SHORT TERM UPDATE

1-14

Quarterly Newsletter
March 2014

Headlines Belgian Economy

Special Topic in this issue
The use of firm-level data to assess national competitiveness

Federal Planning Bureau
Economic analyses and forecasts

.be

Quarterly Newsletter of the Federal Planning Bureau

Short Term Update (STU) is the quarterly newsletter of the Belgian Federal Planning Bureau. It contains the main conclusions from the publications of the FPB, as well as information on new publications, together with an analysis of the most recent economic indicators.

H E A D L I N E S   B E L G I A N   E C O N O M Y

The euro area economy moved out of recession in 2013Q2 and has recorded slightly positive growth ever since. On an annual basis, euro area GDP is expected to have dropped by 0.4% in 2013, but to grow by 1% in 2014 against the backdrop of an acceleration in global economic growth. This modest recovery remains surrounded by major uncertainties. Turmoil in financial markets could reignite the euro crisis. Moreover, the prospect of a normalisation of monetary policy is currently causing substantial capital outflows from emerging economies, which raises uncertainty about their growth prospects (and, thus, those of the global economy).

After several quarters of negative growth, the Belgian economy started to recover in 2013Q2 (qoq growth of 0.2%) owing to a pickup in exports. GDP growth accelerated to 0.3% per quarter on average in the second half of the year, against the background of a recovery of the European economy. However, due to an unfavourable starting point, annual growth remained limited to 0.2% last year. In 2014, both export growth and domestic demand should pick up, resulting in GDP growth of 1.4%.

Domestic employment decreased considerably in the first semester of 2013. The number of jobs started to increase again by mid-2013 and should continue to rise in the course of 2014 in the wake of the economic upturn. On an annual basis, employment should have decreased by well over 11 000 units in 2013 and is expected to grow by 13 000 units in 2014. The unemployment rate (broad administrative definition) should increase slightly from 12.4% to 12.6% in 2014, while the harmonised Eurostat unemployment rate (based on labour force surveys) should remain more or less stable at 8.4%.

Belgian inflation, as measured by the yoy growth rate of the national consumer price index, should cool from 2.8% in 2012 to 1.1% in 2013 and should continue to fall to 0.8% on average in 2014. This decline is mainly due to the slowdown in underlying inflation and a decrease in energy prices. Moreover, in 2014, the drop in energy prices should be reinforced by the reduction of the VAT rate on electricity from 21% to 6% as from April 2014.

STU 1-14 was finalised on 3 March 2014.

The Federal Planning Bureau (FPB) is a public agency under the authority of the Prime Minister and the Minister of Economy. The FPB has a legal status that gives it an autonomy and intellectual independence within the Belgian Federal public sector.

FPB activities are primarily focused on macroeconomic forecasting, analysing and assessing policies in the economic, social and environmental fields.

Contents

## The use of firm-level data to assess national competitiveness

The worldwide financial crisis of 2008 and the ensuing economic slowdown exposed substantial imbalances within the Eurozone. As a result, national competitiveness appeared high on the agenda of EU policy makers, e.g. the Europe 2020 Strategy. The definition of competitiveness is a subject of much debate, but productivity is generally acknowledged as an important indicator of the ability of countries to create value added. Productivity is often computed at a rather aggregated level (industries, regions or countries) under the assumption that industries are composed of fairly homogenous firms. Firm-level data, however, reveal dramatic and persistent differences in productivity between firms within the same industry. In this article, we argue that firm-level data give insight in intra-industry dynamics that is beyond the scope of analysis at a more aggregated level.

Technological efficiency

Productivity provides a measure of the efficiency in using available technology to convert inputs into valuable outputs. The productivity growth of a country is a weighted average of the productivity growth of its industries and the productivity growth of an industry, in itself a weighted average of the productivity growth of the firms that the industry is composed of. If the productivity of firms within the same industry differs, as data clearly bear out, industry-level productivity may change due to the reallocation of market shares, even without any change in the efficiency of firms. In a recent study, firm-level data were used to estimate the productivity of companies in ten manufacturing industries for seven EU countries (Belgium, Finland, France, Germany, Italy, Spain and the UK) over the period 2002-2009.[1] For each industry, a metafrontier was estimated, which shows the highest value added that can be generated for a given set of inputs (labour and capital). The distance of a firms' output from this frontier provides a measure of its technological efficiency (productivity). In most industries, the technology frontier is determined by Belgian firms. Firms from Finland, France and Germany are also highly efficient whereas Spanish firms clearly lag behind. The orange bars in Graph 1 show the average level, across the ten manufacturing industries, of technical efficiency in 2005. The average level of France is set at 1 and the levels of other countries are relative to the level of France. This permits comparison of the average efficiency level of manufacturing industries, esti-

mated using firm-level data, with the productivity level, based on industry-level data from the Groningen Growth and Development Centre (GGDC) Productivity database. The multi factor productivity (MFP) levels for 2005 take into account cross-country differences in purchasing power parity. The level of the US is set at 1 as the benchmark. The MFP levels for total manufacturing (excluding electrical machinery, post and communication) are shown with blue bars in Graph 1. By coincidence, the MFP level for France was 1 (i.e. equal to the US) in 2005.

Graph 1 -   Technological efficiency and multi factor productivity in manufacturing (2005)
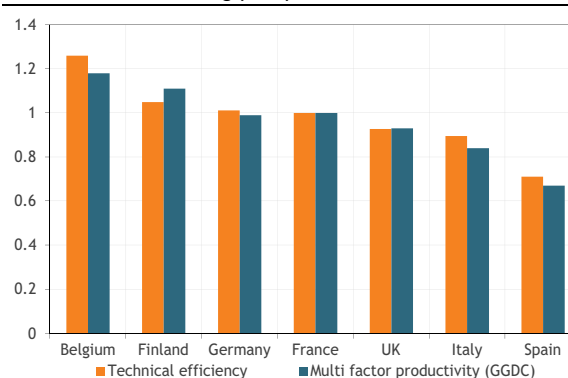
Note: Technological efficiency (productivity) is the average across ten manufacturing industries, estimated using firm-level data from the forthcoming paper by Verschelde et al. (2014); data on multifactor factor productivity for manufacturing industries is estimated using industry-level data from Inklaar, R. and M.P. Timmer (2013), Using Expenditure PPPs for Sectoral Output and Productivity Comparisons, in: World Bank (ed.), Measuring the Real Size of the World Economy: The Framework, Methodology, and Results of the International Comparison Program (ICP), 617-644. Average technological efficiency for France is set at 1, and for other countries, relative to France, for comparison with the MFP.

