian banks kept their criteria constant from the second quarter of 2009. In contrast, in the euro area the tightening of credit conditions continued unabated. In the final quarter of 2011, for example, the net percentage of European banks stating that they had tightened their credit conditions remained at 20% <sup>(1)</sup>. For the second quarter of 2012, though, a tightening of credit conditions was recorded on the Belgian market. This tightening was

in particular applied to mortgage loans, and to a lesser degree, to loans to non-financial corporations and to consumer credit. Despite the recent unfavourable developments, this tightening of credit conditions surely is no indication of a credit crunch in Belgium. The sharp contraction of corporate investment in 2009 could therefore also be partly attributable to the tightening of the criteria for obtaining bank loans for investment purposes. On the other hand, the unfavourable business cycle influenced the demand for loans during the crisis, so that the tightening of credit conditions ultimately only had a limited impact on investment decisions.

The Bank's half-yearly survey of investment in the manufacturing industry confirms the conclusions set out above. That survey explicitly questions companies about the factors determining their investment. The participants are presented with a range of determinants which they have to tick if they consider them important. On average, barely three out of ten firms state that they consider credit costs to be a significant investment determinant, whereas eight out of ten regard a reduction in production costs as important, and seven out of ten cite the introduction of new production processes.

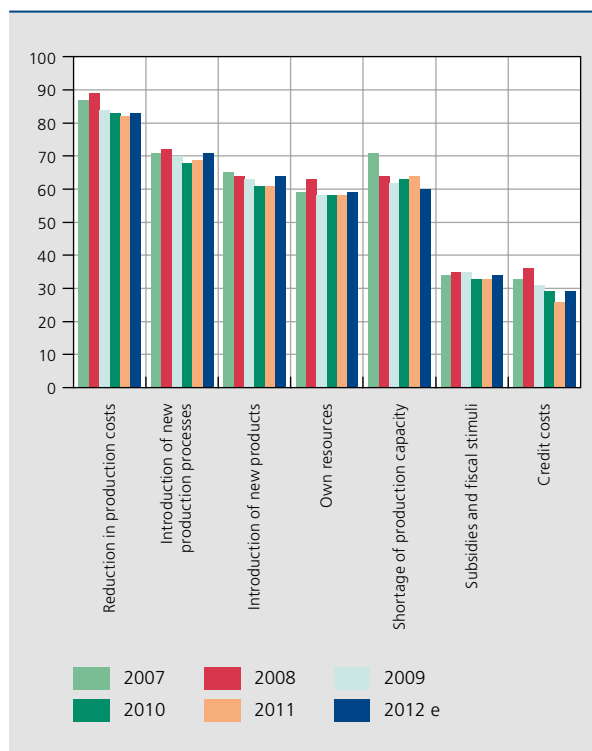
In addition, it is important to note that, for certain types of companies, credit conditions may nevertheless have played a more significant role in the decline in investment during the crisis. Thus, in general, the credit utilisation rate is in inverse proportion to the firm's size. Small companies are assumed to be more dependent on bank credit and to have greater difficulty in raising finance than larger firms. It is therefore possible that, for these small companies, credit conditions may have been a more significant factor influencing their investment decisions.

### 2.2.5 Uncertainty and expectations

Regarding the recent pattern of investment, it has already been said that analyses based on the classic investment determinants do not always identify all the factors which influence investment decisions. Yet it has emerged that, in some circumstances, these residual factors had a major impact on investment decisions. Uncertainty and expectations are two examples of such factors which played a key role during the crisis.

For firms, uncertainty is an everyday phenomenon which operates at various levels. In view of the period over which an investment extends and the fact that an investment project often entails many lags and adjustment

**CHART 9** INVESTMENT DETERMINANTS ACCORDING TO THE BANK'S SURVEY OF INVESTMENT IN THE MANUFACTURING INDUSTRY  
(percentage of firms <sup>(1)</sup> ticking the determinant)



Source: NBB.

(1) Firms can tick more than one determinant.

