Economic Review

December 2013

National Bank OF BELGIUM

Eurosystem

ISSN 1780-664X

Contents

Economic projections for Belgium – Autumn 2013

Introduction

Following the sharp deceleration in activity in the spring of 2011, Belgium experienced a relatively long period in which, quarter after quarter, the economy hardly expanded at all, and actually contracted at times. The Bank´s previous autumn projections, as well as the more recent spring projections published in June 2013, indicated that this sluggish activity would give way to a gradual recovery from the spring of 2013. The economic statistics currently available appear to confirm that forecast: according to the NAI´s initial estimates, activity clearly expanded in the second and third quarter of 2013. That is essentially attributable to private consumption, business investment and exports, which actually seem to have staged a slightly stronger and earlier recovery than previously expected.

Of course, these developments are inextricably linked with what is happening in the rest of Europe and the world. While the global economy appears to be growing a little bit more slowly than predicted in the spring projections, the economy of the euro area has improved recently, as expected. Thus, in the second quarter of the year, activity growth in the euro area as a whole returned to positive territory for the first time since the final quarter of 2011. However, it should be noted that, in certain major countries such as Germany and France, growth in the second quarter has benefited to some extent from temporary factors, linked to weather conditions, among other things. That also partly explains why growth in the euro area lost some of its momentum in the third quarter. More generally, activity has clearly expanded in the advanced countries since the beginning of 2013, thus boosting trade, which also benefits Belgian exporters. The increase in domestic expenditure, most notably private consumption expenditure, has accompanied the significant improvement in both producer and consumer confidence since the spring of this year. There is therefore little doubt that the recovery is partly due to confidence effects.

Confidence also seems to be gradually returning on the financial markets, which have been calmer for several months now. Thus, despite the recent rise, due to the prospect of the particularly accommodative monetary policies being phased out, particularly in the United States, long-term interest rates remain extremely low. Persistent concern over the resolution of the euro area crisis or the sustainability of the debt of several economies has not led to any new surge in interest rates. However, it should be noted that the rapid fall in inflation in the euro area is driving up real interest rates. In addition, the main stock markets have continued to recover, following the losses of recent years.

Against this backdrop, the current projections are very similar overall to the ones published in the June 2013 Economic Review. A relatively uniform recovery is still expected, with activity growing by an average of 0.3 % in the coming quarters, which is below the average growth rate seen prior to the great recession. For 2013, GDP growth in terms of volume was adjusted upwards to a very minor extent, namely by less than 0.2 percentage points, compared to the zero growth estimated in the spring forecasts. However, next year´s growth forecast remains unchanged at 1.1 %. That is the result of two opposing forces. The slightly stronger growth in the latest quarters of this year gives rise to a favourable spillover effect on annual growth in 2014, reflected particularly in a higher contribution to growth from private consumption. However, that is entirely negated by two specific factors. First, the volume growth of public expenditure underwent

sharp downward adjustment compared to the June estimate. That is mainly due to the broad range of measures implemented after the cut-off date for the spring projections, both by the federal government and by the Communities and Regions when drawing up the budgets for 2014. Section 5 presents more detailed comments on those measures. In addition, the common technical and external assumptions underlying the Eurosystem forecasts, of which the main ones are described in the box in the first section of this article, are generally more unfavourable than those on which the June 2013 estimates were based. The downward revision of export market growth and the higher level of interest rates depress exports and investment, among other things.

Despite the hesitant signs of recovery in the Belgian economy, the labour market situation remains worrying. As is usual at the start of a recovery phase, job creation is still clearly lagging behind the trend in activity. Initially, activity growth is supported by an increase in hourly labour productivity and in the average number of hours worked. Despite a small upward revision compared to the spring projections, the level of employment will therefore remain practically unchanged until the end of the year, and will only start rising very gradually at the beginning of 2014. That also implies that the unemployment rate will continue to edge upwards in 2014.

Inflation, which has fallen sharply in Belgium, too, is expected to increase hardly at all in 2014 according to the current projections. That is partly attributable to the movement in the relatively volatile components of the price level, and more particularly the expected continuing fall in the oil price, but it is also due to the weak underlying inflation, which remains well below 2 % throughout the projection period. Control over labour costs in order to reduce the wage handicap in relation to neighbouring countries is a contributory factor here.

Finally, as a result of supplementary consolidation measures, the budget deficit is set to be considerably smaller next year than had been predicted in the spring projections, even though it will be hardly any lower than the 2013 level, namely 2.8 % of GDP. It will therefore remain well above the target set by the latest stability programme, even after incorporation of the initial 2014 budgets. However, it should be pointed out here that, in accordance with the rules applicable to the Eurosystem projection exercises, account is taken only of measures which have been formally adopted by the government – or which are very likely to be approved – and for which the implementing arrangements have been specified in sufficient detail on the exercise completion date. In addition, estimates of the budgetary impact of certain measures, such as those designed to combat fraud, may differ from the amounts included in the budget. The projections were finalised on 22 November 2013. They therefore take no account of the measures to improve Belgium´s competitiveness announced by the federal government on 29 November 2013. However, except for the cut in the rate of VAT on electricity consumption, those measures will not be implemented until after the projection period.

1. International environment and assumptions

1.1 Global economy

Contrary to the assumptions made in the spring, the expansion of global activity continued to slow down somewhat over 2013 as a whole. The reason was the unexpected dip in growth in the emerging countries, which was in turn due to less dynamic domestic demand in that region plus weaker foreign demand. However, growth in these countries significantly outpaced that in the advanced countries, where the balance sheet adjustments in both the private and the public sector continued to depress economic activity. In the United States, in particular, there was a marked slowdown which was mainly due to the strong fiscal contraction during the year. Conversely, in other large economies, growth gathered pace, underpinned by a still very accommodative monetary policy which was actually eased further in certain cases, such as in the euro area and the United Kingdom. Overall, financial conditions remained favourable to economic activity, despite a deterioration during the summer months.

Global activity displayed a mixed picture during 2013. Initially, it lost some momentum at the beginning of the year, the main reason being the marked slowdown in growth in the emerging countries, due to weaker activity in China and in central and eastern Europe. In the advanced countries, growth picked up following a slight fall at the end of 2012, but the expansion was very modest. Doubts therefore emerged over the sustainability of the global economic recovery which seemed to have started in the second half of 2012, under the impetus of various economic policy measures taken from the summer of 2012. Those doubts were due, in particular, to renewed turbulence in the euro area and the publication of disappointing economic figures in the United States, China and the euro area. Business confidence faltered, but the calm which had set in on the financial markets in the summer of 2012 was maintained.

This period of relative calm on the financial markets ended in May, as a new period of volatility began when the American central bank announced that it might reduce the volume of purchases of securities this year (tapering). That announcement was an important signal which led to a reappraisal of assets on the main markets. The correction proved most significant in the emerging countries, where assets came under heavy pressure as investors scaled down their positions. This was not only due to the tightening of global financial conditions but also to the more favourable growth prospects in the advanced countries and the weaker outlook in the emerging countries, which prompted a capital flight from the latter countries. In the second quarter, it was in fact mainly the advanced countries that recorded stronger economic growth.

From the end of August, the asset markets of the emerging countries stabilised, and then even recovered somewhat with the publication of better figures for the Chinese economy and some easing of concerns over the impact of tapering by the Federal Reserve. Calm was also restored on the financial markets of the advanced countries from September onwards, after the American central bank decided at its September and October meetings to keep its policy unchanged, as it considered that the economic recovery was not yet sufficiently far advanced for it to ease back on the accommodative policy, and that there was still too much uncertainty. This mainly concerned the fiscal policy of the United States, where the political deadlock seemed total in September and in the first half of October. It was not until mid-October that agreement was reached on the extension of the federal government´s spending authority – after several public services had been shut down for about two weeks – and on a temporary suspension of the federal debt ceiling until 7 February 2014. On the basis of the available information, it seems that the growth of global economic activity gathered pace again in the third quarter.

At the end of November 2013, commodity prices were generally below those recorded a year earlier. Since the spring, those prices have exhibited a divergent pattern: prices of food commodities have continued to fall, essentially as a result of the increase in supply. In contrast, the prices of the commodities most sensitive to the economic cycle (crude oil and industrial commodities) increased as a result of the revival in activity. The strongest rise concerned oil prices, notably influenced by the geopolitical uncertainty related to the situation in North Africa and the Middle East. Subsequently, the agreement on the dismantling of Syria´s chemical weapons under United Nations supervision and the rapprochement between Iran and the United States brought some easing of tensions and a fall in prices during September. At the end of November, the price of Brent crude oil stood at $ 111 per barrel, comparable to the end-2012 figure. Consumer price inflation maintained the downward trend which had begun in the second half of 2011, notably as a result of the fall in commodity prices. The nominal effective euro exchange rate increased from April onwards, an important factor being the strong appreciation of the euro against the Japanese yen and, to a lesser extent, against the US dollar.

In this context, the global growth forecasts for 2013 and 2014 were downgraded slightly. The EC´s autumn forecasts indicate very modest growth of global GDP, namely 2.8 % this year, the lowest level recorded since the start of

TABLE 1 PROJECTIONS FOR THE MAIN ECONOMIC REGIONS

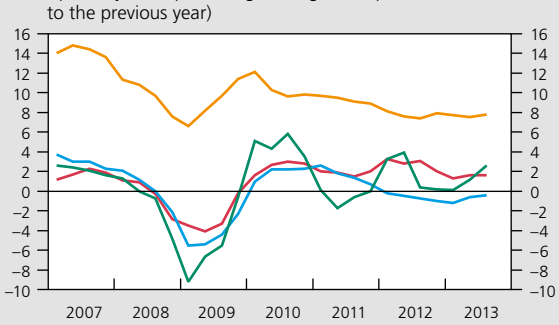
(percentage changes compared to the previous year, unless otherwise stated)

	2012	2013	2014
	Actual figures	Projections	
Real GDP			
World	3.1	2.8	3.6
of which:			
Advanced countries	1.4	1.1	2.1
United States	2.8	1.6	2.6
Japan	2.0	2.1	2.0
European Union	–0.4	0.0	1.4
Emerging countries	4.9	4.5	5.0
China	7.8	7.5	7.4
India	3.8	2.9	4.0
Russia	3.4	1.9	3.0
Brazil	0.9	2.2	2.5
p.m. World imports	*2.0*	*2.8*	*5.2*
Inflation (1)			
United States	2.1	1.5	1.9
Japan	0.0	0.3	2.6
European Union	2.6	1.7	1.6
China	2.6	3.0	3.0
Unemployment (2)			
United States	8.1	7.5	6.9
Japan	4.3	4.0	3.9
European Union	10.5	11.1	11.0

Sources: EC, IMF.
(1) Consumer price index.
(2) In % of the labour force.

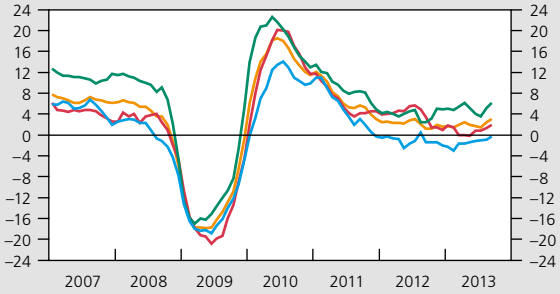
CHART 1 GLOBAL ECONOMIC ACTIVITY AND DEVELOPMENTS ON FINANCIAL AND COMMODITY MARKETS

REAL GDP GROWTH
(quarterly data; percentage changes compared to the previous year)



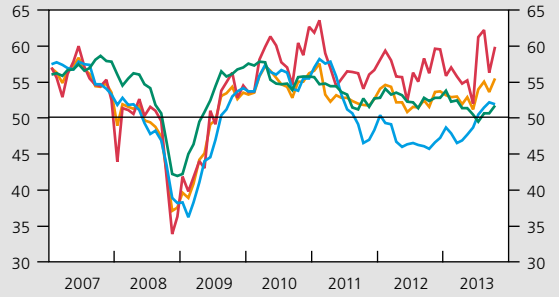
United States
China
Euro area
Japan

INTERNATIONAL TRADE
(seasonally adjusted three-month moving average of export and import volumes; percentage changes compared to the previous year)



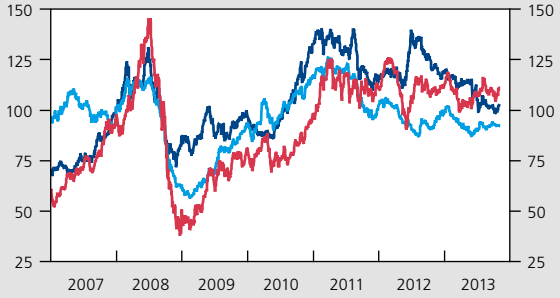
World
Euro area
United States
Emerging countries

BUSINESS CONFIDENCE
(seasonally adjusted monthly data; PMI of output in manufacturing industry and the service sector)



World
Euro area
United States
Emerging countries

COMMODITY PRICES
(daily data; in USD)

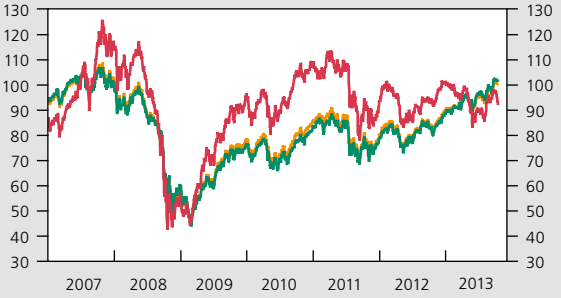


Food commodities
Industrial commodities
Brent crude (per barrel)
(indices 2010 = 100)

EURO EXCHANGE RATE
(daily data)

Bilateral exchange rate against the US dollar (left-hand scale)
Bilateral exchange rate against the Japanese yen (right-hand scale)
Nominal effective exchange rate (right-hand scale, indices 2007 = 100)

STOCK MARKET PRICES
(MSCI; daily data; indices 2007 = 100)



World
Advanced countries
Emerging countries

Source : Thomson Reuters Datastream.

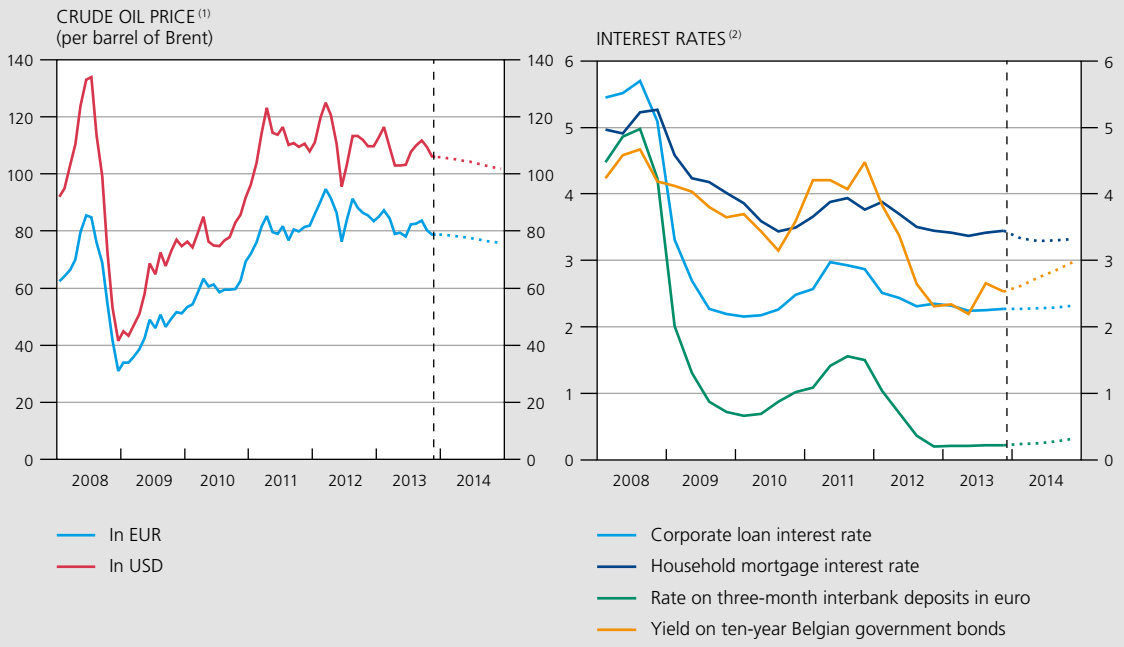
the economic recovery that followed the great recession. In 2014, activity is set to gather pace in both the advanced and the emerging countries, though the acceleration will be stronger in the first group. The reason lies in the declining impact of some imbalances and the weaker budgetary contraction in a number of those countries. In the emerging countries, growth should remain well above that in the advanced countries, despite a sharp slowdown compared to the pre-recession years. There continue to be significant divergences within these two groups. Growth is expected to remain stronger outside Europe, but the differences in relation to other major, advanced countries would be considerably smaller than in previous years. These growth disparities are expected to diminish in the euro area, too. The downward trend in inflation recorded in recent years is expected to come to a halt in 2014, owing to the revival in activity. Unemployment is projected to fall in 2014 in the largest economies, with the EU seeing the first decline since the end of the great recession.

Box – Assumptions adopted for the projections

The macroeconomic projections for Belgium described in this article form part of a joint Eurosystem exercise for the euro area. That exercise is based on a set of technical assumptions and forecasts for the international environment drawn up jointly by the participating institutions, namely the ECB and the national central banks of the euro area.

In particular, the projections are based on exchange rates set at the average level recorded in the last ten working days before the cut-off date of the assumptions on 14 November 2013. In the case of the US dollar, the exchange rate then stood at $ 1.34 to the euro. That was slightly higher than the average of $ 1.29 to the euro in 2012 and $ 1.32 in the first three quarters of 2013.

ASSUMPTIONS CONCERNING THE MOVEMENT IN OIL PRICES AND INTEREST RATES



Source : ECB.
(1) Actual figures up to 14 November 2013, assumptions from 15 November 2013.
(2) Actual figures up to the third quarter of 2013, assumptions from the fourth quarter of 2013.

As usual, in regard to oil prices, account is taken of market expectations as reflected in forward contracts on the international markets. In mid-November 2013, this indicator suggested that the price per barrel of Brent would decline gradually over the projection horizon, from $ 109.8 in the third quarter of 2013 to an average of $ 102.2 in the last quarter of 2014.

The interest rate assumptions are likewise based on market expectations in mid-November 2013. The three-month interbank deposit rate, which had fallen to an unusually low level of barely 22 basis points in the third quarter of 2013, is projected to record a very small rise to around 32 basis points in the last quarter of 2014. Over the year as a whole, that amounts to an increase of barely 5 basis points compared to the 2013 average. The rise in long-term interest rates is expected to be slightly bigger, taking them to around 3% in the final quarter of 2014.

However, the interest rates that the banks are forecast to charge on business investment loans and household mortgage loans take account of the transmission generally apparent in relation to market rates. In these Eurosystem forecasting exercises, the rates applied by the banks of each country are modelled on the basis of the market rates to which they are most closely linked, and their projections are based on these reference interest rates. Thus, since the start of the financial crisis (and more especially the sovereign debt crisis), mortgage interest rates in Belgium have been greatly influenced by the Euribor ten-year swap rates, rather than government bond yields. In contrast, the interest rates charged on business loans generally depend on the rates for shorter maturities.

At the end of 2013, the long-term mortgage interest rate is projected at just under 3.5 %, slightly below the previous year´s figure. In 2014, that interest rate is forecast to fall by a further 15 basis points, despite the expected rise in government bond yields. The average rate on business loans, which is closer to the short-term segment, is also projected to remain more or less unchanged in 2014. The level of interest rates for both households and businesses is therefore still very low throughout the projection period.

Another key assumption concerns developments on the foreign markets relevant for Belgium. During 2012, imports from Belgium´s trading partners slowed sharply. Over the year as a whole, the export markets expanded by barely 1.2 % in volume (against more than 5 % in 2011). The decline was most marked for sales within the euro area, where the volume of demand for imports actually diminished slightly. In 2013, the export markets are forecast to expand by only 1.2 %, despite a hesitant revival in economic activity during the year. Markets in the euro area will again produce hardly any real growth, and demand for imports from markets outside the euro area is likely to slacken further. In 2014, world trade is expected to continue picking up, and export markets are forecast to expand again by 4 %. That last figure implies a small downward revision compared to the assumptions underlying the Bank´s June 2013 forecasts.

The trend in Belgian exports is determined not only by the growth of these markets but also by changes in market shares and, therefore, Belgium´s competitiveness. In regard to the cost aspects of that competitiveness, one important factor is the movement in the prices which competitors charge on the export markets. Those prices have been falling since the last quarter of 2012 : in 2013, competitors´ prices on the export markets are forecast to decline by 1.5 %, whereas in 2012 they increased by 3.8 % against the previous year. Prices are projected to remain almost unchanged in 2014, with an increase of just 0.3 %. Compared to the spring projections, there has been a sharp downward revision in regard to prices (of around one percentage point for each of the two years), due in part to the strong appreciation of the euro as measured on the basis of the real effective exchange rates.

Of course, developments on the export markets relevant for Belgium must be viewed in the context of global economic growth. Thus, the projections assume that, outside the euro area, global growth which – according to the latest estimates, declined further to 3.3 % in 2013 – would reach 3.9 % in 2014. That figure is based on a continuing improvement in economic conditions in the United States, where activity growth in 2014 is expected to be much more dynamic than in 2013, but also takes account of a marked slowdown in the Japanese economy. However, the main uncertainty concerns the assumption relating to the Asian emerging markets, which represent

more than a quarter of global output. For those countries, the Eurosystem projections assume that growth will again exceed 6 % in 2014. That implies that the growth slowdown in China in 2013 is temporary, and therefore does not herald a structural downturn. It is also assumed that the worries concerning the adoption of a less accommodative monetary policy in the advanced countries will not destabilise the economy of the emerging countries.

EUROSYSTEM PROJECTION ASSUMPTIONS

(in %, unless otherwise stated)

	2012	2013	2014
		(annual averages)	
EUR/USD exchange rate	1.29	1.33	1.34
Oil price (US dollars per barrel)	112.0	108.2	103.9
Interest rate on three-month interbank deposits in euro	0.6	0.2	0.3
Yield on ten-year Belgian government bonds	3.0	2.4	2.8
Corporate loan interest rate	2.4	2.3	2.3
Household mortgage interest rate	3.6	3.4	3.3
		(percentage changes)	
Export markets relevant to Belgium	1.2	1.2	4.0
Competitors' export prices	3.8	–1.5	0.3

Source: ECB.

1.2 Estimates for the euro area

According to the Eurosystem´s autumn projections, the recovery which began in the euro area during 2013 should gradually gain momentum from the last quarter of 2013. Activity will be supported by the strengthening of both domestic and foreign demand. Domestic demand, which is set to be the main engine of growth in 2014, will be bolstered more particularly by the ebbing uncertainty, the accommodative monetary policy stance, low inflation and less restrictive credit conditions. However, the need for both governments and the private sector to proceed with further debt reduction in a good many countries continues to depress the growth outlook. Overall, activity in the euro area is expected to contract by a further 0.4 % in 2013 before returning to positive year-on-year growth in 2014 – after two consecutive years of decline – though growth will still be relatively weak at just over 1 %.

After having fallen to an unusually low level in the autumn of 2013, inflation is also set to begin rising gradually. However, in view of its low starting point, it is unlikely to exceed 1.1 % over 2014 as a whole. It will also be curbed by the movement in prices of energy products if oil prices fall in 2014 in accordance with the above assumption. Similarly, underlying inflation – i.e. inflation excluding volatile movements in prices of energy and food – should remain particularly low at 1.3 %, well below the HICP reference value of 2 % used for the euro area´s monetary policy. The reason lies in the still moderate domestic cost pressure during the first phase of the revival in activity.

As usual, job creation will lag behind the recovery of activity to some extent: growth is unlikely to produce a net gain in terms of jobs until some time in 2014. Also, the unemployment rate continued to rise significantly during 2013 to over 12 %, and there should only be a very slight fall in 2014. The average budget deficit in the euro area is set to decline by around 0.5 % of GDP in both 2013 and 2014, and will still come to 2.6 % of GDP in 2014 as a result of the continuing fiscal consolidation and the gradually improving economic situation.

TABLE 2 EUROSYSTEM PROJECTIONS FOR THE EURO AREA

(percentage changes compared to the previous year)

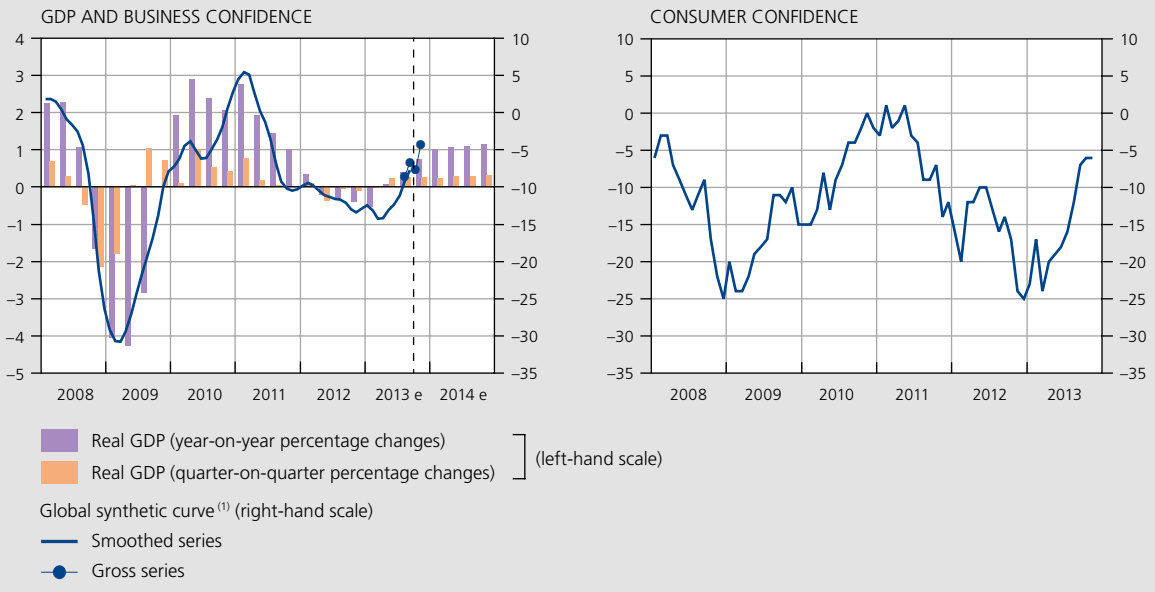
	2012	2013 e	2014 e
Real GDP	–0.6	–0.4	1.1
Final consumption expenditure of households and NPIs	–1.4	–0.6	0.7
Final consumption expenditure of general government	–0.6	0.1	0.3
Gross fixed capital formation	–3.9	–3.0	1.6
Exports of goods and services	2.7	1.1	3.7
Imports of goods and services	–0.8	–0.1	3.5
Inflation (HICP)	2.5	1.4	1.1
Underlying inflation[1]	1.5	1.1	1.3
Employment	–0.6	–0.8	0.2
Unemployment rate[2]	11.4	12.1	12.0
General government financing requirement (–) or capacity[3]	–3.7	–3.2	–2.6

Source: ECB.
(1) Measured by the HICP excluding food and energy.
(2) In % of the labour force.
(3) In % of GDP.

2. Activity and demand

CHART 2 GDP AND CONFIDENCE INDICATORS

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



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

As had been predicted in the Bank´s latest autumn and spring forecasts, the long period of economic stagnation or decline which had begun in the second half of 2011 seems to have ended in the spring of 2013. In the second and third quarter of 2013, the NAI´s initial quarterly accounts show clear activity growth of 0.2 and 0.3 % respectively. The still low positive quarterly growth figure for Belgium in the second quarter of 2013 tallies with developments in the other euro area countries, which likewise appear to have seen a cyclical upturn in the spring, as is evident from the fact that the euro area economy expanded for the first time since the final quarter of 2011, namely by 0.3 %. However, euro area growth dipped to 0.1 % in the third quarter, notably owing to the disappearance of specific factors which had supported growth in France and Germany in the second quarter.

The improvement in the Belgian economic situation is also reflected in the upturn in the industry, the sector of activity most sensitive to (international) cyclical fluctuations: in the second quarter of 2013, industry´s value added increased against the previous quarter for the first time since the final quarter of 2010, and continued to rise in the next quarter. In regard to the expenditure components, the return to positive growth was underpinned mainly by private consumption, exports and, to a lesser extent, business investment. These specific components of total demand actually seem to be growing faster or more strongly than expected in the Bank´s spring forecasts. On the other hand, during the first three quarters, growth was held back by the reduction in the volume of public investment and private investment in housing. These two factors, the first of which is essentially due to the traditional electoral cycle of local authority investment, also explain why activity in the construction sector is currently lagging well behind the general level of economic activity.

The economic recovery, particularly the said upturn in private consumption, exports and business investment, is taking place against the backdrop of a strong improvement in producer and consumer confidence. According to the Bank´s surveys, these two confidence indicators have surged since the spring of 2013. Thus, following a low point at the end of 2012 which was more or less comparable to the level at the time of the great recession, consumer confidence has exceeded its long-term average for several months now. However, the increase in consumer confidence seems to have faltered in the fourth quarter. In October, producer confidence dropped slightly before improving again in November so that it is now also considerably above its long-term average.

The Bank´s current forecasts are based on the assumption of a continuing recovery, with further clearly positive growth in the fourth quarter. That assumption is based partly on the estimates available on the forecast cut-off date of the short-term forecasting or ´now-casting´ models used by the Bank. Overall, year-on-year growth in 2013 is put at 0.2 % according to the current forecast, which is a slight upward revision of the spring forecasts. That is due to the revision of the national accounts for 2012 and, in particular, the slightly stronger-than-expected growth

TABLE 3 GDP AND MAIN EXPENDITURE CATEGORIES

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

	2010	2011	2012	2013 e	2014 e
Final consumption expenditure of households and NPIs	2.8	0.2	–0.3	0.5	1.1
Final consumption expenditure of general government	0.6	0.7	1.4	0.7	1.1
Gross fixed capital formation	–1.1	4.1	–2.0	–2.3	1.4
general government	–2.1	7.1	2.4	–9.4	–2.8
housing	3.6	–3.2	–3.2	–4.5	–0.7
enterprises	–3.1	7.3	–2.1	–0.3	2.8
p.m. Domestic expenditure excluding change in inventories	*1.4*	*1.1*	*–0.2*	*0.0*	*1.1*
Change in inventories (1)	0.3	0.9	–0.4	–0.3	0.0
Net exports of goods and services (1)	0.6	–0.3	0.5	0.5	0.0
Exports of goods and services	8.1	6.4	1.8	0.1	3.1
Imports of goods and services	7.5	6.9	1.3	–0.5	3.1
Gross domestic product	2.3	1.8	–0.1	0.2	1.1

Sources: NAI, NBB.

(1) Contribution to the change in GDP compared to the previous year, percentage points.

in the second and third quarter of 2013. Annual growth remains very weak, given that the positive growth rates from the second quarter are partly neutralised by the negative spillover effect of the contraction during 2012.

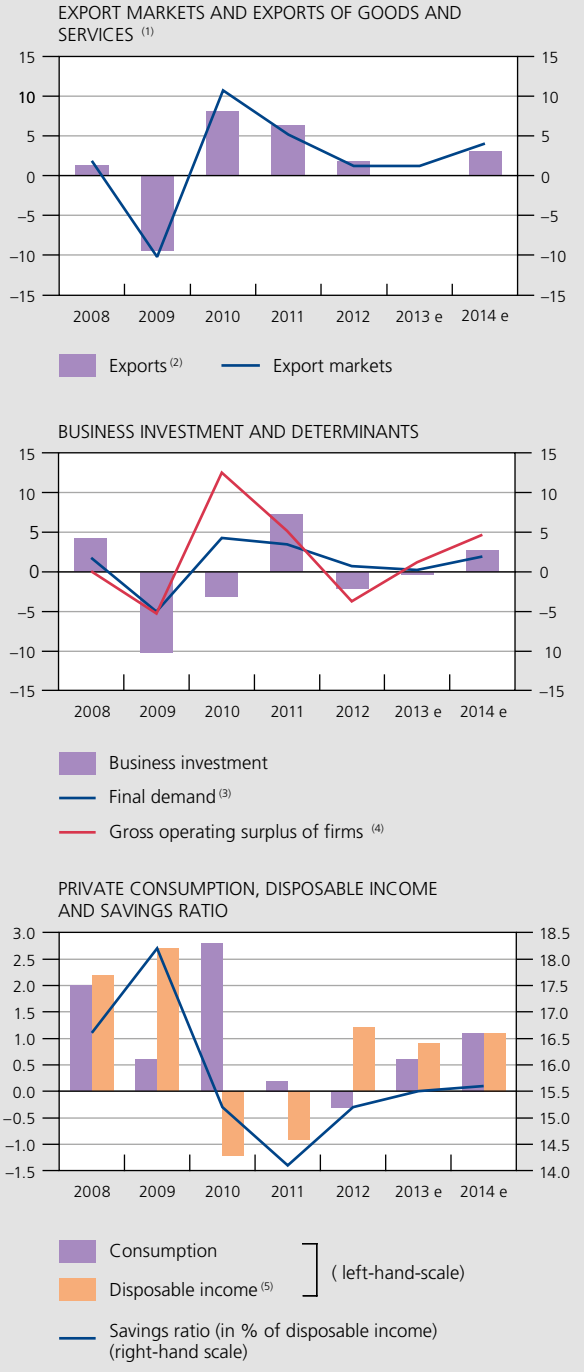
Next year, however, the improvement in economic activity should boost annual growth, with quarterly growth rates maintained at around 0.3 % throughout the year. According to the projections, activity will rise by 1.1 % in 2014. Although that forecast remains the same as in the spring, growth in 2014 will probably gain more support from private consumption – due mainly to the spillover effects of the stronger recovery in 2013 – and to a lesser extent from public spending owing to the additional expenditure cuts announced in the 2014 budgets.

In regard to the contribution to growth made by international trade, net exports are projected to represent around 0.5 percentage point of growth in 2013, owing to the moderate fall in the volume of imports and the even smaller rise in exports. That contribution is the same as in 2012, but it incorporates a small upward revision compared to the spring forecasts (which still predicted stagnating exports), given the slightly positive export growth. Moreover, a positive contribution from net exports typifies the start of a recovery in Belgium. In 2014, according to the current forecasts, imports and exports would expand in roughly equivalent proportions, reducing the growth contribution of net exports to practically zero.

For both years, export growth lags a little behind the expansion of the export markets since the projections assume that Belgium will continue to lose market shares. The movement in these market shares is fairly volatile year-on-year, and according to the national accounts and the available statistics on the growth of demand for imports from partner countries, Belgian exporters have seen their market shares increase in some years, often when global economic activity was weak, as in 2009, 2011 and 2012. Measured over a slightly longer period, however, the Belgian economy has a tendency to lose market shares, the main reason being a lack of competitiveness, attributable to both costs and non-cost factors. According to the initial observations, the share of export markets held by Belgian firms was expected to be down again in 2013, and the current forecasts indicate that the same will apply in 2014. However, during these two years, the loss should be less than the long-term average owing to the relatively favourable movement in unit labour costs assumed by the forecasts, which will be examined in section 4. It is mainly thanks to the recent measures aimed at limiting pay increases, as a first move towards reducing the competitiveness gap in relation to neighbouring countries, that labour costs are set to rise more slowly in

CHART 3 MAIN EXPENDITURE CATEGORIES AND DETERMINANTS

(percentage changes; volume data, unless otherwise stated)



Source : NBB.
(1) Seasonally adjusted data.
(2) Calendar adjusted data.
(3) Excluding change in inventories.
(4) Value data.
(5) Data deflated by the private consumption expenditure deflator.

Belgium than in the euro area as a whole in 2014, though another factor is a marked acceleration in wage growth in, for example, Germany. The narrowing of the wage gap should bolster export growth, even though the full effects will only become apparent in the longer term.

The volume of domestic demand (excluding changes in inventories) is expected to remain unchanged in 2013, as the positive growth rates recorded from the second quarter onwards are likely to be entirely offset by the spillover effect of the marked slowdown in domestic demand during 2012. However, demand will continue rising in 2014, when average growth is projected at 1.1 %. That is comparable to the 2011 growth rate, but still well below the figures recorded prior to the great recession.

Private consumption is once again likely to be the main driver of growth. After an exceptionally long period of decline in real terms in both 2011 and 2012, the revival from the start of 2013 should result in clearly positive year-on-year growth this year, and according to the current forecasts that growth should double in 2014. The upturn in private consumption is due both to the new, albeit modest, rise in the real disposable income of households and to the gradual waning of macroeconomic uncertainty.

In regard to the first of these two factors, the income growth recorded in 2013 is supported to a greater extent than in 2012 by the secondary distribution of incomes, with a further reduction in net transfers to general government in real terms, despite the relatively sizeable increases in taxes on income and assets. However, the real rise in labour income will subside to a very low level, owing to wage moderation and the fall in employment described in section 3. The real growth of other primary incomes, such as property income, will nevertheless exceed the 2012 figure, notably on account of the growth of private assets and the small rise in long-term interest rates. Overall, real disposable income will be up by around 1 % in 2013. Comparable growth is forecast for 2014, while the growth of labour income will be barely higher than in 2013.

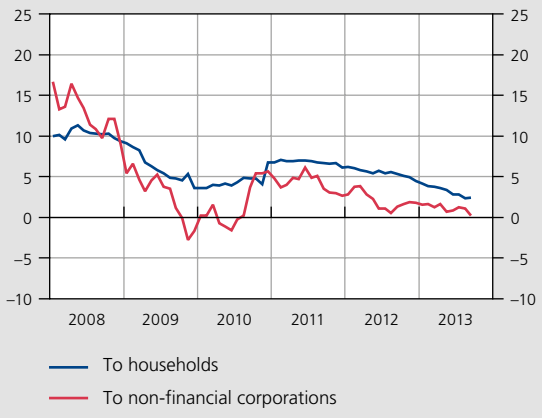
As regards the economic uncertainty, the household savings ratio which had fallen to an exceptionally low level after the end of the great recession in 2011 began rising again in 2012. While the propensity to save is expected to increase a little further in 2013, according to the currently available sector accounts, the current forecasts predict no change in 2014 despite the growing share of disposable income represented by financial incomes – which are traditionally devoted more to savings – and the higher returns on savings expected on the basis of the rise in real interest rates. The expectation of a constant savings ratio is linked to the improvement in confidence which is prompting a gradual reduction in precautionary household savings. It may also be connected with liquidity constraints which imply that, for many households, increased income is reflected in a rise in consumption expenditure.

Unlike private consumption, investment in housing is expected to record (very) negative real growth again in 2013, for the third year running, which shows that household confidence in the longer-term income prospects is still very fragile. In addition, tighter credit conditions are also likely to be a factor, as will the rise in real mortgage interest rates and the uncertainty concerning the transfer to the regions of the tax treatment of mortgage loans. The growth of mortgage lending slowed further in 2013 while remaining positive. Despite the expected recovery of these investments in housing during 2014, the average growth is likely to remain negative next year.

The volume of business investment returned to positive growth from the first quarter of 2013, although year-on-year growth remains slightly negative owing to the spillover effect. These investments are set to continue rising steadily over the projection period, recording annual growth of just under 3 % in 2014. The business investment revival is of course due to the improvement in the demand outlook in a context of economic recovery. In addition, capacity utilisation in manufacturing industry began rising again in the second and third quarter of 2013, although it remains well below its long-term

CHART 4 LOANS GRANTED BY RESIDENT BANKS TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

(end-of-quarter data, year-on-year percentage changes)



Source : NBB.

average. Moreover, the improvement in the gross operating surplus, after the steep fall in 2012, is creating scope for internal financing for firms, while – according to the Bank Lending Survey – business credit conditions eased in the first quarter.

Despite the consolidation efforts, public consumption will continue rising in real terms. The growth rate was expected to subside to around 0.7 % in 2013, notably owing to the need to cut the budget deficit below 3 % of GDP, but should pick up in the following year to just over 1 %, a rate similar to the growth of private consumption. In addition, public investment was down sharply in real terms in 2013, which is not unusual for a year following the local elections, and would probably continue to fall in 2014.

3. Labour market

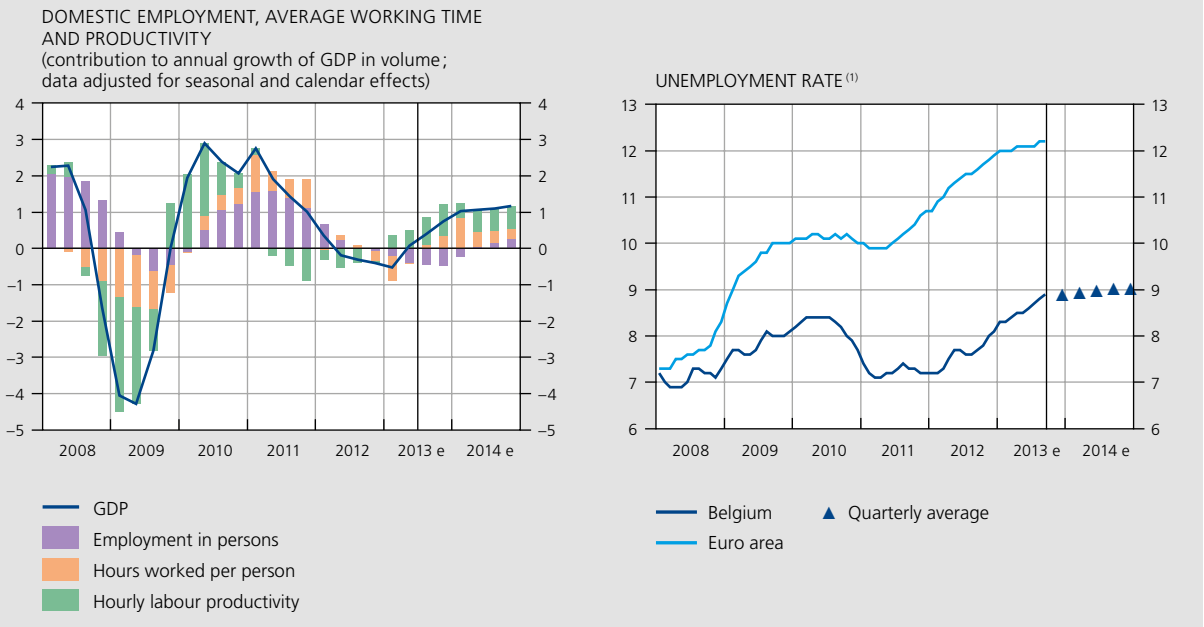
Employment generally takes a certain time to react to changes in economic activity. Thus, while GDP contracted in 2012, average employment was still slightly up on an annual basis. The revival in activity in 2013 was also not reflected in corresponding employment growth; employment is forecast to fall by 0.4 % this year. Only in 2014 is there likely to be new net job creation, but it should still be modest at around 0.1 %.

Initially, the rising demand will be absorbed by greater labour productivity and by an increase in the hours worked per person. Nevertheless, job creation has undergone a modest upward revision compared to the spring projections (which still predicted a slight drop in domestic employment in 2014).

Following the record reduction in average working time in 2009, as a result of employers making intensive use of temporary lay-offs and certain crisis measures, the hours worked per person have not yet returned to their pre-crisis level, according to the estimates for 2013. Less use was made of labour hoarding schemes during the 2012 cyclical downturn. Apart from the more modest decline in activity, there are at least two reasons for that: first, on emerging from the great recession, firms had smaller financial reserves, and second, the conditions for resorting to temporary lay-offs were tightened by introduction of a responsibilisation contribution by employers.

Taking account of the very small reduction in average hours, the decline in the total volume of work in 2013 is mainly due to job losses, which should be greater than in 2009. This delayed response by employment is also partly attributable to the expiry of certain measures which buttressed demand for labour and which had been reinforced

CHART 5 LABOUR MARKET



Sources : EC, NAI, NEO, NBB.
(1) Harmonised unemployment rate in % of the labour force.

in 2010. In particular, in the second quarter of 2013, the number of people benefiting from the Activa win-win scheme reverted to zero. At the same time, various collective redundancy programmes previously announced in connection with business closures or restructuring took effect. In view of the length of the associated procedures, these collective redundancies would continue to have an impact on the employment figures in 2014.

In the context of the expected economic recovery, firms are initially expected to get their staff to increase their working hours and restore their level of productivity before they embark on new recruitment. In 2014, the hours worked per person should therefore rise, while there is only likely to be a small increase in the number of persons employed, so that the rise in the total volume of labour would be attributable mainly to the increased working hours of existing workers. However, since activity is set to pick up more strongly in 2014, the rate of increase in hourly productivity is expected to match last year´s figure.

Job losses in 2013 have mainly occurred in branches sensitive to the business cycle, and there should be virtually no net job creation throughout 2014. In contrast to what happened during the great recession, the "general government and education" sector is also likely to be affected in the light of the fiscal consolidation at various levels of power. Conversely, as in previous years, the heavily subsidised "other services" branch (mainly health care and social services) is likely to contribute to the rise in employment.

Other subsidised jobs, such as those covered by the service voucher system, should continue to support job creation. However, the growth rate here will be slightly below the 2008-2009 figure, partly owing to the gradual saturation of demand and successive increases in the price of the vouchers.

As in previous years, the number of self-employed persons is forecast to boost employment, with growth of about 1 % in 2013 and 2014, representing between 6 000 and 7 000 additional workers.

In total, domestic employment is expected to decline by 17 400 persons in 2013 and expand by 2 500 in the following year. As a result of the contraction in demand for labour and its dissuasive effect on labour supply, the

TABLE 4 LABOUR SUPPLY AND DEMAND

(annual averages, calendar adjusted data, unless otherwise stated)

	2009	2010	2011	2012	2013 e	2014 e
			(percentage change)			
GDP	–2.8	2.3	1.8	–0.1	0.2	1.1
Volume of labour	–1.3	1.0	2.1	0.2	–0.4	0.5
Domestic employment in persons	–0.2	0.7	1.4	0.2	–0.4	0.1
			(change in thousands of persons)			
Domestic employment	–8.8	30.2	63.4	9.4	–17.4	2.5
Employees	–13.3	23.9	53.7	0.5	–24.1	–3.2
of which:						
Branches sensitive to the business cycle	–38.1	2.8	31.9	–6.0	–31.5	–13.3
General government and education	13.8	6.7	3.7	–0.6	–1.6	–1.8
Other services	11.0	14.4	18.1	7.1	9.1	11.9
Self-employed	4.5	6.3	9.7	8.9	6.7	5.7
Frontier workers	1.1	0.8	–0.1	1.1	0.2	0.0
Total employment	–7.7	31.1	63.2	10.5	–17.2	2.5
Unemployed job-seekers	50.6	13.7	–19.8	14.4	23.5	19.4
Labour force	42.9	44.7	43.4	25.0	6.4	22.0
p.m. Harmonised unemployment rate(1)	*8.0*	*8.4*	*7.2*	*7.6*	*8.7*	*9.1*

Sources: EC, NAI, NEO, NBB.
(1) In % of the labour force (15-64 years), non calendar adjusted data.

labour force is expected to grow by around 6 000 persons in 2013, a much slower growth rate than in previous years. This slowdown should cushion the impact of job losses on unemployment. The new rise in unemployment would be felt mainly in 2013, with 23 500 additional job-seekers. The extra 19 400 job-seekers in 2014, would bring the number of unemployed to almost 600 000. The harmonised unemployment rate of the 15-64 age group would thus continue rising to reach an average of 9.1 % in 2014, the highest figure since 1998.

4. Prices and costs

According to the current projections, consumer price inflation measured by the HICP will reach 1.2 % in Belgium in 2013 against 1.4 % in the euro area – and 1.3 % in 2014. These price increases are much lower than in previous years, since inflation stood at 3.4 % in 2011 and 2.6 % in 2012.

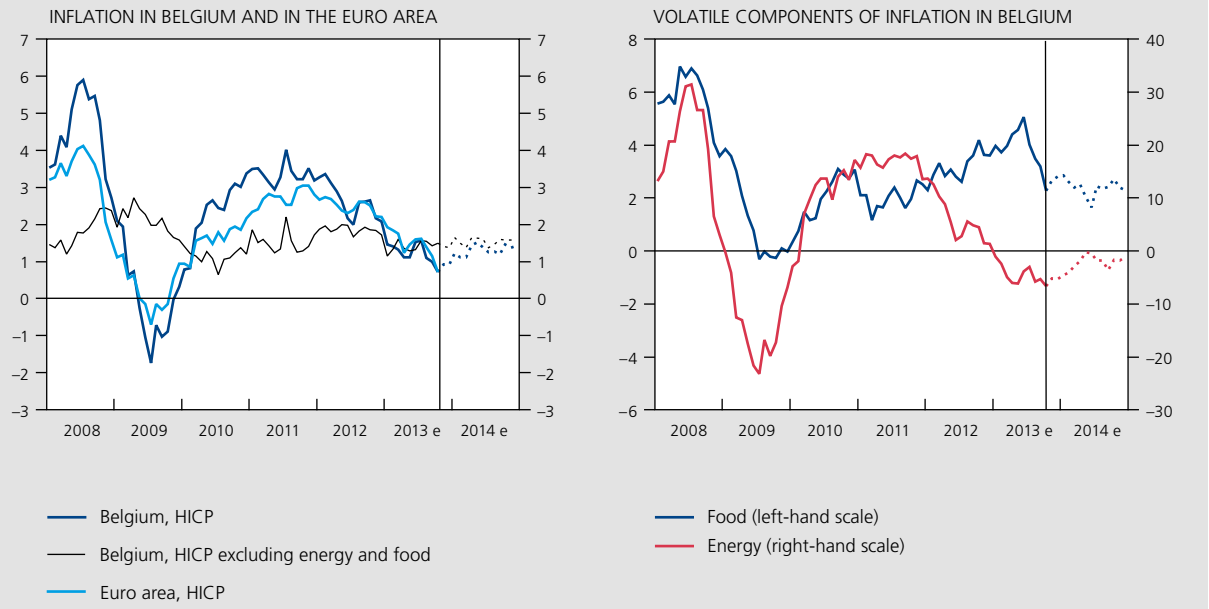
The underlying trend in inflation is linked to factors such as the movements in business costs, including wages, and business pricing policies – and hence also to the competitive environment – and contributes to the slowdown in the inflation rate. It is projected to revert to an average of 1.4 % over 2013 as a whole, and 1.5 % in 2014. This evolution is likewise due to the fact that the January 2012 increases in indirect taxes in the service sector ceased to exert any influence from 2013, whereas they were part of the reason why underlying inflation gathered pace to an average of 1.9 % in 2012.

However, the fall in total inflation is due primarily to the movement in energy prices, which have fallen year-on-year since the beginning of 2013. The current projections assume a 4.7 % decline in 2013 against 2012, when they had risen by an average of 6 %. Although the fall will gradually become less marked, negative year-on-year growth rates are still expected in 2014, with an average reduction of 2.5 %.

These fluctuations are partly attributable to oil prices quoted on the international markets and the behaviour of the euro against the US dollar, and partly to changes on the gas and electricity markets. Thus, the price per barrel of Brent is set to fall slightly over 2013 as a whole, the current projections anticipating an average of $ 108 per barrel in 2013, compared to $ 112 in 2012. At the same time, the euro/US dollar exchange rate will rise to 1.33, against 1.29 in 2012. The lower Brent price combined with a stronger euro will accentuate the fall in the oil

CHART 6 INFLATION

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



Sources : EC, NBB.

price in euros in 2013 compared to 2012. Moreover, after the freezing of the gas and electricity price indexation between April and December 2012, a number of suppliers announced substantial tariff cuts from January 2013 in a context of keener competition. In addition, under new legislation, indexation formulas for variable price contracts can in future only be based on the prices quoted on European gas and electricity markets, and may no longer refer to the oil price.

In contrast to energy prices, food prices are rising faster than in 2012, curbing the deceleration in total inflation. More particularly, prices of unprocessed food are the reason for this acceleration, since they are estimated to have risen by an average of 4.5 % in 2013, as a result of adverse supply conditions due to bad local weather conditions for fruit and vegetables. From 2014, the year-on-year increases should become more modest, our projections forecasting an average rise of 2 %.

After having peaked at 4.4 % in 2012, the rise in unit labour costs in the private sector is expected to subside to 1.7 % in 2013, and 0.6 % in 2014. The deterioration in cost competitiveness in 2012 was due to the unfavourable trend in both labour productivity and hourly labour costs. The outlook for 2013 and 2014 benefits from the gradual recovery of labour productivity gains and the decelerating rise in labour costs, forecast at 2.1 % in 2013 and 1.1 % in 2014, against 3.7 % in 2012. Consequently, the cost competitiveness of Belgian firms compared to firms in Belgium´s three main partners, namely Germany, France and the Netherlands, should tend to improve in 2013, and especially in 2014.

Wage indexation is still the main determinant of the movement in labour costs. Following a rise of 3.1 % in 2011 and 2.7 % in 2012, the health index – which is used as the reference for wage indexation – is projected to increase by 1.3 % in 2013 and 1.4 % in 2014. One of the changes made in January 2013 to the calculation of the health index, namely the inclusion of the downward effect of prices discounted in the sales, is a one-off contributory factor in this deceleration in 2013. Nonetheless, since the various joint committees do not all apply the indexation mechanisms at the same time, the automatic wage adjustment will continue to generate bigger increases in 2013, even though inflation has been falling since the end of 2012. In 2014, that effect will be apparent in a significantly slower pace of wage increases. Apart from indexation, the assumption concerning the movement in hourly labour costs in the private sector in 2013 and 2014 takes account of a real negotiated wage freeze, as specified in the draft interprofessional agreement for 2013-2014 imposed by the government. The movement in other factors relating to wage-setting would be slightly positive in 2013, but a little negative in 2014, mainly owing to the impact of cuts in social security contributions.

TABLE 5 PRICE AND COST INDICATORS

(percentage change compared to the previous year)

	2009	2010	2011	2012	2013 e	2014 e
HICP	0.0	2.3	3.4	2.6	1.2	1.3
Health index	0.6	1.7	3.1	2.7	1.3	1.4
Underlying inflation trend (1)	2.1	1.1	1.5	1.9	1.4	1.5
GDP deflator	1.2	2.1	2.0	1.9	1.6	1.5
Labour costs in the private sector						
Labour costs per hour worked	2.7	0.9	2.4	3.7	2.1	1.1
of which indexation	2.5	0.5	2.7	2.8	1.9	1.3
Labour productivity (2)	–1.5	1.3	–0.2	–0.7	0.4	0.6
Unit labour costs	4.3	–0.4	2.6	4.4	1.7	0.6

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

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

(2) Real value added per hour worked by employees and self-employed workers.