There are only minor differences between both measures. The relative MFP level of Belgium is somewhat lower and that of Finland somewhat higher than productivity estimated using firm-level data, though Belgium holds first place for both measures. Except for France and Germany, which switch places despite marginal differences, the ranking of the countries is the same for both efficiency measures.

Within-industry dynamics

Studies based on firm-level data show that there are substantial differences in performance (e.g., productivity) of firms in the same industries. These differences appear to be rather persistent. Changes in the performance of industries result from changes in the performance of firms but also from the reallocation of market shares between existing firms (incumbents) as well as from entry and exit. In the year that new firms start their activities, they often have a productivity level below the average of incumbents. It takes some time for starting firms to

---

1.   For further details on the estimation and a discussion of the results, see Verschelde, M., Dumont, M., Rayp, G. and B. Merlevede (2014), European competitiveness: A semiparametric stochastic metafrontier analysis at the firm level, forthcoming.

raise their efficiency, suggestive of learning effects. Graph 2 shows the distribution of technological efficiency (productivity) of Belgian firms over the period 2002-2009 for the ten manufacturing industries considered. The productivity level of firms is related to the industry average to account for differences in productivity across industries. The graph shows the distribution of the productivity of new firms in the year that they enter and of firms that exit, in the year before they exit. To assess the possible role of learning, incumbents are grouped by age. The graph shows the distribution for starting firms, i.e. firms that have not been active for more than 5 years (excluding the year of entry); young firms (active for more than 5 but not more than 10 years); and mature firms (active for more than 10 years). The more the bulk of the distribution is to the right, the higher the efficiency of the group relative to industry average efficiency. On average, mature firms are more efficient than the other groups of firms and firms that enter or exit are, on average, the least efficient. The distribution shifts to the right with firm age, indicating increasing efficiency of firms that comes with experience (and exit of less efficient start-ups). There are a small number of entrants, starters, and young firms among the most efficient firms.

Graph 2 - Distribution of technological efficiency in Belgium (2002-2009)
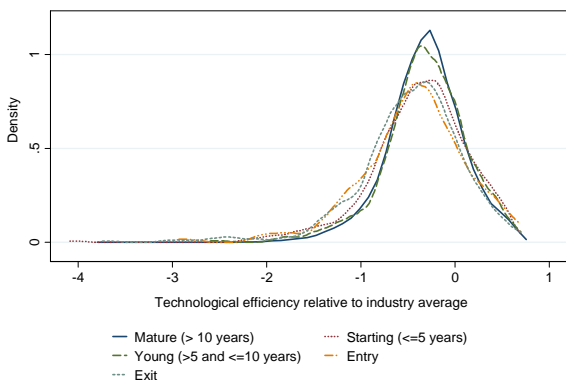
Note: The graph, from Verschelde et al. (2014), shows the distribution of technological efficiency (relative to the industry average) of three age groups of firms, new firms in the year of entry, and firms that exit (in the year before exit). The graph covers ten manufacturing industries over the period 2002-2009.

This small group contributes disproportionally to industry performance. The graph shows that the notion of a representative (average) firm is rather tenuous and that there is a need to consider the entire distribution of firm performance.

The analysis for seven EU countries indicates that firms seem to learn rather swiftly in Finland and a little more slowly in Belgium and Germany whereas in Italy and Spain, firms fail to catch up with existing firms, even within ten years after entry. The most robust finding is the positive contribution of efficiency growth of young firms to industry-level productivity growth.

Conclusion

The main advantage of firm-level data is that they provide insight into the dynamics within industries that is beyond the scope of more aggregate data. They reveal substantial and persistent differences in technological efficiency between firms in the same industry. Young firms need time to raise their technological efficiency but gradually contribute substantially to industry-level productivity growth. The performance of start-ups is highly heterogeneous. Only a small number of entrants are able to grow considerably whereas the rest either exit at an early stage or remain relatively small. Post-entry growth is probably more important than the relative number of entrants. This calls for a more in-depth investigation of factors that may hamper post-entry growth, such as imperfections in product and factor markets (e.g., credit constraints), obstacles to the transfer of knowledge and technology or established buyer and supplier networks that prevent start-ups gaining a strong market position.

Economic forecasts 2014

The euro area economy is improving...

The euro area economy moved out of recession in 2013Q2 and has recorded slightly positive growth ever since. On an annual basis, euro area GDP is expected to have dropped by 0.4% in 2013, but to grow by 1% in 2014 against the backdrop of an acceleration in global economic growth. The recovery is occurring in almost all euro countries, but growth differentials between the countries remain fairly large as a number of Member States are still facing high debt levels (both government and private sector), a credit crunch and high unemployment. Nevertheless, the budgetary policies of national governments should weigh less on economic activity in 2014 than in previous years, and producer and consumer confidence have increased, which is reflected in a favourable evolution of several indicators.

Graph 1 - Economic sentiment indicator: euro area (index, long-term average=100)
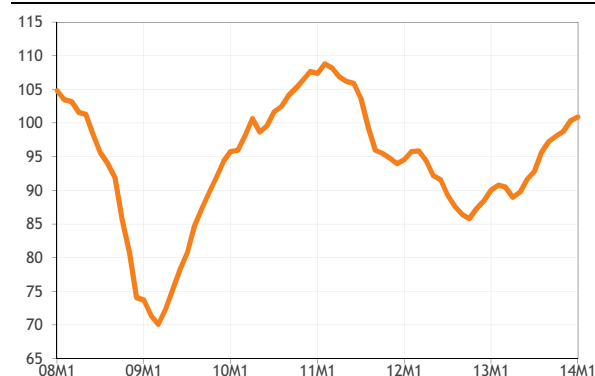

Source: European Commission

The scenario of a modest global recovery is consistent with recent outlooks from international institutions but is still considered fragile. Turmoil in financial markets could reignite the euro crisis. Such tensions could result from new concerns about the European banking sector or from a considerable increase in interest rates if expansionary monetary policies of advanced economies are reversed. The prospect of a normalisation of these monetary policies is currently at the origin of substantial capital outflows from emerging economies, which raises uncertainty about their growth prospects (and, thus, those of the global economy).

... as a result of which the Belgian economy continues to recover

After several quarters of negative growth, the Belgian economy started to recover in 2013Q2 (qoq growth of 0.2%) owing to a pick-up in exports. GDP growth accelerated to 0.3% per quarter on average in the second half of

the year, against the background of a European economic recovery. However, due to an unfavourable starting point, annual growth remained limited to 0.2% last year. In 2014, both export growth and domestic demand should pick up, resulting in GDP growth of 1.4%.