(1) Weighted net percentage of banks reporting a tightening (-) or an easing (+) of credit conditions in the past three months.

costs, firms in fact take account not only of current economic activity but also of future activity when deciding on their investments. Although a company thus expresses expectations regarding future demand and economic activity, those factors are always subject to change. Moreover, companies face uncertainty over future prices and financing costs of financial instruments. In such a context, uncertainty over the stated expectations may depress investment. If a firm cannot be certain about future demand and economic activity, it is hard to assess the viability of an investment project. Companies therefore have to take account both of the possible return on the investment and of the risks entailed in making those profits. In the context of the crisis, it is therefore possible that the uncertainty increased the return required of an investment project for risk-averse investors. Uncertainty would thus have lowered the maximum financing cost beyond which investments would be regarded as too expensive, and would therefore not have been carried out, thus reducing the amount of investment.

### 2.3 Why was the decline in investment nevertheless relatively limited during the crisis ?

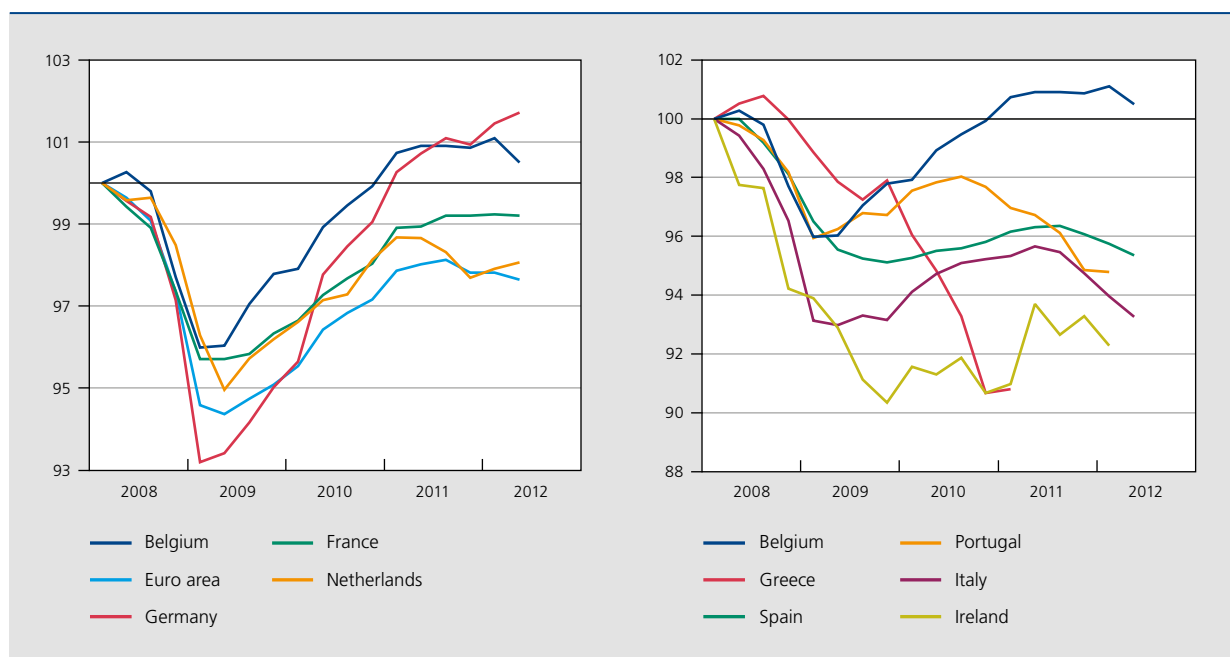
Even though the fall in the volume of investment by Belgian firms was the steepest since 1980, the decline

in Belgian corporate investment was limited in an international perspective. This section examines the factors which helped to restrict the decline in investment by Belgian firms during the crisis.