5. Public finances

5.1 Revenue, expenditure and overall balance

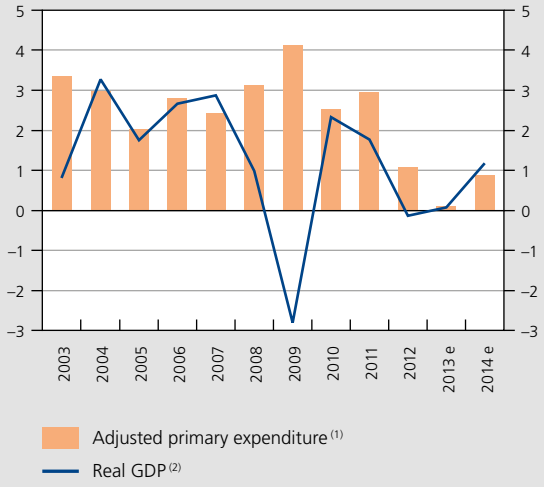
According to the latest data, public finances are expected to end the year 2013 with a deficit of 2.8 % of GDP. In 2014, in the macroeconomic environment described above, that deficit is set to remain stable.

Public revenues expressed as a percentage of GDP are projected to rise by 0.5 percentage point in 2013, before declining by 0.2 percentage point.

The new increase in the revenue ratio in 2013 is mainly due to structural fiscal measures. These include the continuing harmonisation of the tax on income from movable assets at 25 %, the increased tax on capital gains and life insurance premiums, adjustment of the reference rate for the calculation of the notional interest deduction, the increase in excise duty on tobacco and alcohol, and tightening of the rules concerning VAT on investment goods for both business and private use. In 2013, the positive influence of purely temporary factors will be generally comparable to that in 2012, as the revenues expected from such measures as the tax regularisation are likely to offset overall the exceptional revenues generated last

CHART 7 PRIMARY EXPENDITURE OF GENERAL GOVERNMENT AND GDP

(year-on-year percentage changes)



Sources : NAI, NBB.

(1) Primary expenditure is deflated by the HICP and adjusted for cyclical, non-recurring and fiscally neutral factors, and for the effect of indexation. The latter is due to the difference between the actual indexation of civil service pay and social benefits and the increase of the HICP.

(2) Data adjusted for calendar effects.

TABLE 6 GENERAL GOVERNMENT ACCOUNTS (1)

(in % of GDP)

	2011	2012	2013 e	2014 e
General government				
Revenue	49.6	51.0	51.4	51.2
Fiscal and parafiscal revenue	43.6	44.8	45.3	45.5
Other	6.0	6.2	6.2	5.7
Primary expenditure	50.0	51.6	51.0	50.9
Primary balance	–0.4	–0.6	0.4	0.3
Interest charges	3.3	3.4	3.1	3.0
Financing requirement (–) or capacity	**–3.7**	**–4.0**	**–2.8**	**–2.8**
p.m. Effect of one-off factors	*–0.2*	*–0.4*	*0.4*	*0.1*
Overall balance per sub-sector				
Federal government	–3.4	–3.4	–2.7	–2.6
Social security	0.0	–0.1	0.1	0.0
Communities and Regions	–0.2	0.0	0.0	–0.1
Local authorities	–0.1	–0.4	–0.1	–0.1

Sources: NAI, NBB.

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

year by the late payment of the 2011 nuclear levy and the early collection of the tax on life insurance premiums. In regard to non-fiscal and non-parafiscal revenues, the repayment by bpost of subsidies granted in the past and the EU refund of excess customs duties collected are positive one-off factors.

In 2014, fiscal and parafiscal revenues should continue rising, thanks to various measures. Personal income tax revenues should increase, notably following the abolition of the partial allowance for energy-saving investments. In addition, revenues are likely to be boosted by the fairness tax which is applicable to certain companies whose distributed profits exceed the corporation tax base, the introduction of VAT on lawyers´ fees, and other measures, particularly concerning excise duty. Conversely, non-fiscal and non-parafiscal revenues are expected to be down sharply as a result of the disappearance in 2013 of one-off revenues and the reduction in the financial sector´s payments in respect of capital injections and guarantees granted by the government, which have been partly scaled down.

In 2012, primary expenditure had risen to a particularly high level in historical terms, partly on account of the recapitalisation of Dexia. In 2013, that expenditure was expected to contract in relation to GDP by 0.5 percentage point, and that fall should persist in 2014 at a rate of 0.1 percentage point. Adjusted for one-off and cyclical factors and indexation effects, the primary expenditure expressed in volume terms is expected to stabilise in 2013 before rising by 0.9 % next year. The structural growth of public expenditure would then lag slightly behind real GDP growth.

The stagnation of adjusted primary expenditure, in real terms, expected overall in 2013, masks divergent movements within the sub-sectors. The federal government´s expenditure is projected to stabilise in real terms. Social security expenditure is expected to rise by 0.9 %; this very small increase compared to the average rise in recent years is attributable to moderation of health care expenditure. In contrast, the Communities and Regions, like the local authorities, are likely to see their expenditure fall by 0.4 and 1.5 % respectively. The reduction in local authority expenditure is attributable in particular to the fall in public investment, which traditionally occurs in the year following the municipal and provincial elections.

The projections for 2014 point to a 1.9 % contraction in the federal government´s adjusted real expenditure. Social security expenditure is predicted to rise by 2 %, a larger increase than in 2013 but still below the average seen in the past. The expenditure of the Communities and Regions, like that of the local authorities, is forecast to increase by 1.4 % and 0.1 % respectively.

Interest charges will again exert a favourable influence on the budget balance. After rising slightly in 2012, they are expected to decline again in 2013 and 2014 in relation to GDP, following the reduction in the implicit interest rate on the public debt.

The public deficits indicated by the projections exceed the targets set by the federal government of 2.5 % of GDP for 2013 – including a safety margin in relation to the target of 2.7 % of GDP set by the Ecofin Council of 21 June 2013 – and 2.1 % of GDP for 2014. For 2013, the revenues estimated by the present projections are lower than those in the general government budget, giving rise to a spillover effect for 2014. In the case of the local authorities the deficit is expected to exceed the budget figure. In addition, in accordance with the methodology used for the Eurosystem projections, measures which are insufficiently detailed are disregarded. That restriction applies in particular to the relatively substantial underutilisation of funds assumed in various budgets for 2014, and to a large proportion of the revenues expected from measures to combat tax evasion and social security fraud. Finally, the government expects the Communities and Regions and the local authorities to post a joint surplus of 0.1 % of GDP in 2014, whereas the estimates predict a deficit of 0.1 % of GDP.

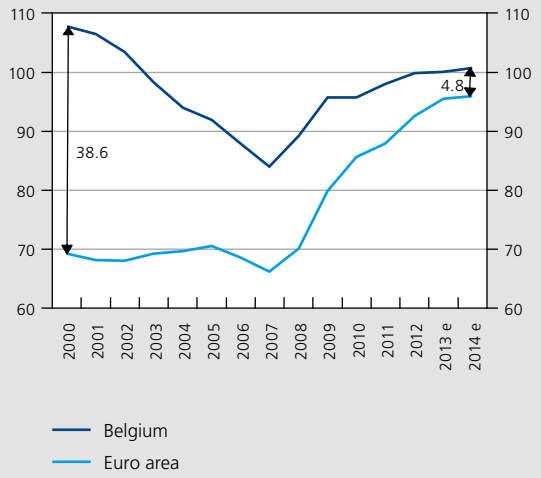
5.2 Public debt

At the end of 2013, Belgium´s debt ratio is estimated at 100.1 % of GDP, an increase of 0.3 percentage point against the previous year. These figures disregard any additional measures designed to meet the federal government´s aim of keeping the debt ratio below 100 % of GDP. Since 2007, Belgium´s public debt would thus have expanded by 16.1 percentage points. Over the same period, however, the rise in the debt ratio appears to have been much larger in other European countries, so that the gap between Belgium´s debt ratio and that of the euro area should narrow further.

The rise in the Belgian debt ratio in 2013 is attributable mainly to exogenous factors, which are expected to raise the debt by 1.1 percentage points of GDP. However, their negative impact should be slightly less than in 2012, mainly thanks to the improvement in the primary surplus, though for 2013 this positive factor is unlikely to offset the dip in nominal GDP growth. The improvement in the primary balance is therefore not likely to be sufficient to stabilise the public debt ratio.

CHART 8 CONSOLIDATED GROSS DEBT OF GENERAL GOVERNMENT IN BELGIUM AND IN THE EURO AREA

(in % of GDP)



Sources : EC, NAI, NBB.

Exogenous factors, thus named because they affect the debt but not the overall balance, are predicted to exert a positive influence of 0.8 percentage point of GDP on the debt in 2013. The loans granted under the EFSF, like the capital injections in the ESM, are likely to contribute to an increase in the debt ratio, while the repayment by KBC and the sale of Royal Park Investments and Fortis Bank should very largely counterbalance that upward effect.

In 2014, the debt ratio is expected to reach 100.8 % of GDP, 0.7 percentage point of GDP higher than in 2013. That is almost exclusively due to exogenous factors, such as the loans granted by the EFSF and the capital injections in the ESM, but also to a range of factors resulting from treasury management[1]. Endogenous factors are predicted to have a slightly negative influence on the debt. According to these projections, the improvement in nominal GDP growth and the level of the primary balance are not yet sufficient to avoid the public debt snowball effect.

6. Risk factor assessment

The Bank´s current projections remain similar to forecasts made by other institutions which likewise predict activity growth of around 1 % for next year. However, this close convergence in the various macroeconomic forecasts must not divert attention from the great economic uncertainty that still surrounds these projections. Generally speaking, the risks still appear to be on the downside.

Indeed, various factors could still undermine the global recovery. First, there is the persistent uncertainty over American fiscal policy and, in particular, the need to restore expenditure growth to a more sustainable path. In addition, there is the prospect of the phasing out of a particularly accommodative monetary policy in the United States and possibly in other regions. For example, the macroeconomic projections for the United Kingdom were recently revised upwards to a significant degree which – according to the Bank of England´s forward guidance – could imply a more rapid monetary tightening. Moreover, this uncertainty over the monetary policy stance in the advanced economies could further depress the growth prospects of the emerging economies via capital flows. In addition, many of those countries have to contend with serious structural challenges, so growth could prove to be weaker than currently estimated. For example, the necessary changes to the Chinese growth model could have a more negative influence on the growth of activity during a transitional period. Finally, in regard to the euro area, the debt reduction process necessary in many countries is far from complete. Here, the recovery is still very fragile and could also be hampered by reform fatigue and the accompanying heightened uncertainty over the sustainability of the (private and public) debt burden in various countries, and the associated institutional developments. Although the recovery in the euro area and in other advanced economies predicted by the previous estimates appears to be continuing, significant downside risks nevertheless persist.

At the national level, the downside risks seem to relate mainly to the movement in relative competitiveness and the persistence of favourable confidence effects. On the first point, one key factor concerns the degree to which the current control over wage costs will be maintained in 2014, as expected in the present projections, and may lead to a narrowing of the wage gap in relation to the main partner countries. However, it should be borne in mind that labour costs are only one aspect of the competitiveness differential. If the movement in Belgian competitiveness proves to be less favourable than expected – which depends, of course, on developments in the other countries – the losses of market share could worsen, causing export and activity growth to slow down, though that will only be perceptible in the medium term.

(1) This concerns the cost of repurchasing the buy-backs, the impact of issue premiums – the exceptional issue premiums recorded in 2012 and 2013 reduced the debt ratio at that time but will drive the ratio higher in 2014 – and the difference between interest on a transaction basis and a cash basis.

TABLE 7 COMPARISON WITH ESTIMATES OF OTHER INSTITUTIONS

(year-on-year GDP growth, in volume, in %)

Institution	Latest forecasts			Earlier forecasts		
	Date of publication	2013	2014	Date of publication	2013	2014
Federal Planning Bureau	September 2013 (1)	0.1	1.1	May 2013 (2)	0.2	1.2
Belgian Prime News	September 2013	0.0	1.0	June 2013	0.1	1.2
IMF	October 2013	0.1	1.0	April 2013	0.2	1.2
Consensus Economics	October 2013	0.0	0.9	June 2013	0.0	1.0
EC	November 2013	0.1	1.1	May 2013	0.0	1.2
OECD	November 2013	0.1	1.1	May 2013	0.0	1.1
NBB	**December 2013**	**0.2**	**1.1**	**June 2013**	**0.0**	**1.1**

(1) Economic budget.
(2) Economic forecasts 2013-2018.

In regard to confidence effects, one might point out, for example, that stabilisation of the household savings ratio, as predicted in these projections, clearly depends on a continuing decline in uncertainty. Increased uncertainty over the medium-term income prospects, caused for instance by a slower recovery in employment, could give rise to higher precautionary savings. Similarly, greater uncertainty among producers regarding the demand prospects could dampen the revival of business investment or employment. The confidence of Belgian consumers, investors and employers is naturally very dependent on the international economic outlook, but purely national factors, such as uncertainty over fiscal policy, may also play a part. Conversely, more robust global growth could also trigger stronger positive confidence effects which could cause domestic demand to pick up faster than forecast by the projections. Finally, the federal and regional elections in May 2014 and the ensuing formation of governments could likewise be a factor of uncertainty.

Annex

PROJECTIONS FOR THE BELGIAN ECONOMY: SUMMARY OF THE MAIN RESULTS

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

	2010	2011	2012	2013 e	2014 e
Growth (calendar adjusted data)					
GDP in volume	2.3	1.8	–0.1	0.2	1.1
Contributions to growth:					
Domestic expenditure, excluding change in inventories	1.4	1.1	–0.2	0.0	1.1
Net exports of goods and services	0.6	–0.3	0.5	0.5	0.0
Change in inventories	0.3	0.9	–0.4	–0.3	0.0
Prices and costs					
Harmonised index of consumer prices	2.3	3.4	2.6	1.2	1.3
Health index	1.7	3.1	2.7	1.3	1.4
GDP deflator	2.1	2.0	1.9	1.6	1.5
Terms of trade	–1.6	–1.3	–0.2	–0.4	0.6
Unit labour costs in the private sector	–0.4	2.6	4.4	1.7	0.6
Hourly labour costs in the private sector	0.9	2.4	3.7	2.1	1.1
Hourly productivity in the private sector	1.3	–0.2	–0.7	0.4	0.6
Labour market					
Domestic employment (average annual change in thousands of persons)	30.2	63.4	9.4	–17.4	2.5
Total volume of labour [1]	1.0	2.1	0.2	–0.4	0.5
Harmonised unemployment rate [2] (in % of the labour force)	8.4	7.2	7.6	8.7	9.1
Incomes					
Real disposable income of individuals	–1.2	–0.9	1.2	0.9	1.1
Savings ratio of individuals (in % of disposable income)	15.2	14.1	15.2	15.5	15.6
Public finances [3]					
Overall balance (in % of GDP)	–3.7	–3.7	–4.0	–2.8	–2.8
Primary balance (in % of GDP)	–0.4	–0.4	–0.6	0.4	0.3
Public debt (in % of GDP)	95.7	98.0	99.8	100.1	100.8
Current account (according to the balance of payments, in % of GDP)	**1.9**	**–1.1**	**–2.0**	**–1.7**	**–1.1**

Sources: EC, DGSEI, NAI, NBB.

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

(2) In % of the labour force (15-64 years), data not adjusted for calendar effects.

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

Trends in tax systems in the EU

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Introduction

It has long been acknowledged that many European countries, and especially Belgium, have a high level of taxation on labour incomes. Against that backdrop, national and international economic institutions point out that this heavy taxation may lead to distortions in the labour supply, and stress the need to transfer part of the tax burden from labour to other revenue sources.

In the current context, it is less a question of changing the method of taxation but rather a matter of seeking new potential revenues, as the need for massive fiscal consolidation is nearly universal. That consolidation essentially requires cutting back public expenditure, but in view of the scale of the problem, it also means seeking new resources. Ideally, the latter should create the minimum possible additional distortions and should ultimately replace taxes that cause greater distortion, once the tax pressure can be eased somewhat.

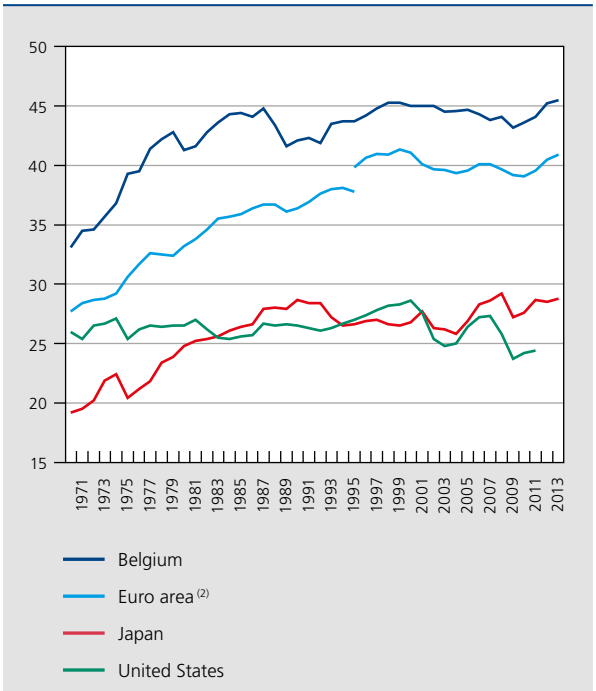
Moreover, tax systems are constantly evolving. It is therefore important to analyse the main trends apparent in the EU, and more particularly in the euro area, since the start of the century. Among other things, that analysis should define Belgium's position in relation to its partners, in terms of both developments over recent years and current levels of taxation. This should be useful for guiding future tax reforms recommended by the EC and the Ecofin Council, which Belgium seems to be willing to tackle. In connection with European integration, it is likewise interesting to see whether the Member States are trying to harmonise their tax systems and tax levels or whether, conversely, they are engaging in fiercer tax competition.

This article begins by putting the overall fiscal and parafiscal burden into perspective over a long period, not only in the euro area but also in the United States and Japan. It then considers the recent past – from 2000 onwards – in the euro area countries, plus Denmark, Sweden and the United Kingdom. It systematically reviews developments and the current situation for the main fiscal and parafiscal revenues – for simplicity, the term "fiscal" will also include the parafiscal revenue later in this article –, looking first at taxes on the factor labour, which on average represent more than half of the total tax burden. The next two sections focus on consumption taxes and environmental taxes. Finally, the article briefly considers capital taxes as a whole before taking a more specific look at corporation tax and discussing some current developments concerning taxation of income from movable property and of financial transactions.

1. Total tax revenues

Since 1970, the total tax burden in what is now the euro area has followed more or less the same pattern as in Japan. The total level of fiscal revenues expressed as a percentage of GDP thus increased substantially up to the end of the 1980s in Japan and up to the mid-1990s in Europe. Thereafter, the tax burden remained stable overall in the euro area. In Japan, the slight fall from the early 1990s was transient, since it was

CHART 1 TOTAL FISCAL AND PARAFISCAL REVENUES (1)
(in % of GDP)



Sources: EC, OECD (up to 1980 for Japan and 1994 for the euro area).
(1) Excluding imputed social security contributions.
(2) Unweighted average for 1970-1994, own calculations.

subsequently matched by a rise from the beginning of the 2000s. Over this period as a whole, the variations were much less marked in the United States, where total tax revenues today are similar to, but lower than, those of the 1970s.

Since 1970, the total tax burden in terms of levels has always been heavier in Europe than in the United States and Japan. However, the fairly small gap between Europe and the United States at the start of the period has widened, and Japan now has a heavier tax burden than the US. That burden is currently around 30 % lower in Japan than in Europe, as was already the case at the start of the period, whereas in the United States it is almost 40 % below the European figure.

In comparison with these major economic regions, Belgium has always had a particularly heavy tax burden. In 2013, the gap in relation to the euro area is 4.6 percentage points of GDP.

Within the euro area, the total tax take expressed as a percentage of GDP remained practically unchanged between 2000 and 2013. However, that apparent stability conceals variations in the member countries.

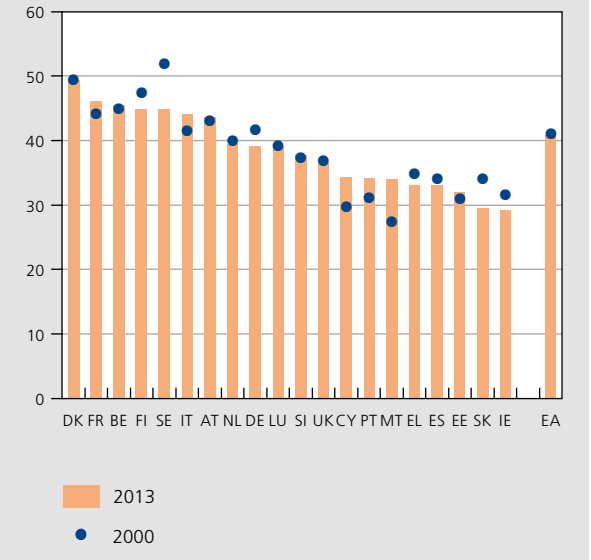
Among the countries which reduced the tax burden, Sweden stands out for the scale of that reduction, so that it is no longer the country with the heaviest tax burden in Europe. Although Finland's tax cuts were more modest, they removed the country from the third place which it had held in 2000. At the other extreme, taxation became the lowest in the euro area in Member States which also made substantial cuts, namely Ireland and Slovakia. In Spain and Greece, the current fiscal consolidation has driven the tax burden back up in recent years, which partially offset the decline observed until 2009.

Conversely, other countries have recorded an increase in their tax burden over the past 13 years. Among the countries where the burden was already high in 2000, this essentially concerns France and Italy. Taxation was also increased in Member States where the burden remains below the euro area average, such as Malta, Cyprus and Portugal.

Belgium, which now ranks third, reverted to a total level of taxation close to that prevailing in 2000, as did Austria and the Netherlands, for example. Nonetheless, that stability covers a downward phase up to the outbreak of the financial and economic crisis, followed by an increase dictated by fiscal consolidation.

In the following breakdown of taxation by type of tax, the most recent statistics often end in 2011, but in some cases

CHART 2 FISCAL AND PARAFISCAL REVENUES IN EUROPE (1)
(in % of GDP)



Source: EC.
(1) Excluding imputed social security contributions.

the financial and economic crisis has resulted in a change of trend which only became apparent later. That applies, for example, to the substantial consolidation undertaken by certain euro area Member States which had previously exhibited a downward trend in their tax burden. Wherever possible, the findings relating to the period 2000-2011 are supplemented by notes on the most recent years, though the comments are sometimes merely qualitative.

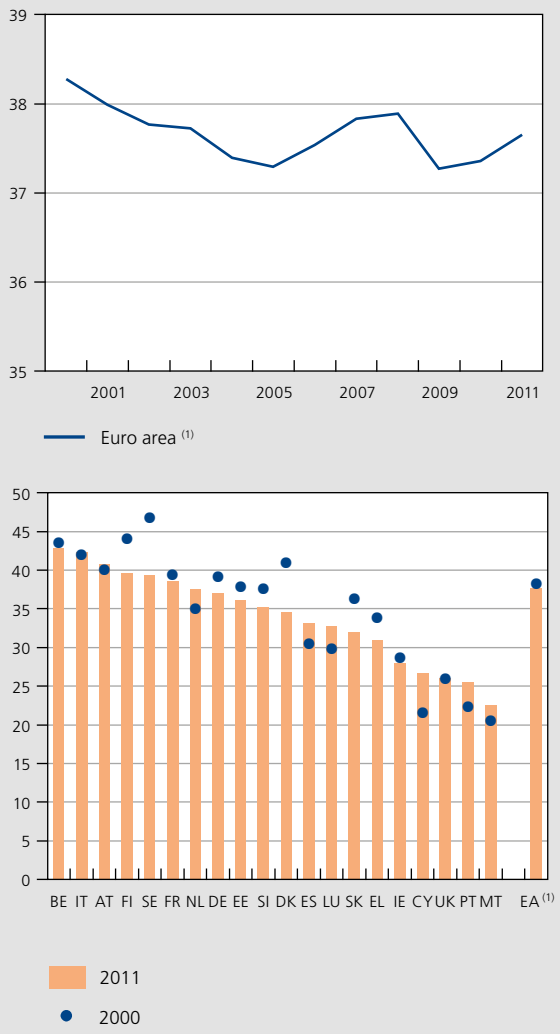
2. Taxes on labour

The implicit tax rates applicable either to labour or to other tax bases are calculated from macroeconomic data, by comparing the revenues actually collected with the theoretical tax base indicated by the national accounts. They therefore show the true tax burden, and in particular take account of any reductions granted, also known as tax expenditure.

In 2011, the implicit tax rate on labour in the euro area as a whole was slightly lower than in 2000. However, that decline was not continuous. Up to 2005, the reduction had been more or less linear. After that, driven by a number of countries such as Italy, the Netherlands and Slovakia which took fiscal measures in that regard, the implicit rates of tax on labour edged back up until 2008, without regaining the levels of the start of the century. In 2009, the fall in this tax rate was particularly marked. That was due, on the one hand, to the crisis and the pro-cyclicality of taxes on labour, as the progressive character of personal income tax then implies that the decline in taxes outstrips a contraction of the tax base. On the other hand, a number of Member States had then taken measures in favour of a reduction in the tax burden as part of their recovery plans. The rise which ensued from 2010 was initially connected with the temporary cyclical upswing, and was subsequently due to the essential fiscal consolidation in many economies. In fact, in 2011 and 2012, various countries increased the rate of personal income tax – sometimes for a limited period – while endeavouring to strengthen the employment incentives for certain target groups. One result of this was an increase in the tax burden on high incomes.

Over the period as a whole, there was some convergence in the implicit rates of tax on labour in Europe. That was due partly to larger increases in labour taxes in countries where the tax rate had been relatively low – such as Malta, Portugal and Cyprus – and partly to cuts in certain countries where the rate had been particularly high, such as Sweden and Finland. The great exceptions to this relative convergence are Greece and Slovakia, which lowered the implicit tax rate on labour whereas it had been fairly close to, but below, the euro area average in 2000. Belgium likewise cut this tax rate, but by such a small amount that it became the country with the highest implicit tax rate on labour in this group, at 42.8 % in 2011. Conversely, Malta had the lowest implicit tax rate at 22.7 %, only just over half the Belgian figure.

CHART 3 IMPLICIT TAX ON LABOUR
(rates)



Source: EC.
(1) Weighted average.

As stated in the introduction, international economic institutions regularly recommend reducing taxes on labour in favour of other types of taxation, especially in the euro area countries, as there are many economic arguments in favour of doing so.

The main one concerns the impact that the various tax instruments may have on economic growth. Thus,

an OECD publication based on an empirical analysis covering 21 countries, establishes that "income taxes are generally associated with lower economic growth than taxes on consumption and property" (Arnold, 2008). That publication actually determines the ranking of taxes having the greatest impact on growth. Corporate income taxes seem to have the most negative effect, followed by personal income taxes, consumption taxes and finally property taxes, and particularly taxes on immovable property. A more recent study (Arnold *et al*., 2011) shows that the tax change most conducive to economic recovery in the current circumstances is a reduction in taxes on the lowest incomes, which would stimulate demand, increase the labour supply and reduce income inequality.

One of the other arguments in favour of cutting taxes on the factor labour is that this type of tax applies only to domestic production, whereas a consumption tax affects all goods regardless of where they are produced. Similarly, it is argued that indirect taxes affect all the production factors in the same way, whereas taxes on labour (or capital) affect only one factor. Finally, from the point of view of fairness, taxes on labour apply only to workers, whereas consumption taxes apply to the entire population.

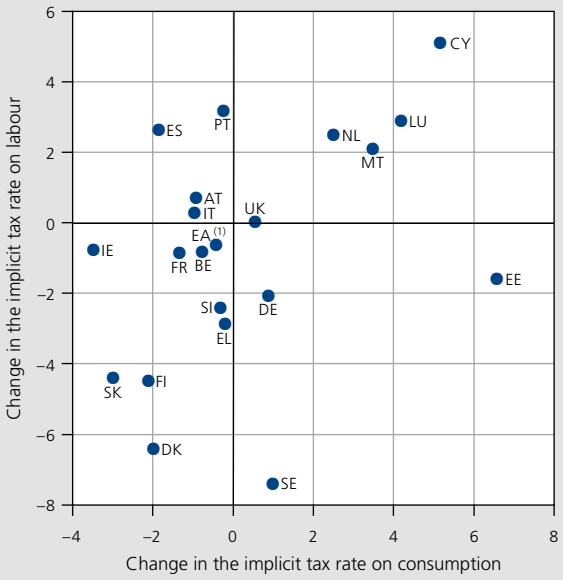
It is therefore interesting to check whether European countries have followed these many recommendations – made not only by the OECD but also by the IMF and the EC [1]. To that end, we compare the movement in the implicit rates of tax on labour and on consumption.

A first obvious finding is the lack of any coordination or similarities between euro area Member States in regard to transferring taxation from one base to another. In fact, the comparison of changes in the implicit rates of tax on labour and consumption between 2000 and 2011 shows that these rates have risen in some cases and fallen in others, depending on the country. On average, the two implicit tax rates have fallen slightly in the euro area, leaving their mutual relationships unchanged overall. Eleven countries reduced the implicit tax rate on labour while eight increased it. This number is the same for consumption taxes, though the countries concerned sometimes vary.

Three countries seem to have followed the recommendations, with a reduction in labour taxes offset by an increase in consumption taxes: Germany, Sweden and Estonia. However, in addition to this group, there are countries which reduced the burden on both these tax bases, cutting labour taxes by more than consumption taxes. Between 2000 and 2011, this essentially concerned Denmark, Greece, Finland, Slovenia and Slovakia. The Nordic countries thus all appear to have followed these

CHART 4 IMPLICIT TAXATION OF LABOUR AND CONSUMPTION

(change in the rates between 2000 and 2011)



Source: EC.
(1) Weighted average.

recommendations. Finally, Malta, which increased its total tax burden, and Luxembourg, which increased it for the two tax bases together, did so by boosting consumption tax revenues by more than those derived from labour, which likewise corresponds to the recommendations, in view of the circumstances.

In contrast, some countries did the opposite of what was recommended, increasing the burden on labour and cutting consumption taxes. This applies to Spain, Portugal, Austria and Italy. Ireland cut its consumption taxes by more than the tax on labour, as did France. Finally, in Belgium, the United Kingdom, the Netherlands and Cyprus, the changes were small or similar for both types of taxation.

The same lack of comparability between countries is evident in regard to the transfer of part of the tax burden from labour to capital. However, taking the average for the euro area, the implicit tax rate on capital declined by more than the rate on the other tax bases, which seems contrary to the recommendations.

The second frequent recommendation on labour taxes concerns limiting the taxation of the lowest incomes, in

(1) See, in particular, IMF (2012) and EC (2013g).

particular to promote the economic recovery by expanding the labour supply.

The OECD's microeconomic data can be used to trace the movement in marginal rates of tax for eight types of workers who differ in their income levels, marital status and number of children. The marginal tax rate includes the taxes and social security contributions paid by these people and by their employers, and any family allowances that they receive. To observe the movement in tax on the lowest incomes without taking account of changes in benefits which depend on family circumstances, it is best to consider the case of a single person with no children, paid two-thirds of the average wage.

This case study reveals that the fluctuations since the beginning of the century have been highly diverse. Thus, some countries recorded strikingly large cuts in the marginal burden on labour. Denmark and Sweden reduced this tax rate by almost 10 and 8 percentage points respectively, and Germany and the Netherlands reduced it by more than 5 points. Conversely, Ireland increased it by almost 10 points and Italy by almost 4 points. These changes narrowed the gaps in this respect for the lowest incomes, but the average fall at the level of the OECD still came to less than 1 percentage point. However, the current levels still range from a marginal tax rate on low wages of almost 66 % of the wage cost for employers in Belgium[1] to less than 38 % in Ireland. Among the founding member countries of the EU, the rates are relatively high.

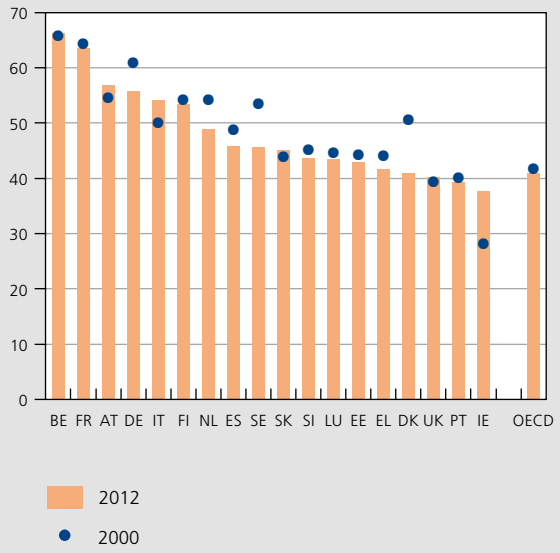
To establish whether the countries reducing income taxes targeted the lowest earners or whether the reduction in labour taxes was general, it is useful to compare these movements with what happened to the highest incomes. To that end, we use the OECD simulations relating to incomes equivalent to 167 % of average earnings, again in the case of a single person with no children. That comparison shows that, on average in the OECD, the moderate fall in the marginal burden on labour was slightly greater on high incomes than on lower incomes, which is contrary to the recommendations.

However, some countries improved their relative situation in terms of marginal tax rates on low incomes as opposed to high incomes. Sweden, Spain, Greece and, to a lesser extent, Slovenia, France and Portugal increased the tax on high labour incomes while reducing the tax burden on low incomes. In Denmark and the Netherlands, the reduction was more modest for high wages than for the lowest incomes.

Contrary to the recommendations concerning low wages, the movement in marginal rates was favourable to high incomes and unfavourable to low wages in Austria, Slovakia and Belgium. In Germany, Luxembourg and Finland, the fall in the marginal rate was smaller for low wages than for high wages. Finally, in Ireland and Italy, the increase in the marginal tax rate between 2000 and 2012 affected low wages more than high wages.

CHART 5 FISCAL AND PARAFISCAL LEVIES ON LOW WAGES

(marginal rates for a single person earning 67 % of the average wage, in % of wage costs)



Source: OECD.

3. Consumption taxes

Consumption taxes consist essentially of VAT (which accounts for over half of indirect taxes), excise duties, customs duties, certain motor vehicle taxes and environmental taxes[2]. As these taxes are levied via a payment from the consumer to the supplier and not direct to the State, they are also referred to as indirect taxes.

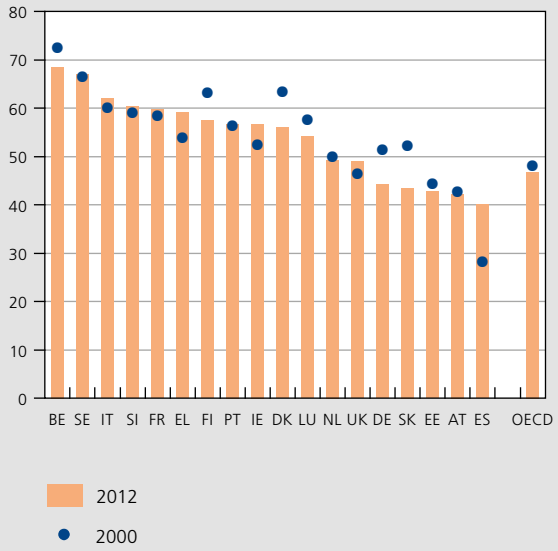
As already indicated, the international economic institutions regularly advocate increasing consumption taxes in order to provide scope for cutting the taxes on labour, which should attenuate the distortion entailed by taxes on the production factors. However, increasing indirect taxes is no panacea, particularly as it generally tends to be more unfair. Indirect taxes are not in fact progressive since they

(1) In all types, the marginal rates in Belgium are much higher than the OECD average. They are even the highest, with the exception of the case of households with children but only one income.

(2) Most environmental taxes are consumption taxes. However, owing to their specific characteristics, they will be discussed in the next section.

CHART 6 FISCAL AND PARAFISCAL LEVIES ON HIGH WAGES

(marginal rates for a single person earning 167 % of the average wage, in % of the wage cost)



Source : OECD.

affect all consumers equally. They are actually regressive in that households with limited resources spend a larger proportion of their income on consumption. Thus, shifting the tax burden from labour to consumption would be favourable to firms and workers, but detrimental to people on benefits. To overcome this drawback, many countries have introduced a system of reduced rates on basic essentials, thus trying to introduce a degree of progressiveness into taxation, but this creates new distortions which are not more desirable. In order to avoid this type of negative effect, it would be better to use part of the additional revenue generated by higher consumption taxes to make a supplementary transfer to modest-income households. The rest of this section looks at how these various arguments and recommendations have been applied in the countries analysed, first in general and then more specifically for VAT and excise duties.

3.1 General developments

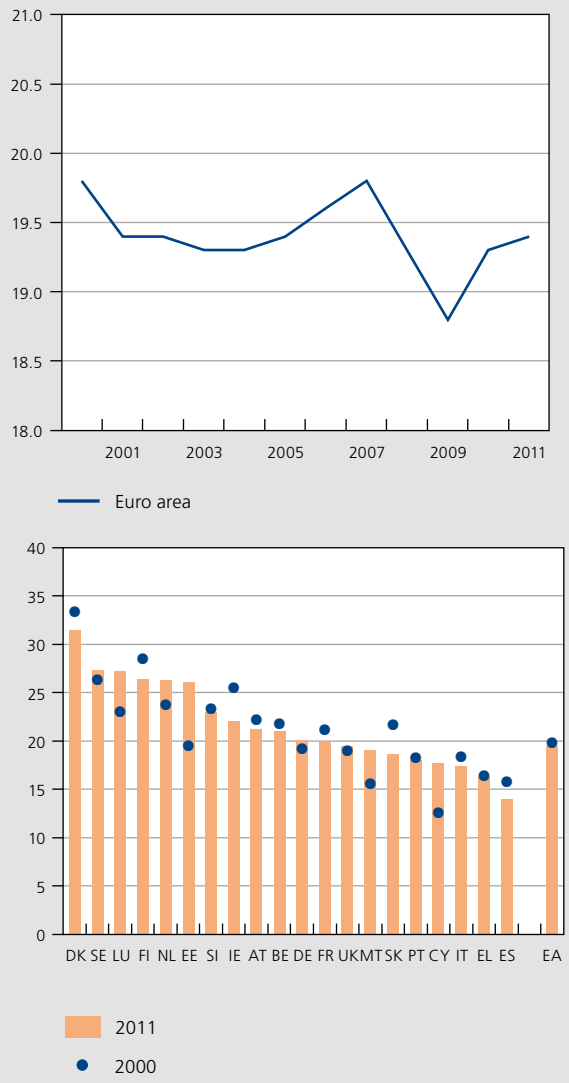
Overall, the implicit tax rate on consumption dropped by 0.4 percentage point in the euro area between 2000 and 2011. The relative stability at the start of the period was disrupted by the outbreak of the financial and economic crisis and by its consequences. In 2008 and 2009, there was a sharp reduction for a range of reasons. First, it was due to the recovery measures supporting final demand. These essentially comprised either a reduction in the standard VAT rate (Portugal, United Kingdom) or a cut in the reduced rates (Finland), or extension of the range of goods taxed at reduced rates (Finland, Austria, Belgium and Cyprus). Next, this fall may be due to a time lag between the payment of VAT by firms, which is immediately affected by the slowdown in activity, and the refund of VAT to firms – particularly exporters – which takes time to follow the economic cycle. In addition, some countries speeded up the refunds as part of their recovery strategy, contributing to a fall in net VAT revenues. Finally, as shown by an INSEE analysis (Faure *et al*., 2012), when purchasing power declines, consumption switches to basic necessities, less taxed.

Conversely, since 2010, more than half the euro area Member States have put up their standard and/or reduced rates of VAT. Some of them have also limited the number of goods and services which are VAT-exempt or taxed at reduced rates. Excise duties likewise increased significantly in most Member States between 2011 and 2013. Finally, for 2013, the EC (2013d) expects a further rise in indirect tax revenues as a percentage of GDP. These developments indicate that the implicit tax rate on consumption will probably have continued rising in 2012 and 2013. In Belgium, too, the recent measures imposing VAT on certain services which had previously been exempt (notaries, bailiffs, lawyers and pay-TV) and higher excise duties should slightly increase the level of implicit tax on consumption.

Between 2000 and 2011, there was a particularly big increase in the implicit taxation of consumption in certain countries, rising by up to 6.6 percentage points in Estonia, whereas it declined in other countries, with Ireland making the largest reduction of 3.5 percentage points. Following these changes, the implicit taxation of consumption only converged slightly between 2000 and 2011, with hardly any reduction in the standard deviation.

By 2000, certain southern European countries, such as Spain, Greece, Italy and Portugal, already had some of the lowest implicit rates of tax on consumption in the euro area. Moreover, those rates fell even further between 2000 and 2011, in contrast to what happened on average in the other euro area Member States. However, it was mainly after 2008 that they fell below their 2000 level, indicating that the crisis had a serious impact there. In addition, these countries had not reduced their standard rates of VAT, suggesting that there was no deliberate intention to reduce the tax burden on consumption; those standard rates have actually risen since then, as have excise duties. The Nordic countries have some of the

CHART 7 IMPLICIT TAXATION OF CONSUMPTION
(rates)



Source: EC.

highest implicit rates of tax on consumption in Europe. Nonetheless, those rates did edge closer to the European average. Belgium recorded a moderate fall in this implicit rate, putting it very close to the euro area average in 2011.

3.2 VAT

VAT is a tax charged on all goods and services at the point of consumption, wherever they are produced. This tax is currently neutral in that there is no discrimination between producers of different origins. However, in the European Union this system is still regarded as transitional: since the creation of the Single Market in 1993, the aim has been to establish a common system of VAT in which the seller of goods and services would invoice the VAT, so that the system would be based on the country of origin.

Under this "transitional" system, EU legislation stipulates that the standard VAT rate must be at least 15 %, but that Member States may adopt one or two reduced rates of not less than 5 % for specific goods and services. In addition, exemptions may be granted, notably for labour-intensive services (in an attempt to bring down unemployment) and for the supply of energy. Some territories are also permitted to apply specific rates to a restrictive list of products or services. Furthermore, a range of goods and services which were exempt or subject to "super-low" rates before 1991 can continue to be taxed at those reduced rates, in accordance with an exhaustive list and/or strict criteria laid down by European law, such as having a social purpose intended to benefit the final consumer. Finally, there are various exemptions defined at Community level, in the public interest (health care, long-term care, education, cultural services, etc.), either because it would be difficult to establish a tax base (financial services, etc.), or for historical reasons (renting of property, for example).

Where these reduced rates apply for social reasons to goods or services regarded as basic essentials, they can attenuate the regressive character of VAT in an attempt to ease the burden borne more specifically by the less well-off. However, this approach attracts criticism, as redistribution is more effectively achieved through direct taxation. Sometimes, rates are also cut to stimulate consumption of certain goods and services, such as books, newspapers, public transport, or plants and flowers.

Owing to the existence of reduced rates and exemptions, the VAT revenues actually collected are lower – sometimes much lower – than they would be if the standard rate applied to all goods and services consumed. Moreover, VAT fraud leads to substantial losses of tax revenues. According to the OECD (2012), those losses average 12 % of revenues in the European Union.

As an unweighted average in the euro area, the standard VAT rate increased from 18.1 to 20.4 % between 2000 and 2013. During that period, there were two phases in the increase in this rate. Between 2000 and 2009, the rise was moderate, not even one percentage point. A third of it was due to the increase in the rate in Cyprus, which the island implemented in order to conform to the minimum rate of 15 % under European rules in view of its accession to the EU. From 2009 onwards, some countries resorted

to the VAT rate to increase their revenues for the purpose of the fiscal consolidation. In the space of four years, the average rate in the euro area then increased by 1.4 percentage points.

Between 2000 and 2013, most of the countries considered thus increased their standard rates of VAT without that common trend leading to harmonisation. Only in Slovakia was the standard rate reduced, while it remained unchanged in six countries, of which Belgium. The biggest increases took place in the countries under particularly severe budgetary pressure, namely Cyprus, Greece, Portugal and Spain. Those countries also had some discretion in this respect, as their rates were below the European average in 2000, and – with the exception of Portugal – even in 2008. In Belgium, although the standard rate has remained static, it is now close to the European average.

The reduced rates likewise pursued an upward trend, since only Finland reduced these rates, while twelve countries in the survey sample increased them, again for the purpose of contributing towards the recent fiscal consolidation. Those rates remained unchanged in seven countries, including Belgium.

3.3 Excise duties

Excise duties are the second biggest source of indirect revenue. They have two specific characteristics, namely they are levied only on clearly defined goods, and the amounts payable are generally expressed in terms of criteria other than the selling price, such as the volume sold. However, some excise duties are calculated *ad valorem*, i.e. on the basis of the selling price. Excise duties are often introduced to influence consumption behaviour in relation to certain specific goods, particularly those which are harmful to health or the environment. On the other hand, like VAT, they do not discriminate according to the origin of the goods and are collected by the final seller rather than directly by the State, so that makes them indirect taxes.

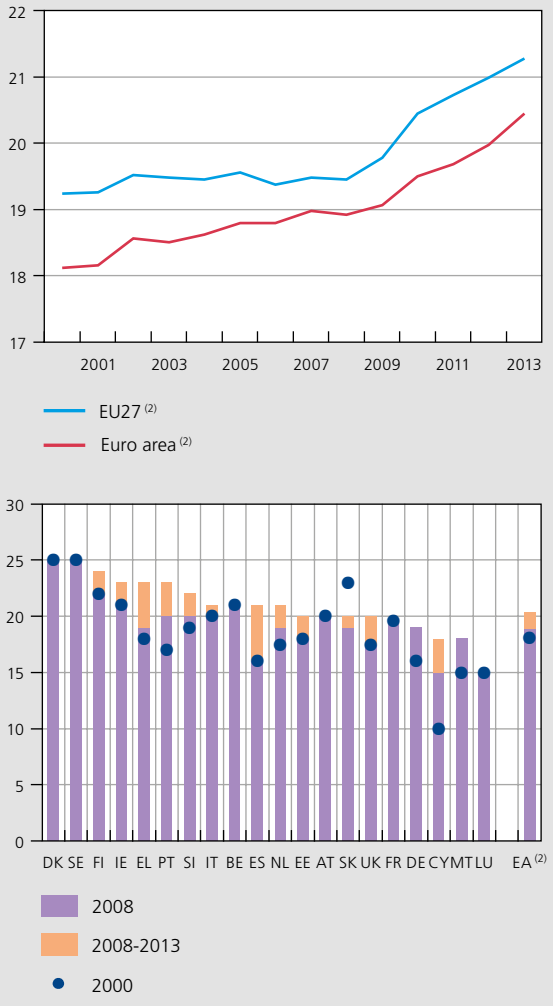
Some products attract excise duties in all 15 Member States which made up the EU in 2000, for which data are available for the entire period. This essentially applies to some alcoholic beverages (though not necessarily all), tobacco, and mineral oils. Excise duties on the last item also form part of the environmental taxes on energy.

In the case of tobacco, the excise duties combine unit levies with *ad valorem* levies. As this second component is affected by inflation – or at least by an increase in the price of cigarettes excluding tax – the excise duties per unit of sales increase even without any change in the law. On average for the countries considered, the increase came to almost 85 % between 2000 and 2013 at current prices, up from € 85 to € 162 per thousand cigarettes. At constant prices the increase is over 40 %, reflecting the substantial use of this resource by a number of countries in connection with the recent fiscal consolidation.

The excise duties on wine are levied according to volume [1]. Some major wine producers such as Spain, Italy and Greece, but other countries too, do not charge excise duties on this product. The excise duties are also particularly low in France. At constant prices, they declined by

(1) Here it is a question of the volume in hectolitres. The volume of alcohol may also determine the level of excise duty, the latter being reduced in some countries if the alcohol content of the wine is below a certain limit.

CHART 8 STANDARD RATES OF VAT [1]



Source : EC.

(1) Where two rates apply in a given year, the rate prevailing on 1 July is the one considered.

(2) Unweighted averages.

almost 5 % on average between 2000 and 2013, demonstrating the extent to which this tax is eroded over time if it is not increased in nominal terms. The nominal level of the excise duties went up by only 30 % in the countries which charge this duty, a figure which is below average inflation. In the countries which collect excise duties on these products, the average is still well above the level in Belgium, where the increase was no more than 12 %.

The excise duties on beer, again per hectolitre consumed, are significantly lower than on wine, but are nevertheless levied in all 15 Member States considered. Beer-producing countries such as Belgium and Ireland impose lower excise duties on beer than on wine, while some wine-producing countries, such as France, Spain and Portugal, tax beer more heavily than wine. At constant prices, the rate of excise duty on beer has fallen slightly, on average, in the countries examined. The biggest proportionate increases occurred in Spain, France and Greece, where excise duties were still particularly low in 2000. In Belgium, these excise duties remain well below the average.

Excise duties on mineral oils represent a large proportion of total excise revenues, owing to both the high level of consumption and the tax burden imposed on these products, which regularly exceeds 100 % of the price excluding tax. These excise duties vary according to the purpose for which the product is used (e.g. heating or road fuel), the fuel's characteristics (LPG, diesel or petrol), and even whether it is destined for business or private use.

On average, in the oldest 15 EU Member States, taxes on heating oil rose by much more than inflation between 2000 and 2013. They more than doubled at current prices, rising by over 60 % at constant prices. The rise was particularly steep in Greece, and almost all the countries considered recorded an increase. However, there was a reduction in France and Luxembourg, the latter actually abolishing excise duty on this product. As the biggest increases occurred in the countries where these products were already heavily taxed, the dispersion became significantly more marked in this respect. Starting from a level which was already fairly low compared to its partners in 2000, Belgium now ranks second lowest after Luxembourg. It should also be noted that taxes on heating oil are generally lower than those on diesel, essentially for social reasons, though that is not the case in the Netherlands and Greece.

Expressed in current prices, the taxes on Eurosuper 95 and on diesel increased in all the countries considered except the United Kingdom between 2000 and 2013, but in varying proportions. The average nominal rise for the countries studied came to 26 and 28 % respectively for Eurosuper and diesel. Conversely, at constant prices, the taxes on these motor fuels were down slightly, indicating that the measures taken did not entirely offset the impact of inflation on these revenues. In Belgium, the rise was fairly close to the average in the case of Eurosuper 95, but exceeded it for diesel, so that the levels approached the average for the 15 countries.

Furthermore, the relative levels of taxation on these two motor fuels are at odds with the regularly cited environmental arguments encouraging heavier taxes on diesel than on Eurosuper 95, as diesel emits more fine particulates and nitrogen oxides (NOx). Despite these arguments, diesel is still subject to lower tax, sometimes much lower, than Eurosuper 95 in every country studied. However, some countries do seem set to eliminate these discrepancies, either quite strongly, such as Sweden and Finland, or more gradually, such as Italy, Denmark, France and Austria, or even Belgium.

4. Environmental taxes

The aim of environmental taxes is to influence the behaviour of consumers and/or producers by increasing the marginal cost of certain goods and services to the private consumer, raising it to the level of the marginal cost for society. These taxes generate what is sometimes called a "double dividend", as these tax revenues – which make it possible to reduce other taxes – complement the environmental objective. These taxes take many forms, ranging from excise duty on certain polluting products, such as fuel, to specific levies on certain products which may vary according to product characteristics.

On average in the euro area, environmental tax revenues expressed as a percentage of GDP declined between 2000 and 2011, dropping from 2.6 to 2.3 %, as most countries recorded a downward trend. Unlike other types of tax, these revenues now exhibit a greater dispersion between euro area countries than in 2000. The general decline as a percentage of GDP is due solely to levies on energy, as the other resources remained more or less stable.

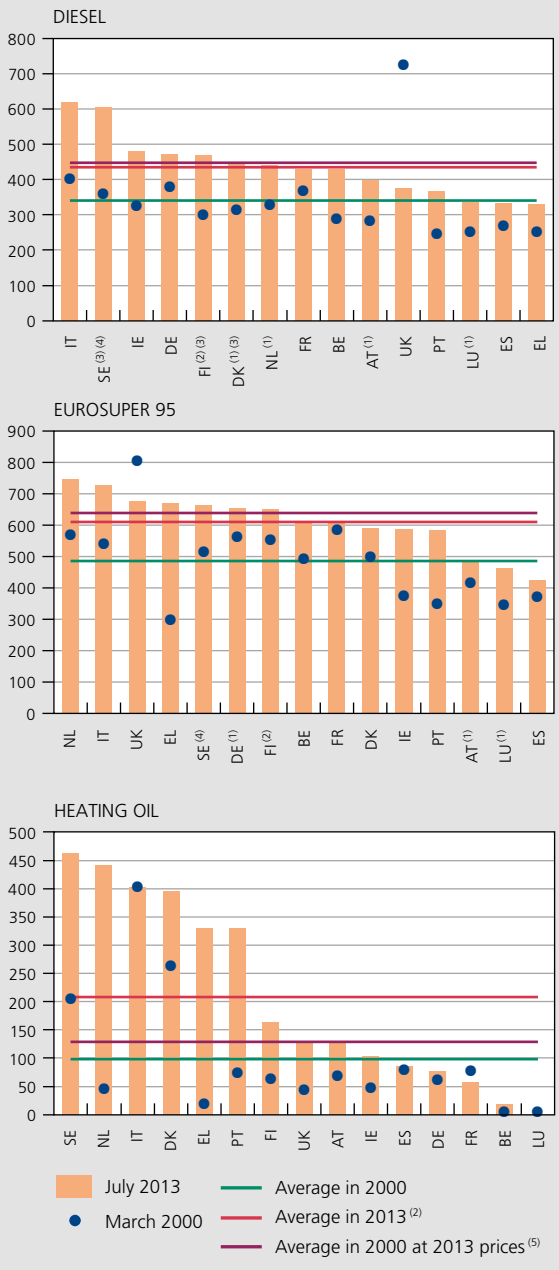
The fall in these revenues may seem contrary to expectations against the backdrop of mounting concern over global warming, pollution and the exhaustion of natural resources. However, it essentially stems from the improvement in energy efficiency, namely the use of energy per unit of GDP.

Taxes on energy generate almost three-quarters of the environmental taxes in the euro area as a whole. In some countries (Netherlands, Malta, Ireland and Denmark),

their volume is equivalent to less than 60 % of total environmental taxes, while it exceeds 90 % in Luxembourg. Other environmental taxes, namely those on transport and other types of pollution, represent on average respectively around 20 % and almost 5 % of environmental tax revenues. These proportions have varied only a little since the start of the century, with the share of energy down slightly in favour of the other two sources.

CHART 9 EXCISE DUTY ON MINERAL OILS

(in € per thousand litres)



Source : EC.
(1) Low sulphur content.
(2) Environment-friendly.
(3) Including taxes on CO_2.
(4) Class 2.
(5) Deflated by the HICP of the 15 first EU Member States.