Graph 2 - Quarterly GDP growth (QoQ growth rates, corrected for seasonal and calendar effects)
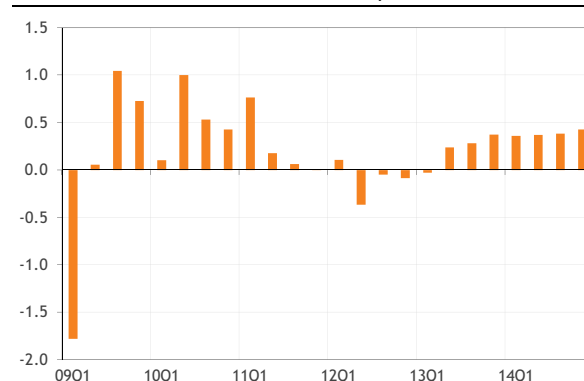
Source: INR/ICN, FPB

Graph 3 - Quarterly GDP growth (YoY growth rates, 4-quarter moving averages)
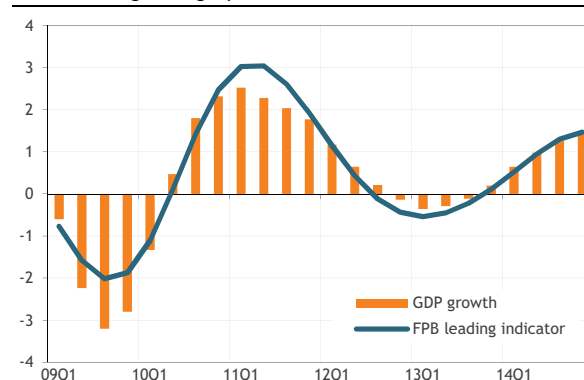
Source: INR/ICN, FPB

Over the past two years, Belgian export growth (1.8% and 1.9%, respectively) was restrained by negative economic growth in the euro area and the slowdown in the world economy. In 2014, export growth should accelerate to 3% in the wake of an acceleration in foreign markets. This year, the contribution of net exports to economic growth should amount to 0.2 %-points. Together with lower oil prices (-5.4% in euro), which are causing import prices to grow more slowly than export prices, this should reduce the Belgian current account balance deficit.

Private consumption dropped by 0.3% in 2012, despite an increase in households' real disposable income. The decrease in consumer confidence (a result of the deterioration in the labour market situation) led to an increase in households' precautionary savings. Owing to an improvement in consumer confidence, private consump-

tion should develop more in line with real disposable income in 2013 and 2014, resulting in a near stabilization of the savings rate. This year, purchasing power growth ought to accelerate to 1.5% as a result of a recovery in employment and substantially slower growth in personal income tax payments. The latter emanates from a number of fiscal measures and from a larger number of reimbursements (through assessments) in 2014. All in all, households' final consumption expenditure should increase by 1.3% in 2014. The increase in consumer confidence and in households' disposable income should also contribute to the timid recovery of housing investment. On an annual basis, residential investment is expected to grow by 0.8%, after a 3.9% drop in 2013.

Graph 4 - Private consumption, disposable income and savings rate
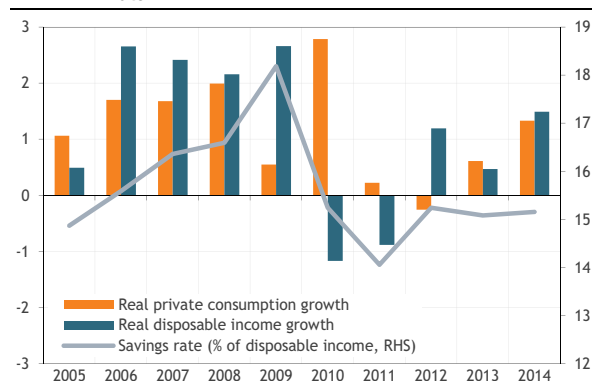
Source: INR/ICN, FPB

In 2013, business investment recovered to a certain extent, but not enough to compensate for the decrease in the course of 2012. The rise in business confidence (owing to improved demand prospects, among other factors) and the increasing industrial capacity utilisation rate, which currently approximates its historical average, increase the need for investment in expansion. Moreover, credit conditions for companies remain favourable. Business investment ought to increase by 2.5% in 2014, after a 0.5% drop in 2013.

Taking into account all known measures, the annual volume growth of public consumption should amount to 0.8% in 2014, after 0.4% last year. Growth in public investment is largely determined by local authorities' infrastructure projects. After the sharp rise in 2011-2012, public investment should have dropped by 5.5% in 2013 and should continue to fall by 6.4% in 2014.

Employment picks up, but the unemployment rate is still slightly on the rise

Domestic employment decreased considerably in the first semester of 2013. The number of jobs started to increase again by mid-2013 and should continue to rise in the course of 2014 in the wake of the economic upturn.

On an annual basis, employment should have decreased by well over 11 000 units in 2013 and is expected to grow by 13 000 units in 2014.

Graph 5 - Evolution of employement and unemployment (changes in thousands)
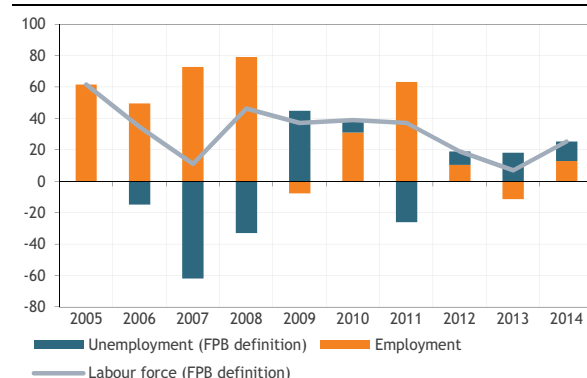
Source: INR/ICN, RVA/ONEM, FPB

The employment increase is, however, insufficient to keep up with the further increase in the labour force. As a result, the unemployment rate (broad administrative definition) should increase slightly from 12.4% to 12.6% in 2014, while the harmonised Eurostat unemployment rate (based on labour force surveys) should remain more or less stable at 8.4%.

Inflation cools to less than 1%

Belgian inflation, as measured by the yoy growth rate of the national consumer price index, decreased from 2.8% in 2012 to 1.1% in 2013 and should continue to fall to 0.8% on average in 2014. This decline is mainly due to the slowdown in underlying inflation and a decrease in energy prices. The drop in energy prices results both from price quotations on the international markets and from increased competition in the gas and electricity market. Moreover, in 2014, this drop should be reinforced by the reduction of the VAT rate on electricity from 21% to 6% as from April 2014.