#### 2.3.1 Relative resilience of the Belgian economy against the global crisis

In this context, it is important to note that, in comparative terms, the fall in GDP during the crisis was less marked in Belgium than in the neighbouring countries and in the euro area. Since the decline in macroeconomic demand was modest overall in Belgium, firms were able to uphold a slightly higher level of production than their counterparts in neighbouring countries, and felt less need to make drastic cuts in their investments. Moreover, GDP recovered more rapidly in Belgium as well: on the basis of an index of 100 for the first quarter of 2008, it is evident that Belgian GDP regained its pre-crisis level at the beginning of 2011, whereas that was clearly not the case in the euro area, France and the Netherlands. Only Germany recorded a similar picture, but starting from a deeper fall so that its GDP did not regain its pre-crisis level until a little while after Belgium. The difference is even more marked in relation to the peripheral countries which suffered severe problems during the crisis (Greece, Spain, Portugal, Italy and Ireland). Even now, in none of those

**CHART 10** BELGIAN GDP FROM AN INTERNATIONAL PERSPECTIVE  
(indices, first quarter of 2008 = 100)



Sources: NBB, OECD.

countries has GDP reached anything like its pre-crisis level. The severe contraction of GDP in all those countries also depressed the GDP growth of the euro area, which was significantly weaker than Belgian GDP growth.

Even taking account of the differences in the severity of the recession, Belgium seems to have withstood the crisis well in international terms. The investment ratio in fact declined less sharply in Belgium than in the euro area and in neighbouring countries, because – over the period from the second quarter of 2008 to the fourth quarter of 2009 – the fall in investment in relation to the decline in GDP was not abnormally high compared to previous recessions<sup>(1)</sup>. While the investment ratio in Germany had, in contrast, risen steadily from the end of 2009, the stabilisation of the Belgian investment ratio in 2010 was followed by a gradual recovery, and then an acceleration in the first two quarters of 2011. Investment therefore recovered more slowly in Belgium than in the neighbouring countries, with firms deciding to “wait and see” in 2010; nevertheless, a period of strong growth ensued in the first half of 2011. After that, stabilisation set in.

Apart from cyclical fluctuations in the investment ratio, the above chart also shows that the level of the investment ratio is structurally higher in Belgium than in neighbouring countries. However, these differences must be interpreted with great caution, as they may

equally be due to differences in the underlying structure of the economy. The higher investment ratio is reflected in a larger share of capital in production in Belgium, which also leads to a higher level of apparent labour productivity.

### 2.3.2 Financial soundness

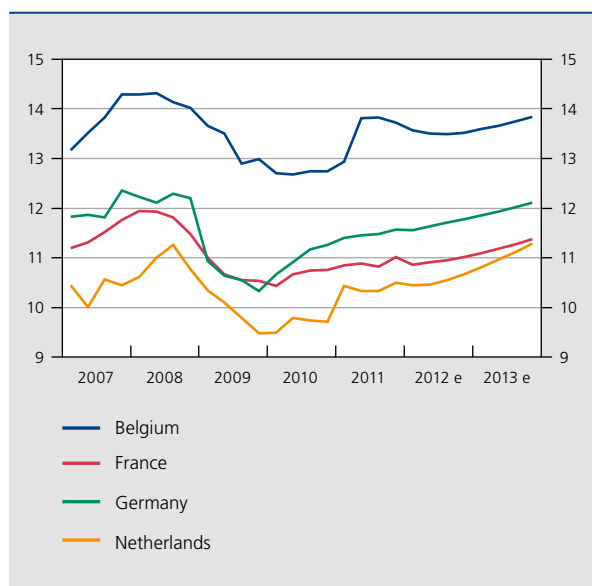
The sound financial position of Belgian firms is another factor which may explain why Belgian investment contracted less sharply in 2009 than investment in all the neighbouring countries. That soundness is reflected, in particular, in the level of the gross operating surplus and the net financing balance.

The reduction in the gross operating surplus of Belgian companies recorded in 2008 and 2009 was smaller than in neighbouring countries, and the surplus recovered more quickly. Thus, in the second quarter of 2010, it had already regained its pre-crisis level whereas in the other countries (except for the Netherlands) it remained below its pre-crisis level. That performance is due partly to the resilience of activity and demand, already mentioned, but also partly to higher inflation in Belgium. In the longer term, however, that situation implies risks, since it impairs firms’ competitiveness.

Overall, the gross operating surplus dropped from 24 to 22% of GDP between 2007 and 2009, but that figure is still above the historical average. Between 1995 and 2011, the gross operating surplus in fact amounted to an average of 21.7% of GDP. Moreover, it almost reached 24% again in 2010 and 2011, a level comparable to that in the years immediately before the crisis, and higher than in the second half of the 1990s and the first years of the new millennium.