In Belgium, the level of environmental taxes is below the euro area average. The ranking by component of these taxes in Belgium compared to the EU reveals the factors behind this relatively low figure. Thus, in regard to taxes on energy, Belgium ranks 26th. Conversely, other taxes on transport (annual road tax, registration taxes, etc.) and on pollution or the use of resources, expressed in percentages of GDP, bring in as much as the euro average, or even slightly more.

So the most significant environmental taxes concern energy. The implicit tax rate on energy can be measured in euros paid per tonne of oil equivalent (1). According to the EC's data, the implicit tax rate on energy expressed at constant prices declined by almost 3 % on average in the euro area between 2000 and 2011, reflecting the natural downward trend in taxes charged per physical unit, which are eroded by inflation if nothing is done. That effect can be counteracted by regular adjustments or the indexation of these taxes per unit, as in Denmark.

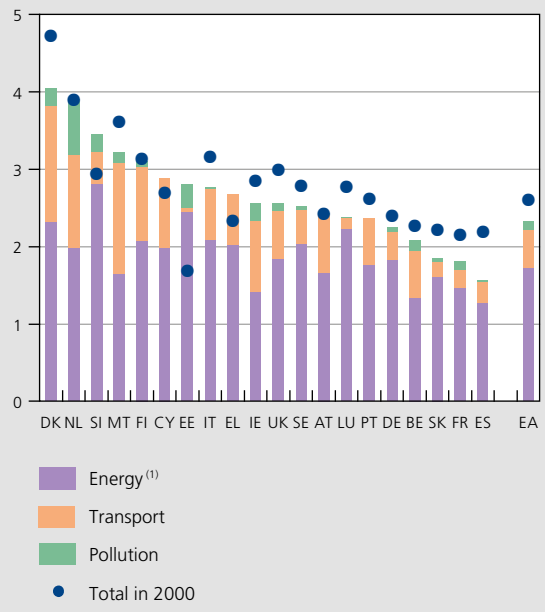
As in the case of taxes on labour and consumption, the average implicit tax rate on energy went through various phases during the period studied. The natural downward tendency was more or less constant between 2000 and 2008. That phase was followed by a rise from 2009, which was probably due mainly to the need for fiscal consolidation. There were many measures concerning this in 2012 and 2013 which are likely to have generated a continuing rise in these revenues.

In the countries analysed, the implicit taxation of energy generally increased, albeit in varying proportions. However, this taxation was down in Italy – where it was high in 2000 – and in Spain, where it was then already low. It remained practically stable in France and Germany so that the level reverted to what it was in 2000 in the euro area, the various countries being weighted according to their respective GDP. Some Member States which had a fairly low implicit tax rate on energy in 2000 are now close to or above the euro area average, such as Cyprus, Slovenia, Greece and Malta. The gap has also narrowed for countries such as Finland and Portugal. In Belgium and Slovakia, where the rate prevailing in 2000 was well below the average, the increase has been moderate so that the gap in relation to the average has hardly narrowed. Taking account

(1) This rate is calculated as the ratio between total energy tax revenues and final energy consumption, aggregating different energy sources on the basis of each source's net calorific value (EC, 2013a).

CHART 10 ENVIRONMENTAL TAXES

(in % of GDP, 2011)



Source: EC.
(1) These taxes include excise duty on fuel.

of these developments, the dispersion of the implicit rates of tax on energy is now less than in 2000, though it cannot be said that there has been any harmonisation in this sphere.

In 2011, the implicit tax rate on energy in Belgium was the third lowest in the euro area, after Slovakia and Estonia. This low figure was due mainly to the excise duty on heating oil, which stood at € 18.5 per thousand litres, compared to an average of € 135.6 in the euro area.

5. Taxes on capital and capital incomes

Capital and the income derived from holding it are taxed in many ways, so that a brief typology of those methods may be useful. Thus, a first distinction must be made between tax on the capital itself – property or wealth – and tax on the income derived from it.

In regard to property, movable assets are rarely subject to direct, recurring taxation, one exception to that principle being the solidarity tax on wealth in France. Conversely, in the wake of the financial crisis, the proposal for a tax on financial transactions has gained increasing support. Such a tax would form part of the taxes on property, in that there is no link with the income generated but only with the value of the property transferred. Similarly, transfers of movable or immovable assets in the form of gifts or inheritances are frequently also taxed, as they have been for a very long time. In addition, the sale of real estate is subject to tax. Finally, immovable assets are subject to recurrent taxation in all EU countries except Malta.

Taxes on capital income comprise corporation taxes and taxes on financial capital gains and other household capital income. In addition, the EC includes income taxes and social security contributions of self-employed workers, notably in calculating the implicit tax rate on capital, the distinction between the parts concerning labour remuneration and capital remuneration being difficult and arbitrary.

Following a general presentation of the level of the implicit tax rate on capital as a whole and how it has changed, the analysis focuses on corporation tax, which generally accounts for the major share of capital taxes, and on recent developments in the taxation of income from movable assets and of financial transactions.

5.1 General presentation

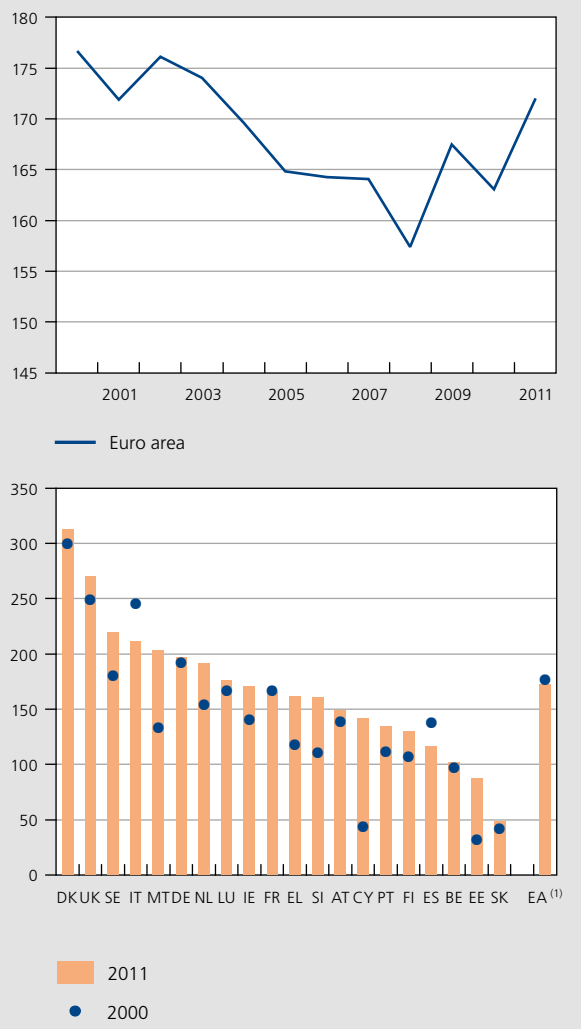
The EC calculates the implicit tax rate on capital as the ratio between, on the one hand, taxes on capital and capital incomes (1) and, on the other hand, total capital incomes (including the incomes of companies and self-employed workers). There is therefore some statistical inconsistency between the numerator and the denominator of this indicator. Nevertheless, it is interesting to see how the taxation of capital and capital incomes has changed over the medium term.

The EC data show that the implicit tax rate on capital declined by 1.3 points in the euro area between 2000 and 2011, bringing it down to 28.9 %. Once again, this movement was not linear, as the sharp rise recorded between 2004 and 2007 temporarily drove this rate above the levels prevailing at the start of the century. Conversely, following the outbreak of the financial crisis, the rate dropped steeply until 2010 before edging back up in 2011.

(1) In Belgium, capital tax thus defined includes notably corporation tax and taxes paid by self-employed workers, inheritance and gift taxes, taxes on long-term savings, revenue collected at the time of the first and second tax amnesties, withholding tax on income from immovable property, road taxes paid by firms, the nuclear levy, the annual tax on UCIs and transfers to the Industrial Accident Fund from private industrial accident insurance funds.

CHART 11 IMPLICIT RATES OF TAX ON ENERGY

(in € per tonne of oil equivalent, deflated data, base year 2000)



Source : EC.
(1) Average weighted by respective GDP.

Over the period from 2000 to 2011, the total decline was particularly marked in certain countries where this rate had previously far exceeded the average, such as Sweden, Finland and the United Kingdom. It was also substantial in some Member States even though the implicit tax rate there was already relatively low, such as the Netherlands, Slovakia, Germany and Austria. Conversely, some countries which already had a high tax rate compared to the European average increased the gap still further after the implicit rate had risen, as it did in France. This rate also recorded a moderate increase in Belgium, but that was enough to drive it above the euro area average. As a result of these developments, the dispersion is now greater than it was in 2000.

5.2 Corporation tax

Nominal rates of corporation tax, being easy to compare, are generally the initial focus of attention for potential investors, even if they subsequently analyse the situation in greater depth. It is therefore useful to focus on these rates – and more specifically on the adjusted top rate – even if they do not cover the complexity of corporation tax systems, better grasped via the effective tax rate.

Nominal rates vary greatly from one country to another, and in 2013 they ranged from 10 % in Cyprus to 36.1 % in France. In all euro area countries, rates have been reduced since 2000, except in Malta where the rate was steady. Taking the euro area average, this rate thus dropped from 34.4 % in 2000 to 25.9 % in 2013. Once again, there were two sub-periods. Up to the start of the financial crisis in 2008, the first downward phase was continuous and sustained. The average rate then stood at 26.3 % in the euro area, more than 8 percentage points below its 2000 level. Since then, the fall has been considerably slower, and the rate actually nudged upwards in 2012 and 2013.

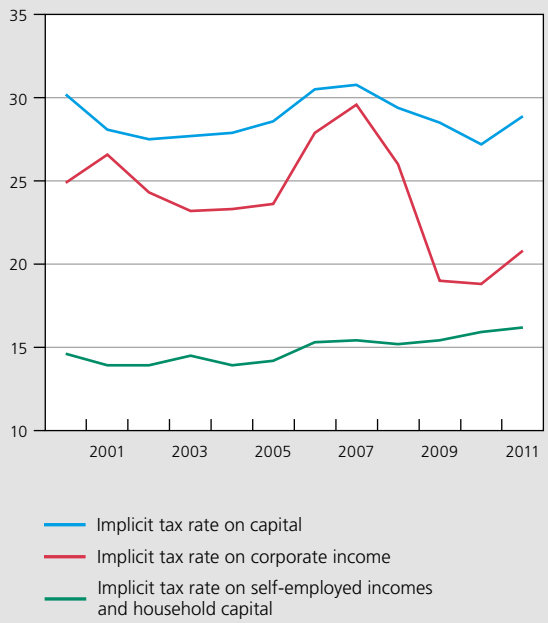
With a tax rate of 33.99 %, Belgium has the third highest adjusted top tax rate in the EU, after France and Malta, despite the rate cut which took effect on 1 January 2003. In fact, no fewer than twelve countries have made larger reductions since 2000, headed by Germany where the rate was cut from 51.6 to 29.8 %. It is noteworthy that among the countries with particularly low rates, Cyprus and Ireland are maintaining these levels despite the pressure put upon them in connection with the European support measures for those countries.

The recent trend towards stabilisation of the tax burden on companies is evident not only in the tax rates but also in the policy on business taxation relating to a number of other instruments. Analysis of the effective tax rate sheds light on developments of this type.

The average effective tax rate on non-financial corporations is a measure of the discounted value of future taxes paid, expressed in proportion to the net discounted value of income flows (excluding the initial investment cost). It indicates the potential attraction of investing in one country rather than another. That rate, illustrated here, is calculated by making a number of economic assumptions, such as a required real net return of 5 % and inflation at 2 %.

Between 2000 and 2012, the average effective tax rate in the euro area went down by 6.3 percentage points, a fall of almost a quarter. However, the more or less general decline was concentrated on the period 2000-2008,

CHART 12 IMPLICIT RATES OF TAX ON CAPITAL
(euro area)



Source: EC.

when countries appeared to engage in intense tax competition in this respect. Since the outbreak of the financial and economic crisis the "race to the bottom" has come to a halt, notably because the necessary fiscal consolidation prevented any further cuts in this area. This competition has reduced the rate dispersion between the various countries.

Between 2000 and 2011, for the euro area as a whole, the decline in nominal rates (–25 %) outpaced the fall in effective rates (–22 %). The decline was even smaller in terms of corporation tax revenues expressed as a percentage of GDP, which were down by 17 %. These last two significant falls confirm that tax competition concerns not just the nominal rate but the overall tax burden on businesses. However, it is important to understand the reasons why these three concepts diverge.

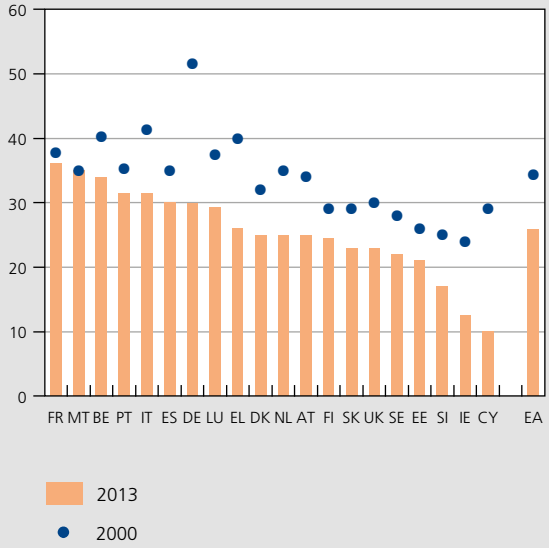
Various factors explain these differences. Thus, the fall in nominal rates was offset by expansion of the tax base, mainly via a restriction on tax expenditure in favour of companies. The discrepancy between the decline in the effective rates and the fall in revenues is logically due to expansion of the tax base, which may be surprising in a crisis period. The reason could be that many self-employed workers set up their own companies in view of the increasing tax advantage, owing to the widening difference between the tax burden on companies and that applicable to individuals.

The decline in the effective rate of corporation tax was likewise widespread with the exception of Ireland, where there was a 5 percentage point increase, and Malta, where the rate reverted to its 2000 level. The steepest falls occurred in Cyprus, Greece and Germany where they exceeded 12 percentage points. In this respect, Belgium recorded the sixth biggest reduction owing to the effect of the notional interest system.

Thus, the downward convergence of nominal rates in the EU countries merely reflects tax competition and not coordinated action at European level. Each Member State is in fact free to choose the rate of direct corporation tax. Moreover, this competition also concerned the tax base, notably via an increase in tax expenditure or advantages available to small firms, for example. Member States therefore developed strategies to attract international investment by adjusting nominal rates, tax bases or special tax regimes.

Harmonisation at European level would have prevented this competition from being detrimental to the Member States considered as a whole. Some rules have gone in that direction. For instance, one key European initiative

CHART 13 CORPORATION TAX RATES (1)
(adjusted top rates)



Source: EC.
(1) Where multiple rates coexist, only the top basic rate is considered plus any eventual surcharges and the average of local taxes.

was the Ecofin Council agreement of 1 December 1997 on a set of measures to combat tax competition. Subsequently, in 1999, the Primarolo group had submitted a report identifying 66 detrimental tax practices, including the tax regime applicable to coordination centres in Belgium, which was then abolished though the notional interest deduction was introduced.

Since any coordinated approach at European level requires unanimity, and taking account of the Member States' attachment to their fiscal powers, the EC long ago gave up trying to get the rates increased in countries where they are particularly low, including certain new Member States. On the other hand, it has tried to establish a common consolidated corporate tax base for firms operating in multiple Member States. In 2011, it actually submitted a draft Directive on the subject, which has been discussed but is still encountering resistance from a number of countries. In 2012, the European Parliament suggested going down the road of enhanced cooperation, which would make it possible to produce a draft backed by a minimum of nine countries.

However, in the absence of overall success, harmonisation has been achieved for some specific elements, as set out in the Directive on relations between parent companies and subsidiaries, the merger Directive and the one establishing a common tax regime applicable to interest payments and royalties between associated firms located in different Member States.

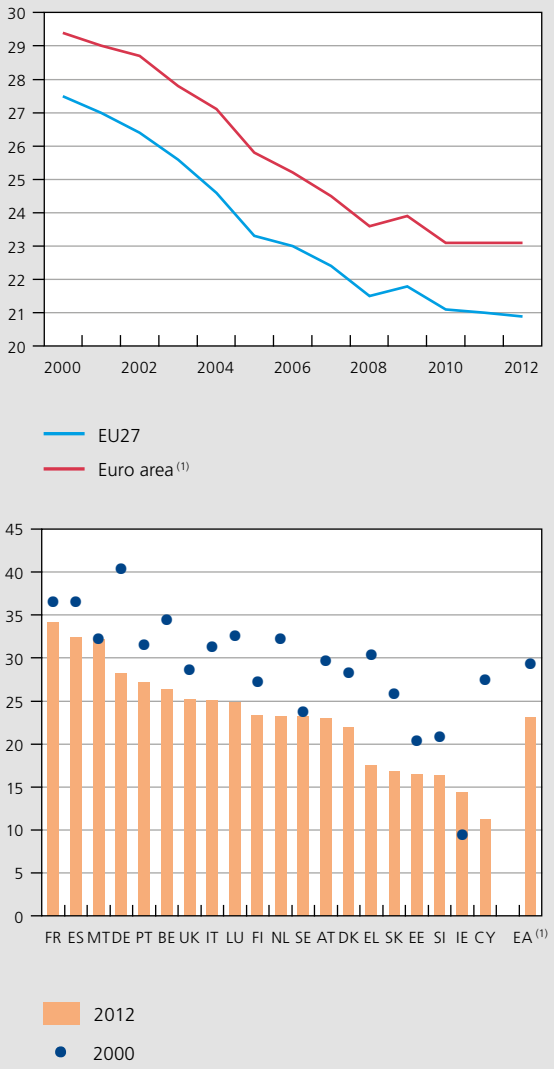
5.3 Taxation of income from movable property and financial transaction tax

In the absence of harmonised statistics over a long period at international level, this section looks at two major developments now taking place. The first concerns the international battle against tax evasion concerning income from movable property; the Directives on the taxation of savings and on data exchange agreements are part of that battle. The recent American FATCA (Foreign Account Tax Compliance Act) could lead to a change here at European level. The second development concerns the possible introduction of a financial transaction tax in certain EU Member States, which is yet to be agreed.

THE EUROPEAN DIRECTIVES ON THE TAXATION OF SAVINGS AND THE EXCHANGE OF INFORMATION

Income from the interest on capital is one of the most mobile tax bases. To combat tax evasion in this sphere, the EU adopted the Directive on the taxation of savings income in 2003, which was implemented on 1 July 2005 and

CHART 14 EFFECTIVE TAX RATE OF THE NON-FINANCIAL SECTOR



Source: EC, taken from ZEW.
(1) Unweighted average.

aims to ensure the effective taxation of savings incomes collected in the form of interest payments made in one Member State to individuals resident in another Member State, in accordance with the law in the latter country.

The exchange of information is the cornerstone of that Directive. However, three countries – Belgium, Luxembourg and Austria – had nevertheless obtained a temporary but unlimited exemption enabling them to collect the tax at source rather than exchange information. The tax rate was 15 % between 1 July 2005 and 30 June 2008, and 20 % from 1 July 2008 to 30 June 2011; since 1 July 2011 it has stood at 35 %. Belgium abandoned this exemption on 1 January 2010.

Every three years, the EC has to report to the Council on the functioning and effectiveness of the Directive, and propose any adjustments. When the Directive was first reviewed in 2008 the EC had identified a number of weaknesses giving rise to circumvention, and suggested modifications to rectify them. First, the Directive only applies in the signatory countries. Second, it only concerns individuals. It is therefore easy to get around it by using corporate structures such as trusts. Finally, the definition of interest income makes it possible to circumvent the directive by using innovative financial products.

On 13 November 2008, following this report, the EC adopted a proposal for an amendment to the Directive to close the loopholes in the text and make it more effective against tax evasion. The European Parliament approved the proposal, and the European Economic and Social Committee also gave its consent. At the level of the Ecofin Council, political agreement was reached by the end of 2009. Even though the proposed changes enjoyed a consensus and were considered acceptable to all, Luxembourg and Austria did not in the end agree to endorse the amended text.

The second review of the Directive, in 2012, confirmed the need to extend its scope. However, the debate on the amendments is still ongoing, as Luxembourg and Austria have once again rejected the revision, and particularly the extension to other products such as life insurance. On this point, before coming on board, the two countries want the same rules to apply to Switzerland and other European tax havens. However, Luxembourg promised to join in the automatic exchange of information from 2015, thus partially renouncing its banking secrecy, whereupon Austria undertook to consider the matter.

Despite the lack of real progress so far, a number of recent developments seem to indicate genuine changes at both European and international level. Thus, the agreements which some European countries have signed with the United States on the automatic exchange of information under the FATCA should step up the pressure on the two recalcitrant countries. Adopted in 2010, the FATCA requires banks to forward to the IRS (US Internal Revenue Service) the information necessary for the taxation of American taxpayers, wherever they are resident. Recalcitrant banks will be subject to a highly dissuasive tax on their transactions. Rather than allow US law to apply to their banks, many countries therefore opted to negotiate an agreement governing the details of the exchange of data on bank accounts held by American taxpayers. That should lead to very widespread implementation of the FATCA, particularly in the EU.

The bilateral agreements with the United States prompted France, Germany, Italy, Spain and the United Kingdom to launch a pilot programme in April 2013 on the automatic exchange of data at European level, based on the American model. Other Member States then joined the project, laying the foundations for a multilateral agreement within or even beyond the EU. Banks in participating countries will have to reveal information on their foreign customers, which is then forwarded to the tax authorities of the taxpayer's country of residence.

Finally, on 15 February 2011, the EU adopted Directive 2011/16/EU on administrative cooperation in the field of taxation. On 12 June 2013, it also submitted a proposal for extending the mandatory automatic exchange of information to other forms of capital income such as dividends, capital gains and any other income generated by assets held on a financial account. The preamble to that proposal explicitly refers to the FATCA. In fact, pursuant to Article 19 of this Directive, if a Member State provides a third country with wider cooperation than specified by the Directive, it cannot refuse that wider cooperation to another Member State wishing to take part in such a form of wider mutual cooperation. The fact that Member States have concluded or will conclude agreements with the United States under the FATCA means that they provide wider cooperation within the meaning of that provision. Extension of the automatic exchange of information on the basis of an EU-wide legislative instrument will remove the need for Member States to invoke Article 19 of the Directive in order to conclude bilateral or multilateral agreements on the same subject which they may consider necessary in the absence of applicable European legislation.

DRAFT FINANCIAL TRANSACTION TAX

In September 2011, the EC adopted a proposal for a Directive on a financial transaction tax (FTT). This was in response to the Member States' desire to ensure that the financial sector contributes fairly to the cost of the crisis, while discouraging future speculation, by a harmonised approach. This tax was thus intended to generate substantial revenues and help to promote financial market stability.

As it was impossible to secure the unanimous approval of the 27 EU Member States in favour of a common tax, eleven countries including Belgium wanted to adopt the FTT via an enhanced cooperation procedure, authorised by the Council in January 2013.

In February 2013, the EC then submitted a new proposal for a Directive introducing the FTT. Under that proposal,

any financial transaction would be taxed provided at least one of the parties was established in a participating country (residence principle). Transactions concerning a financial instrument issued in a participating country would also be covered by the proposal (place of issue principle).

All instruments tradable on the capital markets, money market instruments, UCI units and derivatives are covered, but not day-to-day financial activities of households and firms, e.g. relating to insurance or credit. Similarly, the proposal covers all types of transactions, whether conducted on organised or over-the-counter markets, except for primary market transactions and those effected with ESCB central banks.

According to the draft, the tax rate is set at 0.1 % for all these instruments, except for derivatives which would qualify for a rate of 0.01 % on the value of the underlying assets, though each Member State is free to charge higher rates. These taxes will be paid by financial institutions. In addition, these amounts are payable by each financial institution concerned, whether it is the seller or the buyer.

Altogether, the EC estimates that this tax could raise around € 31 billion per annum for the participating countries as a whole, taking account in particular of changes in the behaviour of agents who will logically reduce the volume of the transactions which have become more expensive. That move will have a negative impact on tax revenues, but is in itself one of the aims of the tax. This assessment likewise considers that the new tax will to some extent result in relocation and tax avoidance. Thus, the Commission anticipates that these circumventing strategies will lead to a 15 % reduction in equity and bond transactions and a 75 % fall in derivative transactions. For Belgium, an estimate by FPS Finance puts the potential revenue for the Belgian State at between 0.18 and 0.48 % of GDP, or between € 0.8 and 2 billion.

Last July, the European Parliament submitted an opinion on this FTT draft, in which it proposes that pension fund transactions should be eligible for a 50 % cut in the tax rate for the first three years. It also suggests a rate of 0.05 % for transactions in sovereign bonds. The argument here concerns preserving the profitability of pension funds and maintaining liquidity on the government bond market, so as not to put up public borrowing costs. Finally, it suggests expanding the tax base to include currency transactions.

So far, the ECB has not given a detailed opinion on the proposal for a Directive. Nevertheless, the institution has recommended careful examination of the effects of this proposal in view of the potential risks to financial stability and the transmission of monetary policy inherent in the tax as envisaged in the Commission document.

It is now for the eleven Member Sates taking part in the enhanced cooperation procedure to approve the Directive and transpose it into national law. However, the recent lack of progress seems to indicate that the Directive will not enter into force before mid-2014 at the earliest.

Conclusions

In 2013, the total average tax burden in the euro area had practically reverted to the level prevailing at the start of the century. However, that stability conceals geographical and chronological variations and differences between types of taxation.

Geographically, the Nordic countries still impose a heavy total tax burden, though it has been greatly reduced in Sweden and Finland, and to a lesser extent in Denmark, which has the highest level of tax in Europe. France and Belgium are now in second and third place in the ranking of the highest tax countries. Of the countries studied, Malta and Cyprus have recorded the biggest increase in the tax burden. In Slovakia and Ireland, there was also a marked fall, and these two countries now have the lowest tax rates.

The period examined can be divided into four phases, generally apparent both in Europe and in Japan or the United States. The first two phases precede the financial and economic crisis and feature a reduction in the tax burden up to 2004, followed by a more limited rise up to 2007. After that, the crisis led to a reduction in the tax burden following the contraction of the tax base and the ensuing recovery measures. Finally, from 2010-2011, the growth of tax revenues was due to fiscal consolidation taking place almost everywhere.

Despite a modest decline at European level, there is no common trend in taxation of the factor labour. The biggest cuts in the implicit tax rate between 2000 and 2011 occurred in the Nordic countries, though the rate there still exceeds the European average. Other countries where this rate was below the European average proceeded to increase the tax burden on this factor. These movements led to a limited convergence of the implicit tax rate on labour. There was no generalised transfer of part of that tax to consumption, as repeatedly recommended by international economic institutions. Nonetheless, some countries – including Germany and Sweden – did make that transfer, and also cut the marginal rates of tax for workers

on modest incomes. Belgium heads the ranking in terms of the implicit tax rate and marginal rates of tax on labour.

Changes in indirect taxation also varied between countries and went through a number of phases. Overall, however, the implicit tax rate on consumption has fallen somewhat since 2000, both in the euro area as a whole and in Belgium. Standard rates of VAT have nevertheless risen on average, particularly as fiscal consolidation has taken effect. The reduction in the implicit tax rate could thus be due to a change in consumption habits in favour of goods on which a lower VAT rate is applied. Excise duties have sometimes risen by more than inflation (tobacco, alcohol, heating oil), and sometimes by less (motor fuel). Belgium remains among the countries where excise duties are generally fairly low, or even very low in the case of heating oil.

Contrary to what one might have expected given the mounting concern over global warming, pollution and the exhaustion of natural resources, the burden of environmental taxes was lower overall in 2011 than in 2000.

The clearest trend in developments concerning the various types of taxation concerns corporation tax. Up to 2008, there was a significant decline in levels of both nominal and effective rates – taking account of tax expenditure as well – and in revenues expressed as a percentage of GDP. The strong tax competition in this sphere was then curbed by the necessary fiscal consolidation. Thus, the relative convergence of corporation tax rates is due to the competition between countries, as European coordination has so far only resulted in agreements on specific elements.

Income from movable assets is the subject of special international attention. The financial crisis has in fact rekindled interest in better coordination, including as regards data exchange and taxation. Thus the updating of the Savings Taxation Directive and the American legislation (FATCA) should greatly improve the exchange of financial information. In addition, the proposed introduction of a financial transaction tax could contribute to an increase in the tax on capital at European level.

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Measuring inflation : the stakes and the state of play

J. Langohr(*)

Introduction

As is the case every eight years, the major overhaul of the national consumer price index (NCPI), upon which the health index is based, is currently under way. The new index, with a fully updated weighting structure, will enter into force in January 2014. In addition to a complete update of the index's weighting structure and the addition and removal of certain products in order to better reflect households' new consumption patterns, the reform is also an opportunity to adjust the methodology to make inflation measurement more accurate and ensure that the index is representative. It is also hoped that the reform will contribute to convergence between the national index's methodology and the methodology that Eurostat sets out for the harmonised index of consumer prices (HICP), whose weighting structure is updated more frequently. Notable reforms being considered for 2014 include : the switch to a chain index with annual weighting changes instead of a fixed base, the use of scanner data rather than price collections in supermarkets, and better accounting for substitution effects (changes in consumption quantities in response to relative price movements).

Furthermore, at the government's behest, two changes to the national index went into effect ahead of schedule, in January 2013. First of all, the effect of seasonal sales is now taken into account when compiling prices, as was already the case for the HICP, with the difference that the impact is spread proportionally over the entire year as opposed to just the sale months. Second, a "payment" approach (trailing 12-month moving average) has been adopted for heating oil contracts.

(*) The author would like to thank D. Cornille for his contribution to this article.

These changes are more than just a question of methodology ; they also have economic consequences and are intertwined with the debate over automatic wage indexation and the debate over labour cost trends, the wage gap with neighbouring countries and competitiveness. This article shows not only that these changes have an impact on the level of inflation – temporarily, when they are introduced – but that they can structurally alter inflation trends and volatility, which influences the wage indexation via the health index.

With this in mind, the reforms made in January 2013, which allow the NCPI to reflect consumption habits more quickly and more accurately, should be encouraged, notably to avoid overestimating consumer price inflation.

This article aims to highlight the key differences between the two inflation measures that exist side by side in Belgium, i.e. the NCPI and the HICP, and to clarify recent changes and proposed improvements that could still be made as part of the major reform process. The first section describes the two indices, touching on some core principles and analysing the differences in inflation as measured by the two indices, as well as the changes made to the two indices in January 2013. The reforms adopted for the HICP also give some indication of the impact that similar changes being considered for the NCPI in 2014 might have. Where possible, we have estimated the impact that the changes would have on inflation. The second section deals with accounting for substitution effects when measuring inflation. The current method of supermarket price collection is explained in detail, as are the possible future alternatives. Natural gas and electricity prices are also used as an illustration. The third section covers the challenges of incorporating housing costs,

discussing real rents and the cost of owner-occupied housing, an expense currently absent from both the HICP and the NCPI.

1. Two price indices share the stage

1.1 The differences between the national index and the HICP

Belgium's national consumer price index (NCPI) has a long history going back to 1920. The methodology of the index, which generally strives to measure changes in the cost of living, has changed significantly since the early days, as has the way it is used. Today, the NCPI and, since 1994, its so-called health index variant (which is the NCPI excluding products deemed detrimental to health, such as petrol, diesel, alcohol and tobacco), are used as a benchmark for indexing wages, social benefits or rents. This is why compiling and calculating the NCPI calls for cooperation between labour and employer representatives in the Index Commission and the National Labour Council. This dialogue is unique to Belgium and has been held in various forms from the inception of the index.

In practice, the NCPI is calculated monthly by the Consumer Price Unit of the Directorate-General for Statistics and Economic Information (DGSEI) of FPS Economy SMEs, Self-employed and Energy, using the methodology approved by the Minister of Economy based on the recommendation of the Index Commission. The index is not published until after it has been approved by the Index Commission. If there is disagreement within the Commission, the Minister of Economy has the final say. Since the January 2013 index, union organisations have decided no longer to approve the index, but rather to abstain in response to the way the two methodology reforms (impact of the sales and "payment" approach for heating oil) were introduced ahead of schedule at the government's request as part of a series of measures to support employment and competitiveness. Since the September 2013 index, employers' organisations have also been temporarily abstaining because they consider that the methodology used to account for phone tariffs causes inflation to be overestimated.

Like Belgium, the other European countries have consumer price indices designed for specific purposes, and the methodological differences among them are in some cases significant. Because of these differences, which were even more pronounced some 15 years ago, a need was seen for a harmonisation of indices within the EU. This was the context that gave rise to the HICP[1]. It has been published since 1997, with data extrapolated back to 1995 (for certain countries, data for the principal components are even available back to 1990). The HICP was first used in the context of the Maastricht Treaty convergence criteria[2] and it continues to play this role for new EU Member States attempting to join the euro area[3]. Since the start of phase III of EMU, the index has played a direct role in the quantitative definition of euro area price stability, which is central to the Eurosystem's monetary policy strategy. The ECB Governing Council has defined price stability as an annual increase in the euro area HICP of less than, but close to, 2 % over the medium term.

The national HICPs are calculated at the national level using methodology harmonised by Eurostat and consistent with specific European legislation. However, the national statistical institutes have a certain amount of autonomy with respect to their methodology choices, as harmonisation is still an ongoing process and some differences in methodology persist. Eurostat is also responsible for calculating aggregate data for the EU and euro area. In Belgium, the Consumer Price Unit of FPS Economy, SMEs, Self-employed and Energy calculates both the harmonised index and the NCPI. However, the Index Commission does not intervene at any point in the index's calculation or publication. The index is published simultaneously by FPS and Eurostat, which publishes the HICPs of the other EU countries and that of the euro area overall, which is based on an aggregate of the national HICPs.

Since 2010, the HICP weighting structure has been based not only on the household budget survey (HBS), but chiefly on national accounts data, as recommended by Eurostat[4]. Thus, weightings for the year 2013 reflect the most recently available national accounts, i.e. those of 2011, although the 2010 HBS was used where national accounts data lacked sufficient detail. The FPS also uses external sources that provide it with highly detailed surveys in order to set the weightings of certain specific products (for example, cars and travel). In addition, prices are updated to adjust spending in the national accounts for relative price movements between December 2011 and December 2012. The weightings in the national index are still based on the HBS and external sources for the specific products. Even though adjustments were made within some of the major product categories in the mini-reforms

(1) Council Regulation (EC) No. 2494/95 (1995), which took effect in January 1997.
(2) The Treaty was signed in 1992, before introduction of the HICP, but already made reference to inflation calculated using a consumer price index with a comparable basis.
(3) Article 1 of the Protocol on the convergence criteria of the Treaty (Art. 121) stipulates that "the criterion on price stability… shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1½ percentage points that of, at most, the three best performing Member States in terms of price stability".
(4) Application of EC Regulation No. 1114/2010, binding from 2012.

TABLE 1 CORE PRINCIPLES OF THE TWO CONSUMER PRICE INDICES IN BELGIUM

	National index (NCPI)	Harmonised index of consumer prices (HICP)
Created	1920	1997 (data since 1995)
Goal	Measure cost of living changes Act as a benchmark, via the health index, for indexing wages, social benefits, rents and other regulated prices, with the aim of preserving households' purchasing power	Measure inflation and purchasing power changes in a comparable manner in the various EMU countries References – convergence criteria (Maastricht) – quantitative definition of price stability in the euro area (ECB)
Calculated and published monthly by	FPS Economy – DGSEI Approved by the Index Commission (labour and employer representatives)	FPS Economy – DGSEI (Belgium) Eurostat (Belgium and euro area) Independently from the Index Commission
Methodology set by	Minister of Economy, based on the recommendation of the Index Commission	Eurostat and European legislators, but national statistical institutes are granted some autonomy
Statistical source used for weighting structure	HBS (Household Budget Survey) External sources (highly detailed surveys) for the weighting of certain specific products	National accounts (since 2010) HBS when the level of detail in the national accounts is inadequate External sources (highly detailed surveys) for the weighting of certain specific products

Sources: DGSEI, NBB.

of 2008 and 2010, their weightings remained as they were set in the previous major reform of 2006, which was based on the 2004 HBS. The 2014 major reform offers an opportunity to base the national index's weightings principally on the national accounts instead of the HBS.

Belgium is not the only country that has two indices; most euro area countries do. However, in theory, there is no reason to have multiple inflation measurements. For the purposes of both protecting purchasing power and making monetary policy, inflation measurements should be as accurate as possible and meet the most exacting standards of methodology. Furthermore, there is no contradiction between the two indices' goals because preventing a loss of monetary value (decline in purchasing power) is at the heart of any monetary policy with a focus on price stability.

Conversely, the significant methodology differences that remain could undermine the inflation measure's credibility with the general public, especially if they lead to divergent inflation profiles, as is the case with how frequently the weighting structures are updated, which is different for the HICP (annual revisions) and the NCPI (every eight years). The latter less accurately reflects consumption habits with every year that passes since the previous revision.

The fact that the national index is less representative of trends in consumption patterns is particularly meaningful in the case of energy products. Since the previous major reform, energy prices have spiked on two occasions, in 2007-08 and 2010-11. These price increases led households to seriously alter their behaviour and reduce their energy consumption. This phenomenon can be seen in the weightings of the HICP, which are updated annually and show that, stripping out the increase in the relative prices of energy products, which naturally gave rise to a larger weighting of the energy component in the average consumption basket, the weight of energy intrinsically declined. If we look solely at the change in relative prices between 2004 and 2013, we see a clear increase (+42 thousandths for the NCPI and +43 thousandths for the HICP) in the weight of energy in the consumption basket linked to the stronger

increase in energy prices compared with the total index. From this standpoint, we can consider that the national index, and thus also the health index, overestimated inflation, granting energy a greater weight than it warranted in reality, whereas the HICP, owing to its annual revisions, took into account the intrinsic decline in energy consumption, whose weight increased only 18 thousandths in the HICP. As a consequence, inflation according to the national index is consistently higher than it is according to the HICP during periods of rising energy prices.

The intrinsic decline in the energy weighting was principally offset by an increase in the weight of the services category, notably the "social welfare spending" and "hospitalisation" sub-categories. This is chiefly attributable to the change in source and the switch from the HBS to the national accounts. In the HBS, consumers such as the elderly and those living in collective housing (nursing homes) are under-represented owing to the way survey data are collected. But the relative weight of health-related spending in these consumers' basket of goods and services is significant. On the other hand, the weight of the category of non-energy industrial goods is weaker, reflecting mainly a decrease in spending on vehicles and publications.

Another example of obsolescence in the weighting structure has to do with fixed-line telephone services. Based on the 2004 HBS, this category still has a relatively high weighting in the national index (17 thousandths), even though it has declined sharply in the HICP in recent years (6 thousandths in 2013). Thus, when the incumbent operator's tariffs increased sharply in May 2013, the impact on NCPI inflation (+0.1 percentage point) was stronger than it was on HICP inflation (+0 point).

In recent years, the various methodology differences have given rise to inflation gaps when the effects have not been offset or have realigned at different rates. The gap between the trends in the national and harmonised indices since 1999 has undergone contrasting phases.

Up until 2004, the year-on-year monthly changes in the HICP were by turns equal, greater than or less than those of the national index. In 2004-05, on the other hand, the national index systematically rose more quickly (by 0.25 percentage point annually) than the HICP. This is primarily attributable to the fact that, unlike the HICP, the national index weightings are not revised annually, and that they still dated back to the 1995-96 HBS. Because the HICP is revised annually, it can be expanded to include new goods and services that are being consumed in significant quantities. And in fact, the prices of these products, such as mobile phones and personal computers, declined substantially, but the trend was not reflected in the national index. In addition, the price reduction was accentuated by the fact that the HICP methodology provided a way to adjust for changes in the level of personal computer quality.

The 2006 reform of the national index, based on the 2004 HBS, expanded the index's coverage to goods and services that were being consumed in significant amounts. From 2006, the two indices' movements were thus very similar. However, the annual changes in the national index were heavily influenced to the downside in 2006 owing to the terms under which the new index had been introduced.

TABLE 2 OBSOLESCENCE OF NATIONAL INDEX WEIGHTINGS

(thousandths; in red/blue: differences relative to 2004)

	Energy		Energy included in the health index[1]	Food products	Services	Non-energy industrial goods
	NCPI	HICP	HICP	HICP	HICP	HICP
Weightings in 2004	96	94	59	202	376	328
	+42	+43	+29	+9	–10	–41
2004 weightings adjusted to account for relative price changes between 2004 and 2013	137	138	88	211	366	287
		+18	+10	+11	+19	–49
Weightings in 2013 according to the HICP		113	68	212	395	279
Effects of changes in consumption habits		**–25**	**–19**	**+1**	**+29**	**–8**

Sources: DGSEI, NBB.
(1) Electricity, gas, heating oil and solid fuels.

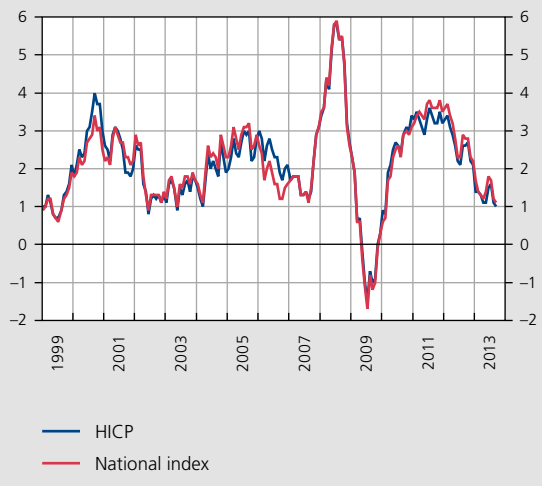
The conversion coefficient used to switch from the old national index to the new one was based on the average respective levels of the two indices in 2004. Thus, the surplus in the inflation measurement accumulated since 2004 by the old index was, in practice, entirely offset in 2006.

In addition, it was decided in 2006 that there would be a mini-reform of the national index every two years to allow for the possibility of adding in new products while keeping the weighting of major product groups constant. As a result of the 2006 reform, annual variations in the two indices were virtually the same for three years, between 2007 and 2009, despite yearly adjustments to the weightings of the HICP.

Starting in 2010, the gaps began to widen in the wake of two methodology changes made in January 2010. On the one hand, the new method for treating seasonal products in the HICP was put into place, causing a bias in year-on-year changes in 2010. On the other hand, the HICP weighting structure ceased to be solely based on the HBS, but principally on the national accounts, as recommended by Eurostat. This caused differences in the way the two indices were weighted, both at the level of the major product groups in the overall index and with respect to the products within each major group. The weighting differences that had a profound impact on the gap between the two indices were notably the greater weight of tobacco in the HICP and, above all, the divergences on energy products.

CHART 1 INFLATION GAP BETWEEN THE TWO INDICES[1]

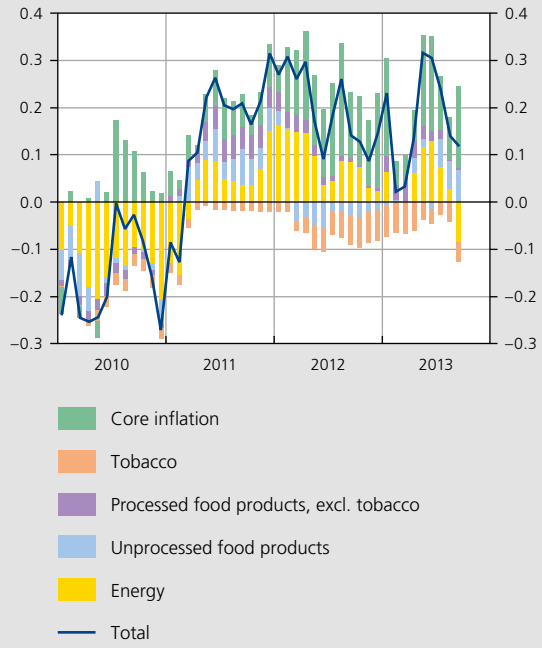
(percentage change compared to the corresponding month of the previous year)



Source: DGSEI.
(1) Excluding effect of seasonal sales.

CHART 2 CONTRIBUTIONS TO THE INFLATION GAP BETWEEN THE TWO INDICES[1]

(percentage points)



Sources: DGSEI, NBB.
(1) Excluding effect of seasonal sales and adjusted for the methodology change regarding foreign travel in the HICP in 2011.

Core inflation (non-energy industrial goods and services) has also helped widen the gap between the two indices' trends since 2011 (effect of seasonal sales excluded). This is notably due to the fact that the national index still gives greater weight to the categories of notary fees and fixed-line telephone communications, whose prices increased significantly, whereas the HICP gives greater weight to mobile phone communications, whose prices fell. As for non-energy industrial goods, the difference was mainly attributable to products such as personal computers, whose weight in the HICP is greater, not to mention the fact that the HICP quality adjustment is greater than that of the national index. The two factors combined to keep HICP inflation lower.

1.2 The January 2013 reforms to the national index

Because the national index's higher level of inflation has an impact on wage indexation, in January 2013 the government decided to go ahead with two methodology changes to the national index. These changes, made prior

to the major reform of the national index in January 2014, were part of an effort to boost employment and competitiveness and to contain wage growth.

The first change is the inclusion of the seasonal sale effect, which is already included in the HICP, in the NCPI. This inclusion naturally had a temporary impact on year-on-year inflation in 2013. The impact will disappear in January 2014 and from that point on, the sales will have only a minor influence that will depend upon their extent relative to the previous year.

However, whereas the HICP concentrates the impact of markdowns in the months when the sales are held, i.e. January and July, and thus has two temporary dips each year, it was decided that for the national index the impact should be spread out over the full year. In other words, the impact of the January sales is spread out over the first six months and the impact of the July sales is spread out over the last six months.

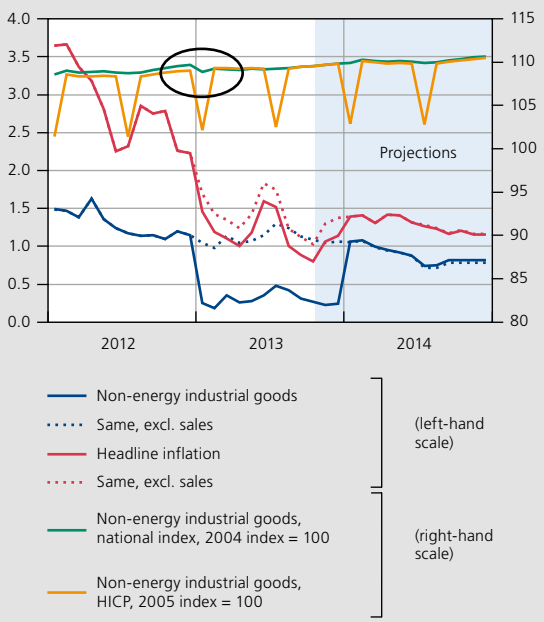
The goal of spreading the markdowns' impact over the full year was to avoid creating disruption between collective labour agreements (*conventions collectives de travail*, or CCT) with respect to wage indexation. Had the change of including the sales affected only the January and July indices, we might assume that – barring an adjustment of CCTs – wage indexation in certain branches of the economy would not have been affected, as indexation mechanisms vary from one CCT to another and the reference periods are not all the same. Thus, CCTs whose reference period excludes the months of January or July would be unaffected. Such is the case of the joint committees for which automatic wage indexation takes place only once a year, in January. These committees cover around a quarter of private sector employees. In theory, then, the inclusion of the sales would have had no impact on these wages because the indexation is based on the average of the previous four months, i.e. September to December, during which there are no sales.

Until the end of 2012, the fact that the sales were included in the HICP but not the NCPI was liable to cause temporary divergences (in January and July) between the two indices depending on the scale of the price markdowns relative to the previous year. The decision to spread the effect of the sales over the entire year in the NCPI means that this divergence will persist, even though the sales are now also factored into the NCPI.

According to the national index, the January 2013 sales lowered headline inflation by 0.24 percentage point. The July 2013 sales impact was not communicated by FPS Economy, but it is estimated to be 0.23 percentage point.

CHART 3 IMPACT OF INCLUDING THE SEASONAL SALES EFFECT ON NATIONAL INDEX INFLATION

(percentage change compared to the corresponding month of the previous year)



Sources: DGSEI, NBB.

The impact on overall 2013 inflation will thus be of a similar order, automatically lowering the health index by 0.26 point.

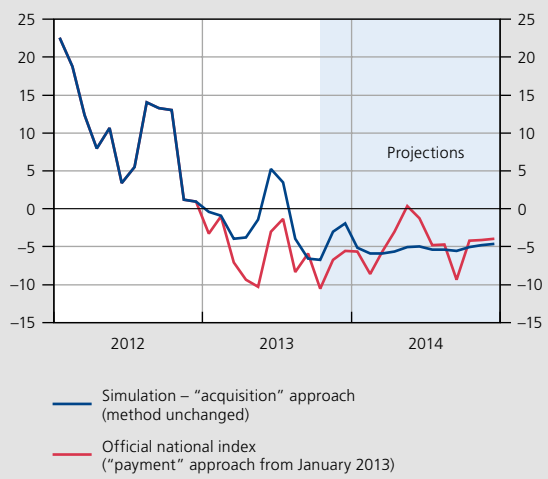
The second change made ahead of the major reform is the switch to a "payment" approach for heating oil contracts. Previously, the index had applied the "acquisition" approach, which means taking into account the prices in force at the time inflation is calculated, whereas the "payment" approach uses the average price over the past 12 months, as reflected in the annual invoices actually paid by consumers. This change could slow the transmission of energy commodity price changes to the consumer price index, although earlier studies on the impact of this kind of methodology change were unable to arrive at a unanimous conclusion[1].

Furthermore, the government has studied the possibility of returning to the "payment" approach for fixed-price natural gas and electricity contracts, or even all contracts in the two categories. This approach was used in the past, but since 2007 the "acquisition" approach has

(1) Cornille D. (2009), "Methodology or pricing: how can the greater volatility of consumer gas and electricity prices in Belgium be explained?", NBB, *Economic Review*, December, 47-57.

CHART 4 INFLATION RATE OF THE HEATING OIL CATEGORY

(percentage change compared to the corresponding month of the previous year)



Sources: DGSEI, NBB.

been applied to price collections of both products, as per Eurostat's guidelines for the HICP.

Considering the current context of lower year-on-year energy prices, notably owing to the drop in Brent crude oil prices in euros over the same span, the switch to a "payment" approach for heating oil is putting upward pressure on NCPI headline inflation because it now takes into account prevailing prices during the past 12 months, the average of which is currently higher than the price applied during the month in which inflation is calculated. The impact is estimated to be +0.07 percentage point for 2013, whereas our last projections for 2014 put the impact at –0.01 point. In light of the significant price cuts made by the principal gas and electricity suppliers from January 2013, when the 2012 freeze on upward indexation ended, the switch to a "payment" approach for gas and electricity would also have pushed inflation upwards.

1.3 The January 2013 reforms to the HICP

Unlike the basket of goods and services used to calculate the national index, which remained unchanged, the HICP basket was revised, as it is every year, when the index was published in January. This revision involved adjusting the basket's weightings based on the 2011 national accounts and the most recent available household budget survey (2010). These weightings were then updated for 2013, taking into account relative price movements between December 2011 and December 2012. Forty-two products were added, representing a weight of 4 %, and eight were removed. The combined impact of these additions and deletions on HICP headline inflation is estimated to be +0.1 percentage point for the first nine months of 2013.

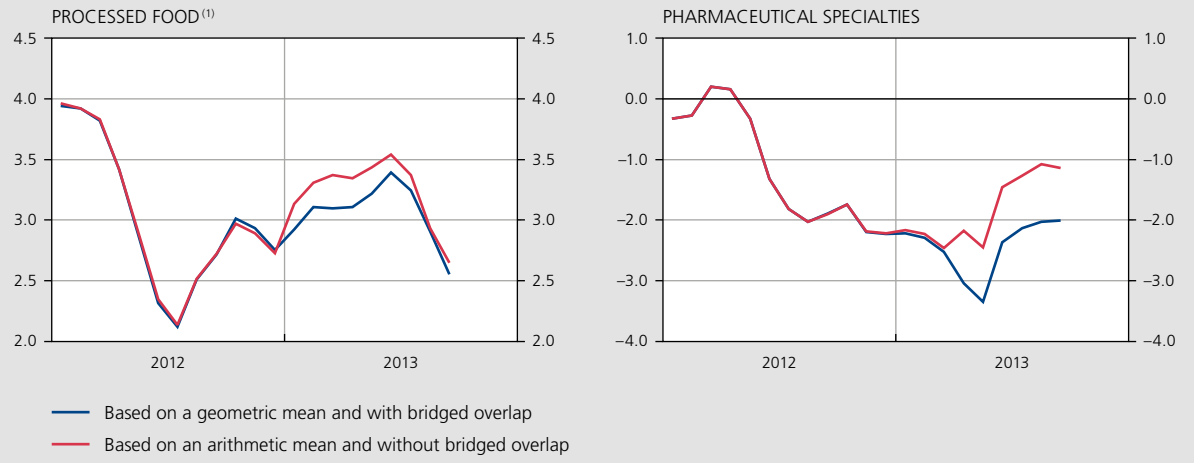
In addition, the January 2013 HICP publication also marked the introduction of various methodology changes aimed notably at complying with Eurostat regulations. A decision was made to no longer adjust for seasonal effects in the foreign travel category, retroactive to the January 2011 index, and to use an "all-seasonal estimation" for seasonal products. Because the HICP is a monthly chain index, it makes sense to assert an assumption when handling the first month's collection, i.e. that for the month preceding the one in which a product becomes available, an imputed price is estimated based on the price trends of products in the same group (see Annex, point 9). Nevertheless, the impact on inflation remains limited considering the weight of the products in question in the index.

Furthermore, there is no longer a weighting associated with locality. Prices from different localities will henceforth be aggregated in a "simplified" way, which is to say that each locality will be equally weighted. This is warranted, on the one hand, by the fact that weightings are not necessarily identical for all product groups and, on the other hand, by the very strong correlation between the various local indices, given that the price trends they face are very similar, so the change also has very little impact.