The increase in the health index, which is not affected by price developments in petrol and diesel, is slowing down somewhat less markedly, from 2.6% in 2012 to 1.2% last year and to 0.9% in 2014. The current pivotal index of public wages and social benefits (101.02) should be exceeded in December 2014.

"Economische vooruitzichten 2014 – Prévisions économiques 2014", INR/ICN, February 2014.

Summary of Economic Forecasts

Economic forecasts for Belgium by the Federal Planning Bureau

Changes in volume (unless otherwise specified) (cut-off date of forecasts: 12 February 2014)	2011	2012	2013	2014
Private consumption	0.2	-0.3	0.6	1.3
Public consumption	0.7	1.4	0.4	0.8
Gross fixed capital formation	4.1	-2.0	-1.9	1.3
Final national demand	2.0	-0.6	-0.4	1.2
Exports of goods and services	6.4	1.8	1.9	3.0
Imports of goods and services	6.8	1.3	1.2	2.8
Net-exports (contribution to growth)	-0.2	0.4	0.6	0.3
Gross domestic product	1.8	-0.1	0.2	1.4
p.m. Gross domestic product - in current prices (bn euro)	369.26	375.88	381.72	392.23
National consumer price index	3.5	2.8	1.1	0.8
Consumer prices: health index	3.1	2.6	1.2	0.9
Real disposable income households	-0.9	1.2	0.5	1.5
Household savings ratio (as % of disposable income)	14.1	15.2	15.1	15.2
Domestic employment (change in '000, yearly average)	63.4	9.4	-11.4	13.0
Unemployment (Eurostat standardised rate, yearly average)	7.2	7.6	8.4	8.4
Current account balance (BoP definition, as % of GDP)	-1.1	-2.0	-2.4	-1.7
Short term interbank interest rate (3 m.)	1.4	0.6	0.2	0.3
Long term interest rate (10 y.)	4.2	3.0	2.4	2.6

Economic forecasts for Belgium by the different institutions

	GDP growth		Inflation		Government balance		Date of update
	2014	2015	2014	2015	2014	2015	
Federal Planning Bureau	1.4	.	0.8	.	.	.	02/14
INR/ICN	1.4	.	0.8	.	.	.	02/14
National Bank of Belgium	1.1	.	1.3	.	-2.8	.	12/13
European Commission	1.4	1.7	0.9	1.4	-2.6	-2.7	02/14
OECD	1.1	1.5	1.1	1.3	-2.4	-1.1	11/13
IMF	1.0	1.3	1.2	1.2	-2.5	-1.5	10/13
ING	1.3	1.6	1.3	2.0	-2.4	-1.6	02/14
BNP Paribas Fortis	1.4	1.1	1.0	1.4	-2.4	-2.2	02/14
Belfius	1.2	1.5	1.1	1.3	.	.	02/14
KBC	1.2	1.4	0.9	1.5	.	.	02/14
Deutsche Bank	1.2	1.6	1.3	1.5	-2.7	-2.6	02/14
Oxford Economics	1.1	1.4	1.0	1.7	-2.9	-2.5	02/14
IRES	1.4	.	0.9	.	-2.5	.	01/14
Belgian Prime News	1.1	.	1.3	.	-2.5	.	01/14
Consensus Economics	1.0	1.4	1.3	1.7	.	.	02/14
Consensus The Economist	1.2	.	1.3	.	.	.	02/14
Consensus Wirtschaftsinstitute	1.1	.	1.7	.	-3.1	.	10/13
Averages							
All institutions	1.2	1.5	1.1	1.5	-2.6	-2.0	
International public institutions	1.2	1.5	1.1	1.3	-2.5	-1.8	
Credit institutions	1.2	1.4	1.2	1.5	-2.5	-2.1	

The European Semester

In the European Semester, the European Council provides policy advice on macroeconomic and structural policy matters. In the following pages, the different components of the European Semester are explained briefly, with an emphasis on structural policy matters. The most important indicators used in this process are presented for Belgium and its main trading partners.

At the end of 2011, the European Union defined the different components of the "European Semester" as follows: the broad economic policy guidelines, the employment guidelines, the stability and convergence programmes (SCP), the national reform programmes (NRP) and the monitoring of macroeconomic imbalances (MIP). These components all aim to ensure closer coordination of economic policies and the sustained convergence of the economic performance of the EU Member States. The European Council assesses these programmes and provides policy advice on macrofiscal and macrostructural issues. The advice takes the form of country-specific recommendations.

The Europe 2020 strategy started at the beginning of the decade and will continue to 2020, so that in 2015 the strategy will be halfway through. The European Commission is undertaking a mid-term review, with a possible change in emphasis that could be decided by the end of this year.

In April of each year, each Member State must submit two programmes: an NRP and an SCP. The first one is on macrostructural issues and the second on macrofiscal issues. These programmes are integrated to the extent that they use the same macroeconomic projections and are consistent with respect to the measures that are taken into account.

The Belgian NRP contains an overview of the main macrostructural measures that the governments in Belgium have taken over a 12-month period (from April to March) in the areas that are covered by the Europe 2020 strategy (employment, R&D and innovation, climate and energy, education and social inclusion). This overview includes progress towards the targets set by the Belgian governments. In addition, it provides an overview of the main measures taken in response to the country-specific recommendations (CSR) that Belgium received in the previous year for all the areas, except the budget. The areas covered require a strong collaboration of the federal government with the governments of the Regions. The advice of social partners and civil society is also taken into account.

Apart from a macroeconomic scenario and a list of budgetary measures, the Belgian SCP contains a medium-term budgetary projection that assumes unchanged policies, a projection of public finances that is consistent with the medium-term objective (MTO) set by the European Council and the measures to obtain this objective. Moreover, the budgetary strategy contains objectives for the different entities (the federal level, the Regions and the Communities).

The macroeconomic imbalances procedure aims to identify, prevent and, if necessary, correct macroeconomic imbalances. This is a relatively new procedure and follows from the large imbalances observed over past years in many Member States. Further on in this article, more information about the procedure is given, and its application in 2013 is described. The indicators included in the scoreboard on which the procedure is based are presented for Belgium and its three neighbouring countries.

A full cycle of the European Semester took place over the past year; so at the beginning of this year, a new cycle started. The results for Belgium for the 2013 cycle are described below. As mentioned, one of the key outcomes of the cycle is the decision by the European Council on the CSRs. The seven CSRs that Belgium received in 2013 are summarised in Table 1.