The net financing balance of Belgian firms as a whole also recorded only a temporary decline during the financial crisis. The balance was only negative in 2008, after which it made a very rapid and strong recovery, peaking at 4% of GDP in 2010. Despite the macroeconomic difficulties, it remained at a substantial level in 2011. Leaving aside the year 2005, when the figure of 3.4% of GDP was influenced by a purely statistical effect<sup>(2)</sup>, the financing capacity achieved by

**CHART 11** INVESTMENT RATIO FROM AN INTERNATIONAL PERSPECTIVE  
(fixed capital formation by firms in % of GDP, quarterly data)

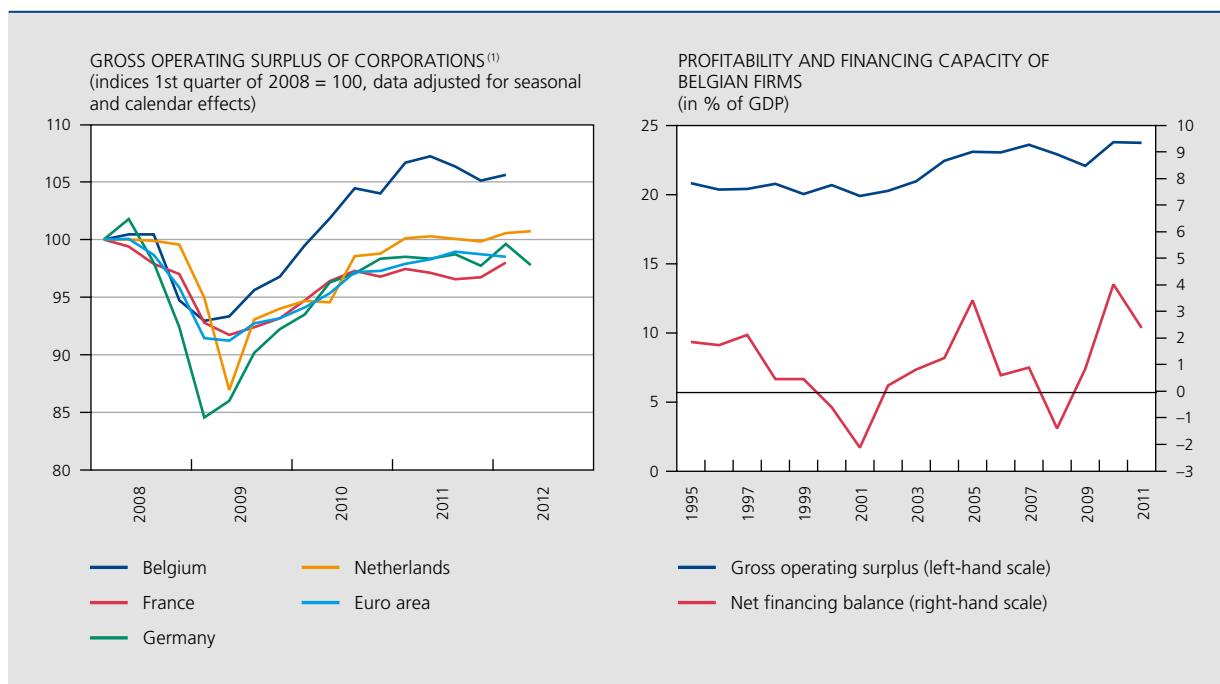


Source: OECD.

(1) Examination for each country of the percentage fall in the investment ratio from the pre-crisis peak to the absolute low point (occurring in different quarters, depending on the country) shows Belgium in second place, after France, on the list of the smallest reductions in the investment ratio.

(2) The peak of 3.4% of GDP which the net financing balance reached in 2005 should be interpreted with the greatest caution. The figures for that year were distorted by the absorption of the major part of the SNCB’s debt by the Railway Infrastructure Fund (whose assets were automatically transferred to Infrabel in 2008), which is a part of the general government sector (amounting to € 7.4 billion). The other capital transfers received from the government were therefore exceptionally high that year. The net financing balance had also been slightly distorted in 2003: in that year, the capital transfers payable to the government were extremely high owing to account being taken of the Belgacom pension fund amounting to € 5 billion.