The fourth change affects nearly all the products included in the index basket. It has to do with quality changes, which are now taken into account using the so-called bridged overlap method. Under this technique, when two products are no longer comparable from one month to the next, an imputed price is estimated for the preceding month based on the price trends of similar products that are still comparable. Until 2012, the "link to show no price change" was used, a method consisting in adjusting the base price in such a way as to entirely neutralise the price difference. This method is still used for the national index (see Annex, point 5). Other, so-called explicit methods are also available for taking quality changes into account, notably the "option pricing" technique in which option prices are used to measure the value of quality changes (given that, in many cases, certain characteristics of a new model were previously offered as options on an older model). With respect to the HICP, this method applies to PCs and cars, two products that frequently undergo significant quality changes. In the NCPI, option

CHART 5 IMPACT OF SWITCHING TO THE GEOMETRIC MEAN AND THE BRIDGED OVERLAP

(percentage change compared to the corresponding month of the previous year)



Sources: DGSEI, NBB.
(1) Weighting based on the national index.

pricing is also used for PCs and cars, but only 50 % of the estimated change in quality is taken into consideration on the assumption that consumers are not prepared to pay 100 % of the price of all the options corresponding to improvements made to the product.

The final change made to the HICP in January 2013 is the switch from arithmetic mean (Dutot index) to geometric mean (Jevons index) for an entire series of products, including product categories surveyed in stores in all localities, television subscriptions (channel packages) and pharmaceutical specialties. The categories covered represent a weight of around 70 % in the HICP basket, whereas the arithmetic mean is still used for the national index. The geometric mean does a better job of measuring substitution effects between products, i.e. changes in

TABLE 3 RECAP OF THE ESTIMATED IMPACT OF THE JANUARY 2013 METHODOLOGY CHANGES CONCERNING THE NATIONAL INDEX AND THE HICP

(percentage point)

Reforms	Impact on		
	Harmonised index (HICP) 2013 Estimate	National index (NCPI) 2013 Estimate	National index (NCPI) 2014 Extrapolation / Estimate
Sales	(1)	–0.24	≈0.00
Payment approach (heating oil)	(1)	+0.07	–0.01
Weightings update	+0.11	(1)	(2)
Bridged overlap Geometric mean	–0.04	(1)	–0.04
Total	**+0.07**	**–0.17**	**–0.05**

Sources: DGSEI, NBB.
(1) Not applicable.
(2) Probably a downward impact.

quantities consumed in response to relative product price movements. This aspect is discussed further in the following section.

The impact of the HICP's switch to the geometric mean and the bridged overlap technique is illustrated by the gap relative to the NCPI trend for the categories that are affected by the change and are comparable from one index to another. To establish the gap, these categories must not only refer to the same products in both indices, but they must also be unaffected by other methodology differences. Processed food (if we calculate, for the HICP, the index for this category using the NCPI weightings to aggregate the sub-categories), and pharmaceutical specialties meet these criteria. In both cases, we note that inflation was weaker according to the HICP (the effect of no longer weighting by locality is assumed to be negligible), which tends to confirm that the geometric average does a better job of incorporating substitution effects (shift to less costly products), although taking quality changes into consideration may also have an impact.

The HICP inflation rate for processed food is 0.2 of a percentage point weaker over the first nine months of 2013, thus reducing headline HICP inflation by 0.02 point. The effects for pharmaceutical specialties come to respectively –0.6 and –0.01 percentage point. The combined impact of the two categories on HICP inflation is estimated at –0.04 % for the full year 2013.

The effects of the various changes are relatively modest according to the estimates that can be made at this point. However, it should be noted that following the downward impact of taking the sales into account in 2013, the NCPI is likely to be negatively affected again in 2014, notably as a result of the probable switch to the geometric mean and the bridged overlap technique for quality changes.

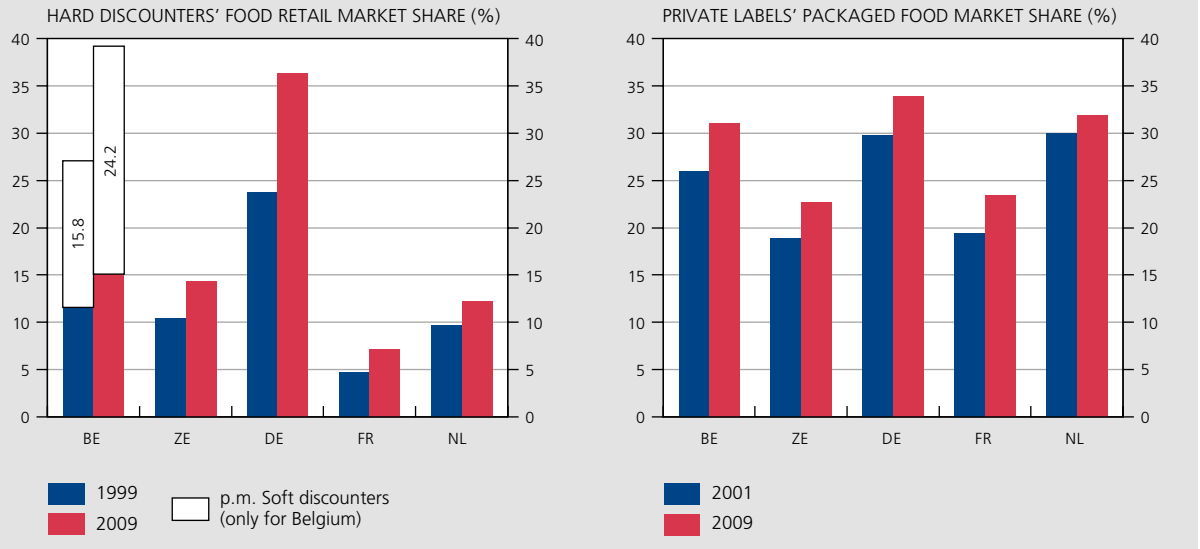
2. The substitution effect in inflation measurement

The substitution effect refers to changes in household consumption made in response to price movements. When the price of a good rises, consumers may choose to replace it with another good, or may continue to consume the good but opt for a different supplier or retailer, another brand or another kind of brand. Adequately accounting for this substitution effect when measuring inflation makes the measurement more precise and representative by better reflecting consumer behaviour in the wake of price movements.

2.1 Products sold in supermarkets

In the case of the retail sector, for example, consumers' reaction to price increases may have an impact on the structure of the sector if households decide to reduce

CHART 6 STRUCTURAL CHANGES IN THE RETAIL SECTOR



Source : Euromonitor.

their consumption of brand products in favour of private-label or white-label products, which tend to have lower prices, or to shop more at discounters as opposed to supermarkets. In recent years, the market share of hard and soft discounters has risen, as has that of private-label products, and Belgium is no exception. These shifts are not without consequences for price trends and inflation measurement.

Two kinds of problem can arise. First of all, when the sample is updated, the conditions under which new stores and new products are introduced are not neutral. In principle, the price level of a new store or product will not be the same as that of the rest of the sample or that of the store or product it is replacing. It makes sense to restate this price difference to reflect differences in quality (the service quality of the retailer in terms of location, store environment, presentation, staffing, number of check-outs, etc.). In practice, the national statistical institutes often use a transition method that attributes the entire price difference exclusively to a difference in quality (of the retailer's service level).

This practice, the failure to record a price decline, can cause inflation to be overestimated, unless there really is no change except a difference in quality. The literature often labels this problem "new outlet bias". But the success of the formats offering lower prices shows that consumers tend to think that the price difference more than offsets any difference in quality.

All in all, it is not easy to precisely quantify this bias and no estimate is available for Belgium or for the euro area. While estimates covering the 1990s in countries such as the US, Portugal, France and Germany show that this kind of bias was not very significant, the rapid recent changes in market share of the various kinds of retailers could conceivably amplify the bias. So not only are frequent sample updates important, it would also be desirable to have additional research done in this field, notably in order to correctly identify the scope of differences in quality.

Secondly, if the sample used to calculate the price index is not adapted to structural changes in the retail sector, there is a risk that the index will grow progressively less representative. This could lead to errors in measuring inflation, especially if price trends are systematically different for different kinds of store or types of product, and if the relative shares of different kinds of store or product change as a result. This is an argument in favour of frequently updating the sample of products included in the consumer price index, while keeping in mind that the index reflects changes in the prices of a basket of goods and services whose composition remained unchanged over a certain period. In effect, as its name indicates, the price index is intended to reflect changes in price and not in consumption quantities, unlike a "unit value index" or "expenditure index".

In practice, for each item in the basket, agents collect prices every month in supermarkets and other types of store in 65 localities around the country. The prices of different brands and kinds of brand are naturally reported, but there is no explicit weighting of brands, kinds of brand or type of point of sale. However, in reality, there is an implicit weighting in the sense that the extent of the different points of sale and brands determines the location and number of the price collections. Thus, changes in the retail sector are reflected in the number of price collections made in each store. More specifically, a decision could be made to collect prices more frequently at a soft discounter than at traditional supermarkets in order to increase the weight of the former relative to the latter in the arithmetic mean, and thus to implicitly reflect its market share gains. The same technique can be used with respect to different kinds of brand.

The elementary aggregation of these price collections is calculated (until 2012 for the HICP) with the help of an arithmetic mean for each of the 65 localities. This approach based on the arithmetic mean has two drawbacks: first, the impact of price changes on the index depends on the level of the prices in question, which means that relatively expensive products (brand products, for example) carry greater significance than less expensive products (private-label or white-label products, for example); second, it assumes an elasticity of substitution equal to zero, reflecting a fairly unrealistic model of consumption behaviour that is completely uninfluenced by relative price movements.

Lastly, for each product, the indices of each locality are aggregated, with each assigned a population-based weighting, and which is thus the same for all products.

In January 2013, two changes were made to the HICP, which are also envisaged for the NCPI starting in January 2014. The first has to do with the now simple aggregation of the local indices, which are thus no longer weighted according to their population for the reasons cited earlier.

The second change is the switch to a geometric mean (Jevons index) for the elementary aggregation of product prices collected in stores. The geometric mean offers two material advantages over the arithmetic mean. It does not give greater significance to higher prices; in other words, the relative change in a price will have the same impact on the geometric average regardless of the price level.

TABLE 4 CONSUMER PRICE INDEX METHODOLOGIES FOR PRODUCTS SOLD IN SUPERMARKETS

Method up until 2012 for both indices	Method for the harmonised index (HICP) from 2013	Method envisaged for both indices from 2014
Fixed basket of goods Adjustment possible every year (HICP) or every two years (NCPI)	**Fixed basket of goods for a one-year period**	
For each good: **price collections** of different brands and types of brand by agents in various supermarkets and specialty stores, **with no explicit weighting**		**Use of scanner data** for the prices of products sold in supermarkets in place of price collections in the 65 localities, **with no explicit weighting**
Arithmetic mean calculated for each of the 65 localities covered (Dutot index)	**Geometric mean** calculated for each of the 65 localities covered (Jevons index)	
Aggregation of the local indices with the help of weightings representing local **populations**	**Simple aggregation** of the local indices, **with no weighting**	

Sources: DGSEI, NBB.

Also, the Jevons index assumes an elasticity of substitution equal to 1. This means that by using this index, one implicitly assumes that quantities consumed fluctuate in proportion to price changes, which, from an economic standpoint, makes more sense than assuming an elasticity of substitution equal to zero.

The January 2014 reform offers a chance to partly replace the collections carried out by agents with supermarket scanner data. In theory, the availability of these data makes it possible to assign each type of retailer and each type of brand an explicit weighting at the elementary aggregation level. However, these data will probably not be available for certain large retailers, and more specifically for hard discounters, which will continue to require in-store collection.

Thus, because the prices considered will be determined each month by checkout data, it may also be possible to specify each month the weightings assigned to each type of retailer and brand as a function of quantities sold as shown by the scanner data with the aim of better representing consumption and market share trends. This method, however, raises the issue of chain drift, which means that the price changes observed in a given month would have a permanent impact on the index.

TABLE 5 EXAMPLE OF CHAIN DRIFT

	January		February		March		April	
	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
Product A	2.5	10 000	2.0	500 000	2.5	2 000	2.5	10 000
Product B	3.0	10 000	3.0	10 000	3.0	10 000	3.0	10 000
Index (1)	100.00		84.78		96.35		96.35	

Source: DGSEI.
(1) Törnquist-type index.

The example below illustrates this problem. Let us assume that product A is on special offer in February, causing its sales to increase sharply in response to the lower price. This results in a steep drop in the price index. However, when prices and quantities return to their January levels in March, the index will not return to 100. The February promotion has thus had a permanent impact on the index, which is clearly problematic. This phenomenon also arises when prices rise, and over long periods, this type of index can tend towards zero or infinity. Based on this observation, the use of this kind of methodology has already been ruled out.

Another solution would involve setting the weightings at the level of elementary aggregation according to the types of retailer and brand, and to update them each year, based on chained indices. However, there is no preference for this method either, chiefly because numerous products disappear from store shelves from one month to the next over the course of the year, and sales fluctuate from one season to the next in the same year. Lastly, this method would make it impossible to introduce new products into the index basket.

Considering the drawbacks of assigning weightings at the elementary aggregation level, one possibility would be to do a simple aggregation at the elementary level, but to also include a geometric mean (Jevons index), as is the case for the HICP, which would make it possible to account for the substitution effect (equal to 1). Scanner data would partly replace the price collections done locally, and the weightings at the non-elementary level would be adjusted annually, in the image of the methodology used for the HICP, which would thus also mean switching to a chain index.

While scanner data cannot be used to assign weightings at the elementary level, they can determine the proportional representation of the various retailers and brands for the prices that will be included in the Jevons index calculation. This makes it possible to more accurately reflect respective market shares in practice. For example, when the market share of a retailer or brand expands, the number of prices related to it included in the index can be adjusted upwards to replace prices that correspond to declining market shares.

In the Netherlands, scanner data have been used since January 2010. They show that the products sold in supermarkets vary significantly from one period to the next, with numerous entries and exits, such that a fixed basket would quickly cease to be representative. Given the problem of chain drift posed by opting for explicit weightings that change from one period to the next, the Netherlands chose to use a geometric mean with no explicit weighting at the elementary aggregation stage. As for the choice of prices used for each product when calculating the index, the Netherlands logically decided to give preference to the most representative prices by selecting around 50 % of available prices for each product, i.e. generally between 80 % and 85 % of total spending on the product. The national statistical institute was able to compare trends in an index based on the previous method (price collections and arithmetic mean) with the index based on scanner data and a geometric mean, and it appears that the latter systematically develops more slowly.

2.2 Natural gas and electricity prices

Like the retail sector, the natural gas and electricity markets have also recently undergone some substantial changes. In 2012, when the upward indexation of gas and electricity prices was frozen and the government carried out a number of initiatives (such as a "Gas and electricity: dare to compare!" ad campaign, publicising price comparisons, and doing away with fines for contract cancellation), a growing number of households decided to change their energy supplier; the percentage of network access points that changed supplier increased sharply. It nearly doubled in Flanders and Brussels, for both gas and electricity, and rose significantly in Wallonia, although the trend was not as pronounced as in Flanders.

This phenomenon caused large changes in the market share of the various suppliers. In the case of gas and electricity, there is in principle no difference in the product consumed (notwithstanding the range of services linked

TABLE 6 RELATIVE NUMBER OF NETWORK ACCESS POINTS THAT CHANGED ENERGY SUPPLIER IN 2011 AND 2012

(in % of the number of distribution network access points)

	2011	2012
Electricity		
Brussels	4.1	8.3
Flanders	8.2	16.5
Wallonia	8.6	11.6
Gas		
Brussels	4.7	9.3
Flanders	9.2	18.9
Wallonia	11.0	15.0

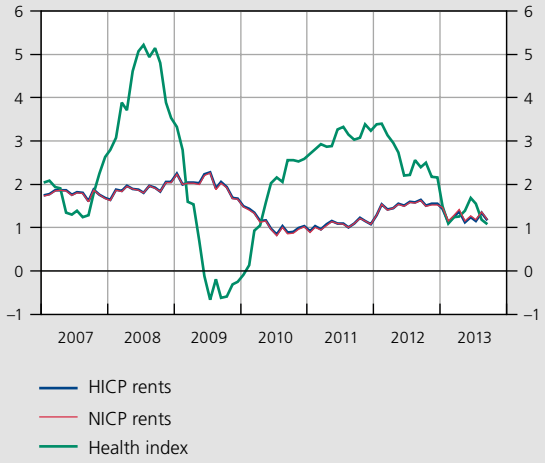
Source: CREG.

to certain contracts). That being the case, the substitution effect must be reflected in the price index trend. In other words, the fact that consumers change their supplier or contract to take advantage of better tariffs must have a downward impact on the index.

To measure changes in gas and electricity prices in the price index, the DGSEI takes into account the tariffs on contracts offered by the suppliers, as well as changes in these contracts' market shares, which makes it possible to include the substitution effect in the inflation calculation. The Price Observatory, basing its work on this methodology, estimated the impact of the substitution effect on the gas and electricity market by fixing market share from April 2012 onwards (start of the price freeze). According to its estimates, supplier changes had an impact of –0.3 percentage point in 2012 on the change in electricity prices, and a –1.2 point impact on gas price changes. The impact on the energy component of the HICP is –0.4 percentage point, while the impact on headline inflation is –0.1 point in 2012.

CHART 7 REAL HOUSING RENTS AND HEALTH INDEX

(percentage change compared to the corresponding month of the previous year)



Sources: DGSEI, EC.

3. Housing costs in the price index

Housing costs are divided into two categories: so-called real rents, which are the rents actually paid by tenants, and the housing costs borne by residents who own their own home. With respect to the first category, it is possible to fine-tune the way the rents are reflected in the price index, as the rent index reflects primarily movements in the health index, smoothed and after a certain delay(1), and thus legal rent indexation in the context of a current lease agreement. Changes resulting from housing market dynamics, which have an impact on rent increases applied when a new lease is signed are thus inadequately taken into account.

The method currently applied to rents is based on a sample of 1 800 tenants selected to comply (in terms of type of residence, facilities and number of rooms) with the results of the 2001 socio-economic survey. The elementary aggregate of reported rents is compiled by using an arithmetic mean because it implicitly assumes an elasticity of substitution equal to zero, which FPS Economy considers is more characteristic of the rental market than an elasticity of substitution equal to 1 (implicit assumption when using geometric mean).

In practice, one problem encountered in calculating the index is the fact that a growing number of tenants in the sample are not responding to the survey. Often, this phenomenon arises when a tenant leaves a residence and the subsequent tenant no longer replies to the survey. Furthermore, when a rental unit is replaced by another (with the same characteristics), the difference in rent is entirely neutralised, which is contrary to HICP rules. These two factors explain why the rent increases applied when new leases are signed are not adequately reflected in the index.

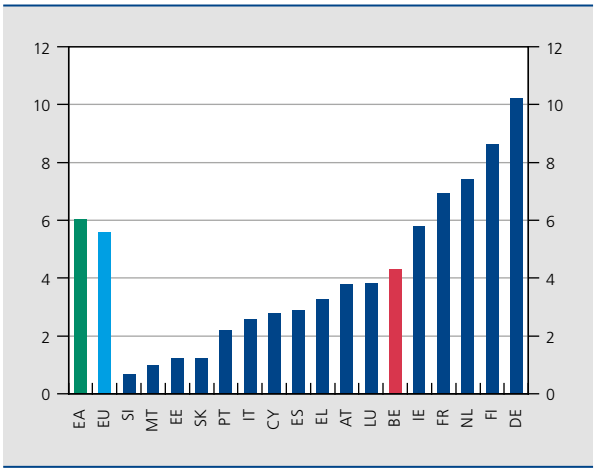
To remedy this shortcoming, the data source used to calculate the index could be changed to cadastral data on reported leases. In addition, to account for rent increases when a new lease is signed, the bridged overlap technique would be applied when a rental unit is replaced in the sample, which should have the impact of raising inflation.

While real rents are reflected imperfectly in the index, owner-occupied housing costs are currently left out of both the NCPI and the HICP. However, the structure of European households' housing is quite varied. The split between homeowners and renters differs considerably within the euro area. In southern Europe, the rental market is generally underdeveloped and the share of homeowner households is relatively high. In Germany, by contrast, the share of real residential rents in the HICP is over 10 %, compared with just 6 % on average in the euro area. In Belgium, the share of renters is fairly small, such that in HICP weightings, the category of real residential rents is barely more than 4 % of the consumption basket.

(1) Given that each month, rents may only be indexed on lease contracts for which it is the anniversary of the signing, and only based on the value of the previous month's health index.

CHART 8 WEIGHTING OF REAL RESIDENTIAL RENTS IN THE HICP IN 2013

(percentage)



Source : EC.

These disparities are principally the result of national customs and housing market regulations (taxes, subsidies, tenant rights, etc.).

As a result, including real residential rents and excluding the housing costs of owner-occupiers compromises comparability among countries, given that these practices are not neutral in terms of their impact on price trends, especially because the housing costs of owner-occupiers represent a significant share of their final consumption expenditure. For example, according to the most recent available household budget survey (that of 2012), these expenditures represent, according to the rental equivalence method (see box), 14 % of average total expenditure in Belgium. It is important to point out that certain spending related to owning a home is nevertheless included in the price index basket. These include notary fees as well as certain maintenance and repair costs.

Taking into account the housing costs of owner-occupants should improve the coverage of the HICP and make it more comparable internationally, thus boosting its credibility. To this end, and in accordance with a European Directive, Eurostat is carrying out a project aimed at determining the most suitable practice for drawing up an owner-occupied housing index (OOH), to be subsequently included in the HICP basket. However, this project, in which the ECB is also participating, is complicated and also raises some important objections, so it is too early to say for certain whether the OOH index will be added.

The first objection stems from the legitimacy of including such an index in a consumer price index, given that owner-occupiers' spending related to their home is at least partly an investment and not consumption. Furthermore, there is also some debate over which methodology to adopt.

Box – The three methods by which owner-occupied housing costs can be taken into account

Different methods have been considered as part of the Eurostat project to establish an OOH index.

1. The **rental equivalence** method involves taking into account a theoretical rent based on the housing unit's characteristics. This method was not chosen, principally because it is based on imputed/theoretical values, a practice incompatible with the concept of monetary expenditure upon which the HICP is based (see Annex, point 1). Furthermore, the rental market is small in certain countries, which limits its representativeness, especially because its structure is different (more apartments and small houses) than that market of properties for sale. Lastly, one more objection is that the rental market differs significantly from the market for owner-occupied housing, and that it cannot be used as a proxy because in practice there is little correlation between rents and real estate prices.

2. In the **mortgage interest approach**, the cost of the housing is determined by the interest on the mortgage loan. Making this calculation requires monitoring outstanding mortgage loans over a long period, taking into account real estate price trends as well as interest rates, the breakdown between fixed- and variable-interest rate loans, etc. The biggest disadvantage of this method is that the loan amounts are influenced by real estate prices, meaning that the impact of those prices on the index will be felt for a long time.

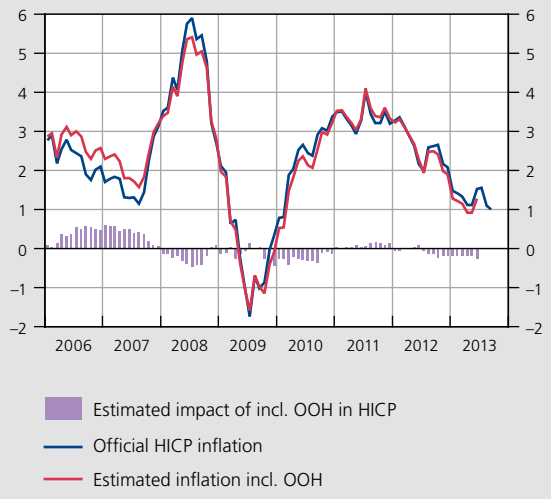
3. The **net acquisitions approach** involves taking into account all transactions linked to housing consumption, but only between the household sector and other sectors. Transactions between households are thus not taken into consideration when calculating the index or assigning weights. The transactions taken into account are the purchase of the home and additional expenses related to the purchase and the transfer of ownership (registration fees, VAT on new buildings, notary fees, etc.), as well as any major repairs and upkeep.

   This net acquisitions approach is consistent with HICP rules and, actually, is the HICP standard, even though for most other categories, the difference between gross and net spending is minor. This method is warranted by the fact that when a property is sold from one household to another, the deal is an expense for one but revenue for the other, such that the net result is zero. Furthermore, the price of land is also excluded from the index, as land is considered the "asset/investment" portion of the acquisition, whereas the residence itself is the consumed portion. The difficulties inherent in this approach have more to do with its implementation, given that in practice, separating the price of the residence from that of the land is complicated (this is also true of the additional expenses), and it is also hard to distinguish between "intra-household" and "extra-household" transactions.

In light of the respective pros and cons of the various methods, the net acquisitions approach was selected for calculation of the OOH index, which will be quarterly and is expected to appear from the third quarter of 2014 onward. The index will be published in T+3, i.e. with a one quarter delay owing to the lag in the availability of sources. Eurostat is expected to issue an opinion on whether or not the OOH is suitable for inclusion in the HICP by 2018 at the latest.

CHART 9 SIMULATED IMPACT OF INCLUDING THE OOH INDEX IN THE HICP

(percentage change compared to the corresponding month of the previous year)



Sources: DGSEI, EC, NBB.

Several countries, including Belgium, already calculate the OOH index on an experimental and confidential basis. A series exists for Belgium going back to 2005, based on which it is possible to simulate the impact of such a decision, keeping in mind that the spending reflected by the OOH index is substantial, at around 13 % of the Belgian household basket, which is due to the fact that the rental market is relatively underdeveloped.

According to our simulation, Belgian HICP inflation would have been respectively 0.3 and 0.4 of a percentage point higher in 2006 and 2007, whereas it would have been 0.2 point weaker in 2008, when commodity prices spiked. Including spending related to owner-occupied housing would thus have mitigated somewhat the strong inflation seen during this episode, according to the simulation. In recent years, the impact would have been negative again in 2010 and negligible in 2011, despite another significant rise in commodity prices. In 2012, inflation would have been 2.6 % had the OOH index been included, which is the same level as that of the official HICP.

Conclusions

Given the use of the HICP in euro area monetary policy and the NCPI's role in the indexation of wages and other prices, measuring inflation is not just a question of methodology. It also, and chiefly, has economic implications, notably with respect to monetary policy and competitiveness. That being the case, the inflation measurement obtained using a price index must be as accurate as possible, and it is vital for the measurement to be credible.

For the purposes of both protecting purchasing power and setting monetary policy, inflation measurements should be as precise as possible and meet the most exacting standards of methodology. Furthermore, there is no contradiction between the two indices' goals because preventing a loss of monetary value (decline in purchasing power) is at the heart of any monetary policy with a focus on price stability.

The significant methodology differences that remain between the two indices could undermine the inflation measure's credibility with the general public, especially if they lead to divergent inflation profiles. The 2014 reform of the national index thus offers a chance to bring the two indices more closely into line with each other, although the preference is to move the national index towards the HICP and not the other way around. For example, desirable NCPI reforms include the switch to a chain index, which would allow weightings to be updated more frequently (annually) and thus better reflect changes in household consumption habits. Furthermore, it would be beneficial to take quality changes into account more precisely and to better represent substitution effects by switching to a geometric mean at the elementary aggregate level. These changes, which would allow the national consumer price index to reflect consumer habits more quickly and more accurately, should be encouraged, notably to prevent overestimating consumer price increases.

Other changes are also desirable, for both the NCPI and HICP. The first involves switching to scanner data where possible and using the data not only to replace price collections but also to better represent fluctuations in the market shares of different types of retailer and types of brand, even if this can only be done implicitly. It is also important to adopt a method suited to updating the sample. This will help lay the groundwork for future changes, such as the likely growth of online retailing. Furthermore, it will be helpful to apply the method used for gas and electricity to other products, such as mobile phone contracts, again in order to reflect market share changes and substitution effects. Lastly, pending a decision on whether or not to include owner-occupied housing costs, there are already some improvements that can be made to the index of real rents so that it more accurately translates rental market dynamics.

The changes made to the HICP in 2013 (geometric mean, bridged overlap) should, by our estimates, have a downward impact on NCPI inflation if they are adopted in 2014. This effect would thus accentuate the downward impact already recorded by the NCPI in 2013 as a result of the introduction of seasonal sale effects. Other reinforcing factors would include the use of a "payment" approach for heating oil, the switch to scanner data (as suggested by the Netherlands' experience) and applying the new methodology to telecoms. However, other methodology changes could mitigate the impact, notably the inclusion of a new index designed to better reflect rent increases at the time a new lease is signed. Lastly, it is important to keep in mind that the impact on inflation of all of these methodology adjustments will also depend upon the terms under which the new index is introduced. As it did in 2006, the Index Commission will have to determine the conversion coefficient used to transition from the old to the new index, which will influence the year-on-year change of the latter in 2014.

Annex – Principal methodology differences between the two Belgian consumer price indices

1. The concept of household final monetary consumption expenditure

The concept used for the HICP's coverage is that of household final monetary consumption expenditure (HFMCE). This is the same principle applied to the NCPI since 1998. HFMCE covers "expenditure made by households on goods or services for the direct satisfaction of individual needs or wants" (Council Regulation (EC) No. 1687/98). The concept of "monetary" in the context of the HFMCE merits closer attention. "A monetary transaction is an economic flow that is an interaction between institutional units by mutual agreement, where the units involved make or receive 'payment'" (Council Regulation (EC) No. 1687/98). The requirement that a monetary transaction take place for a product to be included in the HICP is consistent with the idea that inflation is a monetary phenomenon, at least over the long term.

Initially, because practices were not identical in the Member States, products for which consumers did not pay the full price were not included in the HICP, although they were already included in the NCPI. Subsequently, it was agreed that, in keeping with the monetary concept, the prices recorded in the HICP should reflect the amounts actually paid by households, with deductions made for any reimbursements (such as co-payments, for example). This concept of net prices is also applied to the NCPI.

At present, owner-occupier housing costs are not included in the HICP; only rent that is actually paid is included, so the HICP differs materially from the national accounting concept, which includes both real residential rents and owners' equivalent rents. This significant difference stems principally from the fact that the concept used for HICP coverage is that of household final monetary consumption expenditure, whereas owners' equivalent rents are generally non-monetary in nature. Owner-occupier housing costs are also excluded from the NCPI. However, the possibility of including them is currently being studied (see section 3).

2. Geographic coverage

The geographic coverage of Belgium's HICP, like the HICPs of all other Member States, and thus of the euro area aggregate, refers to consumption within the territory of the respective Member States and the euro area (Council Regulation (EC) No. 1688/98). This means that the HICP's weighting structure is influenced by the purchases of foreign consumers (chiefly tourists) in euro area countries, whereas spending by member state residents abroad has no influence. The use of this concept makes it possible to avoid double counting or omissions when the individual member state HICPs are aggregated.

Conversely, the NCPI uses a "hybrid" concept that, like the HICP, excludes residents' spending abroad (spending in local currency done abroad while on holiday), but also excludes spending by foreigners inside of Belgium.

3. Demographic coverage

Both indices are based on the concept of an "average" representative household. However, spending by individuals living collectively (in a retirement home, for example) is covered by the HICP (Council Regulation (EC) No. 1688/98) but excluded from the NCPI. Using the concept of the "average" household as opposed to the "median" household implies that high-income households, which spend more, carry greater weight than low-income households in determining the representative basket of goods and services.

4. Coverage by type of retailer

While European legislation is not explicit on this point, the coverage of price collections by type of retailer must be representative. When the HICP and the 1996-based NCPI were introduced, they were brought into line with the results

of a study on the structure of the retail trade carried out in 1995. However, the details of the breakdown by store type remain confidential. Since there has not been a new study on the topic, the breakdown by point of sale has not been explicitly reviewed, either for the creation of the HICP or for the new NCPI.

Nevertheless, pragmatic adjustments are made when the points of sale visited are renovated or closed. Thus, in recent years, price collections have been conducted so as to account for the growing market shares of hard discounters such as Lidl and Aldi so that they will be reflected in the price index. Similarly, price collections in small specialised stores have been scaled back as those stores have lost market share to the big national supermarket chains.

Thus, this is an aspect where improvements could be made, and for which the FPS is preparing a methodology change as part of the 2014 reform. In the future, the use of supermarket scanner data should make it possible to more accurately account for changes in market share among the various types of store and brand, thereby reducing the risk of outlet substitution bias (see section 2.1).

5. Adjustments for quality changes

The HICP is supposed to measure the "pure" change in the price of a basket of goods and services whose quality remains constant. Any changes in price linked to quality improvements must be restated, which means that statisticians must determine what percentage of the total change in a product's price – if there has been a change in quality – corresponds to a change in quality and what percentage is actually a price increase. A quality change occurs when a product's characteristics are improved or when a product is replaced by a new model offering consumers a materially different level of utility.

For the HICP, the European Commission (Eurostat) defines a certain number of minimum standards that must be respected by the EU member countries. For example, "Where quality changes occur, Member States shall construct price indices by making appropriate quality adjustments based on explicit estimates of the value of the quality change". Furthermore, the Commission states that, "In no case should a quality change be estimated as the whole of the difference in price between the two items, unless this can be justified as an appropriate estimate" (Commission Regulation (EC) No. 1749/96).

When two products are no longer comparable from one month to the next, the so-called bridged overlap method consists in estimating an imputed price for the preceding month based on the price movements of similar products that are still comparable. Quality changes can also be estimated using three so-called explicit methods : (a) the econometric method (hedonic regression) ; (b) using option pricing to measure the value of quality changes (given that in many cases, certain characteristics of a new model were previously offered as options on an older model) ; and (c) the expert judgement method. The choice of method depends, among other things, on the market structure for the product in question. The implicit method is in principle only valid if the market is transparent, flexible and competitive. These characteristics usually ensure that the longer a model is available on the market, the more its price will diminish as new, better models are released. Price differences observed in this manner serve as indicators of value that consumers attribute to changes in quality. However, the implicit method is still highly sensitive to the size and structure of the sample, and thus an explicit method is often preferred. The explicit methods offer the advantage of being independent of specific market characteristics. While the econometric method is undoubtedly the most reliable, especially for short-term movements, it is also more complex and more unwieldy. thus, the option pricing method, which reliably tracks long-term trends, is generally considered the most cost-effective solution.

In Belgium, an explicit estimate of quality changes for PCs was introduced to the HICP in 2002. The estimates are based on option prices. Since 2006, an explicit estimate for PCs has also been used for the NCPI, but only 50 % of the adjustment is applied. Since 2006, the HICP and NCPI have both included an explicit estimate of quality changes for car prices, but here again limited to 50 % for the NCPI.

Furthermore, since 2013, the HICP has used the bridged overlap technique whereas the NCPI still uses the link to show no price change, under which method the entire price difference is neutralised by adjusting the base price when two products are no longer comparable. This can result in a bias.

6. Elementary aggregation

With respect to elementary aggregation, in principle the Commission does not dictate a choice between the two formulas for calculating elementary aggregate indices. Either the ratio between the arithmetic means of prices or the ratio between the geometric means can be used. Until recently in Belgium, only the former formula was used for most products, both in the HICP and in the NCPI. The only exception was car prices, PCs and air fares, for which a geometric mean was calculated for both the HICP and the NCPI.

The geometric mean offers two material advantages over the arithmetic mean. First of all, it does not give greater significance to higher prices; in other words, the relative change in a price will have the same impact on the geometric average regardless of the price level. Also, the Jevons index assumes an elasticity of substitution equal to 1. This means that by using this index, one implicitly assumes that quantities consumed fluctuate in proportion to price changes, which, from an economic standpoint, makes more sense than assuming an elasticity of substitution equal to zero. Since 2013, it has been used in the HICP to aggregate prices for an entire series of products, including products surveyed in stores, television subscriptions (channel packages) and pharmaceutical specialties. Thus, the geometric mean is now used for around 70 % of the HICP basket. For most services, the arithmetic mean is still used for elementary price aggregation. The switch to a geometric mean for the NCPI is one of the principal changes being considered as part of the 2014 reform.

7. Updating the index

The HICP's basket of products and their weightings are updated each year.

New products that represent at least one thousandth of final expenditure must be updated. Weightings must also be updated, as it is strictly forbidden to use weightings that are over seven years old or that, if they were changed, would have an impact on inflation greater than 0.1 percentage point. The new January 2013 weighting structure gives greater weight to the core inflation trend (notably spending on hospital care and social welfare), whereas energy products in the average household consumption basket have come down again, not counting the trend in relative prices. As a result, energy has a smaller weight in the HICP than in the NCPI which, combined with the decline in energy prices in 2013, contributed to a negative gap between the national index and the HICP, although the gap was mitigated by the switch to a "payment" approach for heating oil in the NCPI.

As for the NCPI, a major reform is done every eight years, but mini-reforms took place in 2008 and 2010 to add new products and adjust weightings, although the weighting changes did not affect those of the 12 major categories. In 2012, it was decided to forego the mini-reform given that the major reform was around the corner. One of the changes envisaged for the 2014 major reform is the switch to a chain index with an annually revised weighting structure, as is the case for the HICP.

8. Transactions between households

The net acquisitions approach used for the HICP excludes transactions between households because they involve income for one household and an expense for the other. This is why the weight of spending on used cars is lower in the HICP than in the NCPI. Thus, the "car purchase" category, which includes acquisitions of used cars, is weighted at 42 thousandths for the HICP compared with 63 thousandths for the NCPI.

9. Seasonal products

Starting in 2013, there is no adjustment for the seasonal effect for foreign travel in the HICP, in accordance with Eurostat rules. Official HICP data have been revised to reflect the change dating back to January 2011. It was also decided to use an "all-seasonal estimation" for seasonal products. Because the HICP is a monthly chain index (with a monthly comparison of each price collection), it makes sense to assert an assumption when handling the first month's collection,

i.e. that for the month preceding the one in which a product becomes available, an imputed price is estimated based on the price trends of products in the same group. Thus, for example, for asparagus prices collected between April and June, a price must be estimated in April for March (monthly chain index); this price is calculated as a function of movements in fresh vegetable prices during the period between the preceding months of June and March.

In addition, for the HICP as well, a switch was made in 2010 from a method in which the weightings of unprocessed foods could vary seasonally to a method in which they are set regardless of the time of year – provided prices can be collected. This is in keeping with Commission Regulation (EC) No. 330/2009, which is binding from 2011. Conversely, in the NCPI, product weightings vary over the course of the year depending upon the season and their availability.

What inflation developments reveal about the Phillips curve: implications for monetary policy

A. Stevens (*)

Introduction

In October 2013, inflation in the euro area dropped to 0.7 %, well below the quantitative definition of price stability applied by the Governing Council of the European Central Bank (ECB). That was one reason why, at its meeting in November 2013, the Governing Council cut the interest rate for main refinancing operations from 0.5 to 0.25 %. However, despite this recent fall, the level of inflation in the euro area has remained surprisingly stable since the onset of the financial and economic crisis in 2008. Although inflation has declined somewhat, it has not dropped to exceptionally low levels, apart from the negative inflation rates recorded for overall inflation following the collapse of commodity prices in the autumn of 2008. Since 2009, underlying inflation has averaged 1.3 %, compared to around 1.7 % on average in the first ten years of stage three of Economic and Monetary Union (EMU). Moreover, according to its September 2013 macroeconomic projections, the ECB expects inflation to remain above 1 % again next year, at an average of 1.3 %. This relative stability of inflation is striking in view of the extent – in terms of both depth and duration – of the recent economic and financial crisis. According to traditional economic theories and historical observations, a sharp contraction in economic activity actually reduces inflation significantly. Recent developments therefore indicate that this traditional, cyclical pattern of inflation has become less marked nowadays.

The reduced sensitivity of inflation to cyclical fluctuations seems to suggest that the determinants of inflation have changed over time, perhaps as a result of structural changes in the economy or of changes in the conduct of monetary policy, for example. Identifying the changes affecting the inflation process is vital for monetary policy-makers, especially for the Eurosystem whose primary objective is to maintain price stability. Against that backdrop, this article tries to ascertain the factors behind the reduced cyclicality of inflation dynamics. To this end, we estimate an open economy Phillips curve with time-varying parameters for the euro area for the period 1980-2013.

The rest of this article is structured as follows. Section 1 gives a brief account of the lower but – perhaps surprisingly – stable level of inflation in the euro area since the crisis, and illustrates the reduction in its cyclicality. Section 2 analyses the changes in inflation dynamics by means of a Phillips curve with time-varying parameters. More specifically, it describes how the relative importance of the various determinants of inflation – inflation expectations, past inflation rates, economic activity and external price shocks – has evolved over time. We also propose some possible explanations for the observed changes in the inflation process, enabling an examination in Section 3 of the implications of these changes for the conduct of monetary policy.

(*) The author would like to thank L. Aucremanne, J. Boeckx and M. Dossche for their contribution.

1. Inflation in the euro area during the economic and financial crisis

Headline inflation measured by the harmonised index of consumer prices (HICP) has exhibited an erratic pattern since the onset of the great recession, especially in comparison with the picture for the preceding ten years. While inflation peaked at 4 % in mid-2008, just before the crisis, it became negative just over a year later at –0.5 %. It gathered pace again in 2010 and 2011 before starting to fall from the end of 2011. On average, headline inflation has stood at around 1.7 % since 2009, compared to 2.2 % over the period 1999-2008. On the basis of the total HICP, the inflation rate has therefore remained relatively high.

Importantly, the volatility of energy and food prices is largely responsible for the strong fluctuations observed in headline inflation. Underlying inflation, which corresponds to HICP inflation excluding food and energy, offers a less volatile picture of domestic inflationary pressure. Specifically, unlike headline inflation, underlying inflation has been more stable during these last four years, although it has still displayed a cyclical pattern. Underlying inflation at an average of 1.3 % since 2009 is lower than the figure of around 1.7 % recorded in the preceding ten years; yet oscillating between 0.7 and 2 %, it has not been exceptionally low either, and so far negative inflation or even deflation has been avoided[(1)]. In view of the scale and persistence of the contraction in economic activity, it could even be said that underlying inflation has remained surprisingly high. That situation contrasts with what happened in Japan, for example, where the eruption of an economic and financial crisis triggered deflationary pressures which have now persisted for more than two decades.

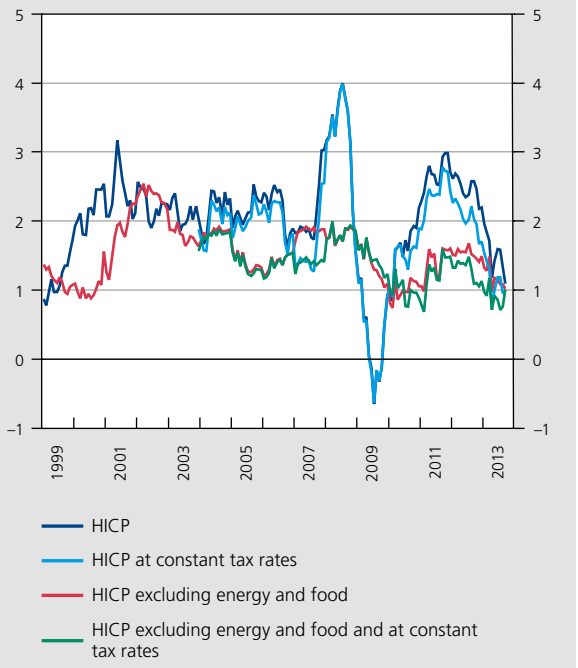
In recent years, the sovereign debt crisis in Europe has forced the various governments in the euro area to devote major efforts to fiscal consolidation. Notably, the indirect tax increases resulting from those consolidation efforts mechanically drive up inflation. If we analyse the pattern of inflation adjusted for the mechanic impact of the changes in indirect taxes, we in fact find that since 2009 the average inflation rate has been slightly lower by around 0.24 and 0.11 percentage points respectively for headline inflation and underlying inflation. That said, inflation at constant tax rates has also remained relatively high, given the substantial excess capacity in the economy[(1)].

As stated above, the pattern of inflation in the euro area during the current economic and financial crisis suggests that inflation dynamics are nowadays less affected by cyclical fluctuations than they used to be. Chart 2, which shows the relationship between inflation and cyclical unemployment over the past four decades, supports that conjecture. Whereas in the 1970s and 1980s a rise in unemployment was accompanied by a steep decline in inflation, that link has been much less apparent in more recent decades. In the 2000s, in particular, the negative correlation between the two variables seems to be virtually absent. It can therefore be said that, over the years, the traditional cyclical pattern of inflation has weakened.

To explain this change in the cyclicality of inflation requires a structural analysis of how the various determinants of inflation have changed over time. For that purpose, in the next section, we formulate and estimate a Phillips curve with time-varying parameters.

CHART 1 INFLATION IN THE EURO AREA SINCE 1999

(percentage changes compared to the corresponding month of the previous year)

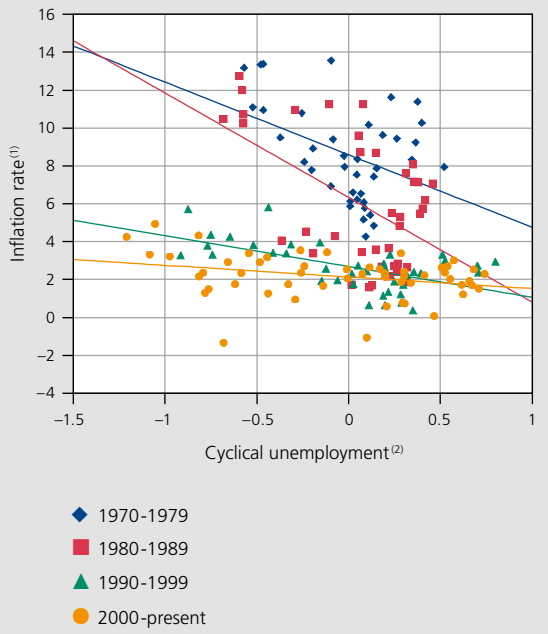


Source: Eurostat.

(1) The challenges posed by deflation are described in more detail in Ide *et al.* (2009).

CHART 2 INFLATION AND CYCLICAL UNEMPLOYMENT IN THE EURO AREA

(in %, quarterly data)



Sources: Fagan *et al.* (2001), Datastream and own calculations.

(1) The inflation rate is the annualised quarterly change in the seasonally adjusted harmonised index of consumer prices (HICP).

(2) Cyclical unemployment corresponds to the difference between unemployment and its trend rate calculated by means of a Hodrick-Prescott filter.

2. A Phillips curve with time-varying parameters

2.1 Model

The pattern of inflation is traditionally modelled by means of a Phillips curve, named after and based on the work of the New Zealand economist William Phillips who, in 1958, was the first to postulate a relationship between nominal wages and unemployment (Philips, 1958). Taking account of the assumption that prices are set on the basis of wages, that relationship was later reinterpreted by Samuelson and Solow (1960) as an explicit link between inflation and unemployment. In its simple, modern variants, the Phillips curve not only includes a measure of economic activity or, more specifically, the degree to which activity deviates from its potential level, but it also accords a role to inflation expectations (see, for example, Clarida *et al.*, 1999). These inflation expectations are largely dependent on the credibility that the economic agents attach to the – implicit or explicit – inflation target set by the monetary authorities.

Empirical research has shown that, apart from the output gap and inflation expectations, there are two other factors that also have a major influence on inflation. First, the historical inflation path is persistent, which means that, after a shock, inflation is slow to converge towards its long-term value. That persistence implies that the current inflation rate is also influenced by its earlier values. Next, in the context of globalisation, the traditional Phillips curve may also comprise an international dimension. As stated by Borio and Filardo (2007), the increasing integration of the global economy may make inflation dynamics relatively more sensitive to global factors (such as the global output gap or the movement in import prices) than to domestic factors (on this point, see also the contributions by Benigno and Faia (2010), and by Guerrieri *et al.* (2010), which demonstrate that an increase in the openness of the economy heightens the impact of import prices on inflation).

Taking account of the above discussion, and in accordance with recent studies by Matheson and Stavrev (2013) and by the IMF (2013b), we postulate the following specification of the Phillips curve for an open economy:

$$\pi_t = (1-\theta_t)\pi_{t-1} + \theta_t\pi_t^e - \kappa_t U_t^{GAP} + \gamma_t\pi_t^m + \varepsilon_t \qquad (1)$$

where π_t represents current inflation, π_{t-1} inflation in the previous period, π_t^e long-term inflation expectations, U_t^{GAP} the level of cyclical unemployment (as a measure of capacity utilisation in the economy) and π_t^m the inflation rate of the relative price of imported goods and services (as deviation from its average). This last factor does not only represent the international dimension of the Phillips curve, but is also of empirical significance. The Phillips curve in fact appears to be best suited for modelling underlying inflation. However, historical underlying inflation data are not available over a long period for the euro area. Therefore, since most commodities are imported, the import price term π_t^m adjusts for this mismatch between the model variable and the data variable. Finally, the error term ε_t picks up inflation fluctuations which cannot be explained by the specification in (1). This term includes in particular domestic cost-push shocks. We assume that these shocks have a constant variance and hover around an average value of zero.

This article will now go on to assess the importance of each of the four inflation determinants π_{t-1}, π_t^e, U_t^{GAP} and π_t^m. An essential point here is that the parameters associated with these variables can change over time, which makes it possible to investigate whether inflation dynamics today differ from those in the past. An increase in the

(1) In its October 2013 World Economic Outlook, the IMF (2013a) reports an output gap of –2.7 % in 2013. Moreover, that gap is not expected to be closed until 2018.

parameter θ_t would mean that inflation expectations play a greater role in determining current inflation, and that inflation persistence is lower. Time variation in γ_t enables an investigation into whether inflation has become more sensitive lately to international developments, e.g. owing to globalisation. Finally, on the basis of the time variation in κ_t (the 'slope' of the Phillips curve), we can examine how the sensitivity of inflation to the domestic cyclical position has changed over recent decades.

2.2 Empirical analysis and results

To estimate the parameters of the Phillips curve in equation (1), it is first rewritten in terms of a state-space model in which the parameters are regarded as non-observed variables following a simple time series process. Subsequently, the time variation in these unknown variables is estimated using Kalman filtering and Bayesian techniques. A more detailed description of the econometric analysis is presented in the box below.

The estimation is based on quarterly data for the euro area. The sample covers the period from the first quarter of 1971 to the second quarter of 2013, with the first ten years acting as a training sample in the estimation procedure. Figures relating to HICP inflation, unemployment and relative import prices were obtained from the Area Wide Model Database (Q1 1971-Q4 2011), and were supplemented by figures from Eurostat (Q1 2012-Q2 2013). All these series are seasonally adjusted. Inflation rates are annualised percentage quarterly changes, adjusted for the impact of changes in indirect taxes, but only from the first quarter of 2003 (owing to the limited availability of data). Cyclical unemployment is calculated as the difference between the unemployment rate and its trend, the latter being measured by means of a Hodrick-Prescott (HP) filter. It should be noted that for the more recent periods this estimate is subject to measurement errors, the reason being that, at the end of the sample, the HP filter accords greater weight to the trend than to the cyclical component of a time series. As a result, the cyclical component of the rise in unemployment during the recent financial and economic crisis may have been underestimated. Import price inflation is the annualised percentage quarterly change in the import price deflator compared to the GDP deflator. Data on long-term inflation expectations for the euro area are available from 1990Q1 via Consensus Economics (inflation expected for the five-year period five years ahead)[1]. For the 1970s and 1980s, these long-term expectations are estimated on the basis of the observed inflation trend, calculated using an HP filter.

Chart 3 depicts the estimated pattern of the various parameters of the Phillips curve, summarized by the median and the 68 % probability interval of the posterior distribution[2]. In line with the IMF (2013b), a number of findings can be stated. First, in the past three decades, inflation has increasingly been driven by its long-term expectations. The left-hand panel of chart 3 shows that, since the beginning of the 1980s, θ_t has risen slowly but surely, from around 0.72 to 0.81 in 2013. Conversely, this phenomenon implies that inflation persistence has declined, so that deviations in inflation from the long-term trend do not last so long now as they did in the 1980s and 1990s. These findings can be linked to a monetary policy that, after the stagflation of the 1970s, was increasingly geared to the maintenance of price stability. Indeed, the primary objective of the Eurosystem is to maintain price stability, which is defined as a year-on-year increase in the HICP for the euro area of less than but close to 2 % in the medium term. Furthermore, the average inflation rate of around 2 % recorded since 1999 promotes the credibility of the monetary policy geared to price stability, with two significant implications for inflation dynamics. First, this credibility helps to ensure that inflation expectations are firmly anchored. Chart 4 clearly reveals that, since the creation of EMU in 1990, inflation expectations have fallen, and since stage three of EMU have remained very close to the Eurosystem's definition of price stability. Second, given a credible policy aimed at price stability, economic agents will attach greater importance to long-term inflation expectations when determining current inflation, as is evident from the increase in θ_t. These two effects together ultimately mean that actual inflation is more firmly anchored to the inflation target, further promoting the credibility of the central bank.

In addition, inflation in the euro area is becoming more sensitive to import prices; the central panel of chart 3 shows that γ_t increases significantly over the period considered, namely 1980 to 2013. That trend is attributable partly to the greater openness of the euro area economy. For instance, imports from outside the euro area as a percentage of GDP have risen from an average of 27 % in the 1980s to an average of 37 % since 1999. Consequently, the increase in γ_t confirms the hypothesis that globalisation has led to an inflation process which is more sensitive to global factors, such as import price fluctuations. Note that this finding implies that movements in the prices

(1) Up to 2003, expectations for the euro area are estimated as a GDP-weighted sum of the expectations for the euro area countries for which the data are available.

(2) These results are robust to various alternative data measures. For instance, the results do not vary significantly if, in regard to capacity utilisation, cyclical unemployment is replaced by the percentage gap between GDP and its trend rate (measured with the aid of an HP filter). Similarly, the results continue to hold if inflation is not adjusted for changes to indirect taxes, although in that case the slope of the Phillips curve exhibits a less marked increase in the recent period. In fact, as mentioned in section 2, unadjusted inflation shows a less pronounced fall so that the same increase in cyclical unemployment is accompanied by a smaller fall in inflation.

Box – Econometric analysis

The state-space form of the Phillips curve with time-varying parameters (1) can be written in matrix notation as follows:

$$\beta_t = I_3\beta_{t-1} + v_t, \qquad v_t \sim N(0, Q), \tag{2}$$

$$y_t = x_t'\beta_t + \varepsilon_t, \qquad \varepsilon_t \sim N(0, \sigma_\varepsilon^2), \tag{3}$$

where,

$$y_t = (\pi_t - \pi_{t-1}) \;,\; x_t = \begin{pmatrix} \pi_t^e - \pi_{t-1} \\ U_t^{GAP} \\ \pi_t^m \end{pmatrix} \;,\; \beta_t = \begin{pmatrix} \theta_t \\ \kappa_t \\ \gamma_t \end{pmatrix} \;,\; v_t = \begin{pmatrix} v_t^1 \\ v_t^2 \\ v_t^3 \end{pmatrix}.$$

The above state-space representation of the Phillips curve models the indirectly observed time variation in the parameter vector β by means of a mathematical description of (i) the dynamic movement in the parameters (the state equation (2)), and (ii) the way in which this indirectly observed time variation is revealed in directly observed variables (the measurement equation (3)). The parameters are assumed to follow a random walk. That is why the autoregressive term in the state equation (2) is represented by the identity matrix I_3.