Table 1 - Main points of the country-specific recommendations for Belgium, July 2013

1	Budget	Adopt measures to correct the excessive deficit by 2013. Adopt ambitious structural reforms. Adopt measures to reach the medium-term objective (MTO) by 2016. Present growth-friendly structural measures. Adopt coordination arrangements with all levels.
2	Sustainability of public finances	Adopt measures to close the gap between the effective and the statutory retirement age. Support active aging. Align the retirement age or pension benefits to changes in life expectancy. Improve cost-efficiency on long-term care.
3	Competitiveness	Reform the wage setting system, including the wage indexation system.
4	Competition	Improve competition in the services sector: retail, professional services, mobile broadband, energy sector, postal sector. Strengthen the independence of regulators (energy, telecom, transport).
5	Tax system	Shift taxes from labour to less growth-distortive tax bases (notably environmental taxes). Simplify the tax system. Increase VAT efficiency. Improve tax compliance.
6	Labour market	Ensure effective enforcement of job-searching. Take measures to increase interregional labour mobility. Simplify and reinforce coherence in labour market policies for older people and the young and people with a migrant background.
7	Climate policies	Agree a division of efforts between the federal and the regional authorities for non-ETS, in particular from transport and buildings.

In the following pages, more information is given on the Europe 2020 strategy and the macroeconomic imbalances procedure, respectively.

Pursuing the Europe 2020 Strategy in Belgium

The European strategy for "smart, sustainable and inclusive growth" sets out objectives in the areas of employment, research & development and innovation, education, climate and energy and social inclusion. For each of these five areas, targets for 2020 are set for pre-defined indicators for the EU as a whole and for each Member State. In the next few pages, progress towards these targets in Belgium is analysed.

Table 2 gives the EU and Belgian targets for each of the indicators in the five areas. When the Belgian governments set their objectives, they were presented in the NRP as "ambitious" at the time. Indeed, the projected improvements were often in contrast with the observed trend over previous years. Moreover, the economic situation is not making matters easier: the evolution of many indicators is at least partly dependent on the evolution of the economy, leading very often to a stabilisation or deterioration of the situation. With unchanged targets for 2020, the level of ambition has therefore increased.

To judge the observed evolution, one can compare the recent evolution with the trajectory needed to obtain the target. Alternatively, one can compare the observed evolution with the trend over a longer period. It is also possible to compare the observed evolution in Belgium with the observed evolution in other European countries that are also subject to a similar economic environment.

In the next few pages, all the headline indicators used in the Europe 2020 strategy are presented for Belgium and the EU27 with a comparison to their targets. In many cases, only a few values for the indicators have been observed since the targets were set. Nevertheless, some general conclusions can already be given.

For some indicators, the observed evolution is "on track" with regard to the targets or even surpassing the trajectory. This is the case for R&D spending, greenhouse gas emissions, energy consumption from renewable sources and the indicator that measures tertiary education.

For some other indicators, the observed evolution either remains within the trend that was observed over past years or its improvement is limited and therefore falls short of the trajectory towards to the targets. This is the case for the employment rate, early-school leavers and the indicator on energy consumption.

Finally, some indicators show a deteriorating situation, even though an improvement was targeted. This is observed for the indicator on poverty (the share of the population facing a risk of poverty or social inclusion). It comes as no surprise that this indicator is particularly sensitive to the economic cycle.

Table 2 -   Targets to be reached by 2020 in the Europe 2020 strategy

		EU-target	Belgian target
Employment	Share of population aged 20-64 that is employed	75%	73.2%
R&D and innovation	Share of GDP invested in R&D	3%	2.82% (3%[a])
Climate and energy	Non-ETS emissions, with 2005 as the base year		-15%
	Share of gross final energy consumption from renewable sources	20%	13%
	Maximum level of primary energy consumption (Mtoe)[b]	1474	43.6
Education	Share of early school leavers	10%	9.5%
	Share of population aged 30-34 with tertiary level education	40%	47%
Social inclusion	Share of population at risk of poverty and exclusion	18.7%	15.8%

a. Including fiscal incentives
b. This target is indicative.

Table 3 shows the recent evolution in Belgium of the Europe 2020 indicators and its comparison to the targets.

Table 3 - Europe 2020 indicators for Belgium

	Belgian target	Observed figure in 2011	Observed figure in 2012
Share of population aged 20-64 that is employed	73.2%	67.3%	67.2%
Share of GDP that is invested in R&D	2.82% (3%[a])	2.21%	2.24%
Non-ETS emissions, with 2005 as the base year	-15%	-9.4%	-7.9%
Share of gross final energy consumption from renewable sources	13%	5.2%	6.8%
Maximum level of primary energy consumption (Mtoe)[b]	43.6	51.6	48.7
Share of early school leavers	9.5%	12.3%	12%
Share of population aged 30-34 with tertiary level education	47%	42.6%	43.9%
Share of population at risk of poverty and exclusion	15.8%	21%	21.6%

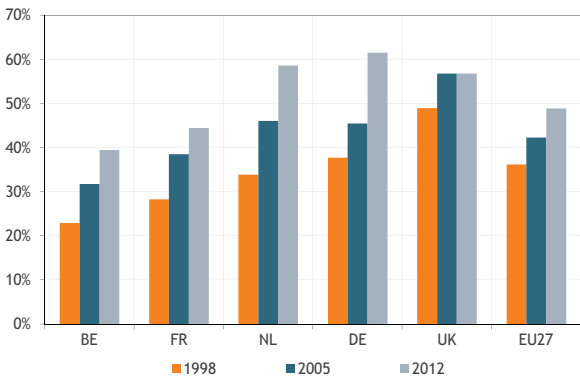a. Including fiscal incentives
b. This target is indicative.
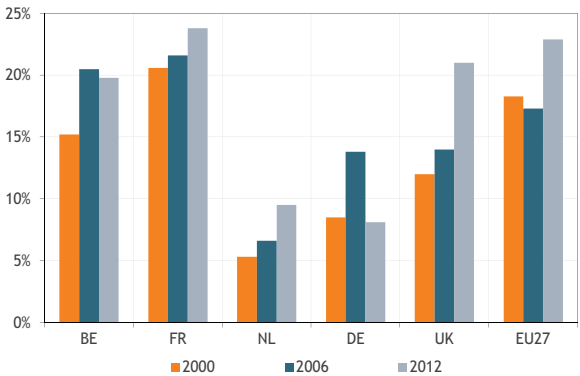
Employment