**CHART 12** GROSS OPERATING SURPLUS AND NET FINANCING BALANCE OF BELGIAN FIRMS



Sources: NAI, ECB, NBB.

(1) Data adjusted for seasonal but not calendar effects in the case of France, Germany and the Netherlands.

companies in the last two years is the highest since 1997. Apart from good profitability, that also reflects firms' prudent approach to investment.

The importance of the internal financing scope is indicated by the firms themselves in the Bank's survey of investment in the manufacturing industry, as they are explicitly questioned about how they fund their investment. In the investment survey, firms from the manufacturing industry report that they financed 70 % of their investment out of their own funds in 2011. That figure is expected to rise to 77 % in 2012. Although it has always been high, it increased by 10 % between 2002 and 2011, demonstrating the growing attraction of internal financing for firms. The notional interest allowance, which attempted to eliminate the disadvantage of using own funds for financing rather than resorting to borrowing, may be part of the reason. Tangible investment via approved coordination centres is the second most important financing instrument. Although there is undeniably a downward trend in this form of funding – it declined from 29 to 17 % of the amounts invested between 2002 and 2011 – owing to the abolition of the favourable regime for coordination centres, it is still playing a major role for the time being. The share of investment financed by borrowing continues to

**CHART 13** SOURCE OF INVESTMENT FUNDING ACCORDING TO THE BANK'S SURVEY OF INVESTMENT IN THE MANUFACTURING INDUSTRY  
(in % of total amounts invested)



Source : NBB.

hover around 10%, while financing by capital increases is insignificant (2%), despite the steep rise in 2011. For 2012, financing by capital increases is expected to revert to zero.

### 3. Points for future attention

As is usually the case owing to the highly pro-cyclical character of business investment, the recent period of economic recession and financial crisis brought wide fluctuations in that investment. However, given the severity of the shocks, the decline in investment in 2008-2009 – like the slump in other economic variables, such as activity, employment or demand for private consumption – can be considered relatively moderate in Belgium, an outcome due notably to the sound financial position of non-financial corporations. The investment revival at the end of 2010 and in the first half of 2011, lagging slightly behind the improvement in demand conditions, was undermined in the second half of the year owing to the rapidly growing uncertainty caused by the worsening sovereign debt crisis in the euro area and a sharp deterioration in economic activity.

These findings are a reminder that various factors need to be present to stimulate investment demand: a positive outlook for demand, a stable macroeconomic environment – without excessive uncertainty – and a fundamentally sound, balanced situation in terms of the profitability and financial position of firms.

In a context of gradually strengthening activity and demand in Belgium and in partner countries, and taking account of the low level of interest rates, a modest investment recovery is generally expected in the medium term.

However, that recovery is subject to various risks and potential fluctuations in activity. First, the corporate

investment recovery is susceptible to risks resulting from uncertainty over the future economic situation in Belgium's main partner countries, in a context of severe tensions within the euro area. Next, once demand for bank credit starts to increase again, the ability of the financial institutions to play their full role in funding the economy at a time when they need to continue to reorientate their business model and adjust to the more stringent prudential rules to be imposed in the future, may have implications for investment financing and, more generally, for the ease of obtaining credit. Moreover, changes have been approved and could yet be introduced in the taxation of companies or in the granting of investment subsidies by the government, in a context of essential fiscal consolidation. Those changes could potentially influence firms' investment decisions.

In the long term, business investment is one of the decisive factors permitting a strong, balanced and therefore sustainable long term development of the potential for creating value added and hence for generating income in the economy. The capital raised complements the labour, facilitating an increase in labour productivity (and hence higher pay), by the capital-deepening effect. Investment is also a way of incorporating technological progress and innovation, permitting not only improvements in the goods and services produced but also more efficient production methods, particularly with regard to the use of raw materials and energy.

In addition, the production potential also depends on the general efficiency with which the production factors labour and capital can be employed, and on an appropriate allocation of the available financial resources in the economy. In that regard, a stable macroeconomic environment is necessary to ensure that avoidable uncertainty is not added to the normal uncertainty inherent in all medium-term economic forecasts.

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