The evolution of the Phillips curve parameters over T quarters is expressed as follows: $\beta^T = [\beta_1', \ldots, \beta_T']$. Apart from β^T, the variance-covariance matrix Q of the error terms in the random walk process (2) and the variance σ_ε^2 of the cost-push shocks in (3) are also unknown and have to be estimated. The model is estimated using Bayesian techniques. In a nutshell, the Bayesian method formulates a stochastic distribution for the unknown parameters (the posterior distribution) by combining the information contained in the data (the likelihood) with the *a priori* assumptions concerning the distribution of the unknown parameters (expressed on the basis of prior distributions). Since it is impossible to define a mathematical expression for the posterior, Gibbs sampling procedures are used to obtain a numerical assessment of this probability distribution. This approach involves using the Kalman filter technique and the Carter and Kohn (1994) Simulation Smoother.

In accordance with Primiceri (2005), we determine the prior assumptions on the basis of a training sample (in this case the first 36 observations, from 1971 Q1 to 1979 Q4). Thus, the average and the variance of the β-prior are chosen on the basis of the OLS estimator $\hat{\beta}_{OLS}$ and its variance $V(\hat{\beta}_{OLS})$, which result from the estimation of the time-invariant version of the Phillips curve (1) on the training sample. More specifically, the β-prior follows the normal distribution below:

$$\beta_0 \sim N\left(\hat{\beta}_{OLS}, 4.V(\hat{\beta}_{OLS})\right). \tag{4}$$

The priors of Q and σ_ε^2 follow an inverse Wishart distribution,

$$Q \sim IW\left(k_Q^2 \,.\, T^{tr}.V(\hat{\beta}_{OLS}) \,,\, (D_Q + 1)\right), \tag{5}$$

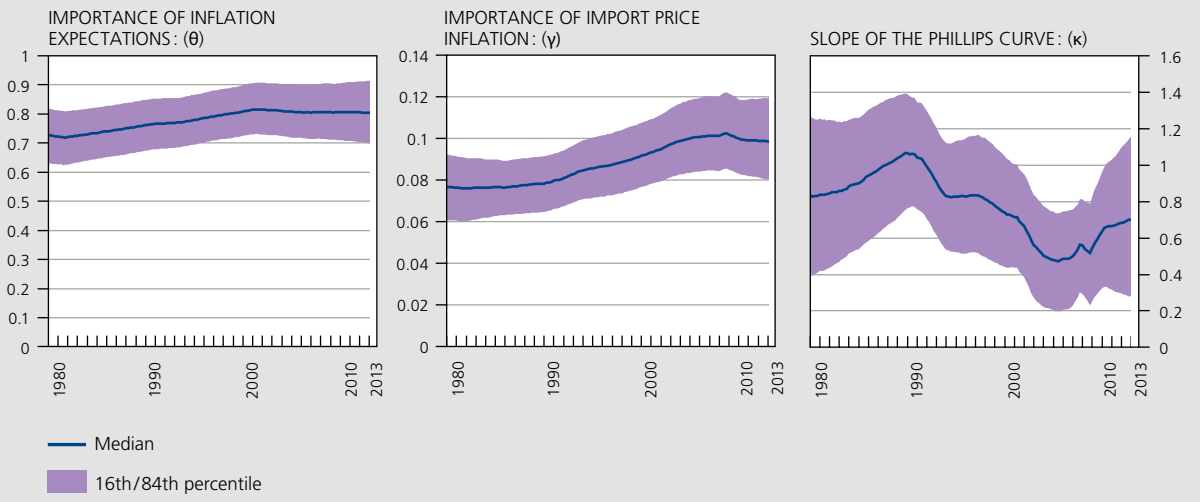
$$\sigma_\varepsilon^2 \sim IW\left(k_W^2 \,.\, (D_\sigma + 1) \,.\, I_{D_q} \,,\, (D_\sigma + 1)\right), \tag{6}$$

where,

$k_Q = k_W = 0.01$, $D_Q \equiv$ row dimension Q $(=3)$, $D_\sigma \equiv$ row dimension σ_ε^2 $(=1)$, $T^{tr} \equiv$ number of periods in the training sample (= 36).

CHART 3 CHANGES IN INFLATION DYNAMICS

(Median and 68 % probability interval of the posterior distribution)



Source : own calculations.

of internationally traded commodities are reflected to a greater extent in consumer prices.

Finally, as is evident from the decline in the slope κ_t of the Phillips curve in the right-hand panel of chart 3, the direct impact of cyclical unemployment on the level of inflation diminishes as more recent periods are examined. However, it should be noted that the Phillips curve has apparently become somewhat steeper again with the latest financial and economic crisis. That turnaround may be due to the criterion used to measure cyclical unemployment. As mentioned before, variations in the time series at the end of the sample are usually attributed by the HP filter to the trend in those series. Therefore, our measure of cyclical unemployment may underestimate the actual decline in demand during the current economic and financial crisis, leading to an overestimation of the slope of the Phillips curve.

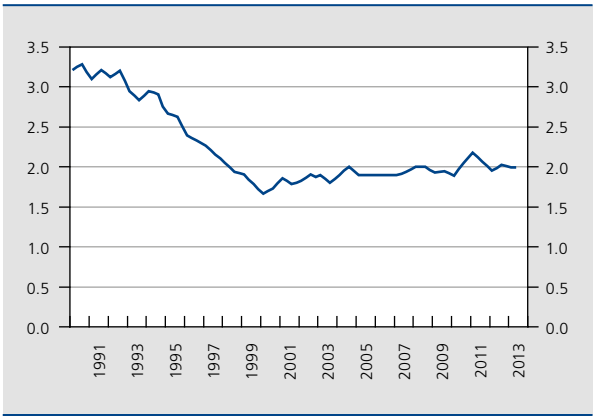
A flattening of the Phillips curve essentially reflects changes in price- and wage-setting behaviour. Recent economic literature puts forward a number of theories to explain these changes in behaviour and the decline in the slope of the Phillips curve. A first one attributes the flattening of the curve to the monetary policy conducted over the past two decades, which has aimed at price stability. On the one hand, a credible policy of price stability leads to more firmly anchored inflation expectations and ultimately more stable inflation. Bayoumi and Sgherri (2004) state that, in the presence of price adjustment costs (such as 'menu costs'), this reduced inflation volatility induces firms to be slower to adjust their prices to the economic situation. On the other hand, a fall in the average level of inflation may likewise lead to a flattening of the Phillips curve. Ball, Mankiw and Romer (1989) argue that, in a lower inflation environment, firms pay more attention to menu costs so that prices are revised less often. Other researchers (such as Coenen, 2003 ; Meier, 2010 ; Benigno and Ricci, 2011 ; and Yellen, 2012) argue that if trend inflation is low, downward nominal rigidities in prices and wages become more relevant. The latter imply for example, that workers will reject or be reluctant to accept a cut in nominal wages. When inflation is low, and a recession exerts downward pressure on wages, there will therefore be little or no reduction in wages in the case of downward nominal rigidities, so that the fall in inflation will be smaller than if the same decline in demand occurs under higher inflation.

According to an IMF study (2006), the flatter Phillips curve is a global phenomenon. From that angle, the flattening of the Phillips curve is also frequently attributed to globalisation (see, for example, IMF, 2006 and Borio and Filardo, 2007). In fact, in a globally integrated economy, foreign competition puts downward pressure on the market power of domestic firms. In response, to safeguard their market share, firms will align their prices more with the market average, which implies greater (real) price rigidity.

It should be noted that the empirical analysis examined here supports both explanations for the flatter Phillips

CHART 4 LONG-TERM INFLATION EXPECTATIONS IN THE EURO AREA SINCE 1990 (1)

(in %, quarterly data, inflation expected for the five-year period five years ahead)



Source: Consensus Economics.

(1) Data for the euro area are available from 2003. For the period 1990-2002, expectations for the euro area are calculated as the GDP-weighted sum of the data for the euro area countries for which expectations are available.

curve, as the increase in θ_t confirms the greater credibility of monetary policy, while the increase in γ_t indicates that globalisation influences the inflation process. In that respect, it is possible that the factors driving the changes in the parameters of the Phillips curve are closely correlated.

3. Implications for monetary policy

This last section aims to examine the possible monetary policy implications of the changing inflation process discussed above.

The finding that inflation is more firmly anchored to the central bank's definition of price stability – a result of inflation's greater sensitivity to inflation expectations, which, in turn, have remained in the vicinity of 2 % since 1999 – suggests that, in recent years, the traditional interest rate channel of monetary policy has become more effective. In an environment of low volatility in inflation and inflation expectations, the central bank can actually steer real interest rates more effectively through its (nominal) key interest rate. That improved effectiveness is particularly beneficial when confronted with an economic downturn – as in the great recession – and key interest rates approach their lower bound. In such situations, if declining inflation prompts expectations of a further fall in inflation, real interest rates will effectively increase. This increase cannot be offset by a further cut in the policy rate since the latter has reached its lower bound. As a result, deflation may arise, putting further upward pressure on real interest rates and, therefore, triggering a deflationary spiral.

However, this positive finding with respect to the anchoring of inflation is no reason for complacency. The more firmly anchored inflation seems to be attributable to – and hence dependent on – the policy pursued, which is clearly aimed at safeguarding price stability. In that respect, it is important that the Eurosystem continues to abide by that commitment and ensures that its policy consistently and symmetrically pursues that primary objective. Otherwise, the credibility of the central bank and the firm anchoring of inflation (and inflation expectations) to the monetary policy objective could be threatened. In addition, Svensson (2013) argues that if observed inflation exhibits a protracted, downward deviation from the definition of price stability, there could still be adverse macroeconomic implications even if inflation expectations are firmly anchored. More specifically, he claims that the resulting – *ex-post* sub-optimal – high real interest rates and wages lead to under-utilisation of production capacity, and hence to cyclical unemployment.

With its forward guidance policy, the Eurosystem does seem to underscore its commitment to safeguarding price stability – which, in the present situation, means avoiding a downward deviation from the inflation target. That policy was confirmed in November and reinforced by a cut in the interest rate on the main refinancing operations and the marginal lending facility to 0.25 and 0.75 %, respectively. This accommodative monetary policy stance is expected to underpin the economic recovery so that, in the medium term, inflation rates are once again compatible with the definition of price stability.

The importance that central banks (including the Eurosystem) attach to the maintenance of price stability is based on the belief that this approach is the best contribution that monetary policy can make to a stable macroeconomy[1]. Theoretical findings, such as the principle of divine coincidence formulated by Blanchard and Gali (2007), seem to confirm this. According to this principle, stabilising inflation also implies stabilising the output gap. In other words, the central bank does not face a short-term trade-off between the stabilisation of inflation and economic activity. As recognised by Blanchard and Gali (2007), this divine coincidence is less relevant in practice since it only applies in a very simple model. In a more realistic set-up, supply shocks, such as the cost-push shocks in the Phillips curve described above (1), imply a short-term

(1) For a discussion of the implications of the financial crisis for the mandate of central banks – and, in particular, whether they should also include financial stability in their mandate – see Smets (2013). However, those issues are beyond the scope of this article.

trade-off between the stabilisation of inflation and economic activity. For that reason, the Eurosystem's definition of price stability explicitly focuses on the medium term, avoiding the need for an immediate response to short-term fluctuations in inflation due to supply shocks. The exact speed of the central bank's response to changes in inflation therefore depends on whether it considers these fluctuations to be driven by demand or supply. Consequently, a well-thought-out policy decision requires a detailed analysis of the factors underlying the observed business cycle fluctuations. The flattening of the Phillips curve makes that analysis all the more relevant.

In the case of demand shocks, the flatter Phillips curve appears to reduce the information content of inflation variations. In such a situation, minor deviations from the inflation target may conceal substantial real disequilibria – i.e. sizeable output gaps. The flatter Phillips curve also increases the trade-off in the case of supply shocks. More specifically, restoring inflation to the target level following a supply shock requires a bigger change in the output gap. Consequently, if the Phillips curve is flatter, it is vital to respond rapidly and effectively to fluctuations in inflation caused by demand shocks, but also to respond in a prudent way to variations in inflation resulting from supply shocks. These considerations highlight the importance of a detailed analysis in support of monetary policy decisions, and of monetary policy strategies which permit sufficient focus on the medium term (see also IMF, 2013b). Note that stronger anchoring of inflation also allows the central bank to respond more gradually to supply shocks, since that anchoring reduces the volatility of inflation.

Finally, it should be pointed out that the flattening of the Phillips curve cannot be used as grounds for stimulating economic activity beyond its potential level – at the cost of an inflation level which appears to be hardly any higher. In fact, as discussed in the previous section, the flattening of the Phillips curve is not necessarily a structural phenomenon, but could be specifically due to – and dependent on – a credible monetary policy geared to price stability. Consequently, a change in the conduct of monetary policy with less attention to price stability could not only damage the anchoring of inflation but could also result in a re-steepening of the Phillips curve.

Although the above discussion presents an overview of the monetary policy implications of the observed change in inflation dynamics, it also exposes the need for a deeper structural analysis of the causes of those changed dynamics. It is particularly important to examine in greater depth whether the flattening of the Phillips curve is due to a change in the conduct of monetary policy or to structural factors such as globalisation. Testing the robustness of the results to a model-consistent measure of the output gap is also on the research agenda.

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Results and financial situation of firms in 2012

David Vivet

Introduction

Each year, in the December issue of the Economic Review, the National Bank describes the developments reflected in the annual accounts of non-financial corporations. By the autumn, the Central Balance Sheet Office already has a representative sample of annual accounts for the previous year. The conclusions based on that sample can therefore be fairly reliably extrapolated to the population as a whole.

Drawn on 13 September 2013, this year's sample comprises 241 092 companies, or 71.9 % of the annual accounts filed for the 2011 financial year. In terms of value added, its representativeness is much higher, being 86.8 %.

This three-part article presents an extrapolation of the main items in the operating account for the 2012 financial year. The extrapolations primarily concern value added, staff costs, depreciations and the operating result. They are itemised according to company size and according to the main branches of activity. The second part assesses the financial position of companies in terms of profitability and solvency. The third and last part examines recent corporation tax trends, focusing on the implicit tax rate, which is the most appropriate statistical measurement for assessing the tax burden.

Since last year, the population studied has reflected all the non-financial corporations as defined by the Central Balance Sheet Office, excluding head office activities (NACE-BEL 70.100). This branch, previously made up of coordination centres, now contains several hundred companies that generally provide banking or treasury management services. In recent years, these companies have seen substantial capital inflows, following the introduction of the risk capital allowance ("notional interest"). Consequently, in 2011, the head office activities branch represented more than one-third of corporate equity capital but barely more than 1 % of value added and employment. This means that this branch has a significant impact on certain aggregate financial statistics but a limited real economic effect. As a result, it has been excluded from the statistics featured in this article.

Annex 1 itemises the NACE-BEL codes for the branches of activity covered. Sectoral categories are based on the NACE-BEL 2008 nomenclature. For presentation and interpretation purposes, the structure used in this article differs slightly from the official structure of the nomenclature.

The article also makes a distinction between companies according to their size, a distinction based on the kind of format filed. Pursuant to the Company Code, small non-listed companies have the opportunity to use the abbreviated format, whereas large firms and small listed companies are required to use the full format.

The Company Code definition of a small company is one that has not exceeded one of the following limits over the last two financial years:
- the average annual size of the workforce: 50;
- turnover (excluding VAT): € 7 300 000;
- balance sheet total: € 3 650 000;

unless the number of employees exceeds an average of 100 units per annum[1].

(1) If the financial year covers either more or less than 12 months, the turnover criterion is recalculated on a pro rata basis. If the enterprise is affiliated to one or more companies, the criterion for the annual average workforce is calculated by adding up the average annual number of workers employed by all the enterprises concerned and the criteria for turnover as well as balance sheet total are calculated on a consolidated basis. For further details, see the advisory opinion CNC 2010-5 of the Belgian Accounting Standards Commission (www.cnc-cbn.be).

In all the other cases, the company is regarded as being a large entity.

In keeping with this criteria, large enterprises are defined as those filing their annual accounts in the full format. The other companies, i.e. those filing their annual accounts in the abbreviated format, are regarded as SMEs.

1. Trends in components of the operating result

1.1 Economic climate

Starting in the second quarter of 2011, Belgium's gradual slowdown in activity continued into 2012. The persistently high level of uncertainty created by the euro area crisis and the deep recessions in countries undertaking adjustments gradually extended their effects to squeeze domestic demand in economies located in the heart of the euro area, including Belgium, whose GDP dropped by an average 0.3 % throughout 2012.

This downturn is primarily the result of reduced domestic demand, generally driven by the fall in the level of household expenditure. The downward movement in private consumption appearing in early 2011 continued into 2012, except for a very limited revival in the third quarter. Such a long-lasting negative trend in household consumption, the like of which has not been seen since the early 1980s, is mainly blamed on recent trends in the real disposable income of households, with the levels declining in 2010 and 2011, before stalling in 2012. Concurrent with weak consumer expenditure, residential investment also followed a downward path for the second year in a row: down 2.8 % in 2012, in the wake of the previous 5.3 % drop in 2011.

The economic conditions also made an impact on business investment. After rising again by over 8 % in 2011, the climate more or less stagnated in 2012 (+0.1 %). The negative contribution from changes in inventories in 2012 contrasts with the situation one year before when it made a substantial contribution to the still comparatively robust upturn in GDP. When the first signs of a new economic downturn appeared in the spring of 2012, inventory accumulation was seriously curtailed, while existing inventories were reduced as a result of which their changes made a negative contribution to the level of growth in GDP throughout 2012.

Conversely, net exports made a positive contribution equal to 0.2 percentage points to growth, notwithstanding the sharp downturn in exports in the wake of the general weakening of demand in Europe. The sluggish domestic demand was also reflected in the case of imports, which declined even more than exports, leading to an improvement in Belgium's external balance of goods and services.

Lastly, budgetary consolidation succeeded in curbing government final expenditure, which was sluggish as well in 2012 (+0.4 %).

TABLE 1 GDP AND PRINCIPAL EXPENDITURE CATEGORIES

(volume data restated for seasonal variations and calendar effects; percentage changes compared to the previous year, unless otherwise stated)

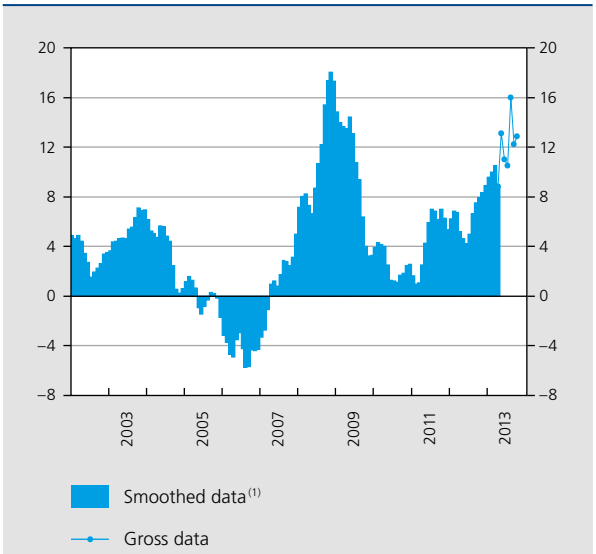
	2008	2009	2010	2011	2012
Final household consumption expenditure (1)	2.0	0.6	2.7	0.2	–0.3
Final government consumption expenditure	2.7	1.9	0.6	1.1	0.4
Gross fixed capital formation	2.0	–8.4	–1.2	4.2	–0.6
Companies	4.2	–10.2	–3.2	8.6	0.1
Housing	–2.7	–8.6	3.1	–5.3	–2.8
Government	0.3	9.8	–1.2	5.9	0.9
Change in inventories (2)	–0.1	–1.1	0.3	0.7	–0.2
Net exports of goods and services (2)	–0.9	–0.6	0.7	–0.1	0.2
Exports of goods and services	2.1	–11.1	9.6	5.5	0.7
Imports of goods and services	3.4	–10.6	8.9	5.7	0.5
GDP	1.0	–2.8	2.4	1.9	–0.3

Source: NAI.
(1) Final consumption expenditure of households and non-profit institutions.
(2) Contribution to the change in GDP.

Macroeconomic trends in recent years have had an impact on how vulnerable Belgian companies are, as reflected in the bankruptcies the commercial courts reported to the Crossroads Bank for Enterprises (see chart 1). The data have to be smoothed in order to work out a trend from them, as they are highly volatile and much affected by seasonable patterns. The rise in the number of bankruptcies peaked in the midst of the recession in 2008-2009 but subsequently dropped sharply until early 2011, thanks to the economic upturn. Since then the negative trend followed by weakening economic activity has coincided with a higher number of bankruptcies, which steadily rose until in 2013 it had reached its highest level of the past four years. All branches of activity were affected by this increased vulnerability, but the construction industry turned out to be the worst hit (the number of bankruptcies rose by 19 % within the space of two years), followed by the hotel and catering sector (+17 %), business services (+15 %), trade (+13 %) and the manufacturing industry 9 %).

CHART 1 TRENDS IN THE NUMBER OF BUSINESS BANKRUPTCIES IN BELGIUM

(percentage change in the number of bankruptcies over the corresponding month of the previous year)



Sources: FPS Economy, SMEs, Self-employed and Energy; own calculations.
(1) Data smoothed by a 12-month moving average.

1.2 Global trends in the operating account

For the year 2012 as a whole, the total value added generated by non-financial corporations, i.e. the difference between the sales revenue and the cost of goods and services provided by third parties, rose by 1.4 % in current prices (see table 2). The slowdown reported in 2011 therefore continued in 2012, owing to a sharp decline in the economic climate. In the context of a general slowing down of demand, companies were generally unable to reflect all their higher costs in their sales prices.

The value added a company generates enables it to cover its operating costs, the surplus being recorded as a net operating result. The latter reflects the company's current commercial efficiency, regardless of its financing policy and any exceptional items.

TABLE 2 TRENDS IN THE MAIN COMPONENTS OF THE OPERATING ACCOUNT

(current prices)

	Percentage changes compared to the previous year					In € million	In % of value added
	2008	2009	2010	2011	2012 e	2012 e	2012 e
Value added	2.6	–3.6	5.5	3.7	1.4	176 400	100.0
Staff costs (–)	5.0	–0.3	0.6	5.3	3.7	102 687	58.2
Depreciation and write-downs(1) (–)	6.4	6.1	2.1	4.0	2.6	32 730	18.6
Other operating expenses (–)	11.1	–5.2	3.0	4.7	–0.4	10 713	6.1
Total operating expenses	*5.8*	*0.7*	*1.1*	*5.0*	*3.2*	*146 130*	*82.8*
Net operating result	**–8.6**	**–21.1**	**28.6**	**–1.7**	**–6.3**	**30 270**	**17.2**

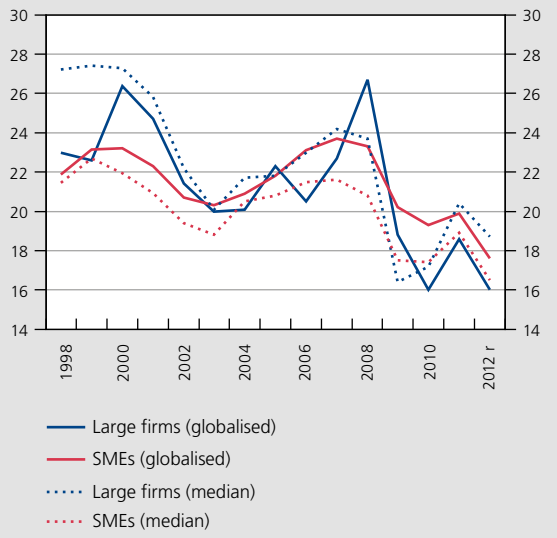
Source: NBB.
(1) On tangible and intangible fixed assets and start-up costs (item 630).

Staff costs usually make up the major part of the operating costs. Subsequent to the strong recovery seen in 2011, they continued to grow steadily in 2012 (+3.7 %). This development in the overall wage bill was primarily affected by the further increase in the private sector hourly wage costs (+3.5 %), which itself was mainly the outcome of the wage indexation scheme. Meanwhile, employment rose only ever so slightly throughout the year under review (+0.6 % in full-time equivalents). All in all, for the fourth time in the last five years, staff costs have risen faster than value added.

After staff costs, the biggest operating expenses are represented by item 630 in the annual accounts: depreciation and write-downs on tangible and intangible assets and start-up costs. They rose fairly slowly again in 2012 (+2.6 %). The overall limited upturn in depreciations in recent years reflects an investment policy that has become a lot more conservative since the onset of the financial crisis.

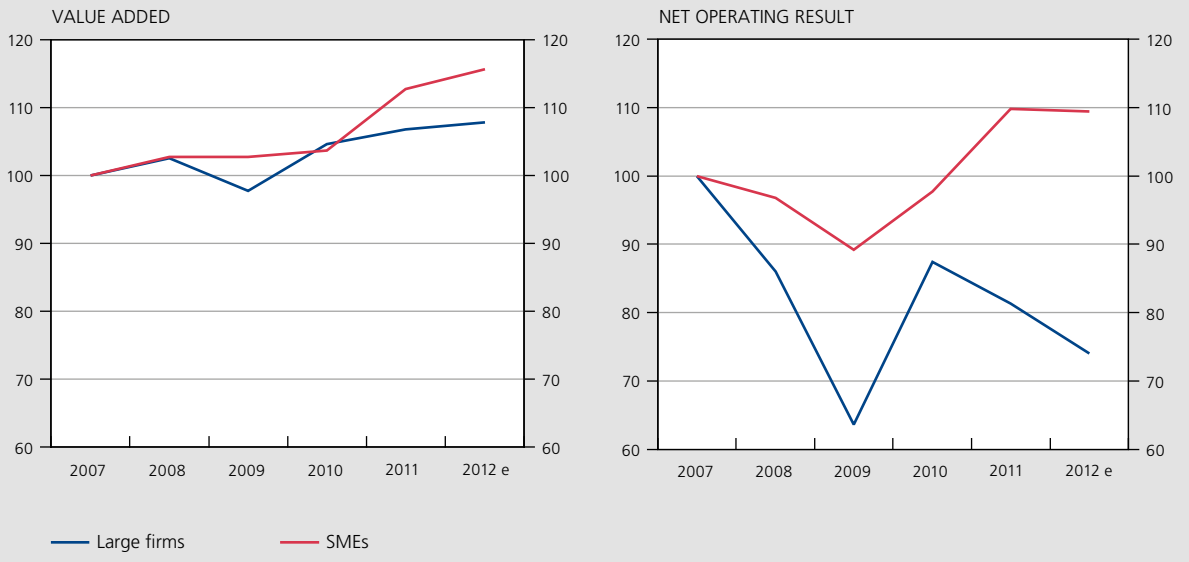
In the annual accounts, corporate investment spending may be examined in the light of the ratio of new tangible fixed assets. This ratio divides the tangible fixed asset acquisitions undertaken during the financial year by the inventory of tangible fixed assets at the end of the previous financial year. Whatever measurement is used, the ratio declined sharply in the wake of the 2008-2009 recession, after which it reached levels well below its long-term average (chart 2). In 2012, the ratio was affected by sluggish demand and the subdued growth outlook, in a most uncertain environment. Changes in capacity utilisation in the manufacturing industry, which continued on its downward path, also discouraged any new investment.

CHART 2 RATIO OF NEW TANGIBLE FIXED ASSETS
(%)



Source : NBB.

CHART 3 VALUE ADDED AND OPERATING RESULT, BY SIZE OF FIRM
(indices 2007 = 100)



Source : NBB.

Determined to a large extent by staff costs and depreciation, the total operating expenses rose by 3.2 % in 2012. As in 2011, the rate of increase was faster than the rise for value added. This combination of higher costs and economic bad times resulted in a further decline in the net operating result (–6.3 %), which stood at € 30.3 billion in 2012. Although the operating result is still below the peak reached before the 2008-2009 recession (€ 35.5 billion in 2007), it more than doubled between 2001 and 2007, it has to be stressed.

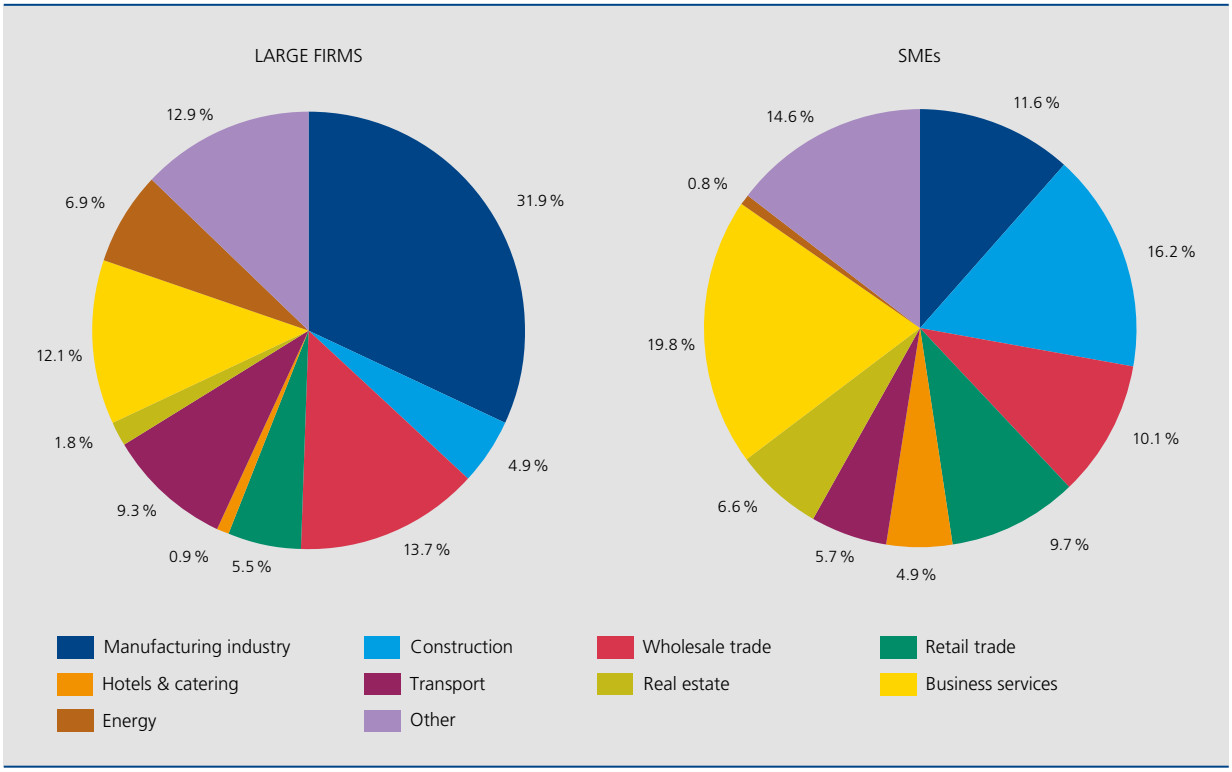
The long-term increase in the operating result has, moreover, been a lot stronger than is the case with the other aggregates, rising by 137 % since the mid-1990s, compared with 86 % for value added, 77 % for staff costs and 82 % for depreciation and write-downs. It was mainly during the years after the 2001-2002 economic downturn that the operating result split from the other components. After peaking in 2007, the gap has narrowed in the last few years, as an indication that the recent deterioration in the business climate has made a lasting impact on firms' ability to generate profits, as underscored by the trend in profitability ratios (see paragraph 2.1).

The company-size-based analysis shows developments have been distinctly more favourable to SMEs in recent years (chart 3). The value added of SMEs has risen by 16 % since 2007, compared with 8 % for large firms. The operating result has also fared a lot better in the case of SMEs: after going into a decline in 2008 and 2009, it recovered strongly so that by 2012 it had reached a much higher position than the level attained before the onset of the financial crisis. Conversely, large firms' trading performances suffered considerably more from the unfavourable economic climate in recent years, including in 2011 and 2012.

Large firms are generally more sensitive to economic cycles as a result of being significantly more inclined towards industrial activities and international trade. As a reminder, 31.9 % of the value added of large firms is attributed to the manufacturing industry, compared with 11.6 % for SMEs. These smaller businesses are, however, more involved in branches reliant on domestic demand, including construction, the retail trade, the hotel and catering sector, real estate and business services (see chart 4). Accordingly, SMEs have been less exposed to cyclical fluctuations in recent years, as these have been primarily determined by the international environment.

CHART 4 BREAKDOWN OF VALUE ADDED BY BRANCH OF ACTIVITY

(percentage changes over the previous year)



Source : NBB.

1.3 Differences between branches of activity

The manufacturing branches were the main contributors to the slowdown in 2011, as a result of a loss of dynamism in trade and higher raw material prices. However, the further slowdown in 2012 was primarily attributable to domestic demand-driven branches, including most of the non-manufacturing ones (see table 3).

Consequently, the retail trade has been particularly affected by weak household consumption since early 2011: this branch's value added and operating result in 2012 suffered their worst performance for over 15 years. Trade in motor vehicles was particularly affected by the propensity of households to postpone their purchases of durable goods and public authority decisions to axe some of the financial support granted for the purchase of environmentally friendly vehicles. The construction sector's activity also reflects sluggish domestic demand, and, more specifically, weak levels of investment in housing and the loss of momentum in corporate investment spending. Lastly, the energy branch has to contend with lower volumes being sold (particularly in the corporate segment) and lower margins owing to various factors such as competition and regulatory measures.

The trends in the manufacturing branches broadly reflected specific conditions on the markets where firms operate. For example, the pharmaceuticals industry performed very well in 2012, whereas in 2011 it was experiencing the aftermath of 2010 dominated by high levels

TABLE 3 VALUE ADDED AND OPERATING RESULT PER BRANCH OF ACTIVITY

(percentage changes compared to the previous year)

	Value added		Net operating result		*p.m. Branch's share, in % of total value added in 2012 e*
	2011	2012 e	2011	2012 e	
Manufacturing industry	**–0.4**	**0.6**	**–6.9**	**–10.0**	***26.6***
of which:					
Agri-food industries	0.0	3.7	–8.9	8.9	*4.1*
Textiles, clothing and footwear	–1.7	0.6	–18.5	12.8	*0.8*
Wood, paper and printing	1.7	0.4	4.7	–4.9	*1.8*
Chemicals industry	2.3	–5.4	–1.0	–24.7	*3.7*
Pharmaceuticals industry	–13.8	7.3	–38.6	40.1	*2.9*
Metallurgy and metalworking	2.8	–4.9	–16.3	–84.2	*3.7*
Metal manufactures	1.0	1.4	16.3	–1.7	*5.4*
Non-manufacturing branches	**5.3**	**1.7**	**0.3**	**–5.1**	***73.4***
of which:					
Trade in motor vehicles	12.2	–4.9	29.1	–25.1	*2.5*
Wholesale trade (1)	2.0	1.1	–7.4	–4.8	*12.8*
Retail trade (1)	5.8	1.2	3.7	–7.4	*6.6*
Transport and storage	0.4	2.2	n.s.	n.s.	*8.4*
Hotels, restaurants and catering	9.5	2.1	16.8	–30.0	*2.0*
Information and communication	2.7	1.6	1.2	–7.3	*7.0*
Real estate activities	6.9	7.8	4.1	7.4	*3.1*
Business services	9.2	4.1	11.5	1.2	*14.2*
Energy, water and waste	4.9	–8.4	2.8	–30.0	*5.3*
Construction	8.2	4.1	3.4	6.1	*7.9*
Total	**3.7**	**1.4**	**–1.7**	**–6.3**	***100.0***

Source: NBB.
(1) Excluding trade in motor vehicles.

of revenue. Owing to its innovative side and high level of value added, the pharmaceuticals industry was generally less affected by the financial crisis than the other industrial branches. Unlike the metal industry, which continued to experience the negative after-effects of an unpromising international climate, dominated, in particular, by the shutdown or indeed even closure of production units. Chemicals companies had to contend with a sharp cut in their margins in 2012, particularly because of fluctuations in prices for certain industrial raw materials and energy products.

2. Trends in the financial situation of firms

The financial analysis which follows is based on the theory of interpretation of the annual accounts, from which several ratios have been borrowed. They are defined in detail in Annex 2.2.

The financial ratios are presented in the form of global figures and medians. The globalised ratios are obtained by taking the sum of the numerators of all companies and dividing it by the sum of their denominators. The median is the central value in an ordered distribution: for a given ratio, 50 % of firms have a ratio above the median and 50 % have a ratio below the median. The two measures are complementary since they focus on different points of interest. Since it takes account of the weight of each firm in the numerator and in the denominator, the globalised figure primarily reflects the situation of the largest firms. In contrast, by indicating the position of the central firm, the median reflects the picture for the distribution as a whole: it is in fact influenced equally by every firm, regardless of size.

2.1 Profitability

Profitability is assessed on the basis of four ratios: the net margin on sales, the return on operating results, the return on equity and the return on total assets.

The net margin on sales is equal to the ratio of net operating result to revenues[1]. It expresses the commercial performance of a business unit, independent of financing, exceptional results and tax considerations. For SMEs, the ratio can only be calculated if revenues are reported in the annual accounts.

The net return on operating assets is the ratio of net operating result to operating assets. The latter are defined as the sum of non-financial fixed assets, inventories, receivables at less than one year and adjustment accounts[2]. Other assets (financial fixed assets, amounts receivable after one year, investments and available assets) are regarded as financial assets and are not included in the ratio's denominator. Thus, the ratio expresses the commercial performance relative to the balance sheet items directly involved in operations.

The return on equity is the net profit after tax divided by equity capital. This ratio indicates the return which shareholders receive after the deduction of all expenses and taxes. From a strictly financial standpoint, it is therefore the ultimate measure of profitability.

Lastly, the net return on total assets before taxes and financial expenses measures the firm's profitability relative to all of the resources at its disposal. Profits are considered before taxes and financial expenses so as to be independent of taxation and financing policy. As a result, the ratio is sometimes called "economic return".

Chart 5 shows the trend in the four ratios defined. In 2012, irrespective of the measurement under consideration, profitability declined for both large firms and SMEs. In some cases, and more specifically the globalised profitability of large firms, the downturn started as early as 2011. By late 2012, most of the ratios examined had reached levels that were the lowest for the last 10 or even 15 years. Overall, corporate profitability was therefore clearly affected by the economic conditions in recent years.

Table 4 itemises the trend in the net margin on sales for each branch of activity, in globalised terms. The lower margins since 2007 are seen to have affected most of the branches under consideration but to extents that vary quite a bit. Solely the pharmaceutical industry and certain technological industries (in metal manufactures) reported an increase for this period.

The branches with the highest margins in 2012 were real estate activities (22.6 %), the pharmaceuticals industry (12.7 %) and telecommunications (10.0 %). The significant real estate margins have to be qualified by other profitability measurements: expressed in relation to equity and total assets, the branch's profitability is a lot lower than the general average (see Annexes 3 and 4).

Lastly, chart 6 describes the margin distribution trend for a selection of manufacturing branches. One can see that both

(1) In the case of large firms, the revenue is increased by other operating income and reduced by operating subsidies.

(2) This is the definition proposed in Ooghe and Van Wymeersch (2006), *Traité d'analyse financière*, Intersentia, Antwerp-Oxford.

the most profitable and less profitable strata are affected by the economic cycle: good economic times generally coincide with an upward shift in the distribution, whereas negative periods are associated with a downward shift.

The movements are apparently often more pronounced at the lower end of the distribution, showing that the percentage of unprofitable companies is more sensitive to cyclical fluctuations than the percentage of highly profitable ones.

Each branch is also observed to have its own specific features. For example, the agri-food industry is characterised by weak dispersion and a limited sensitivity to the economic situation. Conversely, the distribution of metal manufactures is wider and much more affected by the economic cycle, particularly at its lower end.

2.2 Solvency

Solvency is the ability of firms to honour their short- and long-term liabilities. This criterion is of key importance for the financial assessment of a firm, while figuring prominently in the model of financial health developed by the Bank.

CHART 5 PROFITABILITY TRENDS
(%)

Source : NBB.
(1) Excluding exceptional results.

The main measurement of solvency is the degree of financial independence. This is equal to the ratio between equity and total liabilities. If the ratio is high, the firm is independent of borrowings, and that has two positive effects: first, interest charges are low and therefore do not weigh heavily on profits, second, new debts can easily be contracted if necessary, on good terms. The degree of financial independence can also be interpreted as a measure of the financial risk incurred by the firm, since the remuneration of third parties is fixed, in contrast to the firm's results, which fluctuate over time.

In 2012, the globalised ratio for large firms rose 0.7 points for large firms and 1.2 points for SMEs, to reach 44.7 % and 39 % respectively (see chart 7). The entire population again experienced an upward movement: the median ratio for large firms rose 1 point, that for SMEs 1.5 points.

These developments may paint a picture of constantly improving solvency but an analysis of the entire distribution requires this conclusion to be qualified. One particular finding is that the increase mainly benefited the most solvent among the population, and numerous companies have gone against the majority tide. In particular, a steady increase in the percentage of companies with negative equity has been observed: rising from 14.9 % to 17.3 % over the last 15 years.

Another way of measuring solvency is to examine the degree of self-financing: this involves dividing the sum of the retained earnings by total liabilities. This ratio is also very often found in failure predictions models, as it reflects a company's past profitability, dividend policy and, indirectly, its longevity. A long-established firm having amassed profits and applying a conservative dividend

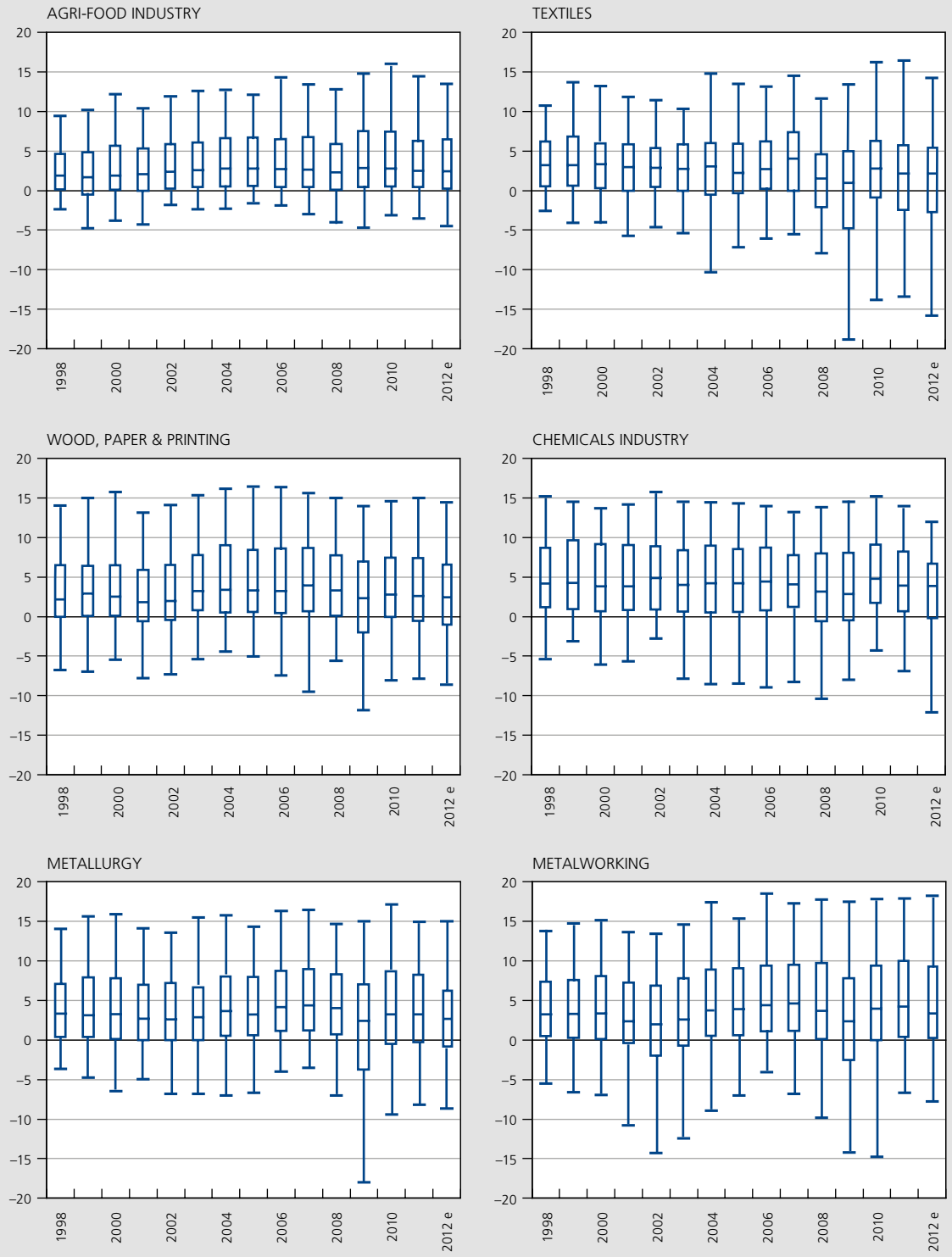
TABLE 4 NET MARGIN ON SALES IN LARGE FIRMS, BY BRANCH OF ACTIVITY
(globalised, in %)

	2007	2008	2009	2010	2011	2012 e	Δ 2007-2012
Manufacturing industry	**4.8**	**3.4**	**3.2**	**4.5**	**3.6**	**3.2**	**–1.6**
of which:							
Agri-food industries	3.8	3.4	4.6	4.0	3.2	3.4	–0.4
Textiles, clothing and footwear	4.1	1.3	2.0	3.9	2.8	3.1	–1.0
Wood, paper and printing	6.0	4.4	4.0	4.7	4.5	4.3	–1.7
Chemicals industry	5.2	2.5	3.2	5.5	5.2	3.8	–1.4
Pharmaceuticals industry	10.7	10.4	15.4	14.0	8.8	12.7	+2.0
Metallurgy and metalworking	5.4	2.9	–0.6	2.8	1.7	–0.1	–5.5
Metal manufactures	4.5	3.6	2.7	5.1	5.3	5.2	+0.7
Non-manufacturing branches	**4.6**	**4.3**	**4.0**	**4.1**	**3.6**	**3.4**	**–1.2**
of which:							
Trade in motor vehicles	2.2	1.1	0.6	1.5	2.0	1.6	–0.6
Wholesale trade[(2)]	2.8	2.2	1.3	2.2	1.7	1.6	–1.2
Retail trade[(2)]	3.4	3.1	3.3	3.6	3.5	3.2	–0.3
Transport and storage	5.8	6.5	7.4	4.7	2.7	3.5	–2.3
Hotels, restaurants and catering	4.8	4.4	1.3	2.2	2.4	1.5	–3.2
Information and communication	12.1	12.2	11.5	11.2	11.0	10.0	–2.2
Real estate activities	27.0	43.2	28.9	23.1	22.4	22.6	–4.4
Business services	4.9	4.9	3.8	4.9	4.5	4.5	–0.4
Energy, water and waste	6.2	5.6	6.5	6.5	6.5	5.1	–1.1
Construction	4.9	4.6	3.9	4.3	3.6	3.9	–1.0
Total	**4.7**	**4.0**	**3.8**	**4.2**	**3.6**	**3.3**	**–1.4**

Source: NBB.
(1) Excluding trade in motor vehicles.

CHART 6 DISTRIBUTION OF THE NET MARGIN ON SALES IN LARGE FIRMS – SELECTION OF MANUFACTURING BRANCHES [1] [2]

(in %)



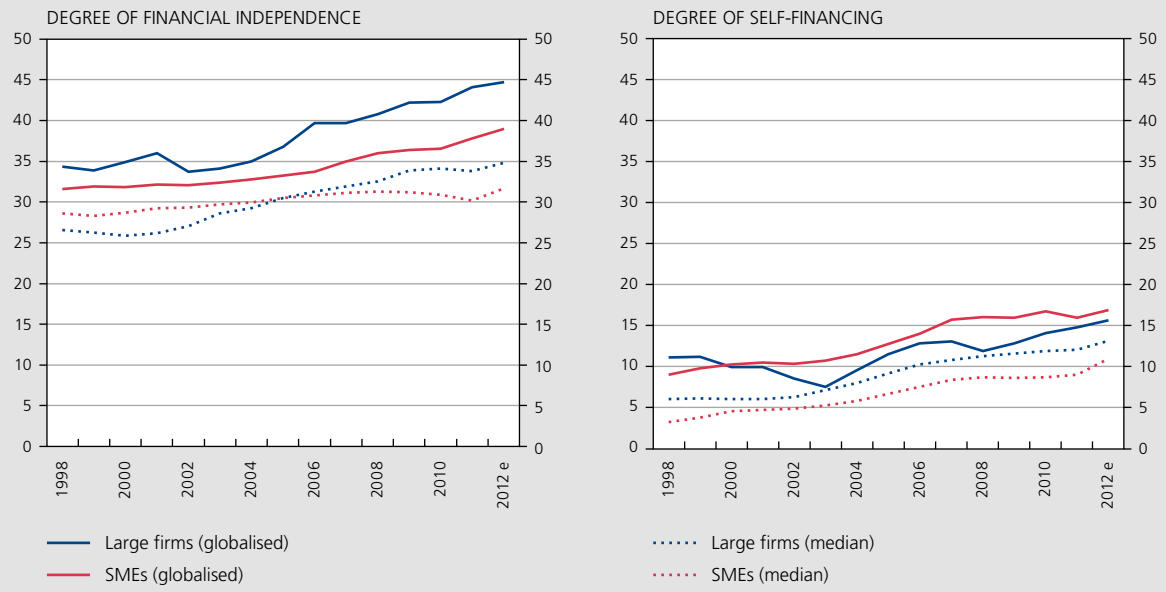
Source : NBB.

(1) Number of companies analysed (2011) : 608 in the agri-food industry, 223 in the textile industry, 350 in the wood, paper and printing category, 271 in the chemicals industry, 536 in the metal industry and 539 in metal manufactures.

(2) The *box plots* are interpreted as follows. The bottom and top ends of the box correspond to the 1st and 3rd quartiles respectively. The line inside the box relates to the median value. The ends of the lower and upper whiskers correspond to the 1st and 9th decile respectively.

CHART 7 FINANCIAL INDEPENDENCE AND DEGREE OF SELF-FINANCING

(in %)



Source : NBB.

policy is less of a risk than a start-up that has not yet been able to build up reserves. As shown in chart 7, this ratio, too, has taken an upward path over the last 15 years, both in globalised and median terms. As with the degree of financial independence, it needs to be borne in mind that the lower end of the distribution declined during the same period.

The average interest charges on financial debts assess the cost of recourse to external sources of funding. The ratio divides charges on debts by the sum of short- and long-term financial debt. The ratio is not calculated for SMEs because their income statements make it impossible to pinpoint the charge on debt[1].

After a significant fall in 2009 and 2010, concurrently with the easing of the euro area monetary policy, the globalised ratio for large firms has since levelled off at just under 4 %, fluctuating very little in 2011 and 2012 (chart 8). The median ratio followed a similar trend, albeit less markedly so. During the last two years under review, the cost of financial debt therefore remained at an all-time low. This is also demonstrated in statistics based on MIR surveys[2] and corporate bond yields.

(1) In the abbreviated format, charges on debt are encompassed in the "financial charges" line (item 65).

(2) MIR surveys are harmonised surveys of the euro area, referring to the rates monetary financial institutions apply to deposits and loans of non-financial corporations and households.

Lastly, it needs to be emphasised that since the onset of the financial crisis, firms have turned increasingly to non-bank sources of funding, particularly corporate bonds. Between 2008 and 2012, the proportion of bank loans in corporate financial debt fell from 44.7 % to 35.3 %, while the proportion of bond loans rose from 5.1 % to 11.1 % (chart 9). This shift in the finance structure was the result, in particular, of tighter bank financing conditions and comparatively weak yields related to corporate bonds. Representing the bulk of the item "other borrowings", the proportion of intra-group loans remained particularly stable over the last decade, fluctuating between 43 % and 47 %. Lastly, the use of subordinated loans, which generally also concern inter-company loans, has increased somewhat over the last few years, while remaining fairly marginal.

3. Recent corporate tax trends

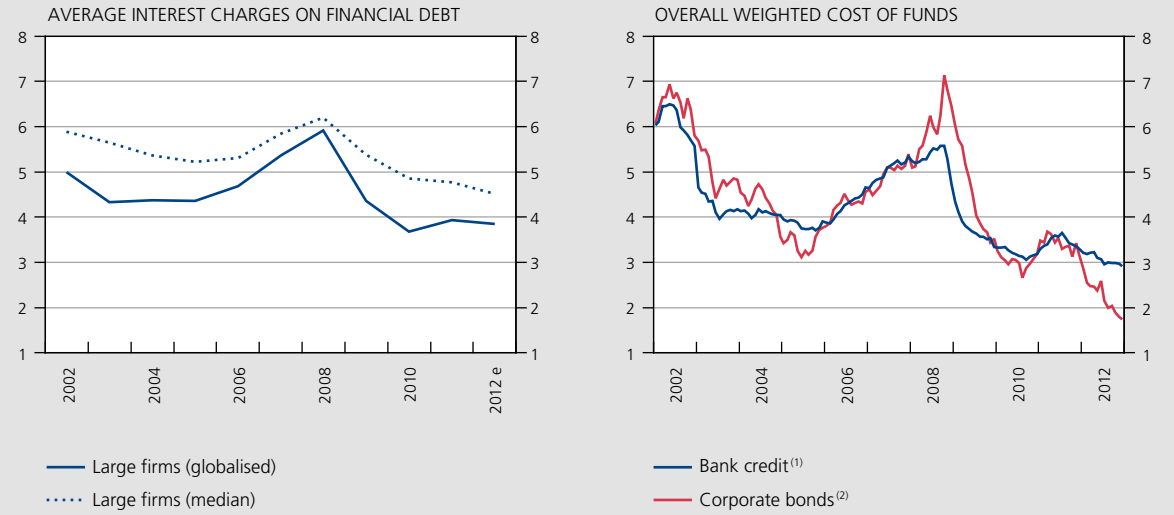
3.1 Introduction

This section discusses recent corporate tax trends, as shown in annual accounts filed with the Central Balance Sheet Office.

Tax paid by corporations may be assessed using the item "Income taxes" (67/77 in the annual accounts). This item

CHART 8 FINANCING COSTS

(in %)



Sources : NBB, Thomson Reuters Datastream.