Graph 1 - Total employment rate*
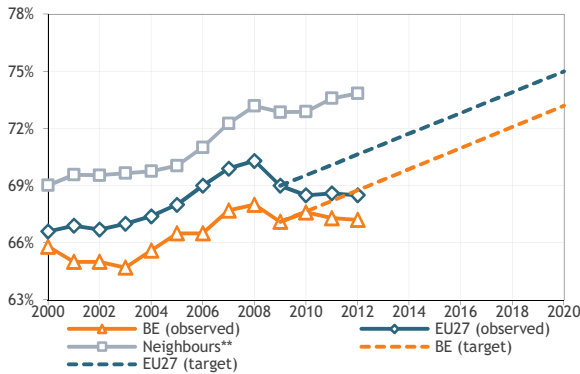
Source: Eurostat (Labour Force Survey)
* The number of persons aged 20 to 64 in employment, divided by the total population of the same age group.
** Average of Germany, France and the Netherlands, weighted by GDP shares.
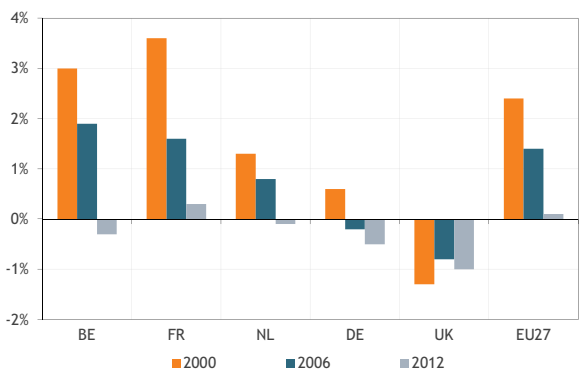
Graph 2 - Employment rate of older workers*

Source: Eurostat (Labour Force Survey)
* The number of persons aged 55 to 64 in employment, divided by the total population of the same age group.

Graph 3 - Youth unemployment rate (-25 years)

Source: (Labour Force Survey)

Graph 4 - Unemployment rate, gender gap females-males (in %-points)

Source: Eurostat (Labour Force Survey)

In spite of the clear increase in the employment rate over the last two decades, the Belgian labour market indicators remain far from the European targets. After rising sharply during the second half of the nineties, the Belgian employment rate remained stable at around 65% until 2004. In 2008, it peaked at 68%, only to slide back to 67.1% in 2009 as a result of the recession. Although Belgium's employment rate rose more than the EU27 rate between 1997 and 2012, it still stood 1.3 %-points below the European average in 2012. Belgium's target for the EU 2020 strategy is 73.2%.

While the Belgian male employment rate has remained stable at around 74% over the last decade, but around 73% since 2009, the Belgian female employment rate has been increasing continuously since the beginning of the nineties and is catching up with the European average. In 2012, it amounted to 61.7%, which is still 0.7 %-points below the European average.

The Belgian employment rate for older workers has been rising continuously since the mid-nineties and converging gradually to the EU27 average. However, at 39.5% in 2012, as against 48.9% in the EU27, it is still one of the lowest in Europe.

At the beginning of the last decade, youth unemployment increased in many European countries. This increase can be explained by weak economic growth. In Belgium, this factor countered efforts to improve young peoples' inclusion, notably through the measures of the Generation Pact - measures taken to promote youth employment and to retain more older workers in employment (new HRM's practices, incentives for training, new approach to restructuring of companies). Although the Belgian youth unemployment rate fell between 2004 and 2008 (to 18%), it went up again to 22.4% in 2010 (as in most European countries). At 19.8% in 2012, it is 3.0 %-points lower than the EU27 average.

As far as the gap between the male and female unemployment rates is concerned, a downward trend can be noted across Europe. The gender-linked difference in Belgian unemployment rates decreased clearly from the end of the nineties. In 2004, it went up again and stabilised at about 1.9%. It decreased to 1.1% in 2008 and even became negative (-0.3%) in 2012, while it reached 0.1% for the EU27.
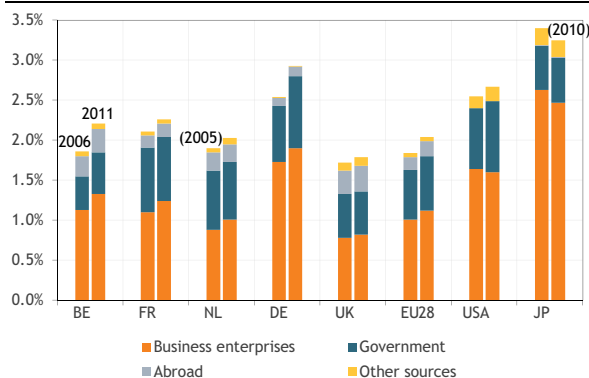
Innovation

Graph 5 - Gross domestic expenditure on R&D* (in % of GDP)
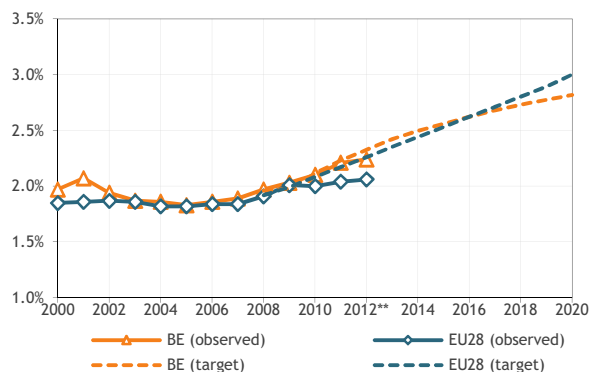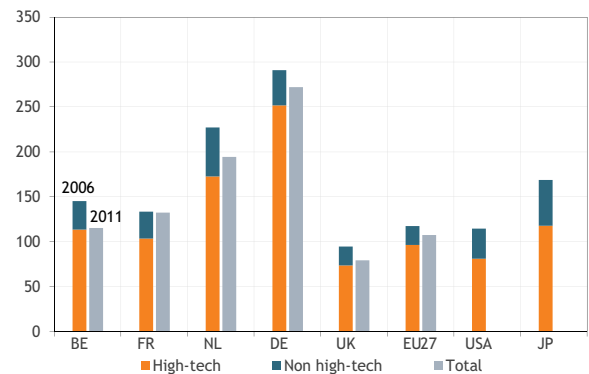

Source: Eurostat (Europe 2020 Indicators)
* This usual measure of R&D expentiture do not include the cost of fiscal incentives for R&D investments.
** Provisional figures

Graph 6 - R&D expenditure by source of funds (in % of GDP)


Source: Eurostat (Research and Development)
* No source of funds available for 2012.

Graph 7 - Patent applications at the EPO* (per million inhabitants)

Source: Eurostat (Patent Statistics)
* Data on patent applications tot the EPO are made available as final up to 2098; 2011 data are estimated. No data on high-tech and non-high tech patents available in 2011.

Graph 8 - Venture capital investment (in % of GDP)
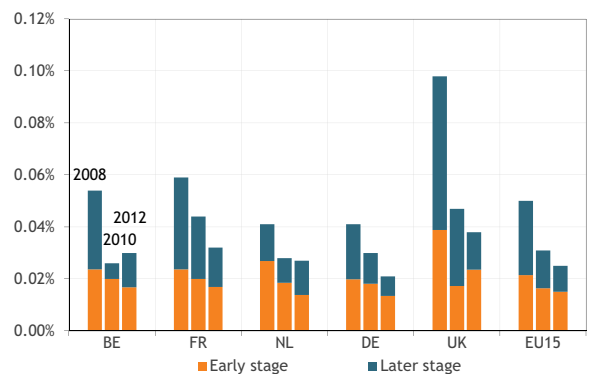
Source: Eurostat (Venture capital investment statistics))

Innovation, as a major source of productivity growth, plays an important role in economic growth. It also helps to address social challenges such as health problems and environmental degradation. Inside the Europe 2020 framework, the quantitative objective assigned to the EU is an R&D intensity of at least 3% at the 2020 horizon. Each Member State has to announce an objective compatible with the European Union target. Belgium set the objective of raising R&D expenditure to 3% of GDP in 2020, including the budgetary costs of federal tax measures in favour of R&D staff. The budgetary cost is estimated at 0.18% of GDP in 2020, which means an objective of 2.82% of GDP for R&D expenditure (Graph 5). A new Europe 2020 headline indicator on high-growth innovative enterprises will soon complement the R&D intensity indicator.

In 2011, Belgian R&D intensity amounted to 2.21% of GDP, which is on the target projection and above the EU28 average (2.04% of GDP).The provisional data for Belgium in 2012 (2.24%) is, however, slightly under the target projection. The performance of Belgium is also above those of the United Kingdom and the Netherlands. Belgium has experienced a continuous increase in its R&D intensity since 2005.

After 2 years of stagnation due to the crisis, R&D financing by Belgian firms increased in 2011 to reach 1.33% of GDP. This intensity is higher than the European average. R&D intensity financed by the public authorities reached 0.52% of GDP, which is significantly below the European average. Finally, funds from abroad constitute an important source of financing of R&D activities in Belgium, as illustrated in Graph 6.

The number of patents resulting from innovative and creative activities is an indicator of the output of the innovation process (Graph 7). Since 2007, the number of patent applications to the European Patent Office from Belgium has decreased at a faster pace than the European average. With 116 patent applications per million inhabitants in 2011, Belgium still remained above the European average (107) but below France (132), Germany (272) and the Netherlands (194). A similar performance is observed for high-tech patents.

The availability of venture capital is crucial for the creation and development of innovative firms. After a fall in venture capital investment due to the crisis, an increase was observed in Belgium in 2011 followed by a stabilisation in 2012 (0.03% of GDP). In 2012, the performance of Belgium was slightly above the EU average for early and later stages, as illustrated in Graph 8.
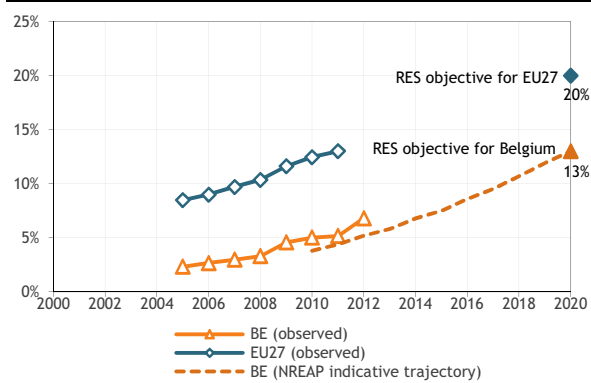
Climate and energy

Graph 9 - Greenhouse gas emissions (GHG) (in Mt)
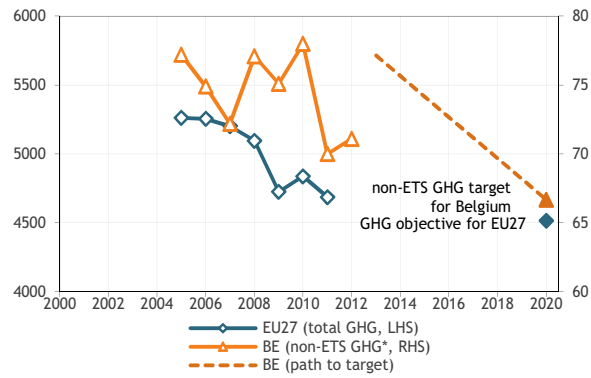
Source: Eurostat (Europe 2020 indicators) and the Belgian Regions (GHG inventories)
* ETS = Emissions Trading Scheme

Graph 10 - Share of renewables (RES) in gross final energy consumption

Source: - Eurostat: observed trajectories (BE: preliminary)
- National renewable energy action plan of Belgium (NREAP): indicative trajectory

Graph 11 - Primary energy consumption (in Mtoe)

Source: Eurostat (Energy statistics), Belgium's NRP 2011, Energy Efficiency Directive (2012/27/EU) and EC (DG Energy, PRIMES baseline 2007)

In order to achieve the EU's target of a 20% reduction in greenhouse gas (GHG) emissions by 2020 compared to 1990, the Climate-Energy Legislative Package includes two main elements: the revised EU Emissions Trading System (ETS) Directive and a decision setting a binding GHG emission target for each Member State in sectors not covered by the EU ETS. For ETS sectors, there is no national target but there is a cap on EU GHG emissions. For non-ETS sectors, Belgium's target is a 15% reduction in GHG emissions by 2020 compared to 2005. Total GHG emissions in the EU were below the 1990 level by 17% in 2011 whereas Belgium's GHG emissions in the non-ETS sectors were 8% below the 2005 level in 2012. In Graph 9, the dotted line shows the path towards the reduction target.
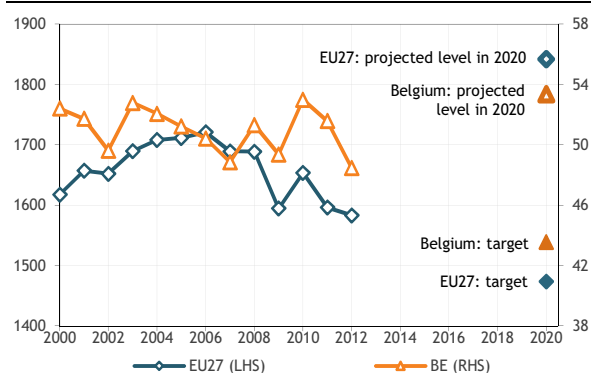
Directive 2009/28/EC on renewable energy sets targets for each Member State such that the EU will reach a share of gross final energy consumption from renewable energy sources of 20% by 2020 and a share from renewable energy of 10% in the transport sector specifically. The overall target for the share of energy from renewable energy sources for Belgium is 13%. The share of gross final energy consumption from renewable energy sources increased steadily: from 8.5% to 13.0% in the EU over the period 2005-2011, and from 2.3% to 6.8% in Belgium over the period 2005-2012. The recent development of renewables has been faster than indicated in Belgium's national renewable energy action plan, which provides an indicative path towards the target (shown by a dotted line in Graph 10).