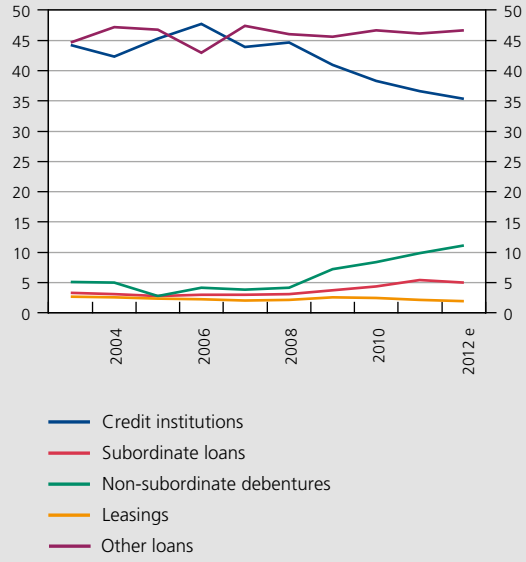
(1) Weighted average rate applied by Belgian banks on loans to businesses, as reflected in the MIR survey. The weighting is based on amounts outstanding for different types of credits.

(2) Yield of an index of euro-denominated bonds issued by non-financial corporations in the euro area, all maturities combined ; index weighted by outstandings.

first of all deals with taxation relative to the profit or loss for the financial year, i.e. primarily taxes and withholding taxes due or paid, provisions in the event of a tax dispute and foreign taxes. The item also applies to additions to previous results plus adjustments of income taxes and any write-back of tax provisions(1).

CHART 9 FINANCIAL DEBT BREAKDOWN TRENDS

(in %, large firms)



Source : NBB.

The overall amount indicated in the item followed a clear upward trend between 1998 and 2007, gradually rising from € 5.2 billion to € 9 billion (chart 10) and has since fluctuated according to the economic climate, to stand at € 8.4 billion in 2012. The ratio between tax on earnings and value added over the same period fluctuated within a 4.5-5.6 % range. The ratio might be applied on a regular basis but it does not allow the tax burden on companies to be assessed, as the value added does not correspond to the taxable base nor does it develop in the same way. Hence this section is focused on the implicit tax rate concept, as the most suitable statistical measurement.

3.2 Implicit tax rate concept

Three measurements of the tax burden on company profits are generally singled out : the nominal rate, the effective rate and the implicit rate. The nominal rate is the most direct measurement insofar as it corresponds to the standard rate applied to the taxable amount. However,

(1) For a detailed description of what the item involves, see Article 96 of the Royal Decree of 30 January 2001 implementing the Company Code.

this rate fails to offer a full picture of the tax burden, as the taxable amount may vary significantly owing to tax relief, depreciation methods or preferential systems. The effective rate is a measurement calculated for specific circumstances, factoring in various parameters, such as the nominal rate, depreciation methods and deductions. Lastly, the implicit rate under consideration here is a statistical estimate obtained by dividing the tax revenue by an aggregate representative of a company's earnings.

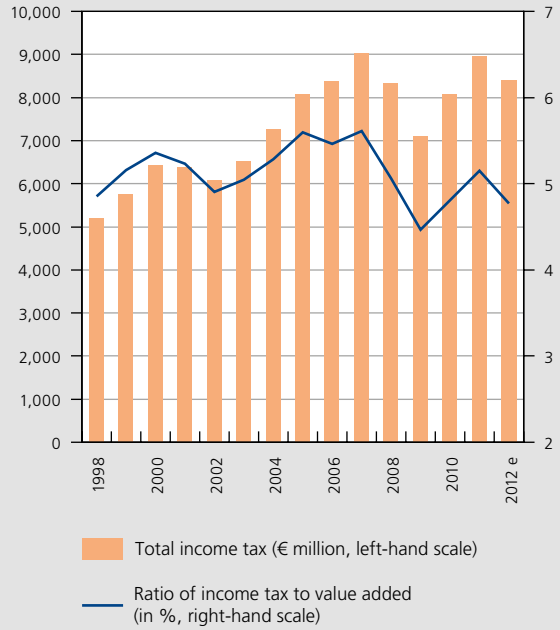
The implicit tax rate for companies can be calculated in several ways, starting with three sources: national accounts, fiscal statistics and annual accounts. Each source has its pros and cons. The Central Balance Sheet Office data can be used to pinpoint profit-making companies and calculate a rate for them only. They can also be used to calculate dispersion measurements on the basis of individual data. On the other hand, the annual accounts allow only an approximate representation to be made of the fiscal concepts used for taxation.

As Valenduc (2004) nonetheless emphasises, the denominator of the implicit rate has to be consistent with an aggregate that approximates the economic concept of revenue, rather than the aggregate that most closely approximates the taxable amount. The idea underlying the implicit tax rate is not to copy an average tax rate obtained on the basis of the tax data but indirectly to obtain an economic indicator of the effective tax burden. Accordingly, when a share of the revenue is exempt that should result in a gap between the implicit tax rate and the corresponding nominal tax rate[1]. At the same time, the movement of the indicator rather than its level is what needs to be analysed first of all. Comparative investigations also demonstrate the variety of outcomes obtained in the light of the source and method applied[2]. In other words, no single definition of implicit tax rate is available, which is why several tests were undertaken, at the end of which the most relevant measurements were chosen.

The findings are shown in chart 11, in both globalised and median terms. A further globalised rate including head office activities (NACE-BEL 70100) is also calculated. Formerly covering coordination centres, this branch now features many inter-group finance companies that are notable, in particular, for a heavy reliance on the risk capital allowance system ("notional interest").

Lastly, for illustrative purposes, the implicit rate calculated by Eurostat on the basis of national accounts is also featured[3]. This overall rate applies to all private companies, including financial corporations. This population may therefore be slightly different to the one under consideration here but the results obtained are nevertheless similar.

CHART 10 TRENDS IN THE TAX ON THE INCOME FROM NON-FINANCIAL CORPORATIONS



Source : NBB.

3.3 Calculation method

After an analysis, two implicit tax rate measurements were chosen that differ according to the treatment of capital gains, write-downs and capital losses on shares. In the case of the first rate, these transactions are regarded as part of corporate profits. For the second one, they are deducted on the same basis as finally taxed income (FTI). Conversely, the two rates have the same numerator: the "income taxes" item in the annual accounts (see above).

The denominator of the first rate reflects pre-tax earnings as shown in the annual accounts (item 9903), minus an estimate of the FTI. Solely feasible for large firms (i.e. firms filing full-format accounts), this adjustment is achieved by multiplying the revenue from financial fixed assets (item 750) by the proportion of investment in financial fixed assets entered on the asset side of the balance sheet. Applicable subject to certain conditions, the FTI system seeks to avoid taxing the same earnings

(1) Valenduc (2004), "Les taux d'imposition implicite du travail, du capital, de la consommation et des transferts sociaux", *Bulletin de documentation of FPS Finances*.

(2) See, for example Central Economic Council (2012), "Méthodologies utilisées pour le calcul des taux d'imposition implicite", CEC briefing note 2012-0224.

(3) See Eurostat (2013), *Taxation trends in the European Union. Data for the EU Member States, Iceland and Norway*, Luxembourg, Office for Official Publications of the European Communities.

several times when they are transferred from a subsidiary to a parent company, according to the *non bis in idem* principle.

Apart from its downward trend, the distinctive feature of the first rate is a significant level of volatility in the case of the globalised ratio (see chart 11). This volatility is largely due to a few capital gains, write-downs and capital losses on shares[1]. Until very recently, also under the *non bis in idem* principle, gains on the sale of shares were untaxed in most cases, as the gain was deemed to represent an increase in value already subject to taxation as a result of earnings entered in the reserves by the subsidiary[2]. This view often gives rise to a debate, as a rise or fall in the value of a share is dependent on other factors, such as the growth outlook, the competitive position and the market supply[3]. The capital gains taxation scheme in 2012 underwent two changes applicable in the 2014 tax year : a) capital gains on shares held for less than one year are to be subject to the separate rate of 25.75 % and b) a specific 0.412 % contribution will be applied to exempt capital gains realised by large firms[4].

In the annual accounts, transactions in shares cannot be pinpointed because they are encompassed with other exceptional entries within items 763 ("Gains on disposal of fixed assets"), 663 ("Loss on disposal of fixed assets"), 661 ("Amounts written down on financial fixed assets") and 761 ("Amounts written back on financial fixed assets"). A survey conducted involving 50 or so annual accounts nonetheless showed that the bulk of the amounts recorded under these items relate to share transactions that have so far been exempt or non-deductible and are, moreover, generally entered in the notes to the accounts as a source of discrepancy between the profit for accounting purposes and the taxable profit.

In the light of the foregoing, and with due regard to the discussion about exempting capital gains on shares, a second rate has been calculated, whose denominator is obtained as a result of correcting the first rate's denominator for the

(1) As an example, the fluctuations affecting the first rate in 2002 and 2004 can be largely attributed to a gain on the sale of shares in 2003 by the Belgacom telecom company, for the sum of almost € 6 billion. This exempt capital gain succeeded in inflating the denominator of the ratio, as a result of which the implicit ratio fell in 2003 only to rebound in 2004.

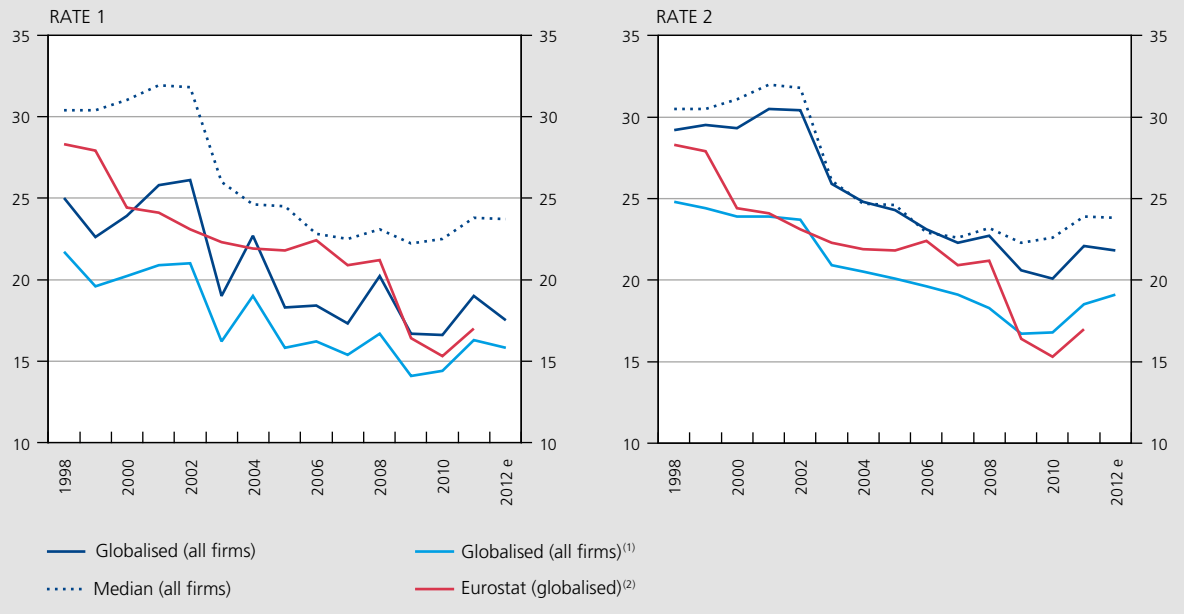
(2) Capital gains realised on shares were completely untaxed, provided any revenue from these shares are deductible by way of FTI. Write-downs and losses on shares were usually non-deductible.

(3) See in this respect the bill, introduced by Mr John Crombez in 2009 (legislative document N° 4-1476/1) seeking to amend Article 192 of the Income Tax Code concerning the exemption of capital gains on shares in the context of company taxation.

(4) However, write-downs and losses on shares will continue to be non-deductible.

CHART 11 IMPLICIT TAX RATE FOR NON-FINANCIAL CORPORATIONS

(in %)



Source : NBB.

(1) Including head office activities (NACE-BEL 70.100).

(2) All private companies, including financial corporations, regardless of size. Data available until 2011.

TABLE 5 TRENDS IN THE IMPLICIT TAX RATE IN NON-FINANCIAL COMPANIES SINCE 1998
(in %)

	1998	2005	2012 e	Δ 1998-2012	Δ 2005-2012
Rate 1					
Globalised (all companies)	25.0	18.3	17.5	–7.4	–0.8
Globalised (all companies)(1)	21.7	15.8	15.8	–5.9	0.0
Median (all companies)	30.4	24.5	23.7	–6.7	–0.9
Rate 2					
Globalised (all companies)	29.2	24.3	21.8	–7.4	–2.5
Globalised (all companies)(1)	24.8	20.1	19.1	–5.7	–1.0
Median (all companies)	30.5	24.6	23.7	–6.8	–0.9

Source: NBB.
(1) Including head office activities (NACE-BEL 70100).

amounts entered under items 761, 763, 661 and 663. This adjustment is feasible only for large firms, as the annual accounts of SMEs fail to itemise the exceptional result components. The main impact is on the globalised rate, which is becoming less volatile, reaching a significantly higher rate, because the most substantial correction applies to exempt capital gains (which are therefore subtracted from the denominator).

3.4 Explanatory statement

The results achieved are described in chart 11 and table 5. All the statistical data are itemised in Annex 5. In globalised terms, the first rate stood at 17.5 % in 2012, compared with 21.8 % for the second one. In median terms, however, the two measurements, have reached the same level (23.7 % in 2012), underscoring the fact that the correction for share transactions applies to a minority of firms. Meanwhile, extending the population to cover head office activities means a drop in the globalised rates. The distinctive feature of this branch is a tax rate well below the average, mainly because of a heavy reliance on notional interest.

(1) The lower rates apply subject to certain conditions (see Article 295 of the Income Tax Code). Pursuant to the Law of 24 December 2002 they are set as follows, for every taxable base:
- on € 0 to 25 000: 24.98 % (including the supplementary contribution)
- on € 25 000 to 90 000: 31.93 %
- on € 90 000 to 322 500: 35.54 %.

As a reminder, they were set as follows prior to the reform:
- on € 0 to 25 000: 28.84 %
- on € 25 000 to 89 500: 37.08 %
- on € 89 500 to 323 750: 42.23 %

(2) a) The depreciation provisions have to be included in proportion to the length of time involved and b) incidental purchasing costs have to be depreciated at the same rate as the asset acquired and no longer just once during the year of acquisition.

The two tax rates examined have fallen sharply over the last 15 years: according to the measurement under consideration, the decline came to between 5.7 and 7.4 percentage points. The downward trend has clearly slowed in recent times, mainly because of a slight recovery over the last few years.

Overall, these trends reflect the changes made to corporate tax over 15 years.

An initial reform set out in the Law of 24 December 2002 and which came into force on 1 January 2003 significantly reduced nominal tax rates. The standard rate fell from 40.17 % to 33.99 % (including the supplementary crisis contribution equal to 3 %), and the lower rates for taxable profits under € 322 500 have also been cut(1). In the case of SMEs, the reform has also provided an exemption for profits earmarked for investment spending and an additional tax charge exemption when no or insufficient advance payments have been made over the past three financial years. In a bid to achieve budgetary neutrality, several offsetting measures have been adopted, such as tighter conditions for applying the FTI system, a change to the rules on depreciation for firms not enjoying lower rates(2), and the application of a withholding tax of 10 % on liquidation surpluses.

Established by the Law of 22 June 2005, the second reform applies to the risk capital allowance, more commonly referred to as "notional interest". Taking effect in the 2007 tax year, this measure allows firms to deduct from taxable income a notional amount of interest calculated on the basis of their equity after "adjustment". The

TABLE 6 INTEREST RATE EFFECTIVELY APPLICABLE IN THE CONTEXT OF THE RISK CAPITAL ALLOWANCE

(in %)

Tax year	Base rate	Higher rate for SMEs
2007	3.442	3.942
2008	3.781	4.281
2009	4.307	4.807
2010	4.473	4.973
2011	3.800	4.300
2012	3.425	3.925
2013	3.000	3.500
2014	2.742	3.242

Source : NBB.

purpose of this measure is to narrow the tax treatment gap between debt financing and equity financing, while offering an alternative to the termination of the coordination centre scheme(1). Deductible notional interest is calculated as a result of subjecting adjusted equity to a rate based on the yield on 10-year linear bonds issued by the Belgian government. The rate for SMEs is increased by 0.5 percentage points. The equity adjustment primarily seeks to avoid cumulative deductions and prevent any abuse(2).

The Law of 22 June 2005 also abolished the 0.5 % registration fee on contributions to companies. The legislation also features measures for ensuring budgetary neutrality. The estimates submitted during the parliamentary proceedings showed that the prime offsetting provision applies to exemptions for capital gains realised, where solely the net amount (i.e. excluding charges related to the realisation) is now exempt(3).

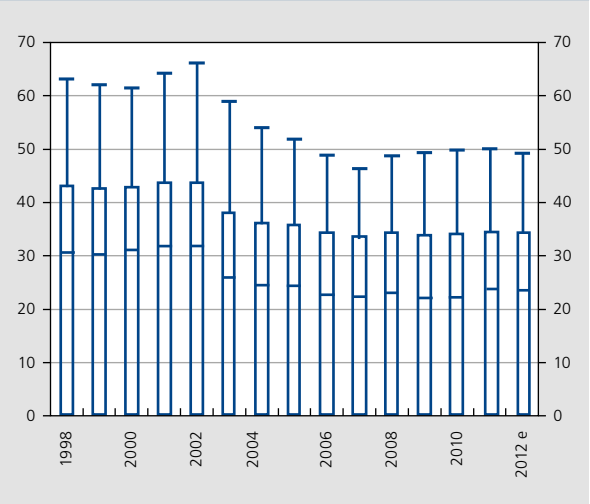
Various legal provisions have gradually curbed the impact of the deduction in recent years. This set of restrictions is the chief cause of the small increase in the implicit tax rate since 2010. The basic rate applied for the deduction has therefore been capped at 3.8 % (tax years 2011 and 2012), then 3 % (starting from the 2013 tax year). As shown in table 6, the rates applied since the deduction was introduced followed an upward path until 2010, as a result of the gradual increase in the yield on linear bonds. They have since plummeted as a result of being capped, followed by the lower yield on government bonds. Apart from the lower rates, the scope for carrying forward interest whose value exceeds the taxable amount was abolished in the 2013 tax year(4). Deferred interest not deducted before the 2013 financial year will remain available for seven years but according to stricter rules.

Lastly, analysis of individual accounts provides a means of calculating the entire implicit tax rate distribution (chart 12). In keeping with the median and globalised measurements, the entire distribution shifted downward in the wake of the 2002 reform before increasing slightly over the last few years.

The distribution is characterised by considerable dispersion. Firstly, the implicit rate for many firms is very low. More specifically, one-quarter of firms have an implicit rate equal to zero every year, which is generally attributed to the deduction of prior tax losses and the deduction for notional interest. Secondly, at the other extreme, the distribution is characterised by a large number of companies whose implicit rate is far in excess of the nominal tax rate. Accordingly, 10 % of firms had a rate higher than 49 % in 2012. In very many cases, the companies involved were ones that had recorded prior-year additions to taxes or expenditure disallowed for tax purposes.

CHART 12 DISTRIBUTION OF FINANCIAL COMPANIES' IMPLICIT TAX RATE (RATE 2) (1)

(in %)



Source : NBB.

(1) The coordination centre scheme used to apply to companies whose purpose is the management of financial flows within a group of companies.

(2) The equity capital is reduced in particular by the net fiscal value of the company's own shares or in the nature of financial fixed assets. For a more detailed description of the procedures for applying the risk capital allowance, see, in particular, Vivet D. (2012), "Results and financial situation of firms in 2011", NBB, *Economic Review*, December.

(3) The other offsetting measures are the abolition of the deduction for investment (with the chief exception of environmentally friendly investment) and the abolition of the tax credit for new shareholders' equity.

(4) Before, any interest not deducted could be carried forward for seven years.

4. Conclusion

The net operating result of non-financial corporations in 2012 continued on its downward path (–6.3 %), to stand at € 30.3 billion. This further fall is a reflection of negative economic conditions, dominated by financial strain and sluggish demand in the euro area. As a general rule, companies were unable to reflect their higher costs in their sales prices. Although the operating result is still below the peak reached before the 2008-2009 recession (€ 35.5 billion), it should be remembered that it had more than doubled between 2001 and 2007.

The review according to firm size shows that operating result trends have also fared a lot better in the case of SMEs. Large firms are generally more sensitive to economic cycles as a result of being significantly more inclined towards industrial activities and international trade. As a reminder, 31.9 % of value added of large firms is attributed to the manufacturing industry, compared with 11.6 % for SMEs. These smaller businesses are, however, more involved in branches dependent on domestic demand, including construction, the retail trade, the hotel and catering sector, real estate and business services. Accordingly, SMEs have been less exposed to cyclical fluctuations in recent years, as these have been primarily determined by the international environment.

The manufacturing branches were the main contributors to the slowdown in 2011, as a result of the loss of dynamism in trade and higher raw material prices. On the contrary, the further slowdown in 2012 was primarily attributable to domestic demand-driven branches. The retail trade has been particularly affected by weak household consumption since early 2011 : this branch's value added and operating result in 2012 suffered their worst performance for over 15 years. The trade in motor vehicles was particularly affected by the propensity of households to postpone their purchases of durable goods and public authority decisions to axe some of the financial support granted for the purchase of environmentally friendly vehicles. The construction sector's activity also reflected sluggish domestic demand, and, more specifically, weak levels of investment in housing and a loss of momentum in corporate investment spending.

Analysis of profitability shows in particular that the lower margins since 2007 are seen to have affected most of the branches under consideration albeit to varying extents. Solely the pharmaceuticals industry and certain technological industries reported an increase for this period. The branches with the highest margins in 2012 were real estate activities, the pharmaceuticals industry and telecommunications. The significant real estate margins have to be qualified by other profitability measurements : expressed in relation to equity and total assets, the branch's profitability is a lot lower than the general average.

The final part of the article analysing recent corporate tax trends is based on the implicit tax rate concept, defined as the ratio between tax revenue and an aggregate representing corporate revenue. Two implicit tax rate measurements were chosen that differ according to the treatment of capital gains, write-downs and capital losses on shares. In the case of the first rate, these transactions are regarded as part of corporate profits. For the second one, they are deducted on the same basis as finally taxed income.

In globalised terms, the first rate stood at 17.5 % in 2012, compared with 21.8 % for the second one. In median terms, however, the two measurements, have reached the same level (23.7 % in 2012), underscoring the fact that the correction for share transactions applies to a minority of firms. Meanwhile, extending the population to cover head office activities means a drop in the globalised rates. The distinctive feature of this branch is a tax rate well below the average, mainly because of a heavy reliance on notional interest.

The two tax rates examined have fallen sharply over the last 15 years : according to the measurement under consideration, the decline came to between 5.7 and 7.4 percentage points. Overall, these trends reflect the changes made to the corporation tax over the period. The downward trend clearly slowed in recent times, however. The rates even made a slight recovery, mainly because of the restrictions applied to the notional interest scheme.

Annex 1

SECTORAL GROUPINGS

	NACE-BEL 2008 divisions
Manufacturing industry	**10-33**
of which:	
Agri-food industries	10-12
Textiles, clothing and footwear	13-15
Wood, paper products and printing	16-18
Chemicals industry	20
Pharmaceuticals industry	21
Metallurgy and metalworking	24-25
Metal manufactures	26-30
Non-manufacturing branches	**01-09, 35-82, 85.5 and 9** (1)
of which:	
Trade in motor vehicles	45
Wholesale trade (2)	46
Retail trade (2)	47
Transportation and storage	49-53
Accommodation and food service activities	55-56
Information and communication	58-63
Real estate activities	68
Business services (3)	69-82
Energy, water supply and waste	35-39
Construction	41-43

(1) Except 64, 65, 70100, 75, 94, 98 and 99.
(2) Excluding automobiles and motorcycles.
(3) Excluding head office activities (70100).

Annex 2

DEFINITION OF THE RATIOS

	Item numbers allocated	
	in the full format	in the abbreviated format
1. Ratio of new tangible fixed assets		
Numerator (N)	8169 + 8229 – 8299	8169 + 8229 – 8299
Denominator (D)	8199 P + 8259 P – 8329 P	8199 P + 8259 P – 8329 P
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
8169 + 8229 – 8299 > 0 (1)		
2. Net margin on sales		
Numerator (N)	9901 + 9125	9901 + 9125
Denominator (D)	70 + 74 – 740	70
Ratio = N/D × 100		
Condition for calculation of the ratio:		
Simplified format: 70 > 0		
3. Net return on operating assets		
Numerator (N)	9901	9901
Denominator (D)	20 + 21 + 22/27 + 3 + 40/41 + 490/1	20 + 21 + 22/27 + 3 + 40/41 + 490/1
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
20 + 21 + 22/27 + 3 + 40/41 + 490/1 > 0 (1)		
4. Return on equity, excluding exceptional result		
Numerator (N)	9904 – 76 + 66	9904 – 76 + 66
Denominator (D)	10/15	10/15
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
10/15 > 0 (1)		
5. Net return on total assets before tax and debt servicing, excluding exceptional result		
Numerator (N)	9904 + 650 + 653 – 9126 + 9134 – 76 + 66	9904 + 65 – 9126 + 67/77 – 76 + 66
Denominator (D)	20/58	20/58
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
6. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
Ratio = N/D × 100		

(1) Condition valid for the calculation of the median but not for the globalised ratio.

DEFINITION OF THE RATIOS (continued)

	Item numbers allocated	
	in the full format	in the abbreviated format
7. Degree of self-financing		
Numerator (N)	13 + 14	13 + 14
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
8. Average interest expense on financial debt		
Numerator (N)	650	
Denominator (D)	170/4 + 42 + 43	
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		

Annex 3

NET RETURN ON EQUITY AFTER TAXES[1], BY BRANCH OF ACTIVITY

(globalised, in %)

	2007	2008	2009	2010	2011	2012 e	Δ 2007-2012
Manufacturing industry	**11.3**	**9.4**	**9.6**	**9.8**	**7.5**	**6.3**	**–5.0**
of which:							
Agri-food industries	19.0	8.8	13.9	8.0	8.3	6.1	–12.9
Textiles, clothing and footwear	5.8	–2.8	1.5	4.5	3.1	4.3	–1.5
Wood, paper and printing	5.7	5.2	1.7	3.6	4.3	4.0	–1.7
Chemicals industry	6.8	4.0	5.9	7.8	5.5	5.4	–1.4
Pharmaceuticals industry	4.3	5.1	6.5	6.3	4.4	5.8	+1.5
Metallurgy and metalworking	15.6	4.8	1.1	5.8	4.5	–1.4	–17.0
Metal manufactures	9.9	6.7	4.4	7.4	9.6	9.3	–0.6
Non-manufacturing branches	**8.2**	**6.7**	**5.0**	**5.9**	**5.9**	**5.2**	**–3.0**
of which:							
Trade in motor vehicles	12.0	2.6	1.8	6.3	8.8	5.6	–6.4
Wholesale trade[2]	8.5	6.8	4.2	7.5	5.7	5.0	–3.6
Retail trade[2]	10.8	8.2	8.0	9.3	10.0	9.6	–1.2
Transport and storage	7.6	6.6	2.6	3.1	1.5	2.6	–5.1
Hotels, restaurants and catering	0.2	0.5	–1.7	1.5	1.6	0.4	+0.2
Information and communication	9.3	11.8	10.6	10.0	13.2	9.7	+0.3
Real estate activities	3.5	3.5	1.5	1.5	2.5	2.4	–1.1
Business services	9.2	7.1	5.1	7.2	6.8	5.9	–3.2
Energy, water and waste	6.4	4.8	5.8	5.4	5.5	4.3	–2.1
Construction	11.1	8.9	7.8	7.9	8.2	7.3	–3.8
Total	**9.2**	**7.5**	**6.4**	**7.1**	**6.4**	**5.5**	**–3.7**

Source: NBB.

(1) Excluding exceptional results.

(2) Excluding trade in motor vehicles.

Annex 4

NET RETURN ON TOTAL ASSETS BEFORE TAXES AND FINANCIAL EXPENSES[1], BY BRANCH OF ACTIVITY
(globalised, in %)

	2007	2008	2009	2010	2011	2012 e	Δ 2007-2012
Manufacturing industry	**7.5**	**6.7**	**6.4**	**6.2**	**5.4**	**4.9**	**–2.6**
of which:							
Agri-food industries	9.0	5.9	7.9	5.3	5.6	4.4	–4.6
Textiles, clothing and footwear	5.6	2.1	3.2	4.3	4.1	4.8	–0.8
Wood, paper and printing	5.7	5.4	3.4	4.0	4.1	3.9	–1.9
Chemicals industry	5.5	4.5	4.7	5.4	4.7	4.7	–0.8
Pharmaceuticals industry	5.1	5.4	5.6	5.8	4.1	5.0	–0.1
Metallurgy and metalworking	8.9	4.6	2.4	3.8	3.8	1.6	–7.3
Metal manufactures	7.1	5.7	3.9	5.1	6.4	6.3	–0.9
Non-manufacturing branches	**5.9**	**5.6**	**4.3**	**4.6**	**4.7**	**4.3**	**–1.6**
of which:							
Trade in motor vehicles	6.8	3.9	2.9	4.3	5.4	4.0	–2.8
Wholesale trade[2]	6.3	5.9	4.0	5.2	4.5	4.4	–2.0
Retail trade[2]	7.4	6.5	6.2	6.4	6.6	6.5	–0.9
Transport and storage	5.1	4.9	2.8	3.1	2.5	2.9	–2.2
Hotels, restaurants and catering	3.8	3.5	2.2	3.2	3.3	2.3	–1.5
Information and communication	7.1	8.0	6.6	6.6	8.0	6.6	–0.5
Real estate activities	4.0	4.5	3.1	2.8	3.3	3.0	–0.9
Business services	6.8	6.3	5.0	5.9	5.7	5.1	–1.7
Energy, water and waste	4.2	3.9	3.8	3.6	4.0	3.3	–1.0
Construction	7.0	6.4	5.7	5.6	5.6	5.3	–1.7
Total	**6.4**	**5.9**	**4.9**	**5.0**	**4.9**	**4.5**	**–1.9**

Source: NBB.
(1) Excluding exceptional results.
(2) Excluding trade in motor vehicles.

IMPLICIT TAX RATE OF NON-FINANCIAL CORPORATIONS

(in %)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 e
Rate 1															
Globalised (all firms)	25.0	22.6	23.9	25.8	26.1	19.0	22.7	18.3	18.4	17.3	20.2	16.7	16.6	19.0	17.5
Globalised (all firms)[1]	21.7	19.6	20.2	20.9	21.0	16.2	19.0	15.8	16.2	15.4	16.7	14.1	14.4	16.3	15.8
Median (all firms)	30.4	30.4	31.0	31.9	31.8	26.0	24.6	24.5	22.8	22.5	23.1	22.2	22.5	23.8	23.7
Rate 2															
Globalised (all firms)	29.2	29.5	29.3	30.5	30.4	25.9	24.8	24.3	23.1	22.3	22.7	20.6	20.1	22.1	21.8
Globalised (all firms)[1]	24.8	24.4	23.9	23.9	23.7	20.9	20.5	20.1	19.6	19.1	18.3	16.7	16.8	18.5	19.1
Median (all firms)	30.5	30.5	31.1	32.0	31.8	26.1	24.7	24.6	22.9	22.6	23.2	22.3	22.6	23.9	23.7

Source: NBB.

(1) Including head office activities (NACE-BEL 70100).

The 2012 social balance sheet

P. Heuse

Introduction

The information contained in the social balance sheet can be used to analyse trends in the workforce, working time and staff costs, and the effort firms devote to training their employees.

A new form introduced in 2012 for firms and non-profit organisations filing full-format accounts paved the way for a new kind of analysis so that a distinction could be made between the situations of women and men employed by these firms. Covered in the first chapter of this article, this survey helped in particular to highlight the gender pay gap, although women have a higher average educational level. The findings featured in this chapter are based on a population of 8 862 firms that together employed 1 095 616 people in 2012[1]. The characteristics of this "provisional" population are described in section 1.1 of this article. The population is described as "provisional" because not all full-format accounts were available when the data extraction process was launched.

Conversely, the findings discussed in the second and third chapters of this article are calculated on the basis of a reduced population[2]. Chapter two describes employment trends between 2011 and 2012, first for all firms in this population, and second for those required to file a more detailed full-format account. The third chapter examines the training-related information the firms provided. The reduced population, whose characteristics are described in section 1.2 of Annex 1, comprises 48 385 companies, which had a workforce of 1 606 021 in 2012. These are companies which filed social balance sheets for both 2012 and 2011, allowing measurement of the changes of a range of variables between these two years. Using a constant sample does have its limitations, however. New companies and those that ceased trading are excluded, which could skew the variations observed. This approach is nonetheless justified owing to the lengthy time lag before information for all the companies is available and the guarantees offered by the representativeness of the sample in terms of jobs. The people employed by the firms in this reduced population accounted for 79 % of the total population workforce in 2011.

1. Men and women in employment: differences reflected in the social balance sheet data

Despite the fact that discriminatory behaviour is prohibited on the labour market, major gender-related discrepancies continue to exist. The social balance sheet can be used to throw a light on some of these variations because a range of information required from companies is broken down by employee gender.

The social balance sheet has been amended several times since coming into force in 1996. From the outset, information about the number of full-time and part-time employees recorded at the year-end, and about training are required separately for men and women. Splitting the training efforts into formal, informal and initial activities, the form introduced for social balance sheets ending from 1 December 2008 onwards retained a gender

(1) Annex 1 summarises the methodological principles governing the construction of these analysis populations and their regional distribution. The breakdown by branch of activity is based on the sections and divisions of the NACE-BEL nomenclature (2008 version) presented in Annex 2. The official headings have been abbreviated in the body of the text for the reader's convenience. Annexes 3 to 10 contain a series of detailed indicators per branch of activity. Annexes 11 to 13 break down some of the findings according to the Region to which the firms belong.

(2) In view of the time which firms are given to meet their financial reporting requirements and the time needed to audit the accounts, the full set of social balance sheets for the financial year ending on 31 December 2012 was not available on 16 September 2013, the date on which the data needed for the analysis were extracted.

TABLE 1 CHARACTERISTICS OF THE PROVISIONAL POPULATION IN 2012

	Number of firms	Number of workers	Share of women	Workforce breakdown		Part-time rates	
				Men	Women	Men	Women
	In units		In %	In % of the totaal		In %	
Breakdown by size of firms							
Small firms	5 696	111 060	34.2	11.7	8.1	8.1	40.4
Medium-sized firms	2 485	295 459	39.7	28.5	24.9	10.4	51.3
Large firms	681	689 097	45.7	59.8	67.0	13.2	56.9
Breakdown by branch of activity							
Agriculture	34	1 259	47.3	0.1	0.1	13.8	59.1
Industry	1 901	292 727	19.5	37.7	12.1	7.7	31.4
Construction	635	53 456	8.1	7.9	0.9	4.8	33.7
Trade and transport	3 346	251 363	36.8	25.4	19.7	14.2	51.1
Information and communication	442	50 744	32.1	5.5	3.5	10.2	32.7
Finance and insurance	427	81 612	50.5	6.5	8.8	10.5	41.0
Real estate	167	4 229	44.3	0.4	0.4	14.5	40.5
Business services	1 024	97 073	50.5	7.7	10.4	16.5	59.5
Health and social work	751	249 847	80.0	8.0	42.5	26.9	66.2
Other services	135	13 306	56.1	0.9	1.6	20.5	43.9
Total	**8 862**	**1 095 616**	**42.9**	**100.0**	**100.0**	**11.8**	**54.2**

Source: NBB (social balance sheets).

breakdown for each type of training. It also presented a gender and education-related distribution of staff at the year-end. Lastly, the version of the social balance sheet now applicable to companies and non-profit organisations filing full-format accounts for the financial years approved by the general meeting of shareholders from 7 September 2012 onwards also requires a breakdown of the average number of employees, the hours worked and staff costs according to gender, in order to gain a better understanding of the gender pay gap.

All the information available provides an insight into the situation for men and women employed in large firms operating in Belgium, i.e. the companies for which the data gathered according to gender are the most comprehensive.

1.1 Analysis population

For reasons concerning the availability of data, this chapter will be confined to undertaking an analysis, for the 2012 financial year, of information extracted on 4 September 2013 for a group of companies that had filed full-format social balance sheets meeting the quality criteria established[1]. The population constructed in this way – described as "provisional" because not all the accounts for 2012 were available when the data were extracted – comprises 1 095 616 employees. This is a considerably smaller number than that recorded for the total population, comprising roughly 2 025 000 in 2011 (including 1 462 000 for full-format accounts only) and the one featured in the national accounts, which listed just over 3 810 000 employees in 2012, across all institutional sectors and all branches of activity. The observations featured in this chapter should, therefore, be interpreted with caution.

The introduction of new statistics (or new items in existing statistics, as in this case) means suitable data collection tools have to be created. Owing to companies falling behind in taking the appropriate steps or unaware of their statistical obligations, failures to report are often observed in the early stages.

It was also discovered that some data were missing for the items introduced in 2012 because of some firms

(1) The methodological principles used to construct the analysis populations presented in Annex 1 also apply to the provisional population on which the findings shown in this chapter are based.

misinterpreting their statistical obligations: companies whose workforce comprises three people of the same gender or less are not legally required to fill out the items covering staff costs for these employees, in order to respect their privacy. In some cases, a lax approach adopted to the way of interpreting this legal opportunity has resulted in companies failing to break down any of the staff cost items when the number of men or women was less or equal to three employees, even if the number of workers of the other gender exceeded this amount. Some firms even failed to break down the hours worked according to gender.

Lastly, the information provided by some of the firms offering the data required turned out to be meaningless, owing to errors making the individual findings incoherent and therefore unusable.

Once these anomalies had been eliminated, the provisional analysis population comprised 8 862 companies employing 1 095 616 people on average in 2012, 42.9 % of whom were women. These female employees accounted for 37.7 % of the total hours worked recorded by these companies and 34.4 % of the staff costs recorded.

Note that large firms (employing over 250 FTE workers) accounted for 62.9 % of the total number of employees, whereas medium-sized firms (with over 50 to 250 FTE workers) employed 27 % of the workforce and small firms (50 FTE workers or more) 10.1 %. There are proportionally more women in large firms (45.7 % of employees) than in small ones (34.2 %), partly because of the female workforce being concentrated in certain branches of activity where employment is centred around a small number of large companies. This is particularly true in the health and social work branch, which alone accounts for 42.5 % of women working in firms in the analysis population. Overall, 86.6 % of women are employed in one of the services branches, while male employees are spread more uniformly among the industrial branches (45.5 % of total) and the services branches (54.3 %).

1.2 Gender wage gap

1.2.1 Legislative background

The wage differentials between men and women continue to be a sensitive issue in Belgium, partly accounted for by structural disparities, such as women being more inclined to opt for branches of activity with below-average wages or more readily choosing to work on a part-time basis, thereby moving less quickly up the wage and career ladders. Other factors enter into the equation, such as seniority, educational level and the post held. However, it should be stressed that, even if it were available, a breakdown by job would not help to eliminate all the discrimination against women, as the definition (and related scale) applicable to them can itself not be neutral. This is why various instruments have been developed in recent years with a view to helping employers and employees remedy any discrimination within their job ranking systems.

Under this heading, the Law of 22 April 2012 on narrowing the wage gap has introduced a multi-tier auditing process. At interprofessional level, the Law specifies the need to take measures to make job ranking systems gender-neutral. The Law also establishes the requirement for joint committees to submit collective labour agreements (CLAs) including job ranking systems for consideration by the Directorate-General for Collective Labour Relations of the FPS for Employment, Labour and Social Dialogue, to see if they are gender-neutral or otherwise. Lastly, various constraints are imposed on individual companies, including the requirement to break down social balance sheet items by gender in the case of full-format accounts, or the obligation for companies with over 50 employees, to apply a neutral remuneration policy, for which they are accountable every two years by having to draw up a wage structure report. Featuring more details than social balance sheets, this report includes various wage cost components, cross-checking gender in relation to status, job, seniority and educational level.

1.2.2 Wage gap in social balance sheets

As a result of the Law of 22 April 2012, social balance sheets drawn up according to the full-format model and approved from 7 September 2012 onwards now feature a gender breakdown for items covering the average number of employees, the number of hours worked and staff costs. This comes on top of the working time arrangement breakdown already applied, so that the three variables are separately available for men and women working full-time and part-time.

The social balance sheet item applying to staff costs (item 1023 on the form) covers remuneration and direct social benefits paid (such as luncheon vouchers), employers' social security contributions, employers' premiums for non-statutory insurance (group insurance, hospital insurance, etc.), other staff costs (particularly clothing costs and costs for meals, gifts or staff parties) and employers' payments for retirement and survival pensions and non-statutory pensions[1]. This variable therefore encompasses much

(1) Benefits paid on top of wages, which are gathered in item 1033, are also broken down by gender but not according to working time arrangement. They are not considered within the context of this analysis. They refer to social benefits allocated for an obvious social purpose or to enhance staff relations or strengthen employees' ties with the company. These benefits include wedding and maternity gifts, crèche services or company sports or cultural facilities, a medical centre or a central buying office.

more than the gross wages paid to staff, on the basis of which the wage gap is traditionally assessed. Incidentally, the Gender Equality Institute's 2013 Report shows that non-statutory benefits are a key component of the income gap between male and female employees. There are proportionally fewer women receiving such benefits and any they do receive are generally lower in value.

1.2.2.1 Average gaps

Employers in the analysis population are reported to have spent an average € 43 716 per female employee in 2012, compared with € 62 587 for a man, thereby producing a 30 % wage gap so that the average staff costs for women were 30 % lower than those of men. Measured in this way, the gap is essentially flawed, failing to take account of employees' working time arrangements. However, half of the female population works part-time, compared with 12 % for men. Calculated separately for full- and part-time employees, the same indicator shows the wage gap was 14 % for full-time workers and 20 % for part-timers in 2012.

Apart from the working time arrangements, working hours also represent a key pay differentiation factor. The amount of hours worked varies according to the CLAs (specifying in particular the maximum number of hours worked every week and the holiday system) and the amount of work (overtime in the event of an excessive workload or, conversely, layoffs when there is less work). This variability is even larger for part-time employees, in view of the range of opportunities for working shorter hours (daily, weekly or even annually, through extra days of leave, for example). A man working full-time worked an average of 1 516 hours in 2012, while female employees subject to the same working time arrangement worked 1 433 hours, or 5 % less[1]. The difference is slightly more pronounced (7 %) for part-timers, with women working 948 hours yearly and men 1 016 hours.

The indicator calculated on the basis of staff costs per hour worked is used to eliminate the effect of the different lengths of time worked. The wage gap calculated in this way was 13 % in 2012 for all employees, 14 % for those working part-time and 9 % for those working full-time. The gender discrepancy therefore continues to be quite significant, even on the basis of the latter indicator, and it is far from uniform according to company size and branch of activity.

The hourly staff costs are in line with a company's size but the difference is much bigger for men than women, so the wage gap is much wider in large companies than in medium-sized or small ones. The gap in large companies is 12 % for full-time employees and 16 % for part-timers.

TABLE 2 STAFF COSTS AND HOURS WORKED IN 2012: BREAKDOWN BY GENDER

(provisional population)

	Women	Men	Gap[1]
Staff costs, per year and per worker (in €)			
Full-time workers	56 265	65 429	14
Part-time workers	33 090	41 388	20
Total	**43 716**	**62 587**	**30**
Hours worked, per year and per worker (in hours)			
Full-time workers	1 433	1 516	5
Part-time workers	948	1 016	7
Total	**1 171**	**1 457**	**20**
Staff costs, per hour worked (in €)			
Full-time workers	39.3	43.2	9
Part-time workers	34.9	40.7	14
Total	**37.3**	**43.0**	**13**

Source: NBB (social balance sheets).

(1) The gap, in %, is calculated according to the following formula: 100 – (magnitude observed for women / magnitude observed for men) × 100. A positive gap shows the magnitude observed for women is lower than that for men.

Conversely, in small firms, it is almost non-existent for full-time staff and confined to 5 % for people working reduced hours.

The average hourly wage for women is lower than that for men in all branches of activity, apart from construction and health and social work. In both branches, women working full-time earn more than their male counterparts (4 and 2 %), while the opposite is true for part-time employees. Construction is obviously a sector where the breakdown of tasks differs to a great extent between men and women, particularly in the case of low-skilled jobs. It is mainly men who work on construction sites, whereas the much smaller number of women (barely 8 % of the workforce) carry out administrative duties.

In all branches of activity, apart from the noteworthy exception of finance and insurance, the gap is wider for part-time workers (sometimes very much so) than for people working full-time.

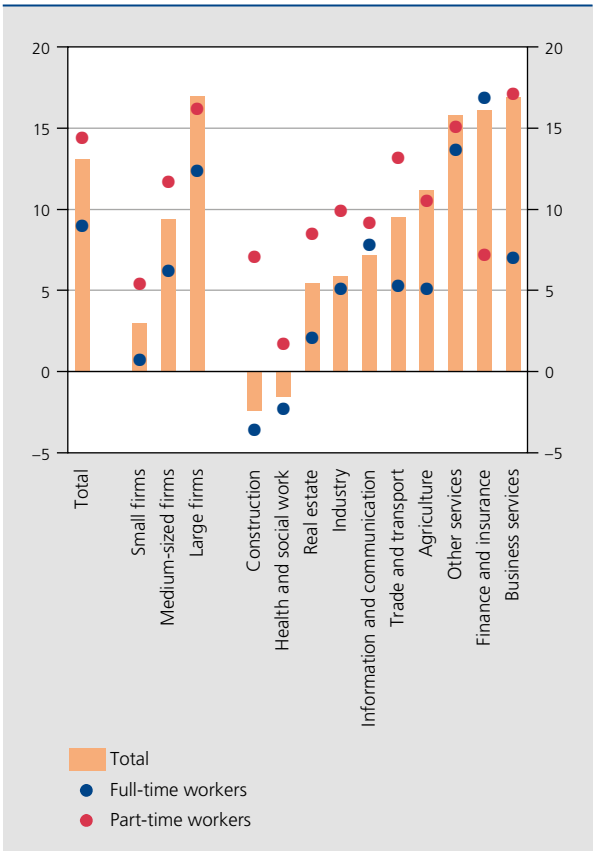
(1) It should be stressed that the average annual hours worked are affected by the presence, in the denominator, of employees who, although registered, make no contribution to the higher number of hours worked. Accordingly, people who are ill or taking career break appear in the denominator, while their working time is recorded in the numerator solely on the basis of their actual presence in the company during the previous financial year. Owing to maternity considerations, woman are more often absent and for longer periods than men.

The wage gap level varied between 7 and 13 % for people opting for reduced working time, except in the case of health and social work, where it did not exceed 1.7 %, and in the other services and business services branches, where it is close to or higher than 15 %. The latter branches include certain activities where average staff costs are particularly low. In the case of business services, this refers to services focused on premises (cleaning and maintenance) and in the case of other services this applies to personal services (laundering and dry cleaning, in particular, including ironing), some of which are funded via service vouchers. Women in these firms, particularly part-timers, account for a significant percentage of the workforce.

In the case of full-time employees, the wage gap ranges from 2 % in real estate to 8 % in information and communication, but reached almost 14 % for other services, and even nearly 17 % for the finance and insurance branch.

CHART 1 WAGE GAP CALCULATED ON THE BASIS OF STAFF COSTS PER HOUR WORKED IN 2012: BREAKDOWN BY WORKING TIME ARRANGEMENT

(in %, provisional population)



Source: NBB (social balance sheets).

(1) The gap, as a percentage, is calculated according to the following formula: 100 – (magnitude observed for women/magnitude observed for men) x 100. A positive gap shows the magnitude observed for women is lower than that for men.

1.2.2.2 Individual gaps

The findings used in the previous section are based on aggregate data either in terms of the total number of companies in the provisional population, or in terms of groups of firms consisting of entities with a uniform size or activity. However, it is possible to use the findings obtained for each firm as a starting point. The individual wages of employees may not be known but what is known are the costs employers incur for all their male and female staff. This information is available separately, per employer, for full- and part-time employees but the following analysis is only focused on data for full-time staff.

Breaking down women and men working full-time according to the average hourly cost recorded for the female and the male workforce in each company, proportionally more women are employed in the lower hourly pay grades: 63 % of full-time female employees are working in firms where the average hourly cost for women is less than € 40, compared with just under 47 % for men. Moreover, 18 % of women are working in firms where female staff cost an average of between € 40 and 50 for every hour worked, or 10 percentage points less than the ratio recorded for men. The differences are slight for the higher wage categories, apart from the grade where the average hourly cost is between € 70 and 80.

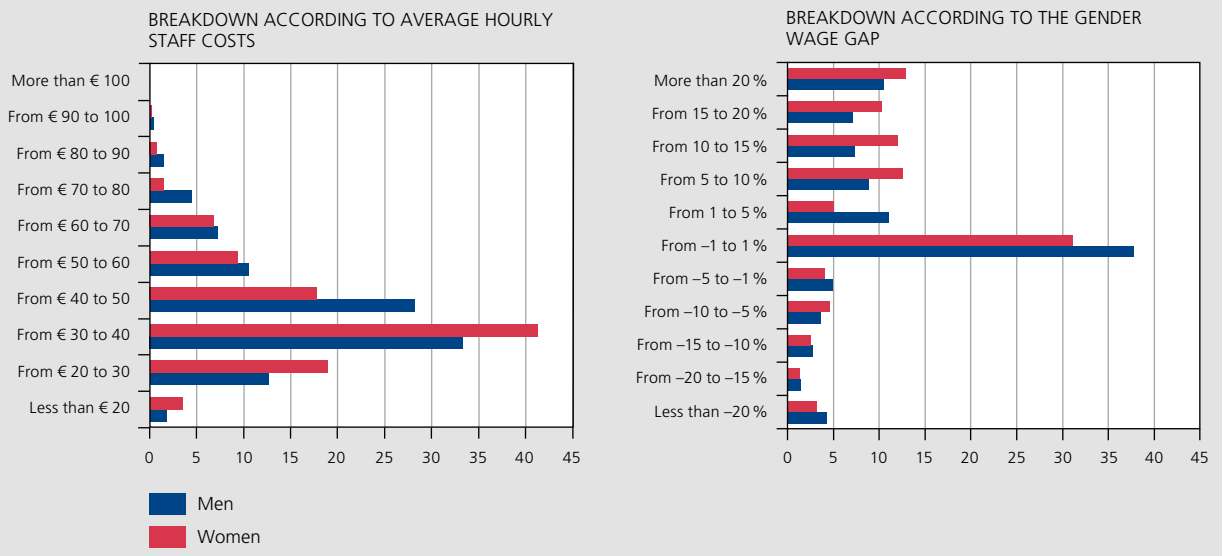
The breakdown of the workforce according to the wage gap seen in companies for the full-time employees shows that over half of female staff are working in companies where the hourly cost for men is on average higher than that for women. The difference is in excess of 5 % for 91 % of female employees in this situation. In contrast, nearly 16 % of women work in firms where the average hourly cost for men is lower than that of women, a percentage that is scarcely any higher for male staff (17 %). Just under one woman in three is employed in a firm where the difference between the costs incurred for one hour worked by men and women is very slight, between –1 and 1 %. The figure is as high as 37.8 % for men, or nearly 7 percentage points more.

1.3 Educational level of male and female staff

The High Council for Employment report on the low-skilled (HCE, 2013) highlights the fact that being better qualified means greater labour market participation together with the chance to earn higher wages. Wage increases consistent with educational levels are reported in Belgium and all the other EU Member States.

CHART 2 DISPERSION OF MALE AND FEMALE EMPLOYEES WORKING FULL-TIME IN 2012

(in % of the total, provisional population)



Source : NBB (social balance sheets).

Within the provisional population, 37.8 % of women had attained a higher education level in 2012 compared with only 30.6 % for men. There are more highly-skilled women by comparison with men, irrespective of their working time arrangements. Nearly half of all women working full-time completed higher education, compared with scarcely 32 % in the case of men.

A larger proportion of highly-qualified women – all working time arrangements included – completed higher non-university education (28.2 % of the female workforce) than men (19.5 % of the corresponding total), whereas there was a slightly greater number of male university graduates (11.2 %) by comparison with women (9.6 %).

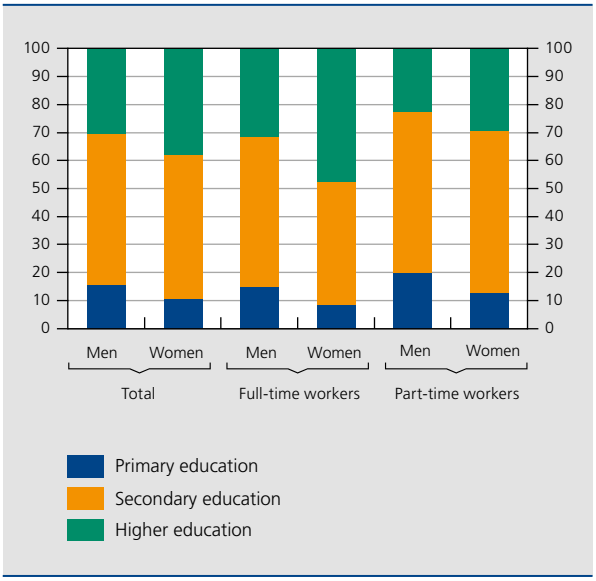
Within the male workforce, workers who never got beyond primary school accounted for 15.7 % of staff, which is well above the rate recorded for women (10.7 %). Those holding a secondary school education certificate amounted to 53.7 % of the male workforce, or 2.2 percentage points more than female staff.

Whereas women accounted for 42.9 % of the total workforce, the female share came to 48.4 % of the highly-skilled and even 52.4 % solely for workers having completed higher non-university education, while they represent only 34.3 % of the low-skilled and 42.2 % of the medium-skilled.

In spite of being better educated than men, women continue to be more confined to the lower pay grades, as was shown in the previous section. This might be due to several factors. Women arrived on the labour market well after men such that the steeply rising female rate of employment is still not equal to the male ratio. Since 1992, the rate of employment among women in the 20-64 age group has risen by more than 13 percentage points, to reach 61.7 % in 2012. At the same time, the male rate of employment has dropped somewhat, by 1.7 percentage points, but, at 72.7 %, it is nonetheless 11 percentage points higher than the female rate. As women entered the labour market later, average female seniority is shorter than that of men. Moreover, their progress up the wage ladder may have been inhibited because they were less available, given that women have for a long time been responsible for most household tasks. There is also a striking difference between the distribution pattern of female and male employment. The development of an economy increasingly focused on services – relying to a large extent on an abundant supply of female workers with increasingly high educational attainments, thanks to longer periods of compulsory schooling and higher education becoming more accessible – has recently been accompanied by job losses in industry (primarily affecting low-skilled male

CHART 3 EDUCATIONAL LEVEL OF THE WORKFORCE IN 2012: BREAKDOWN BY GENDER AND WORKING TIME ARRANGEMENT

(in % of the total, provisional population)



Source: NBB (social balance sheets).

employees) as a result of the restructuring process sparked off by the recession in 2008.

1.4 Training opportunities for male and female staff

While it paves the way for easier access to the labour market, a high educational level, underpinned by better pay and potentially faster wage growth, is also backed up with greater access to continuing training. The High Council for Employment's 2013 Report (HCE, 2013) revealed that the training participation rate of employees rose in line with their level of education.

The findings from the social balance sheets nonetheless show that in spite of having higher average educational level than men, women's rate of participation in formal training[(1)] in 2012 was comparable to that of men, or close to 52 %. This finding is nevertheless affected to a great extent by the situation in the health and social work branch, where women account for 80 % of the workforce and the female training participation rate is quite significant. Discounting this branch of activity, the percentage of women who have undertaken formal training falls to 47.4 % of the female workforce, while the rate for men moves to 53.5 %. In the case of informal training, the female participation rate stood at 32.2 % in 2012 across all branches of activity, or 5 percentage points higher than the figure recorded for male employees. Apart from health and social work, the rate of participation was close to 27 % for both women and men.

The large number of women in the health and social work branch, where the time and money earmarked for training are particularly low, works to the disadvantage of female staff: they have access to shorter and less expensive training modules than those of their male counterparts. Women undertaking formal training in 2012 earmarked an average of 24.4 hours for these activities, compared with just under 31 hours of training for men. The gender gap for informal training is even wider, with an average training duration of 20.2 hours for women and 32.9 hours for men. However, the most flagrant discrepancy is in terms of costs, partly because training expenses include the wages of staff receiving this instruction, which are lower on average for women. The average expenditure for a woman in 2012 was € 1 169 for formal training (nearly 40 % less than for a man) and € 718 for informal training (nearly 50 % less).

(1) Formal training covers courses and practical classes designed by training staff in premises separate from the workplace. Informal training includes other apprenticeship activities, planned according to the learner's needs, and including training in the workplace.

TABLE 3 TRAINING INDICATORS IN 2012: BREAKDOWN BY GENDER AND BY TYPE OF TRAINING

(provisional population)

	Women	Men	Difference
Participation rate (in % of employment as at 31 December, unless otherwise stated)			
Formal training	52.2	52.8	–0.6 (1)
Informal training	32.2	27.2	5.0 (1)
Hours devoted to training, per participant (in hours)			
Formal training	24.4	30.8	–6.4
Informal training	20.2	32.9	–12.8
Net training costs (2) per participant (in €)			
Formal training	1 169	1 881	–712
Informal training	718	1 346	–628

Source: NBB (social balance sheets).

(1) In percentage points.

(2) Net training costs are calculated as the gross costs less subsidies and other financial benefits. The net costs of formal training also include contributions and payments to collective funds.

2. Trend in employment

It is impossible to make an assessment of the trend in employment between one financial year and the next, when some of the social balance sheets for one of these financial years still have to be filed with or validated by the Central Balance Sheet Office. This is why this kind of analysis could not be undertaken for 2012, as the full population is available only roughly 15 months after the year-end closing date. The findings in this chapter and the next one were obtained from a reduced population of companies that filed a social balance sheet for 2011 and for 2012. Consequently, neither new firms nor those that stopped trading during these two years are factored in. What has happened in this constant reduced population may then differ from the trends observed in the total population or, on a broader scale, in the national accounts, with their complete staff inventories.

2.1 All firms

In a context where the volume of business was slowing down, salaried employment, which tends to react to fluctuations in activity with a certain delay, remained stable in 2012 according to the national accounts.

However, in the firms from the reduced population, the headcount rose by an average 0.9 % in 2012. The number of full-time and part-time workers increased by 0.6 and 1.4 % respectively. The depressed economic environment nonetheless prompted firms to slow their net pace of hiring during the year, so that by 31 December 2012, the social balance sheets revealed stabilising employment, with an increase – less pronounced – in the number of part-time employees hardly countering the fall in the number of full-time staff.

The fall in the number of full-time jobs is entirely attributable to the male workforce : their headcount dropped 0.7 % (i.e. 5 493 units), while the number of full-time female employees rose by a further 0.3 % between late 2011 and late 2012. On the other hand, women alone account for the rise in the number of part-time employees. The number of women opting for reduced working hours rose 1.4 % (5 400 units), while the number of men working shorter hours fell by 0.6 %.

The outcome of these contrasting patterns was that the share of women in employment rose by 0.4 percentage point from the previous year, so that by late 2012, they accounted for 44.1 % of the workforce. Their relative share improved in all branches of activity, including those where the absolute number of working women went into a decline. The relative share of part-timers also moved upward, by 0.3 percentage point, to cover 31.2 % of the workforce. The percentage of men working shorter hours remained stable at 12.3 %, while the figure for women rose by 0.3 percentage point, to represent 55.1 % of the workforce at the year-end.

Companies with over 250 FTE employees – which account for more than half of all jobs – are responsible for the downturn in employment between late 2011 and late 2012. Their workforce declined by 1.1 %. The job losses mainly involved full-time workers but the number of part-timers also went into a decline. Conversely, the size of the workforce continued to grow in smaller companies. The number of workers rose 0.8 and 1.5 % respectively in firms with a maximum of 50 FTE employees and in those with between 50 and 250 FTEs. Both working time arrangements enjoyed higher staffing levels in the case of SMEs but the increase was more pronounced for part-time employment.

Most of the branches of activity experienced hardly any change in the size of their workforces. There was a

TABLE 4 CHANGE IN EMPLOYMENT BETWEEN 2011 AND 2012
(reduced population)

	Full-time workers		Part-time workers		Total	
	In units	In %	In units	In %	In units	In %
Annual average	6 834	0.6	7 045	1.4	13 878	0.9
As at 31 December	–4 588	–0.4	4 747	1.0	159	0.0
Men	–5 493	–0.7	–653	–0.6	–6 146	–0.7
Women	905	0.3	5 400	1.4	6 305	0.9

Source : NBB (social balance sheets).

moderate increase in the level of employment for other services, real estate and construction, while the number of employees fell slightly in the information and communication branch and in finance and insurance. A sharp downturn occurred in the case of industry and in trade and transport, where the level of employment fell by 1.5 and 0.9 % respectively, or a total of 9 441 people. Over three-quarters of the losses involved full-time jobs. The trend was reversed in the health and social work branch and for business services : employment shot up by 2 and 1.8 % respectively, or a total of 9 507 people. This latter development is mainly attributed to a rise in the number of part-time employees.

The number of employees levelled off in all firms in the reduced population and in all three Regions of Belgium[1]. Employment declined very slightly in Wallonia, stagnated in Flanders and showed a slight improvement in Brussels. These findings nevertheless conceal highly differentiated trends depending whether the focus is on single-region or multi-region firms. Accounting for 98 % of all firms and employing 70 % of the total workforce, single-region companies are generally small-sized ones : two-thirds of them have less than 250 FTE employees. Three-quarters of the people they employ are engaged in the health and social work (30.1 % of the total in 2011), industry (25.7 %) or trade and transport (20.5 %) branches. The level of employment rose in these single-region companies. Expressed as a percentage change, the increase was particularly steep in Brussels (2.1 %), by comparison with 0.5 and 0.4 % respectively in Wallonia and Flanders.

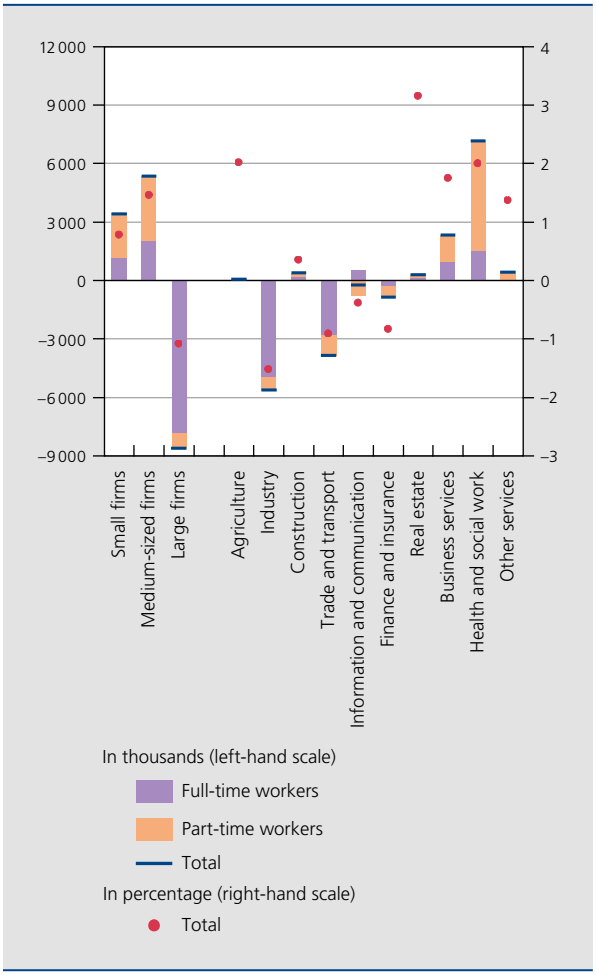
These upward developments were nonetheless offset by the lower level of employment in companies operating in several Regions. These are mainly larger firms, 90 % of which have over 250 FTE employees. Staff are primarily engaged in trade and transport (35.4 % of the total in 2011), industry (18.5 %) or finance and insurance (15.4 %), three branches where employment has fallen to various degrees. The Brussels Region was particularly affected by the job losses in the trade and transport and finance and insurance branches. In the other two Regions, the lower level of employment in industry also contributed to a drop in staff numbers.

The number of workers on permanent contracts rose 0.3 % in 2012, or an extra 4 799 people, to boost the share of these employees in the overall workforce to 93.9 %. The number of temporary employees – those on a fixed-term contract, a substitution contract or a contract concluded for a specific project – declined by 4.6 %, or 4 640 people.

The breakdown of staff by occupational category also reveals that the lower level of economic activity took

CHART 4 CHANGE IN EMPLOYMENT BETWEEN LATE 2011 AND LATE 2012 : BREAKDOWN BY SIZE AND BRANCH OF ACTIVITY

(in units, data as at 31 December, reduced population)



Source : NBB (social balance sheets).

a heavy toll amongst manual workers, bolstering the process of restructuring the economic fabric, a process that got underway several years ago. Employment in this category declined by 1.1 %, or a loss of 7 033 jobs, whereas the number of clerical workers rose 0.8 %, or 7 573 people. The number of managerial and supervisory jobs increased more steadily (1.3 %) but on the basis of a smaller pool. The "others" category refers to a residual group chiefly consisting of trainees and apprentices. The number of workers included under this item declined by 6.6 %.

As the result of a compromise agreement signed between the social partners and the Federal Minister for Employment

(1) The method for regionalising employment and the characteristics of single-region and multi-region firms are featured in Annex 1, section 2.

TABLE 5 CHANGE IN EMPLOYMENT BETWEEN LATE 2011 AND LATE 2012: BREAKDOWN BY REGION[1]

(data as at 31 December, reduced population)

	Single-region firms	Multi-region firms	Total	
	In units		In units	In %
Brussels	2 380	–2 213	167	0.1
Flanders	2 621	–2 592	29	0.0
Wallonia	1 379	–1 734	–355	–0.1
Total	**6 380**	**–6 221**	**159**	**0.0**

Source: NBB (social balance sheets).

(1) Single-region firms are those whose head office and operating establishment(s) are located in just one Belgium's three Regions. They accounted for 98 % of firms in the reduced population in 2012, or 47 524 firms. The other 861, referred to as multi-region firms, have establishments in more than one Region. The number of employees recorded on 31 December was spread amongst the three Regions, according to an apportionment formula based on the establishment data gathered by the National Social Security Office, thus allowing the National Accounts Institute to break down employment according to the districts where a firm has its head office and operating establishment(s). By late 2012, 61.3 % of employees from the reduced population were working in Flanders, 23.5 % in Wallonia and 15.2 % in Brussels.

on 5 July 2013, the distinction between manual and clerical workers is in the process of being abolished in Belgium. Starting from 1 January 2014, social legislation should be adjusted to factor in the substance of the agreement. The provisions include the introduction of a single redundancy scheme and the abolition of the first day without paid benefit in case of illness for manual workers. Following on from decades of discussions focused on this controversial subject, this change is bound to make an impact on corporate human resources management, particularly in the case of firms relying heavily on a manual workforce up to now.

Within the 86 248 firms that filed social balance sheets ending on 31 December for the financial year 2011 (or the latest one for which a full population is available), 41.6 % of the 2 025 068 employees were manual workers. This percentage is far from evenly spread across the various branches of activity. Accordingly, in the case of agriculture, though admittedly a very small branch, the share of manual employees was nearly 80 %. It was not much less in construction (77.4 %) and stood at 59.9 % in the industry branch. The percentage of manual workers in each of these three branches is even higher for

TABLE 6 EMPLOYMENT BREAKDOWN BY TYPE OF CONTRACT AND OCCUPATIONAL CATEGORY

(data as at 31 December, reduced population)

	Changes between 2011 and 2012		Levels in 2012	
	In %	In units	In % of the total	In units
By type of contract				
Permanent staff	0.3	4 799	93.9	1 500 241
Temporary staff[1]	–4.6	–4 640	6.1	96 721
By occupational category				
Manual workers	–1.1	–7 033	39.1	624 285
Clerical workers	0.8	7 573	58.8	939 409
Managerial and supervisory staff	1.3	304	1.5	23 612
Others[2]	–6.6	–685	0.6	9 656
Total	**0.0**	**159**	**100.0**	**1 596 692**

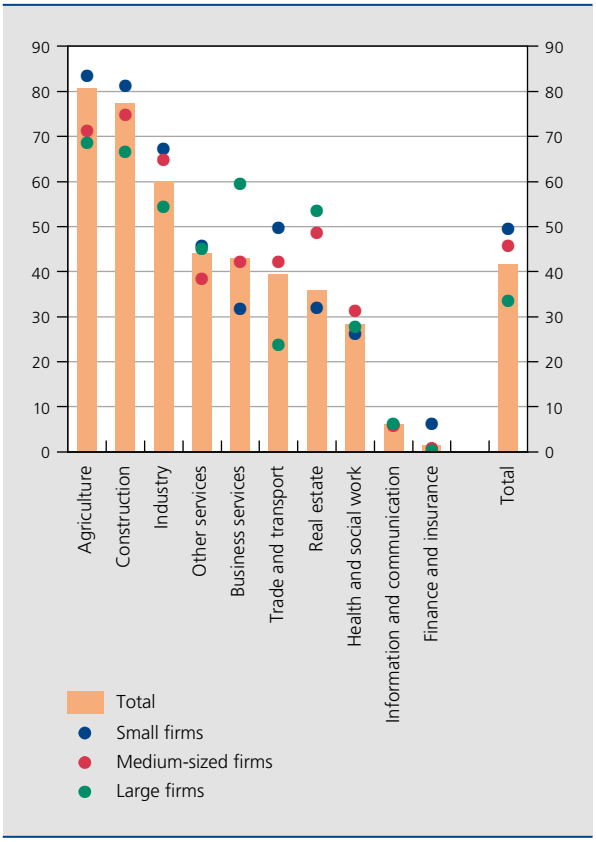
Source: NBB (social balance sheets).

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

(2) Residual category including trainees and apprentices.

CHART 5 RELATIVE SHARE OF MANUAL WORKERS IN ALL FIRMS IN 2011: BREAKDOWN BY SIZE AND BRANCH OF ACTIVITY

(in % of the total, data as at 31 December, total population)



Source: NBB (social balance sheets).

small firms. In industry, this also applied to medium-sized companies. Manual workers account for between 28 and 44 % of the labour force in the other branches, apart from information and communication and finance and insurance, where they represent only a small share of the workforce. It is quite common for the share of manual workers in large companies to be higher than average in these branches. However, SMEs are the ones most affected across the board by this legislative change: in average terms, half of the people working in firms with a maximum of 50 FTE employees are manual workers, a share that is still reaching 45.7 % in firms with 50 to 250 FTE employees. In large companies, on the other hand, manual workers account for only one-third of the workforce on average.

The small change in the size of the workforce as at 31 December conceals the extent of staff movements during 2012 for firms in the reduced population, as measured according to gross staff recruitment and departures during the year. These underlying movements proved to be clearly much more limited in 2012 than in 2011. Staff recruitment fell by almost 6 %, to account for no more than 722 958 employees in 2012, or 45 597 less than the year before. The main downturn was in the volume of full-time hirings, which accounted for 57 % of total staff recruitment. The number of staff departures has also levelled off but to a lesser extent than recruitment, with a decline of barely 0.6 %. Overall, recruitment continued to be slightly higher than departures, with net recruitment involving an extra 963 employees[1] in 2012, contrasting with the higher net level of recruitment in 2011 (42 352 people). The breakdown of movements by working time arrangement implies that, as in previous years, full-time workers have shifted to a reduced working hours arrangement during the course of year. An upturn in the net recruitment of full-time staff is noted in 2012 (+6 727 units), whereas the changes in employment recorded between 31 December 2011 and 2012 point to a decrease. At the same time, a rise in the number of employees working part-time as at 31 December is reported, in contrast to the

(1) Owing to errors in the social balance sheets filed, the year-on-year changes for people employed as at 31 December (mentioned in table 4) are not invariably equal to net staff recruitment and departures (appearing in table 7).

TABLE 7 STAFF RECRUITMENT AND DEPARTURES

(in units, reduced population)

	Recruitment		Departures		Net recruitment	
	2011	2012	2011	2012	2011	2012
Full-time workers	453 621	414 473	417 572	407 746	36 049	6 727
Part-time workers	314 934	308 485	308 631	314 249	6 303	–5 764
Total	**768 555**	**722 958**	**726 203**	**721 995**	**42 352**	**963**

Source: NBB (social balance sheets).

TABLE 8 EMPLOYMENT EXPRESSED IN FTES IN FIRMS FILING FULL-FORMAT ACCOUNTS

(annual average, reduced population)

	Changes between 2011 and 2012		Levels in 2012	
	In %	In units	In % of the total	In units
Staff registered[1]	0.7	7 903	95.6	1 153 698
Agency staff	–7.2	–3 128	3.3	40 180
Staff on secondment	–13.2	–1 897	1.0	12 422
Total	**0.2**	**2 878**	**100.0**	**1 206 300**

Source: NBB (social balance sheets).
(1) Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.

net departures seen for this working time arrangement, on the basis of staff turnover (–5 764 units).

2.2 Firms filing full-format accounts

Information provided by companies required to file full-format accounts can be used to fine-tune the characteristics of the workforce and assess the trends therein. In particular, full-format social balance sheets feature information about the use of out-of-company staff – agency workers or workers on secondment from other companies – and more detailed information about the type of recruitment and departures of employees recorded in the staff register during the financial year.

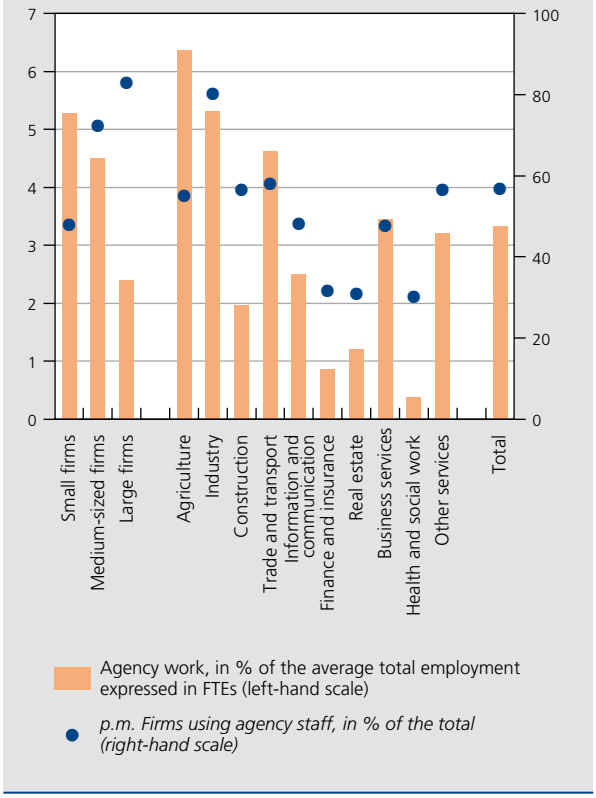
2.2.1 Employees in the staff register, out-of-company workers

In firms included in the reduced population that file a full-format account, the average number of registered FTE employees was up 0.7 % in 2012, which is equal to a further 7 903 FTE employees. This does contrast with the significant fall in agency workers and employees on secondment, whose numbers declined by 7.2 % (–3 128 FTEs) and 13.2 % (–1 897 FTEs) respectively. Overall, total employment expressed in FTEs was up by 2 878 units in 2012 (+0.2 %). Staff registered accounted for 95.6 % of total employment, while the relative shares of agency workers and those on secondment stood at 3.3 and 1 % respectively.

In the case of the 10 979 firms in the reduced population that filed full-format accounts, 57 % used temporary workers in 2012. Industry had over 80 % user companies, the highest percentage of all the branches of activity, and trade and transport some 58 %. These two branches by themselves accounted for 80 % of agency staff working in firms included in the analysis population during the 2012 financial year. The relative share of agency work was 5.3 and 4.6 % respectively of the volume of employment expressed in FTEs. In the other branches, the percentage

CHART 6 AGENCY WORK IN FIRMS FILING FULL-FORMAT ACCOUNTS: BREAKDOWN BY BRANCH OF ACTIVITY

(in %, reduced population)



Source: NBB (social balance sheets).

ranged from 0.4 % of the total for health and social work to over 6 % in agriculture, which is, admittedly, a decidedly marginal branch, where the absolute number of agency workers is low. Apart from health and social work, reliance on agency workers continues to be very limited in the finance and insurance branch, while the same is true of real estate : less than one-third of companies call on the services of agency staff, a ratio which is significantly lower than the average. The proportion of user companies is relatively higher in construction (57 %) but the relative share of agency staff is still low, accounting for only 2 % of the volume of employment expressed in FTEs. And yet it is one of the few branches where the level of agency staff was maintained between 2011 and 2012. The number of agency workers in industry fell by over 10 %, or 2 113 FTEs, and in trade and transport, the downturn was nearly 5 %, affecting 742 FTEs. Negative growth rates, sometimes even more pronounced as a result of being obtained on the basis of fewer workers, were recorded everywhere else, apart from agriculture, business services and finance and insurance, where the cumulative increase in the number of agency staff was no higher than 50 or so FTEs.

The regulations applicable to agency work have been updated in recent months. Accordingly, the Law of 24 July 1987 governing temporary work, agency work and work on secondment was adapted during the summer of 2012 in order to bring it into line with the European Directive 2008/104/EC on temporary agency work. It was upgraded in 2013[1] to factor in recent agency-work-related developments. From 1 September 2013 onwards, companies may officially employ agency staff to fill vacancies, with the aim being that the user will take the agency worker on a permanent basis once the period of secondment has finished. Extensively applied in practice by several companies, this system of obtaining employment is now legally enshrined alongside other reasons for recruiting agency staff such as replacing a permanent employee whose contract has come to an end or been suspended, a temporary higher workload and having to carry out work of an exceptional nature. The new Law specifies that successive daily contracts, creating a sense of insecurity and giving rise to dispute, shall be allowed only insofar as such a need for flexibility can be proved by the user firm.

Only a small percentage of firms filling in a full-format model report having called on the services of workers on secondment. They numbered 481 in 2012, or scarcely 4.4 % of total. This practice is accounted for by only a few branches of activity, mainly trade and transport (51 % of staff on secondment in 2012) and health and social work (29 %). Within these branches, staff on secondment represented 2 and 1.5 % respectively of the volume of employment expressed in FTEs. The huge decline in the number of staff affected by this working arrangement between 2011 and 2012 is almost exclusively attributable to just one firm, involved in warehousing and ancillary transport services, where the use of this type of labour plummeted from 1 967 FTEs in 2011 to 206 in 2012, or 93 % of the overall recorded downturn.

(1) The Law of 26 June 2013 (published in the *Moniteur belge/Belgisch Staatsblad* on 16 July), making key changes to legislation governing agency work, was supplemented by the collective labour agreement 108 adopted on 16 July 2013 by the National Labour Council. These two pieces of legislation came into force on 1 September 2013.

2.2.2 Staff movements

The rate of employment growth slowed down during the financial year in firms filing full-format accounts, turning into a fall in the size of the workforce in late 2012, the extent of which was extremely small, nevertheless. Staff turnover showed a slight net decline in the number of workers recorded in the staff register, amounting to 91 people. This near-stabilisation of employment conceals reverse trends for permanent and temporary staff. The number of permanent workers leaving exceeded that of new people entering firms, owing to the very sharp drop in the number of new recruits (–18.5 %)

TABLE 9 RECRUITMENT AND DEPARTURES OF STAFF REGISTERED[1] IN FIRMS FILING FULL-FORMAT ACCOUNTS

(data as at 31 December, reduced population)

	2011	2012
Recruitment (in units)		
Total	449 522	420 900
of which : Permanent staff	186 476	151 984
Departures (in units)		
Total	420 258	420 991
of which : Permanent staff	175 884	164 623
Net recruitment (in units)		
Total	29 264	–91
of which : Permanent staff	10 592	–12 639
Turnover rate[2] (in % of the total)		
Total	33.5	32.8
of which : Permanent staff	14.7	13.4

Source : NBB (social balance sheets).

(1) Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.

(2) Ratio between the numbers of staff departures recorded during the financial year and the number of workers at the beginning of this year.

TABLE 10 DEPARTURES OF STAFF REGISTERED[1] IN FIRMS FILING FULL-FORMAT ACCOUNTS: BREAKDOWN BY REASON
(reduced population)

	Changes between 2011 and 2012		Levels in 2012	
	In %	In units	In % of the total	In units
Retirement	7.9	909	3.0	12 434
Unemployment benefit with employer top-up[2]	–7.3	–519	1.6	6 621
Redundancy	–3.2	–1 242	8.9	37 519
End of temporary contract	4.9	11 994	60.9	256 368
Other reasons[3]	–8.8	–10 409	25.7	108 049
Total	**0.2**	**733**	**100.0**	**420 991**

Source: NBB (social balance sheets).
(1) Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.
(2) On 1 January 2012, the early retirement scheme became the unemployment benefit with employer top-up scheme. This new designation was introduced in the new social balance sheet form applicable to accounts approved from 7 September 2012 onwards, in practical terms those ending from March 2012 onwards.
(3) Voluntary departures, death in service.

with the result that permanent staff was down by 12 639 units. Conversely, in the case of temporary staff (hired on a fixed-term contract, a substitution contract, or a contract concluded for a specific project), net levels of recruitment reflecting 12 548 additional hirings were recorded. This increase is nonetheless smaller than that reported in 2011 in the same firms.

Temporary staff recruitment and departures account for over 60 % of staff turnover, but the relative significance of these employment contracts remains confined to 5.5 % of staff in firms filing full-format accounts. A large turnover of temporary staff is consequently observed. Some appointments apply to a specific project and are phased out as soon as the relevant task has been completed, while others are extended as budgets are renewed, hence they are filled by a succession of temporary employees.

Permanent staff are also affected by this turnover and may have to leave their firms as a result of redundancy, retirement or for personal reasons. The turnover rate for permanent staff was 13.4 % in 2012, down 1.3 percentage points from one year earlier. This downturn is quite common against a background of sluggish economic activity. Accordingly, permanent staff are less ready to change jobs when employment opportunities are waning and the working conditions on offer are not enough to offset the risks involved in such a decision. This was the case in 2012.

The number of employees leaving firms filing full-format accounts showed little change between 2011 and 2012 – up 0.2 %, or a further 733 departures were recorded –, but developments were seen to differ according to the reasons given. For example, voluntary departures, which form the bulk of the "other reasons" item, were clearly less common than in 2011: the decline reached 8.8 %, to affect 10 409 people. This de-staffing involved 25.7 % of the departures recorded in 2012 compared with 28.2 % the year before. Despite the depressed economic outlook, the number of redundancies was also on the wane, down 3.2 %, as well as the number of workers receiving unemployment benefit with employer top-up (formerly early retirement scheme), which was down by 7.3 %. Departures resulting from the completion of temporary contracts rose by 4.9 %, or nearly 12 000 people. The share of this reason in the total of departures therefore rose to 60.9 %, or 2.8 percentage points more than in 2011. On the basis of a much lower level, the number of workers taking retirement also increased by 7.9 % to account for 3 % of the overall volume of departures in 2012.

3. Training

The training efforts of firms were given special attention in 2013 on the basis of a government request to do so. The first section of this chapter takes stock of the proceedings of the Group of Experts on Competitiveness and Employment, whose analysis includes a consideration of this issue. The second section discusses trends in the training indicators seen in firms in the reduced population between 2011 and 2012.

3.1 Private sector training targets

For many years, there have been quantitative targets for the training efforts of the private sector in Belgium. Regarding participation, the aim was that one in every two employees should take part in training from 2010 onwards. In terms of cost, training expenditure should account for 1.9 % of the wage bill. Otherwise, firms failing to make enough effort are liable to a fine intended to fund the paid educational leave system. This penalty mechanism is activated as soon as the private sector firms jointly fail to achieve the financial target.

Set up at the government's initiative in early January 2013, the Group of Experts on Competitiveness and Employment (GECE) was tasked with providing an analysis and issuing an advisory opinion on several themes[1]. Scheduled to produce these items within six months, the GECE focused in particular on issue of assessing companies' expenditure on training, as the legislative framework lends itself to such a variety of interpretations that it is impossible to decide whether the 1.9 % target has been attained or otherwise. The experts sought to pinpoint the scope of the financial target and to compare the various training measurement findings available : those derived from the European Continuing Vocational Training Survey (CVTS) and those based on the social balance sheets. The study compared both the level of the calculated indicators and the methodology applied.

The experts highlighted the unsuitability of the legislative framework as it stands, imposing a training requirement on companies covered by the Law of 5 December 1968 concerning joint committees and collective labour agreements. This is because a) the scope cannot be precisely defined, as it is impossible to draw up an exhaustive list of the exempt companies and b) it differs from the scope of the statistical tools deployed to formulate the target (i.e. the CVTS) or to assess the progress made every year (social balance sheets).

The analysis was based on aggregate data extracted from the social balance sheets for the 2011 financial year, as published by the Central Balance Sheet Office, focusing on all the social balance sheets filed for that year, whatever the length of the financial year and the date of the year-end closure and irrespective of the company's size and branch of activity. It was shown that training expenditure accounted for 1.52 % of staff costs, including all types of training, while for formal training alone, the figure was 1.05 %. The latest CVTS available[2] reveals that the costs of in-company and out-of-company courses (a concept consistent with the notion of formal training) was equal to 2.4 % of the wage bill in 2010. Hence both statistical sources offered very different findings, even though premised on the same concepts. The GECE examined the reasons for these disparities.

The first divergence factor arises from the populations being analysed. The CVTS applies to companies with at least 10 employees operating in the B to N and R to S branches of activity covered by the NACE-BEL nomenclature, whereas the aggregations based on the social balance sheets are almost exhaustive[3]. The experts also showed that some figures were obviously undervalued in the social balance sheets, particularly direct costs (owing to the failure by many companies to include all or some of the remuneration-based component for staff undergoing training) and contributions and payments to collective funds (which are missing for many companies even though they are mandatory). They also highlighted employers' potential confusion between formal and informal training, as the wording used to describe training activities differs from one source to another, although the definitions featured in the social balance sheet methodology are based on those used on a European-wide scale for the CVTS.

3.2 Social balance sheet findings

The findings in this section differ from those referred to in the government-commissioned GECE report. This is because the analysis population forming the basis for this article includes the social balance sheets of firms meeting a series of criteria (notably a financial year of 12 months ending on 31 December and, in the case of the reduced population, the filing of a social balance sheet for 2011 and 2012) that reduce the significance. The levels of the training indicators calculated on the basis of the reduced population cannot be compared with those based on Central Balance Sheet Office aggregates – because of the prevalence in the reduced population of large companies, which invest more in training their employees on average while higher proportions of these businesses report their training initiatives. The trends noted in the reduced population nonetheless offer good approximate ideas of those anticipated for all

(1) See GECE, 2013. Apart from analysing the training target, the GECE was also required to give its verdict about the impact of subsidies reducing the wage-related costs in Belgium and the neighbouring countries and about wage costs and productivity disparities reported by branch of activity between Belgium and the neighbouring countries.

(2) The findings of the five-yearly CVTS are available for 1993, 1999, 2005 and 2010.

(3) Within the legal framework applying to companies, solely non-profit organisations, foundations and other legal persons governed by private law and employing less than 20 employees are exempt from the requirement to file a social balance sheet.

firms. It should also be stressed that no adjustment was made to the figures in companies' social balance sheets to take account of missing or clearly undervalued data.

3.2.1 Training firms[1]

Steadily increasing since the inclusion of new training items in 2008, the number of training firms[2] (which have completed at least one of the three tables dealing with in-company training) rose sharply in the reduced population: from 11 067 in 2011 to 12 485 in 2012. However, 8 975 of these companies provided training during two consecutive years, while the others referred to employees undergoing training solely in the case of 2011 or 2012, such that figures for training are variable owing to changes in the corporate training policies and in the population of training firms.

The share of training firms represented 25.8 % of the total in 2012, up 2.9 percentage points. The rise was particularly buoyant for companies declaring formal training, as was the case for 19 % of firms included in the reduced population in 2012, compared with 16.7 % the year before. The share of companies reporting informal training represented 11.3 % of the total. The ratio for initial training was 5.7 %. It should be stressed that over half of all training firms combine different types of training.

Whereas 98 % of large companies provide training, the figure is down to 83 % for medium-sized firms and as low as 20 % for small enterprises. The share of training firms nonetheless grew significantly between 2011 and 2012 in the case of SMEs, whose numbers include over 1 400 extra training firms (the bulk of which have less than 50 FTE employees), compared with scarcely 11 for large firms.

3.2.2 Training indicators for all firms

While 43.5 % of people working for companies in the reduced population took part in formal training activities in 2012, 26.3 % of employees undertook informal training and 1.3 % received initial training intended to supplement their school-based apprenticeship or internship. These figures are higher than those reported in 2011. The highest increase was for informal training, reaching 2.9 percentage points. It should be stressed that social balance sheet data cannot be used to obtain an aggregate participation rate, as workers undertaking different types of training during the same financial year are recorded in each of the *ad-hoc* tables.

The percentage of large company employees involved in training in 2012 was 61.8 % for formal training and 37.4 % for the informal variety. In medium-sized companies, the figures were 39.4 and 23.8 % respectively for the two types of training, compared with barely 13.8 % for formal training and 8.2 % for informal training in the case of small companies. Initial training is more common in SMEs than in large firms: 70 % of employees participating in this type of training combining in-school sessions and on-the-job training acquire their work experience in companies employing less than 250 FTE employees, where they account for roughly 1.8 % of the workforce. Conversely, the initial training participation rate in large companies does not exceed 0.8 %.

Training expenditure reported in the social balance sheets of companies in the reduced population totalled 1.84 % of staff costs in 2012. The 0.06 percentage point rise on the previous year is primarily ascribed to informal training. The resources earmarked for this training category increased by 12.5 % between 2011 and 2012, while staff costs rose by scarcely 2.3 %. Overall informal training expenditure accounted for 0.51 % of staff costs in 2012, over 0.47 % the year before. Up by 4.3 %, the formal training budget represented 1.25 % of the wage bill in 2012, while the initial training budget – which rose 8.8 % over the previous year – accounted for 0.08 % of the payroll.

The training expenditure figures recorded in the social balance sheets are net costs: for each of these types of training, subsidies and other financial benefits are subtracted from gross costs, which includes direct costs related to training and the wages of employees undergoing training. In the case of formal training, net costs also cover contributions and payments to collective funds to meet legal or sectoral obligations related to training. The latter averaged 0.07 % of the staff costs in 2012. They have to be mentioned even when no company employee has received any training. Nevertheless, many firms do not mention any amount under the relevant item[3], and contribution rates amongst those that do so vary to a significant extent: for the 7 700 firms meeting their statistical obligations in this area, the average contribution rate is 0.17 % of the wage bill. The rate was less than 0.03 % for one-quarter of these companies and more than 0.23 % for another quarter. As a result of the large number of firms for which

(1) A firm is regarded as providing training when the number of participants in formal, informal or initial training is positive. Firms reporting positive training costs (owing to contributions or payments to collective funds) while no employee has been trained are therefore not recorded as belonging to the training firm category.

(2) Formal training covers courses and practical classes designed by training staff in premises separate from the workplace. Informal training includes other apprenticeship activities, planned according to the learners' needs, and including training in the workplace. Initial training is intended for workers under schemes alternating training and practical work experience, with a view to acquiring a diploma.

(3) The absence of payments is justified in the case of state-owned companies, including the SNCB, Bpost and Belgacom, whose staff are not affiliated to any joint committee and are not therefore required to fulfil this obligation.

data is missing, more systematic quality checks need to be carried out in future to avoid having to adjust the raw data the firms provide. Subsidies for formal training activities accounted for 0.08 % of staff costs in 2012, making it possible cover 6.1 % of the corresponding gross costs on average.

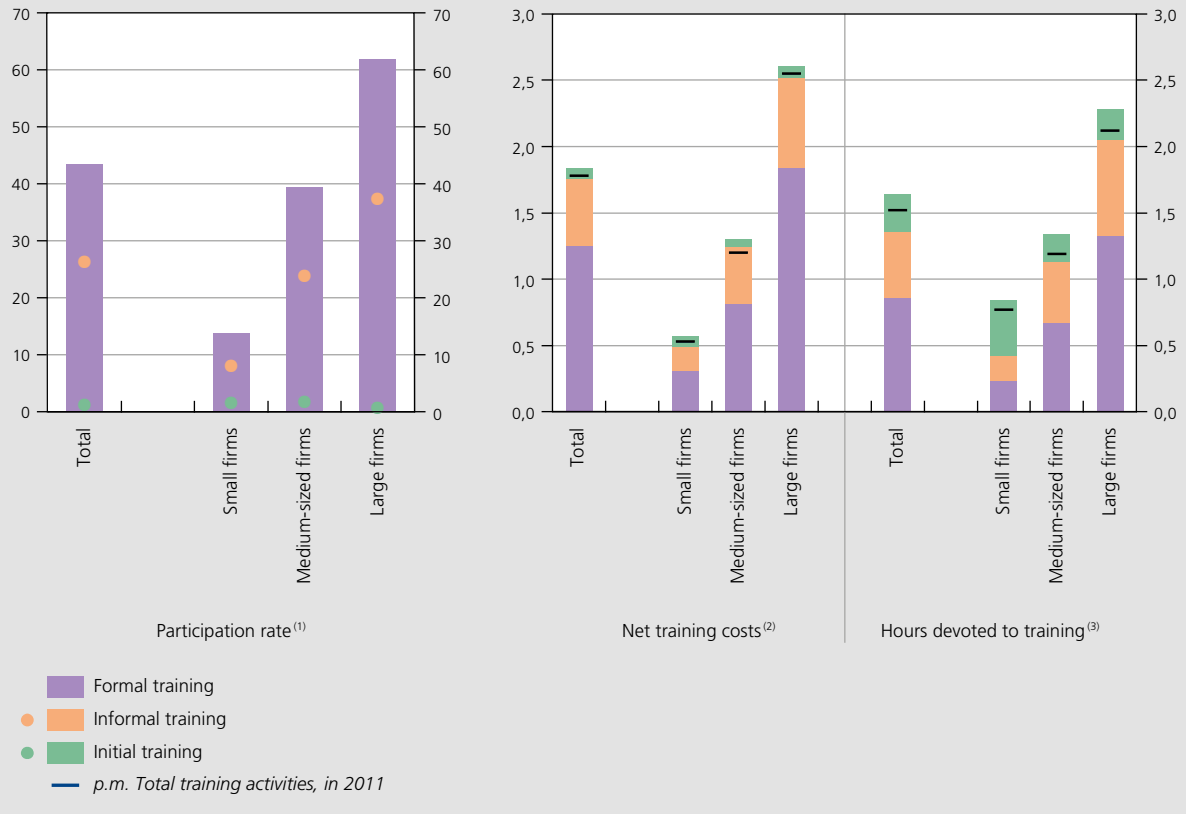
The working time freed up to allow employees to undertake training rose from 1.52 to 1.64 % of the hours worked between 2011 and 2012 in firms in the reduced population. The 0.12 percentage point increase is spread evenly between the three types of training. The working hours devoted to formal training in 2012 accounted for 0.86 % of all the hours worked, while informal training and initial training accounted for 0.50 and 0.28 % respectively of the hours worked.

The variations seen in the case of cost indicators and in the case of duration calculated for groups of companies ranked according to size confirm that SMEs spend proportionately less time and money on training than large companies. Firms with over 250 FTE employees are also reported to earmark a sum equal to 2.61 % of staff costs for employee training purposes; this is two times more than medium-sized firms and four times more than small ones. The differences are slightly less pronounced for training time but nonetheless quite significant, because large firms set aside 2.28 % of working hours for training, which is 2.7 times more than the small ones, where the ratio is 0.83 %.

It should be stressed that the breakdown of the budget and working hours devoted to training by type of training activities varies considerably according to company size. In large firms, formal training accounts for 71 % of expenditure and 58 % of training time, whereas initial training draws the short straw in this area, with shares of 3 and 10 % respectively. In the case of small companies, on the

CHART 7 TRAINING INDICATORS IN ALL FIRMS IN 2012: BREAKDOWN BY SIZE OF FIRM

(reduced population)



Source: NBB (social balance sheets).

(1) In % of average employment.

(2) In % of staff costs. Training costs are net costs, obtained by subtracting from gross costs subsidies and other financial benefits. The net costs of formal training also include contributions and payments to collective funds.

(3) In % of hours worked.

other hand, 13 % of the financial resources and 50 % of the training time are earmarked for this type of training, an outstanding learning pathway for some professions, particularly for construction, trade or catering.

3.2.3 Other training indicators in training firms

People undergoing formal training received an average of 26.4 hours of learning in 2012, i.e. the same figure as the year before and hardly any more than that recorded for informal training (25.6 hours). The costs for formal training – including the wages of the instructors and those of employees being trained, the costs of training premises and materials provided, plus, where appropriate, the travelling and accommodation costs of the trainees – are nonetheless much more than those involved in informal training. One hour of formal training cost an average of € 55.6 in 2012 versus € 38.6 per hour for informal training. The average level of expenditure per participant stood at € 1 388 for formal training and € 988 for informal training.

The figures for initial training differ noticeably from those for continuing training. Trainees and apprentices received an average of nearly 300 hours of training courses in 2012, or 11 times more than those doing other types of training. Conversely, the hourly cost of training is much smaller, or less than € 11 per hour. The annual budget per trainee totalled € 3 218 in 2012.

TABLE 11 COST AND DURATION OF TRAINING ACTIVITIES IN TRAINING FIRMS
(reduced population)

	Formal	Informal	Initial
Net cost per participant [1] (in €, unless otherwise stated)			
2011	1 417	998	3 261
2012	1 388	988	3 218
Change (in %)	–2.0	–1.0	–1.3
Net cost per hour of training [1] (in €, unless otherwise stated)			
2011	56.5	37.4	11.7
2012	55.6	38.6	10.8
Change (in %)	–1.5	3.4	–7.8
Hours devoted to training, per participant (in units, unless otherwise stated)			
2011	26.4	26.7	277.7
2012	26.4	25.6	297.2
Change (in %)	0.3	–4.3	7.0

Source : NBB (social balance sheets).
(1) Net training costs are calculated as the gross costs less subsidies and other financial benefits. The net costs of formal training include, in addition, contributions and payments to collective funds.

Conclusions

Covering accounts approved by the general meeting of shareholders from 7 September 2012 onwards, the new social balance sheet form applicable to companies filing full-format accounts has helped to highlight a series of differences between the situations of female and male employees. This analysis is based on a provisional population of 8 862 firms employing 1 095 616 people, 42.9 % of whom were women. For these companies, it was shown that the average staff costs borne by employers for one woman were 30 % lower than those for one man. The wage gap calculated on the basis of hourly costs – in order to factor in working hour inequalities – is narrower, at 13 %. However, a disparity is reported between full-time employees (gap of 9 %) and those working reduced hours (14 %). Notice that half of the women in this provisional population work part-time, versus less than 12 % of the male workers.

Breaking down separately female and male full-time workers according to the average hourly costs recorded for women and men respectively in each company, proportionally more women are employed in the lower hourly pay grades : 63 % of full-time female employees are working in firms where the average hourly cost for women is less than € 40, compared with just under 47 % for men. What is more, over half of full-time female employees are employed in companies where the average hourly cost for men is higher than the one for women. This compares with barely 17 % of male employees working in companies where the average hourly cost for women is higher than that of their male counterparts. Over 30 % of women (compared with nearly 38 % of men) are employed in firms where the wage levels are very similar.

However, women have a higher average educational level than men. Within the provisional population in 2012, 37.8 % of women had attained a higher education level – even as high as 50 % for women working full-time –, compared with a mere 30.6 % for men. The discrepancy is noteworthy above all for non-university qualifications. On first sight, continuing training opportunities for women appear to be almost the same as for men in the case of formal training, and better in the case of informal training. These findings are less favourable for women if the health and social work branch is discounted, because staff are

mostly composed of women in this branch of activity and the training participation rate is higher than the average. Moreover, women generally have access to shorter and cheaper training modules than those on offer for men.

A reduced and constant population of 48 385 firms, together employing 1 606 021 people in 2012, was used to analyse employment trends in the social balance sheets available when this article was written. Within these firms, there was a 0.9 % increase in staff compared with the previous year, measured as an annual average. Against a backdrop of a decline in economic activity, the employment growth rate nonetheless slowed during the year, with the result that there was hardly any difference in the number of people employed between late 2011 and late 2012. Employment levelled off in all three Regions of Belgium.

In contrast, the findings vary according to the size and branch of activity : the level of employment declined in large firms while continuing to grow in SMEs. Job losses were recorded in industry and in trade and transport, while the number of workers was on the upturn in the health and social work and in the business services branches.

Although employment levelled off, this concealed some change in the staffing profile. The drop in the number of men working full-time was offset by an increase in the number of women working shorter hours. By late 2012, female employees accounted for 44.1 % of the workforce. There were also more part-time workers, up by 31.3 % of the total. A rise in the number of people on permanent contracts was recorded – affecting 93.9 % of staff at the end of the year under review –, to the detriment of temporary employees. The breakdown of staff by occupational category also reveals that the lower level of economic activity took a heavy toll amongst manual workers, while the number of clerical workers and, to a lesser extent, managerial and supervisory jobs, has continued to grow.

In firms filing full-format accounts, the number of employees in the staff register continued to climb, measured as an annual average, while the reliance on agency staff and workers on secondment dropped sharply. The number of agency staff dropped by over 10 % in industry and nearly 5 % in trade and transport, the two branches of activity accounting for 80 % of agency workers recorded in the social balance sheets. The relative share of agency staff in these two branches stood at 5.3 and 4.6 % respectively of total employment expressed in FTEs in 2012, compared with 3.3 % for all firms.

During the financial year being considered here, staff departures were slightly higher than the recruitment figures in firms filing full-format accounts, owing to a sharp drop in hirings. There was very little change in the number of departures but voluntary departures were on the wane in 2012, owing to the gloomy economic climate. Conversely, there was a sharp upturn in temporary contracts coming to an end. These two reasons accounted for 60.9 and 25.7 % respectively of the recorded departures.

While 43.5 % of employees underwent formal training in 2012, 26.3 % participated in informal training, with both sets of figures being higher than in the previous year. Conversely, the rate of participation in initial training changed very little, at 1.3 %. The level of training expenditure totalled 1.84 % of staff costs. The 0.06 percentage point increase on the previous year is mainly attributed to informal training, whose budget rose 12.5 %. The working hours devoted to training climbed from 1.52 to 1.64 % of the hours worked between 2011 and 2012. The 0.12 percentage point upturn was evenly spread between the three categories of training.

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Annex 1 – Methodological annex

1. Composition of the population of firms

1.1 Methodological principles

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

In order to obtain reliable, consistent data, the analysis only considers the social balance sheets of firms which meet a number of criteria. In particular, the financial year must comprise twelve months and end on 31 December; firms must be in the private sector[1]; they must employ at least one full-time equivalent worker; their economic activity and location must be clearly identified[2]; the data reported in the social balance sheet must tally exactly with the data in the annual accounts[3]; firms submitting abnormal values for hourly staff costs or average working time are eliminated, while any anomalies found in regard to training[4] and the use of agency workers are neutralised.

Application of these methodological principles means that the number of social balance sheets included in the analysis for the purposes of this article is considerably smaller, each year, than the total number of social balance sheets filed with the Central Balance Sheet Office. At the end of the selection process, the total population for 2011 comprised 86 298 firms employing an average of 2 025 068 salaried workers.

Moreover, the analysis of the social balance sheets filed for 2012 is based on a reduced[5] constant[6] population, which further diminishes the coverage of the analysis population in regard to the balance sheets filed with the Central Balance Sheet Office. The results presented in this article therefore reflect the movements recorded in a stable population between 2011 and 2012 and may therefore differ from those observed following the final closure for all firms filing a social balance sheet[7].

1.2 Characteristics of the reduced population

The constant reduced population comprises 48 385 companies, which together had an average of 1 592 143 employees on their payroll in 2011, corresponding to 79 % of the workforce in the total population, even though the number of firms included in the reduced population represents only 56 % of the total population. The number of workers employed in the firms in the reduced population comes to 60 % of the private sector employees recorded in the national accounts.

Representativeness according to the employment criterion varies from one branch of activity to another. Expressed as a percentage of the number of employees in firms in the total population, it is lower in the branches with a predominance of small firms, whose annual accounts are often filed and/or checked later. This applies particularly in agriculture, forestry and fishing and in accommodation and food service activities.

(1) Private sector employment is defined as employment recorded in the total economy (S1), less employment in the general government sector (S13) and in the households sector (S14). This concept also excludes firms in NACE-BEL divisions 84 (public administration and defence; compulsory social security) and 85 (education). NACE-BEL division 78 (employment activities), which includes activities of employment placement agencies, is also excluded.

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

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

(4) From the year 2010, the Central Balance Sheet Office has introduced stricter quality checks on the items relating to training. The remaining checks are therefore intended primarily to make sure that the changes recorded in firms in the reduced population are not biased by errors or methodological modifications.

(5) Firms have seven months starting from the date of the end of the financial year to file their social balance sheets with the Central Balance Sheet Office. In view of the time needed to check the data, the full set of social balance sheets relating to 2012 was not available on 16 September 2013, when the data were extracted.

(6) Firms which did not file a social balance sheet for one of the two years are excluded from the reduced population.

(7) Since the Central Balance Sheet Office gives priority to processing the annual accounts of large firms and there are more small firms that file their accounts late, the results based on this reduced population lead to some distortion in favour of large firms.

Furthermore, certain categories of firms or jobs do not appear in the analysis population. This is true of non-profit organisations employing fewer than 20 FTE workers, which are not required to file a social balance sheet. Similarly, employees working for an employer who is not incorporated as a company are not included since the obligation to file a social balance sheet only applies to companies. Consequently, the representativeness of the reduced population

TABLE 1 REPRESENTATIVENESS OF THE REDUCED POPULATION IN 2011

	Number of workers			Representativeness of the reduced population	
	In the national accounts[1]	In the social balance sheets[2]		In % of private sector salaried employment[1]	In % of the total population
		Total population	Reduced population		
	(1)	(2)	(3)	(4) = (3) / (1)	(5) = (3) / (2)
According to the employment criterion	**2 665 140**	**2 025 068**	**1 592 143**	**59.7**	**78.6**
Agriculture, forestry and fishing	13 073	6 638	3 605	27.6	54.3
Manufacturing, mining and quarrying and other industry	555 817	441 794	368 506	66.3	83.4
Mining and quarrying	2 913	2 659	2 229	76.5	83.8
Manufacturing	507 400	397 039	327 783	64.6	82.6
Electricity, gas, steam and air conditioning supply	20 773	21 091	20 700	99.6	98.1
Water supply; sewerage, waste management and remediation activities	24 731	21 005	17 795	72.0	84.7
Construction	208 996	153 879	107 386	51.4	69.8
Wholesale and retail trade, transport and storage, accommodation and food service activities	776 055	550 652	421 735	54.3	76.6
Wholesale and retail trade; repair of motor vehicles and motorcycles	483 194	314 852	239 929	49.7	76.2
Transport and storage	194 871	171 100	147 357	75.6	86.1
Accommodation and food service activities	97 990	64 700	34 449	35.2	53.2
Information and communication	89 405	71 538	62 488	69.9	87.3
Financial and insurance activities	128 596	113 708	100 754	78.3	88.6
Real estate activities	17 045	12 273	8 788	51.6	71.6
Professional, scientific, technical, administration and support service activities	309 019	192 562	131 932	42.7	68.5
Professional, scientific and technical activities	138 356	88 829	63 503	45.9	71.5
Administrative and support service activities[3]	170 663	103 733	68 429	40.1	66.0
Human health and social work activities	470 806	435 126	354 421	75.3	81.5
Other services	96 328	46 900	32 527	33.8	69.4
Arts, entertainment and recreation	28 915	14 889	9 907	34.3	66.5
Other service activities	67 413	32 011	22 621	33.6	70.7
According to the criterion concerning the number of firms	**n.**	**86 298**	**48 385**	**n.**	**56.1**

Sources: NAI, NBB (social balance sheets).

(1) Private sector salaried employment, i.e. salaried employment recorded in the total economy (S1), less salaried employment in the general government sector (S13) and in the households sector (S14). This concept also excludes workers employed in NACE-BEL divisions 84 (public administration and defence; compulsory social security) and 85 (education).

(2) Average number of workers, i.e. the sum of items 1001 (full-time workers) and 1002 (part-time workers).

(3) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

expressed as a percentage of the salaried employment recorded in the national accounts is particularly low in the branches where such firms or workers are numerous, notably in agriculture, forestry and fishing, accommodation and food service activities, arts, entertainment and recreation and other service activities.

In the analysis population, the breakdown of firms by branch of activity is based on the NACE-BEL sections and divisions presented in Annex 2. Branch titles have been simplified to make the text easier to read.

Overall, workers in the trade and transport branch represent 26 % of the staff in the reduced population, and those in industry, 23 %. Health and social work activities employ 22 % of workers. The other branches are relatively less important, at 8 % for business services, 7 % for construction, 6 % for the financial and insurance branch, 4 % for information and communication and 2 % for other services. Real estate activities and agriculture are marginal (less than 1 %).

The classification of firms by size is based on the average number of workers expressed as full-time equivalents (FTEs) in 2011. Small firms with no more than 50 FTEs, or 92 % of companies in the reduced population, employ 27 % of the workforce in that population, well below the figure of 34 % recorded for the total population. Medium-sized companies employing between 50 and 250 FTEs account for 23 % of the workforce in the reduced population, or 1.5 percentage points more than the figure for the total population. Conversely, large firms with a workforce of over 250 FTEs employ half of the workers in the reduced population, against 45 % for the total population. The developments described on the basis of the reduced population are therefore influenced by the over-representation of large firms.

TABLE 2 CHARACTERISTICS OF THE TOTAL AND REDUCED POPULATIONS IN 2011

(in % of the total, unless otherwise stated)

	Total population		Reduced population	
	Number of firms	Number of workers[1]	Number of firms	Number of workers[1]
p.m. In units	*86 298*	*2 025 068*	*48 385*	*1 592 143*
Breakdown by branch of activity				
Agriculture	1.0	0.3	0.8	0.2
Industry	11.6	21.8	13.0	23.1
Construction	15.7	7.6	14.7	6.7
Trade and transport	39.6	27.2	38.0	26.5
Information and communication	2.8	3.5	3.0	3.9
Finance and insurance	4.7	5.6	4.9	6.3
Real estate	1.9	0.6	1.9	0.6
Business services[2]	13.5	9.5	13.6	8.3
Health and social work	5.2	21.5	6.2	22.3
Other services	4.1	2.3	4.0	2.0
Breakdown by size of firm[3]				
Small firms (up to 50 FTEs)	94.6	34.2	91.9	27.3
Medium-sized firms (over 50 to 250 FTEs)	4.4	21.3	6.5	22.8
Large firms (over 250 FTEs)	1.0	44.5	1.5	50.0

Source: NBB (social balance sheets).

(1) Average number of workers, i.e. the sum of items 1001 (full-time workers) and 1002 (part-time workers).

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

(3) Determined according to the value of item 1003 (FTE workers) in 2011.

2. Regional breakdown of the social balance sheets

The analysis populations were broken down by Region for the purposes of this article. For the 1998 to 2011 years, the apportionment formulas are the ones applied by the NAI to regionalise the national employment accounts in the corresponding year. Since the formula for 2012 is not yet available, the one for 2011 was used to regionalise the reduced population for both 2011 and 2012.

Single-region firms are those which have their head office and operating establishment(s) in one and the same Region. In 2011, the reduced population comprised 47 524 single-region firms, or 98 % of total firms. These are generally fairly small companies: on average, they had 24 workers. The other 861 companies – referred to as multi-region firms – operated in more than one Region. They employed an average of 549 workers.

In the case of multi-region firms, the proportional allocation method, which entails breaking down the social balance sheet data between the various Regions in which the firm is active, was only applied to the number of employees at 31 December. This is in fact the variable which is most similar to the basic data per establishment collected by the NSSO (i.e. the number of jobs at the end of the fourth quarter), which are used by the NAI to regionalise the national employment accounts. This apportionment formula is not entirely satisfactory for the other social balance sheet items. Such is the case, for example, for employment broken down by gender, level of education or employment contract, as

TABLE 3 STRUCTURE OF EMPLOYMENT BY REGION IN 2011 (1)

(in % of the total, unless otherwise stated, reduced population)

	Single-region firms				Multi-region firms	Total
	Brussels	Flanders	Wallonia	Total		
Number of firms (units)	4 852	30 905	11 767	47 524	861	48 385
Number of workers (units)	112 692	736 072	270 835	1 119 600	472 543	1 592 143
Average number of workers per firm (units)	23.2	23.8	23.0	23.6	548.8	32.9
Breakdown by branch of activity						
Agriculture	0.0	0.4	0.3	0.3	0.0	0.2
Industry	7.3	27.3	25.7	24.9	18.5	22.9
Construction	4.4	8.6	10.1	8.5	2.4	6.7
Trade and transport	23.0	22.8	20.5	22.3	35.4	26.2
Information and communication	7.7	2.9	1.7	3.1	5.8	3.9
Finance and insurance	8.9	1.5	1.6	2.3	15.4	6.3
Real estate	1.8	0.6	1.0	0.8	5.6	2.3
Business services (2)	15.8	7.3	6.8	8.0	10.6	8.8
Health and social work	24.8	26.8	30.1	27.4	2.8	20.0
Other services	6.3	1.8	2.4	2.4	3.5	2.7
Breakdown by size of firm (3)						
Small firms	40.9	36.6	40.6	38.0	1.9	27.3
Medium-sized firms	33.0	28.6	27.9	28.9	8.2	22.8
Large firms	26.1	34.8	31.4	33.1	89.9	50.0

Source: NBB (social balance sheets).

(1) Average number of workers, i.e. the sum of items 1001 (full-time workers) and 1002 (part-time workers).

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

(3) Determined according to the value of item 1003 (FTE workers) in 2011.

the conduct of the various operating establishments of a firm may vary considerably depending on their activity and their particular method of organisation. In the case of training activities or agency work, the site's location and the range of training activities or agency workers available may also make a difference. It is therefore inappropriate to use a standard apportionment formula for all the items. Consequently, multi-region firms form a separate group from single-region companies for all the variables, apart from the total number of workers employed at 31 December.

While single-region firms differ from multi-region firms by being smaller in size, they also specialise in different fields. Multi-region firms employ proportionately more workers than single-region companies in the branches of trade and transport and finance and insurance, while the industry and health and social work branches are proportionately less developed in multi-region firms. Within single-region companies, there are also differences in specialisation between firms based in Brussels, which focus more on services, and those in Flanders or Wallonia, which tend more towards industry. This heterogeneity is part of the reason for the differences between the Regions in the indicators presented in Annexes 11 to 13.

Annex 2 – Classification of firms by branch of activity

The classification of firms by branch of activity is based on the activity code listed in the directory of firms compiled by the National Bank for the purpose of producing the national accounts; the directory contains a range of administrative data on firms active during the year. The 2011 directory, based on the NACE-BEL 2008 nomenclature, was chosen as the reference to determine the classification by sector and by branch of activity of firms for all financial years from 1998 to 2012. Firms not listed in the 2011 directory retain the activity code which they were given in previous directories or, failing that, the code assigned to them by the Central Balance Sheet Office.

The descriptions in this article are generally based on a ten-branch breakdown. The names of these branches were simplified for the reader's convenience ("Abbreviated title" column). In Annexes 3 to 10, the breakdown into ten branches is detailed to show sections A to S of the NACE-BEL 2008 nomenclature.

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

Title	Abbreviated title	Section	Division
Agriculture, forestry and fishing	Agriculture	A	01-03
Manufacturing, mining and quarrying and other industry	Industry	B-E	05-39
Mining and quarrying		B	05-09
Manufacturing		C	10-33
Electricity, gas, steam and air conditioning supply		D	35
Water supply; sewerage, waste management and remediation activities		E	36-39
Construction	Construction	F	41-43
Wholesale and retail trade, transport and storage, accommodation and food service activities	Trade and transport	G-I	45-56
Wholesale and retail trade; repair of motor vehicles and motorcycles		G	45-47
Transport and storage		H	49-53
Accommodation and food service activities		I	55-56
Information and communication	Information and communication	J	58-63
Financial and insurance activities	Finance and insurance	K	64-66
Real estate activities	Real estate	L	68
Professional, scientific, technical, administration and support service activities (1)	Business services	M-N	69-82
Professional, scientific and technical activities		M	69-75
Administrative and support service activities (1)		N	77-82
Human health and social work activities	Health and social work	Q	86-88
Other services	Other services	R-S	90-96
Arts, entertainment and recreation		R	90-93
Other service activities		S	94-96

(1) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 3

CHANGE IN THE NUMBER OF WORKERS[1] BETWEEN 2011 AND 2012 IN FIRMS IN THE REDUCED POPULATION

	Full-time equivalents			Number of persons						
	Average employment		Employment as at 31 December	Average employment						Employment as at 31 December
				Full-time		Part-time		Total		
	Units	%	%	Units	%	Units	%	Units	%	%
Agriculture, forestry and fishing	81	2.5	2.0	75	3.0	0	0.0	75	2.1	2.0
Manufacturing, mining and quarrying and other industry	–1 497	–0.4	–1.5	–1 513	–0.5	–60	–0.1	–1 573	–0.4	–1.5
Mining and quarrying	16	0.7	–0.5	19	0.9	–1	–0.7	18	0.8	–0.5
Manufacturing	–1 644	–0.5	–1.7	–1 713	–0.6	–210	–0.5	–1 924	–0.6	–1.7
Electricity, gas, steam and air conditioning supply	–100	–0.5	–1.4	9	0.0	84	4.5	93	0.4	–1.3
Water supply; sewerage, waste management and remediation activities	232	1.4	1.6	173	1.1	68	3.1	240	1.4	1.6
Construction	1 195	1.1	0.3	1 089	1.1	176	2.2	1 265	1.2	0.4
Wholesale and retail trade, transport and storage, accommodation and food service activities	1 334	0.4	–0.8	1 162	0.4	488	0.4	1 649	0.4	–0.9
Wholesale and retail trade; repair of motor vehicles and motorcycles	2 196	1.0	0.3	1 513	0.9	1 500	1.9	3 013	1.3	–0.2
Transport and storage	–1 331	–1.0	–0.2	–663	–0.6	–1 182	–3.7	–1 846	–1.3	–2.3
Accommodation and food service activities	469	1.9	–1.9	312	1.9	170	0.9	482	1.4	0.1
Information and communication	543	0.9	0.4	837	1.6	–793	–7.1	44	0.1	–0.4
Financial and insurance activities	–339	–0.4	–0.5	–231	–0.3	–204	–0.7	–435	–0.4	–0.8
Real estate activities	297	3.8	2.7	190	3.0	44	1.8	235	2.7	3.2
Professional, scientific, technical, administration and support service activities	3 892	3.4	1.5	3 111	3.8	893	1.8	4 004	3.0	1.8
Professional, scientific and technical activities	2 208	3.8	2.5	1 996	4.0	173	1.2	2 169	3.4	2.4
Administrative and support service activities[2]	1 684	3.1	0.6	1 115	3.4	720	2.0	1 834	2.7	1.1
Human health and social work activities	7 351	2.7	2.1	2 043	1.4	6 070	2.9	8 113	2.3	2.0
Other services	383	1.4	0.8	71	0.4	431	3.5	502	1.5	1.4
Arts, entertainment and recreation	73	0.9	–0.2	–5	–0.1	86	2.6	82	0.8	–0.2
Other service activities	310	1.6	1.2	76	0.6	345	3.8	421	1.9	2.0
Total	**13 240**	**0.9**	**0.0**	**6 834**	**0.6**	**7 045**	**1.4**	**13 878**	**0.9**	**0.0**

Source: NBB (social balance sheets).

(1) Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 4

HOURS WORKED[1]

	In units, per year (total population)									*Percentage change between 2011 and 2012 (reduced population)*		
	2005	2006	2007	2008	2009	2010	2011					
	Per full-time equivalent						Per full-time equivalent	Per full-time worker	Per part-time worker	*Per full-time equivalent*	*Per full-time worker*	*Per part-time worker*
Agriculture, forestry and fishing	1 536	1 613	1 602	1 628	1 613	1 642	1 668	1 667	961	*–1.5*	*–1.5*	*–0.9*
Manufacturing, mining and quarrying and other industry	1 516	1 520	1 524	1 514	1 447	1 492	1 499	1 501	1 012	*–0.4*	*–0.4*	*–0.1*
Mining and quarrying	1 464	1 479	1 499	1 509	1 447	1 437	1 485	1 483	1 076	*–2.3*	*–2.3*	*–3.7*
Manufacturing	1 518	1 522	1 524	1 513	1 440	1 491	1 498	1 500	1 007	*–0.5*	*–0.4*	*–0.2*
Electricity, gas, steam and air conditioning supply	1 368	1 400	1 460	1 465	1 466	1 485	1 472	1 474	1 108	*1.2*	*0.2*	*1.3*
Water supply; sewerage, waste management and remediation activities	1 625	1 596	1 568	1 560	1 547	1 541	1 539	1 541	1 039	*–0.5*	*–0.4*	*–0.8*
Construction	1 448	1 450	1 452	1 467	1 433	1 420	1 468	1 464	998	*–2.2*	*–2.3*	*–0.6*
Wholesale and retail trade, transport and storage, accommodation and food service activities	1 582	1 579	1 577	1 576	1 555	1 559	1 558	1 565	920	*–0.1*	*0.0*	*–0.6*
Wholesale and retail trade; repair of motor vehicles and motorcycles	1 599	1 590	1 589	1 591	1 575	1 579	1 578	1 585	983	*–0.6*	*–0.3*	*–1.8*
Transport and storage	1 559	1 565	1 560	1 554	1 528	1 530	1 528	1 543	955	*0.7*	*0.5*	*2.3*
Accommodation and food service activities	1 562	1 567	1 557	1 556	1 531	1 538	1 539	1 522	717	*–0.5*	*–0.5*	*0.3*
Information and communication	1 610	1 605	1 601	1 604	1 599	1 600	1 592	1 601	998	*0.6*	*0.6*	*3.8*
Financial and insurance activities	1 429	1 426	1 441	1 442	1 430	1 446	1 447	1 464	960	*0.5*	*0.0*	*2.6*
Real estate activities	1 599	1 590	1 586	1 597	1 567	1 561	1 562	1 556	939	*–0.7*	*–0.7*	*4.6*
Professional, scientific, technical, administration and support service activities	1 589	1 585	1 589	1 600	1 567	1 568	1 568	1 585	939	*0.0*	*–0.1*	*0.8*
Professional, scientific and technical activities	1 641	1 638	1 641	1 649	1 626	1 627	1 623	1 626	1 047	*0.1*	*0.1*	*0.8*
Administrative and support service activities[2]	1 536	1 530	1 533	1 548	1 506	1 510	1 512	1 528	899	*–0.2*	*–0.5*	*0.9*
Human health and social work activities	1 498	1 532	1 464	1 487	1 462	1 469	1 458	1 450	910	*–0.4*	*–0.3*	*0.5*
Other services	1 569	1 562	1 575	1 571	1 561	1 563	1 557	1 557	861	*–0.1*	*0.1*	*0.0*
Arts, entertainment and recreation	1 619	1 617	1 615	1 606	1 605	1 591	1 601	1 590	783	*0.1*	*0.4*	*1.1*
Other service activities	1 546	1 536	1 554	1 554	1 540	1 549	1 537	1 541	893	*–0.2*	*0.0*	*–0.4*
Total	**1 532**	**1 537**	**1 529**	**1 530**	**1 497**	**1 511**	**1 513**	**1 519**	**930**	***–0.3***	***–0.3***	***0.3***

Source: NBB (social balance sheets).

(1) By workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 5

BREAKDOWN OF THE NUMBER OF WORKERS[1] BY EMPLOYMENT CONTRACT AND BY GENDER

(in % of total employment as at 31 December)

	2005	2006	2007	2008	2009	2010	2011	*2011*	*2012*
	(total population)							*(reduced population)*	
By employment contract									
Permanent contract	93.9	94.2	93.7	93.5	93.8	93.5	93.1	*93.7*	*93.9*
Fixed-term contract	5.0	5.0	5.2	5.4	5.1	5.4	5.7	*5.2*	*4.9*
Agriculture, forestry and fishing	6.5	6.4	12.8	11.2	10.9	10.7	8.8	*6.1*	*8.6*
Manufacturing, mining and quarrying and other industry	3.9	4.4	4.6	4.4	2.9	3.6	4.2	*3.9*	*3.4*
Mining and quarrying	6.2	8.2	7.0	6.1	4.5	4.9	5.2	*4.7*	*4.3*
Manufacturing	3.7	4.3	4.7	4.4	2.8	3.6	4.2	*4.0*	*3.5*
Electricity, gas, steam and air conditioning supply	7.2	7.3	5.2	6.0	5.3	4.7	4.3	*4.3*	*3.5*
Water supply; sewerage, waste management and remediation activities	3.0	3.8	3.0	2.9	2.1	2.4	2.9	*2.5*	*2.3*
Construction	2.9	3.2	3.3	3.5	3.7	3.6	3.8	*2.9*	*2.9*
Wholesale and retail trade, transport and storage, accommodation and food service activities	6.2	6.0	6.0	6.5	6.6	6.7	7.3	*6.3*	*6.0*
Wholesale and retail trade; repair of motor vehicles and motorcycles	6.1	5.8	5.9	6.6	6.5	7.5	8.1	*7.6*	*7.0*
Transport and storage	3.4	3.2	3.3	3.3	3.3	2.5	2.8	*2.4*	*2.2*
Accommodation and food service activities	15.1	15.8	14.9	15.9	15.9	14.9	15.9	*13.2*	*14.5*
Information and communication	3.7	3.9	3.1	3.0	2.5	2.4	3.4	*3.4*	*2.0*
Financial and insurance activities	2.8	2.8	2.5	2.0	2.0	1.9	1.8	*1.6*	*1.5*
Real estate activities	4.1	4.2	5.0	5.1	5.4	5.4	5.3	*1.6*	*1.5*
Professional, scientific, technical, administration and support service activities	4.3	4.2	4.5	3.8	3.8	4.1	3.9	*3.2*	*3.4*
Professional, scientific and technical activities	3.4	3.4	3.4	3.4	3.5	3.8	3.4	*3.0*	*3.1*
Administrative and support service activities[2]	5.1	4.9	5.6	4.3	4.2	4.3	4.3	*3.5*	*3.7*
Human health and social work activities	7.4	7.5	7.2	7.7	7.4	7.6	7.6	*7.6*	*7.3*
Other services	7.6	7.2	8.2	9.0	10.1	10.7	10.5	*9.4*	*9.2*
Arts, entertainment and recreation	10.4	9.3	9.4	11.3	13.0	13.7	12.8	*11.0*	*10.1*
Other service activities	6.3	6.3	7.6	7.8	8.8	9.3	9.4	*8.8*	*8.9*
Substitution contract	1.0	0.6	0.9	1.0	1.0	1.0	1.0	*1.0*	*1.0*
Contract concluded for a specific project	0.1	0.2	0.2	0.2	0.1	0.2	0.2	*0.1*	*0.1*
By gender									
Men	60.9	63.9	59.5	58.1	57.2	56.4	56.1	*56.3*	*55.9*
Women	39.1	36.1	40.5	41.9	42.8	43.6	43.9	*43.7*	*44.1*

Source: NBB (social balance sheets).

(1) Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 6

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

(in % of average employment expressed in FTEs)

	2005	2006	2007	2008	2009	2010	2011	*2011*	*2012*
	(total population)							*(reduced population)*	
Workers for whom the firm has submitted a DIMONA declaration or who are recorded in the staff register.	**95.6**	**93.3**	**93.4**	**93.8**	**96.3**	**95.6**	**95.3**	***95.2***	***95.6***
Agency workers	**3.3**	**4.1**	**4.0**	**3.7**	**2.8**	**3.3**	**3.6**	***3.6***	***3.3***
Agriculture, forestry and fishing	4.7	8.7	7.8	8.4	8.6	5.1	4.5	*4.8*	*6.4*
Manufacturing, mining and quarrying and other industry	5.2	6.1	6.4	5.8	4.1	5.5	5.9	*5.9*	*5.3*
Mining and quarrying	2.5	2.8	3.2	3.4	2.2	2.7	3.5	*3.7*	*2.8*
Manufacturing	5.4	6.3	6.5	6.0	4.2	5.7	6.2	*6.3*	*5.7*
Electricity, gas, steam and air conditioning supply	2.5	1.5	2.3	1.4	1.6	1.7	1.1	*1.1*	*1.1*
Water supply; sewerage, waste management and remediation activities	5.5	6.4	6.7	6.3	5.5	6.2	5.8	*4.9*	*4.7*
Construction	1.6	2.0	2.2	2.0	1.8	1.8	2.0	*2.0*	*2.0*
Wholesale and retail trade, transport and storage, accommodation and food service activities	3.8	4.2	4.5	4.7	3.9	4.3	4.8	*4.8*	*4.6*
Wholesale and retail trade; repair of motor vehicles and motorcycles	3.9	4.3	4.5	4.4	3.8	4.2	4.5	*4.6*	*4.3*
Transport and storage	3.7	4.0	4.4	4.8	3.8	4.2	5.0	*4.9*	*4.9*
Accommodation and food service activities	4.3	6.0	7.1	7.1	5.5	6.7	7.0	*6.9*	*5.8*
Information and communication	2.5	2.8	3.1	3.1	2.5	2.5	2.6	*2.7*	*2.5*
Financial and insurance activities	0.8	1.0	1.0	1.0	0.6	0.8	0.9	*0.8*	*0.9*
Real estate activities	1.6	1.7	2.0	2.1	1.6	1.9	1.6	*1.4*	*1.2*
Professional, scientific, technical, administration and support service activities	3.3	4.1	4.2	3.8	2.9	3.3	3.7	*3.5*	*3.4*
Professional, scientific and technical activities	3.3	3.9	3.7	3.9	3.0	3.5	3.4	*3.3*	*3.2*
Administrative and support service activities[1]	3.2	4.4	4.7	3.6	2.7	3.1	3.9	*3.7*	*3.7*
Human health and social work activities	0.5	0.6	0.5	0.4	0.4	0.5	0.5	*0.4*	*0.4*
Other services	3.5	4.9	3.9	4.4	4.0	4.2	4.0	*4.0*	*3.2*
Arts, entertainment and recreation	4.2	3.4	4.0	4.0	3.5	3.5	3.7	*3.0*	*3.2*
Other service activities	3.2	5.6	3.9	4.5	4.2	4.5	0.0	*4.3*	*3.2*
Workers seconded to the firm[2]	**1.1**	**2.6**	**2.6**	**2.5**	**0.9**	**1.0**	**1.1**	***1.2***	***1.0***

Source: NBB (social balance sheets).

(1) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

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

Annex 7

STAFF COSTS PER FTE [1]

	In €, per year (total population)							*Percentage change between 2011 and 2012 (reduced population)*
	2005	2006	2007	2008	2009	2010	2011	
Agriculture, forestry and fishing	31 769	30 664	30 715	31 640	32 517	33 207	33 685	*2.4*
Manufacturing, mining and quarrying and other industry	52 214	54 010	55 139	57 818	57 144	59 945	62 582	*1.8*
Mining and quarrying	46 716	48 001	50 672	52 480	52 776	53 527	57 423	*0.9*
Manufacturing	51 054	52 856	54 677	56 461	55 635	58 630	60 579	*2.9*
Electricity, gas, steam and air conditioning supply	86 430	89 640	88 055	97 968	92 629	93 484	105 904	*–7.3*
Water supply; sewerage, waste management and remediation activities	48 198	48 088	48 887	51 210	52 850	53 306	56 600	*0.7*
Construction	38 200	39 392	40 471	42 526	43 074	43 126	45 584	*2.2*
Wholesale and retail trade, transport and storage, accommodation and food service activities	42 845	44 174	45 360	47 359	48 708	48 844	49 982	*2.7*
Wholesale and retail trade; repair of motor vehicles and motorcycles	43 574	44 888	46 380	48 275	49 657	49 723	50 900	*2.8*
Transport and storage	44 775	46 169	47 183	49 585	50 860	51 166	52 579	*2.8*
Accommodation and food service activities	28 714	29 389	30 070	31 706	33 400	34 267	34 951	*2.6*
Information and communication	59 945	61 814	63 500	66 194	68 105	68 784	70 803	*1.7*
Financial and insurance activities	69 274	70 072	73 246	77 305	78 134	77 943	80 355	*4.1*
Real estate activities	41 806	43 303	43 818	45 952	47 266	47 877	49 673	*2.4*
Professional, scientific, technical, administration and support service activities	48 078	48 740	49 928	52 693	52 928	52 441	53 395	*2.9*
Professional, scientific and technical activities	57 136	58 736	59 859	63 491	64 232	64 289	65 344	*2.8*
Administrative and support service activities [2]	38 910	38 298	39 262	40 943	41 158	40 528	41 478	*2.8*
Human health and social work activities	39 932	44 487	39 666	43 043	43 757	44 860	46 032	*2.7*
Other services	35 600	33 282	40 485	41 613	43 801	44 159	44 609	*3.2*
Arts, entertainment and recreation	37 883	39 630	43 087	43 655	47 083	45 875	47 016	*4.6*
Other service activities	34 582	30 276	39 183	40 614	42 208	43 332	43 510	*2.6*
Total	**47 520**	**49 445**	**49 501**	**51 890**	**52 226**	**53 004**	**54 543**	***2.4***

Source: NBB (social balance sheets).

(1) Item 1023 / item 1003.

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 8

STAFF COSTS PER HOUR WORKED[1]

	In € (total population)							*Percentage change between 2011 and 2012 (reduced population)*
	2005	2006	2007	2008	2009	2010	2011	
Agriculture, forestry and fishing	20.7	19.0	19.2	19.4	20.2	20.2	20.2	*4.0*
Manufacturing, mining and quarrying and other industry	34.4	35.5	36.2	38.2	39.5	40.2	41.8	*2.2*
Mining and quarrying	31.9	32.5	33.8	34.8	36.5	37.2	38.7	*3.3*
Manufacturing	33.6	34.7	35.9	37.3	38.6	39.3	40.4	*3.4*
Electricity, gas, steam and air conditioning supply	63.2	64.0	60.3	66.9	63.2	63.0	71.9	*-8.4*
Water supply; sewerage, waste management and remediation activities	29.7	30.1	31.2	32.8	34.2	34.6	36.8	*1.2*
Construction	26.4	27.2	27.9	29.0	30.1	30.4	31.0	*4.5*
Wholesale and retail trade, transport and storage, accommodation and food service activities	27.1	28.0	28.8	30.1	31.3	31.3	32.1	*2.8*
Wholesale and retail trade; repair of motor vehicles and motorcycles	27.3	28.2	29.2	30.3	31.5	31.5	32.3	*3.4*
Transport and storage	28.7	29.5	30.2	31.9	33.3	33.4	34.4	*2.1*
Accommodation and food service activities	18.4	18.8	19.3	20.4	21.8	22.3	22.7	*3.2*
Information and communication	37.2	38.5	39.7	41.3	42.6	43.0	44.5	*1.1*
Financial and insurance activities	48.5	49.1	50.8	53.6	54.6	53.9	55.5	*3.6*
Real estate activities	26.1	27.2	27.6	28.8	30.2	30.7	31.8	*3.1*
Professional, scientific, technical, administration and support service activities	30.3	30.7	31.4	32.9	33.8	33.4	34.1	*2.9*
Professional, scientific and technical activities	34.8	35.9	36.5	38.5	39.5	39.5	40.3	*2.8*
Administrative and support service activities[2]	25.3	25.0	25.6	26.5	27.3	26.8	27.4	*3.0*
Human health and social work activities	26.7	29.0	27.1	29.0	29.9	30.5	31.6	*3.1*
Other services	22.7	21.3	25.7	26.5	28.1	28.3	28.7	*3.3*
Arts, entertainment and recreation	23.4	24.5	26.7	27.2	29.3	28.8	29.4	*4.4*
Other service activities	22.4	19.7	25.2	26.1	27.4	28.0	28.3	*2.8*
Total	**31.0**	**32.2**	**32.4**	**33.9**	**34.9**	**35.1**	**36.0**	***2.7***

Source: NBB (social balance sheets).

(1) Item 1023 / item 1013.

(2) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 9

TRAINING IN 2012 IN FIRMS IN THE REDUCED POPULATION

	Participants in training activities[1] (in % of average employment)			Hours devoted to training activities (in % of hours worked)				Net training costs[2] (in % of staff costs)			
	For-mal[3]	Infor-mal[4]	Ini-tial[5]	For-mal[3]	Infor-mal[4]	Ini-tial[5]	Total	For-mal[3]	Infor-mal[4]	Ini-tial[5]	Total
Agriculture, forestry and fishing	12.4	8.8	1.1	0.2	0.2	0.3	0.7	0.21	0.31	0.07	0.58
Manufacturing, mining and quarrying and other industry	47.8	30.6	1.4	0.9	0.8	0.2	1.9	1.46	0.78	0.07	2.32
Mining and quarrying	51.7	26.6	0.8	0.7	1.1	0.0	1.8	0.95	1.17	0.02	2.14
Manufacturing	45.4	31.0	1.5	0.8	0.8	0.2	1.8	1.20	0.81	0.08	2.09
Electricity, gas, steam and air conditioning supply	74.0	36.7	0.1	2.2	0.8	0.0	3.0	4.17	0.75	0.00	4.92
Water supply; sewerage, waste management and remediation activities	61.5	17.3	0.9	0.9	0.4	0.0	1.3	1.32	0.34	0.02	1.68
Construction	26.1	13.5	2.0	0.4	0.3	0.8	1.5	0.52	0.32	0.13	0.97
Wholesale and retail trade, transport and storage, accommodation and food service activities	37.0	20.4	1.2	0.8	0.4	0.3	1.5	1.21	0.37	0.05	1.64
Wholesale and retail trade; repair of motor vehicles and motorcycles	31.1	18.2	1.5	0.5	0.4	0.5	1.4	0.75	0.42	0.07	1.24
Transport and storage	52.3	26.9	0.5	1.4	0.3	0.0	1.7	2.05	0.31	0.01	2.37
Accommodation and food service activities	13.6	8.7	1.9	0.3	0.3	0.5	1.0	0.34	0.26	0.14	0.73
Information and communication	57.4	18.6	1.7	1.1	0.3	0.1	1.5	1.61	0.27	0.06	1.94
Financial and insurance activities	65.6	47.5	0.2	1.3	1.0	0.0	2.3	2.08	0.67	0.01	2.76
Real estate activities	17.0	9.1	2.1	0.3	0.2	0.4	0.8	0.29	0.17	0.11	0.57
Professional, scientific, technical, administration and support service activities	28.9	17.4	0.9	0.6	0.3	0.2	1.0	0.79	0.33	0.04	1.16
Professional, scientific and technical activities	32.2	18.5	1.3	0.6	0.3	0.2	1.1	0.74	0.31	0.04	1.08
Administrative and support service activities[6]	25.8	16.5	0.6	0.6	0.2	0.2	1.0	0.88	0.35	0.05	1.29
Human health and social work activities	51.8	33.1	1.2	1.1	0.4	0.3	1.8	0.98	0.43	0.18	1.58
Other services	21.1	12.1	1.4	0.4	0.2	0.5	1.1	0.58	0.19	0.06	0.82
Arts, entertainment and recreation	13.0	8.1	1.4	0.2	0.1	0.2	0.5	0.20	0.10	0.04	0.34
Other service activities	24.5	13.8	1.3	0.4	0.3	0.6	1.3	0.75	0.23	0.08	1.05
Total	**43.5**	**26.3**	**1.3**	**0.9**	**0.5**	**0.3**	**1.6**	**1.25**	**0.51**	**0.08**	**1.84**

Source: NBB (social balance sheets).

(1) Owing to double counting linked to the fact that the same person may have pursued more than one type of training, no total is calculated here.

(2) Gross costs less subsidies and other financial benefits. The net costs of formal training also include contributions and payments to collective funds.

(3) Courses and practical classes designed by training staff responsible for their organisation and content, intended for a group of learners in premises separate from the workplace.

(4) Other apprenticeship activities of which the organisation and content are largely determined by the learners according to their own needs, directly connected with the work or workplace. These activities also include attending conferences or trade fairs as part of the learning process.

(5) Training of a minimum duration of six months, given to workers under schemes alternating training and practical work experience, with a view to acquiring a diploma.

(6) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 10

TRAINING IN 2012 IN TRAINING FIRMS IN THE REDUCED POPULATION

	Hours devoted to training (average per participant, in hours)			Net training costs[1] (average per hour of training, in €)		
	Formal[2]	Informal[3]	Initial[4]	Formal[2]	Informal[3]	Initial[4]
Agriculture, forestry and fishing	23	33	409	25.0	35.5	5.3
Manufacturing, mining and quarrying and other industry	26	39	194	72.5	41.3	16.4
Mining and quarrying	18	57	60	57.8	44.8	25.2
Manufacturing	25	39	200	64.2	40.3	16.3
Electricity, gas, steam and air conditioning supply	43	31	50	123.7	62.5	53.6
Water supply; sewerage, waste management and remediation activities	20	35	57	59.2	31.5	24.8
Construction	22	33	527	43.8	34.6	5.7
Wholesale and retail trade, transport and storage, accommodation and food service activities	30	24	350	51.3	36.0	5.9
Wholesale and retail trade; repair of motor vehicles and motorcycles	23	32	410	49.8	34.8	5.5
Transport and storage	38	14	101	53.0	41.6	11.9
Accommodation and food service activities	24	35	282	29.3	23.4	7.1
Information and communication	29	24	112	66.3	41.5	19.9
Financial and insurance activities	27	27	185	91.6	40.2	12.2
Real estate activities	22	24	257	37.1	37.3	9.8
Professional, scientific, technical, administration and support service activities	27	23	243	50.5	40.4	9.0
Professional, scientific and technical activities	26	27	208	55.2	39.2	8.5
Administrative and support service activities[5]	27	18	314	45.2	42.2	9.6
Human health and social work activities	24	14	289	29.3	34.4	18.6
Other services	23	24	454	50.1	26.1	4.2
Arts, entertainment and recreation	20	24	193	34.5	22.2	6.1
Other service activities	23	24	575	53.2	27.1	4.0
Total	**26**	**26**	**297**	**55.6**	**38.6**	**10.8**

Source: NBB (social balance sheets).

(1) Gross costs less subsidies and other financial benefits. The net costs of formal training also include contributions and payments to collective funds.

(2) Courses and practical classes designed by training staff responsible for their organisation and content, intended for a group of learners in premises separate from the workplace.

(3) Other apprenticeship activities of which the organisation and content are largely determined by the learners according to their own needs, directly connected with the work or workplace. These activities also include attending conferences or trade fairs as part of the learning process.

(4) Training of a minimum duration of six months, given to workers under schemes alternating training and practical work experience, with a view to acquiring a diploma.

(5) Excluding employment activities (NACE-BEL 78), which comprise in particular activities of employment placement agencies.

Annex 11

TYPE AND STRUCTURE OF EMPLOYMENT CONTRACTS BY REGION

	2005	2006	2007	2008	2009	2010	2011	*Percentage change between 2011 and 2012*
	(total population)							*(reduced population)*
Part-time work (in % of employment as at 31 December)								
Single-region firms	25.2	23.0	26.6	27.8	29.9	30.6	30.9	*1.3*
Brussels	22.7	21.9	24.0	25.5	27.9	29.8	30.5	*1.6*
Flanders	25.6	23.1	26.8	28.0	30.0	30.7	30.7	*1.4*
Wallonia	25.1	23.3	27.0	28.1	30.3	30.8	31.3	*1.3*
Multi-region firms	28.2	26.6	30.3	30.5	31.8	32.5	32.7	*0.2*
Total	**26.0**	**24.0**	**27.5**	**28.5**	**30.3**	**31.1**	**31.3**	***1.0***
Temporary work[1] (in % of employment as at 31 December)								
Single-region firms	6.3	6.1	6.7	6.9	6.6	7.0	7.4	*–4.4*
Brussels	5.8	5.4	6.6	6.6	6.9	7.5	7.4	*–0.6*
Flanders	5.3	5.0	5.5	5.5	5.1	5.5	5.7	*–4.6*
Wallonia	9.0	8.9	9.6	10.6	10.2	10.5	11.1	*–5.4*
Multi-region firms	5.7	5.0	5.4	5.4	5.0	5.0	5.4	*–5.4*
Total	**6.1**	**5.8**	**6.3**	**6.5**	**6.2**	**6.5**	**6.9**	***–4.6***
Agency work in firms filing full-format accounts (in % of average FTE employment)								
Single-region firms	3.8	5.0	4.8	4.2	3.2	3.7	4.0	*–7.2*
Brussels	2.6	3.0	3.2	2.5	2.6	3.2	3.3	*–10.1*
Flanders	4.1	5.4	5.1	4.5	3.2	3.8	4.2	*–5.6*
Wallonia	3.8	5.0	4.7	4.4	3.2	3.8	3.7	*–10.9*
Multi-region firms	2.3	2.6	2.7	2.6	2.1	2.5	2.9	*–8.8*
Total	**3.3**	**4.1**	**4.0**	**3.7**	**2.8**	**3.3**	**3.6**	***–7.4***

Source: NBB (social balance sheets).

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

Annex 12

HOURS WORKED AND STAFF COSTS BY REGION

	2005	2006	2007	2008	2009	2010	2011	*Percentage change between 2011 and 2012*
	(total population)							*(reduced population)*
Hours worked per FTE (in units, per year)								
Single-region firms	1 549	1 557	1 544	1 546	1 508	1 522	1 527	*–0.5*
Brussels	1 578	1 581	1 581	1 588	1 563	1 575	1 562	*0.1*
Flanders	1 554	1 566	1 548	1 547	1 508	1 525	1 529	*–0.4*
Wallonia	1 525	1 524	1 521	1 524	1 484	1 494	1 506	*–0.9*
Multi-region firms	1 485	1 485	1 486	1 487	1 466	1 478	1 475	*0.0*
Total	**1 532**	**1 537**	**1 529**	**1 530**	**1 497**	**1 511**	**1 513**	***–0.3***
Staff costs per FTE (in €, per year)								
Single-region firms	45 039	46 754	47 056	49 131	49 309	50 022	51 454	*2.6*
Brussels	53 607	55 042	55 641	58 804	58 444	58 599	58 315	*2.9*
Flanders	45 044	46 977	47 357	49 295	49 432	50 260	51 909	*2.7*
Wallonia	41 166	42 739	42 835	44 719	45 212	45 967	47 589	*2.2*
Multi-region firms	54 437	56 702	56 411	59 739	60 574	61 505	63 585	*2.2*
Total	**47 520**	**49 445**	**49 501**	**51 890**	**52 226**	**53 004**	**54 543**	***2.4***
Staff costs per hour worked (in €)								
Single-region firms	29.1	30.0	30.5	31.8	32.7	32.9	33.7	*3.1*
Brussels	34.0	34.8	35.2	37.0	37.4	37.2	37.3	*2.8*
Flanders	29.0	30.0	30.6	31.9	32.8	33.0	33.9	*3.1*
Wallonia	27.0	28.0	28.2	29.3	30.5	30.8	31.6	*3.1*
Multi-region firms	36.7	38.2	38.0	40.2	41.3	41.6	43.1	*2.2*
Total	**31.0**	**32.2**	**32.4**	**33.9**	**34.9**	**35.1**	**36.0**	***2.7***

Source: NBB (social balance sheets).

Annex 13

FORMAL VOCATIONAL TRAINING BY REGION [1]

	2005	2006	2007	2008	2009	2010	2011	*Percentage change between 2011 and 2012*
	(total population)							*(reduced population)*
Participants in training activities (in % of average employment)								
Single-region firms	27.5	24.9	26.0	26.6	27.8	29.1	29.8	*5.8*
Brussels	27.7	26.7	24.9	25.9	27.1	27.4	27.3	*2.4*
Flanders	29.5	26.0	27.9	27.7	28.9	30.2	31.2	*8.1*
Wallonia	22.1	21.4	21.8	24.2	25.7	27.1	27.4	*0.1*
Multi-region firms	61.1	61.3	61.5	54.6	56.3	58.5	58.0	*3.9*
Total	**36.3**	**34.7**	**35.2**	**33.8**	**35.1**	**36.6**	**36.9**	***4.7***
Hours devoted to training (in % of hours worked)								
Single-region firms	0.54	0.52	0.55	0.50	0.53	0.55	0.55	*8.2*
Brussels	0.55	0.57	0.54	0.50	0.52	0.53	0.54	*2.0*
Flanders	0.58	0.56	0.57	0.53	0.55	0.57	0.58	*7.4*
Wallonia	0.44	0.42	0.50	0.42	0.46	0.52	0.48	*13.9*
Multi-region firms	1.30	1.45	1.55	1.42	1.38	1.27	1.25	*2.5*
Total	**0.73**	**0.77**	**0.80**	**0.73**	**0.74**	**0.73**	**0.72**	***5.3***
Net training costs [2] (in % of staff costs)								
Single-region firms	0.73	0.71	0.71	0.71	0.66	0.72	0.76	*6.7*
Brussels	0.71	0.71	0.73	0.67	0.62	0.76	0.76	*2.1*
Flanders	0.77	0.74	0.73	0.73	0.67	0.69	0.77	*8.3*
Wallonia	0.60	0.62	0.66	0.66	0.68	0.78	0.73	*3.9*
Multi-region firms	2.07	2.34	2.36	2.18	1.99	2.01	1.98	*–2.6*
Total	**1.13**	**1.21**	**1.20**	**1.15**	**1.06**	**1.11**	**1.12**	***0.9***
Training firms (in % of all firms)								
Single-region firms	6.1	5.6	6.5	12.8	14.0	15.6	18.6	*13.3*
Brussels	6.6	6.2	7.1	12.5	14.1	15.7	16.7	*6.1*
Flanders	6.8	6.1	7.1	12.7	13.8	15.1	19.5	*17.5*
Wallonia	4.3	4.1	4.9	13.1	14.5	16.6	17.4	*6.3*
Multi-region firms	44.9	42.9	41.9	51.1	54.1	58.4	61.4	*2.7*
Total	**6.6**	**6.1**	**7.0**	**13.3**	**14.6**	**16.2**	**19.1**	***12.7***

Source: NBB (social balance sheets).

(1) The introduction of a new social balance sheet form applicable to financial years ending on or after 1 December 2008 causes a break in the series between data for years from 2008 onwards and those relating to previous years.

(2) Gross costs less subsidies and other financial benefits, plus contributions and payments to collective funds.

Summaries of articles

Economic projections for Belgium – Autumn 2013

The article presents the Bank's new macroeconomic projections for 2013 and 2014. They were produced in a context of deceleration of growth in the emerging economies and a hesitant revival of activity in the advanced countries. According to the Eurosystem's projections, real GDP is likely to be down by 0.4 % in the euro area at the end of 2013, and growth is predicted at 1.1 % in 2014. Inflation in the euro area is set to remain weak, rising by 1.4 % in 2013 and by 1.3 % in 2014, against a backdrop of import price moderation, and control over domestic costs, namely wage costs.

In Belgium, following a lengthy period of stagnating activity, the recovery emerged in the second quarter of 2013 and should continue, in line with the expectations for the euro area. The volume of GDP is forecast to grow by 0.2 % this year and 1.1 % in 2014. Given the weakness of foreign markets, Belgium's exports will have produced hardly any growth in 2013, while imports are actually estimated to have fallen slightly, so that foreign demand will make a positive contribution to growth. Belgian exports are likely to regain some momentum in 2014, on the back of world trade. The improvement in confidence and the rise in households' purchasing power promoted by the fall in inflation are the reasons for the increase in household consumption expenditure in 2013, following an unusually long period of expenditure restraint. Private consumption is expected to progress at the same rate as household disposable income next year, implying a more or less stable savings ratio. Business investment also began a hesitant recovery in the spring of this year. However, it is likely to be down again year-on-year in 2013 before a clearer revival in 2014, supported by the improvement in the outlook for sales and the steady rise in capacity utilisation rates. Finally, public spending is set to continue making a positive contribution to GDP growth in 2013 and 2014, though it will be moderate.

Despite the fragile signs of recovery in the Belgian economy, the labour market situation is unlikely to improve in the immediate future. The revival will first be conveyed by firms stepping up their working hours and restoring their level of productivity before taking on new recruits. Following a decline of around 17 000 units in 2013, domestic employment will record only a very small rise in 2014, of barely 2 500 units. The unemployment rate will continue to rise, reaching 9.1 % of the labour force in 2014.

Inflation, which is down sharply in Belgium, too, is put at 1.2 % in 2013 and is only forecast to edge up to 1.3% in 2014. That is due partly to the downward trend in energy prices – owing to the expected fall in the oil price and changes taking place on the Belgian gas and electricity markets – and partly to the low level of underlying inflation, influenced by labour costs' moderation.

Given the assumptions relating to fiscal measures, in accordance with the rules applicable to the Eurosystem's forecasting exercises, public finances are expected to end the year 2013 with a deficit of 2.8 % of GDP and remain at that level in 2014.

JEL codes : E17, E25, E37, E66

Key words : Belgium, macroeconomic projections, Eurosystem

Trends in tax systems in the EU

In 2013, the total tax burden in the euro area was almost back to the level prevailing at the beginning of the century. The financial and economic crisis had initially led to a reduction in the tax burden, but fiscal consolidation has generated a rise in revenue. However, there is no general trend observable in labour taxation or indirect taxation. The transfer of part of the burden from labour to consumption, as regularly recommended by international economic organisations, has taken place in a limited amount of countries. Corporation tax alone fell simultaneously in the euro area countries, as a result of tax competition. Following these developments, Belgium remains notable for its heavy taxes on labour and capital, while indirect taxes, particularly excise duties, are relatively low.

JEL codes : H20, H23, H24, H25, H27

Key words : tax system, income tax, consumption tax, corporation tax, capital taxation, VAT, excise duties

Measuring inflation : the stakes and the state of play

The major overhaul of the national consumer prices index (NCPI), upon which the health index is based, is an opportunity to adjust the methodology to make inflation measurement more accurate and ensure that the index is representative. The new index will enter into force in January 2014.

In addition to the changes made in January 2013 at the government's behest relating to the effect of seasonal sales and to heating oil prices, certain other changes are to be recommended. They include switching to a chain index, which allows for weightings to be adjusted more frequently (annually), taking better account of quality changes and substitution effects, switching to scanner data for products sold in supermarkets, and more accurately reflecting trends in the telecoms market. Lastly, pending a decision on whether or not to include owner-occupied housing costs in the harmonised index of consumer prices (HICP), some improvements can already be made to the current index of real rents in order to more accurately reflect rental market swings.

Some of the changes being considered for the NCPI were made in 2013 to the HICP, which means that in certain cases it is possible to estimate their impact on NCPI inflation, were they to be adopted in 2014. However, the overall effect will also depend on how the new index is introduced. As in 2006, the Index Commission will have to set the conversion coefficient enabling the transition from the old to the new index.

JEL codes : E31, E64

Key words : Consumer Price index, HICP, inflation

What inflation developments reveal about the Phillips curve : implications for monetary policy

Average inflation in the euro area has remained relatively stable since the onset of the current economic and financial crisis. Given the extent and length of the crisis, this observation might seem surprising in that it suggests that the traditional cyclical behaviour of inflation has weakened over time. The article seeks to determine the factors that explain this apparent change in inflation dynamics. To this end, the authors estimate a Phillips curve with time-varying parameters for the euro area using Bayesian techniques. The estimation results suggest that the observed stability of inflation is due to a combination of a flattening of the Phillips curve and increasing sensitivity of inflation to long-run inflation expectations, which have appeared firmly anchored in the euro area. These developments may have implications for the conduct of monetary policy. For instance, the better anchoring of current inflation to long-term expectations suggests that the traditional interest rate channel of monetary policy has become more effective. Furthermore, the findings of the article have implications for the inflationary effects of demand and supply shocks hitting the economy, thereby underscoring the need for an in-depth analysis in order to make appropriate monetary policy decisions.

JEL codes : C11, C22, E31, E37

Key words : Inflation, Phillips curve, Bayesian time-varying coefficient model, monetary policy implications

Results and financial situation of firms in 2012

This article looks at the financial situation of non-financial corporations in Belgium over the period from 1 January to 31 December 2012. After briefly describing the methodology and the population studied, it presents an extrapolation of the main operating result items for 2012, with a sectoral and size breakdown. It shows that operating results deteriorated, but more for big companies than for SMEs. The article assesses then the financial situation of companies as regards profitability and solvency. The last section presents an analysis of the corporate tax burden, according to the concept of implicit tax rate. There is a clear trend to the erosion of this rate, but a light revival is observed in the recent years mainly due to the restrictions applied to the notional interest deduction regime.

JEL codes : G30, G33, L60, L80, K34

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

The 2012 social balance sheet

A new form introduced in 2012 for firms and associations filing full-format accounts paved the way for a new kind of analysis, such that a distinction could be made between the situations of women and men employed by these firms. A population of 8 862 firms formed the basis for assessing the gender pay gap in the light of a) the staff costs per employee and b) the costs per hour of work, in order to factor in the differences in working hours. Undertaken separately for employees working full-time or those working reduced hours, the second indicator pointed to a sizeable pay gap within this population (9% and 14% for full-time and part-time employees respectively). There are also proportionally more women in the lowest pay grades and in companies where male staff costs are higher on average than women's wages, notwithstanding a higher average qualification level for women.

Employment trends between 2011 and 2012 were analysed on the basis of a constant population of 48 385 firms. Against the background of output contraction, the slower employment growth rate during the year resulted in a stabilisation of staff levels between late 2011 and late 2012, affecting the whole population of firms and each of the country's three Regions. However, contrasting patterns were reported depending on size and the fields of activity of enterprises and depending on the staff profile.

Within this same constant population, there was an upturn in the number of companies providing training, while the percentage of employees receiving formal or informal training rose to 43.5% and 26.3% respectively. Conversely, the rate of participation in initial training, which is only marginal, showed little change. On an upward path owing to a sharp increase in the informal training budget, training-related expenditure accounted for 1.84 % of overall staff costs.

JEL codes: J20, J22, J24, J31, J63, J71, M53, M51

Key words: agency worker, blue collar worker, employment, employment contract, firing, full time, gender gap, gender discrimination, hiring, part time, social balance sheet, temporary worker, training, turnover, vocational training, wage, wage gap, women

Abstracts from the Working Papers series

243. The fragility of two monetary regimes: The European Monetary System and the Eurozone, by P. De Grauwe, Y. Ji, October 2013

The authors analyse the similarities and the differences in the fragility of the European Monetary System (EMS) and the Eurozone. They test the hypothesis that in the EMS the fragility arose from the absence of a credible lender of last resort in the foreign exchange markets while in the Eurozone it was the absence of a lender of last resort in the long-term government bond markets that caused the fragility. They conclude that in the EMS the national central banks were weak and fragile, and the national governments were insulated from this weakness by the fact that they kept their own national currencies. In the Eurozone the roles were reversed. The national central banks that became part of the Eurosystem were strengthened.

244. Funding liquidity, market liquidity and TED spread: A two-regime model, by K. Boudt, E. C.S. Paulus, D. W.R. Rosenthal, November 2013

The authors investigate the effect of market liquidity on equity-collateralized funding accounting for endogeneity. Theory suggests market liquidity can affect funding liquidity in stabilising and destabilising manners. Using the average fee on stock loans as a proxy for equity-collateralised funding liquidity, they confirm the existence of these two regimes over the period of July 2006 – May 2011. Furthermore, they show that we can separate the two regimes using the yield spread of Eurodollars over T-bills (TED spread) and that a regime switch seems to occur near a TED spread of 48 basis points.

245. Robustifying optimal monetary policy using simple rules as cross-checks, by P. Ilbas, Ø. Røisland, T. Sveen, November 2013

There are two main approaches to modelling monetary policy; simple instrument rules and optimal policy. The authors propose an alternative that combines the two by extending the loss function with a term penalising deviations from a simple rule. They analyse the properties of the modified loss function by considering three different models for the US economy. The choice of the weight on the simple rule determines the trade-off between optimality and robustness. They show that by placing some weight on a simple Taylor-type rule in the loss function, one can prevent disastrous outcomes if the model is not a correct representation of the underlying economy.

246. Household and firm leverage, capital flows and monetary policy in a small open economy, by M. Pirovano, November 2013

The paper outlines a framework for analysing the interaction between financial frictions at the household and firm level, liability dollarization and optimal monetary policy in a small, open economy subject to productivity and capital inflow shocks. It is found that, first, for the shocks under review, the extent of co-movement of financial variables pertaining to entrepreneurs and homeowners crucially depends on the degree of exchange rate flexibility. Second, for a central bank not concerned with financial stability, reacting to inflation and output is considered optimal. Third, including financial stability in the central bank's objectives results in an optimal monetary policy rule reacting to exchange rate depreciation, but not to credit growth, even in the case of large capital inflow shocks. In fact, reacting to credit growth reinforces the initial shock, increasing financial imbalances.

Conventional signs

e.	NBB estimate
e.g.	for example
i.e.	id est
p.m.	pro memoria

List of abbreviations

Countries or regions

BE	Belgium
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LU	Luxembourg
MT	Malta
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
SK	Slovakia
FI	Finland
EA	Euro area
DK	Denmark
SE	Sweden
UK	United Kingdom
EU27	European Union, excluding Croatia
US	United States

Others

CLA	Collective labour agreement
CNC	Commission des normes comptables (Belgian Accounting Standards Commission)
CO_2	Carbon dioxide
CREG	Commission for Electricity and Gas Regulation

CVTS	European Continuing Vocational Training Survey
DGSEI	Directorate General for Statistics and Economic Information
DIMONA	Déclaration immédiate/Onmiddellijke aangifte (electronic declaration for notifying hirings and departures to social security authorities)
EC	European Commission
ECB	European Central Bank
EDF	Électricité de France
EDP	Excessive deficit procedure
EFSF	European Financial Stability Facility
EMU	European and Monetary Union
ESCB	European System of Central Banks
ESM	European Stability Mechanism
EU	European Union
FATCA	Foreign Account Tax Compliance Act
FPS	Federal Public Service
FTE	Full-time equivalent
FTI	Finally taxed income
FTT	Financial transaction tax
GDP	Gross domestic product
GECE	Group of Experts on Competitiveness and Employment
HCE	High Council for Employment (Conseil supérieur de l'emploi)
HBS	Household budget survey
HFMCE	Household final monetary consumption expenditure
HICP	Harmonised index of consumer prices
HP	Hodrick-Prescott
IMF	International Monetary Fund
INSEE	National Institute of Statistics and Economic Studies (France)
IRS	Internal Revenue Service
LPG	Liquefied petroleum gas
MIR	Monetary financial institution interest rates
MSCI	Morgan Stanley Capital International
NACE-BEL	Nomenclature of economic activities in the European Community, Belgian version
NAI	National Accounts Institute
NBB	National Bank of Belgium
NCPI	National consumer price index
NEO	National Employment Office
NO_x	Nitrogen oxides
NPI	Non-profit institution
NSSO	National Social Security Office
OECD	Organisation for Economic Cooperation and Development
OLO	Linear bonds
OOH	Owner-occupied housing

PC	Personal computer
PMI	Purchasing Managers' Index
SME	Small and medium-sized enterprise
SNCB	Belgian national railway company (Société nationale des chemins de fer belges)
UCI	Undertaking for collective investment
VAT	Value added tax
ZEW	Zentrum für Europäische Wirtschaftsforschung

National Bank of Belgium
Limited liability company
RLP Brussels – Company number: 0203.201.340
Registered office: boulevard de Berlaimont 14 – BE-1000 Brussels
www.nbb.be

Publisher

Jan Smets
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Cover and layout: NBB AG – Prepress & Image

Published in December 2013