Reducing energy consumption is another main goal of the European Union. In this respect, the EU agreed on the target of saving 20% of its primary energy consumption compared to projections for 2020. For Belgium, the objective is 18%, as indicated in the National Reform Programme of 2011. The reference projection referred to in the EU energy efficiency objective is the 2007 baseline from the energy model PRIMES. Graph 11 shows the progress towards the objectives for 2020. After the increase recorded in 2010, primary energy consumption dropped in Belgium and in the EU in 2011-2012. In 2012, the EU's primary energy consumption was 14% below the projected level in 2020, whereas Belgium was halfway to its energy efficiency target.

Education

Graph 12 - Tertiary educational attainment*
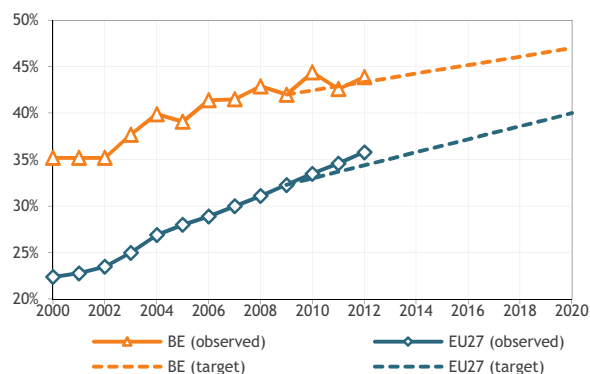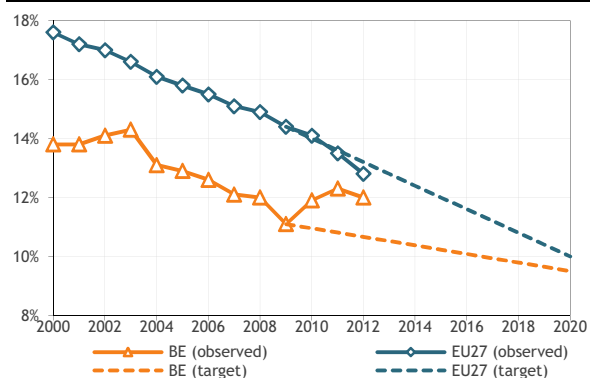

Source: Eurostat (Europe 2020 indicators)
* Share of the population aged 30-34 years who have successfully completed tertiary-level education (ISCED 1997: level 5-6)

Graph 13 - Early leavers from education and training*

Source: Eurostat (Europe 2020 indicators)
* Share of the respondents aged 18-24 who attained a low level of education or training, and who have declared that they have not received any education or training in the four weeks preceding the survey (ISCED 1997: level 0-2 or 3c-short)

Graph 14 - Graduates in science and technology*
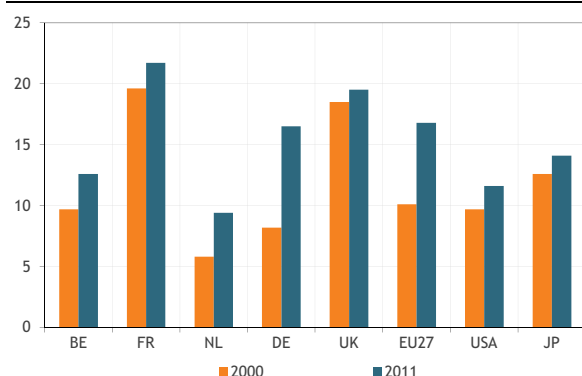
Source: Eurostat (Education statistics)
* Number of persons per 1 000 of population aged 20-29 who graduated in science and technology at post-secondary level during the given year (ISCED 1997: level 5 and above)

Human capital is generally considered to be an important determinant of innovation, productivity, economic growth and well-being. Investing in education is essential in view of the rising demand for high-skilled workers, e.g. due to globalisation and technological change. Matching the rising demand with an increase in the relative supply of high-skilled workers permits opportunities and challenges to be addressed, employability to be improved, and avoidance of the surge in wage inequality witnessed in countries where the number of university graduates has fallen short of the number required by the labour market.

Education takes a prominent position in the Europe 2020 strategy. The European Commission recommends increasing the proportion of young people with a tertiary degree from less than a third to 40% and cutting the school dropout rate from the current 15% to 10%. The targets concern the EU as a whole and Member States have been asked to set their own targets in line with past experience and the overall EU targets.

The share of the population aged between 30 and 34 that has completed tertiary or equivalent education has increased considerably in Belgium since 2000, reaching 43.9% in 2012, i.e. above the EU target for 2020 and well above the EU27 average of 35.8% (see Graph 12). In 2012, Belgium ranked 8th out of all EU Member States. For 2020, the Belgian government has set its target at 47%.

The dropout rate, i.e. the share of the population aged between 18 and 24 years leaving school without having finished secondary education, was 12.0% in Belgium in 2012 (see Graph 13). Though below the EU27 average of 12.8%, Belgium only held 20th position in 2012; the rate is, moreover, above the 11.1% low in 2009. The 2020 target for Belgium has been set at 9.5%.

Because of their important role in R&D and innovation, graduates in science and engineering are of great interest. The availability of qualified researchers is often cited as an important driver for companies in the location of their R&D facilities. Failing to educate a sufficient number of researchers could seriously hamper ambitions to reach the R&D target. The number of graduates in mathematics, science and technology per 1 000 inhabitants aged between 20 and 29 increased in Belgium from 9.7 in 2000 to 12.6 in 2011 (Graph 14). However, this number is still substantially below the EU27 average of 16.8 and below the number in France, Germany, and the UK.

Poverty and exclusion

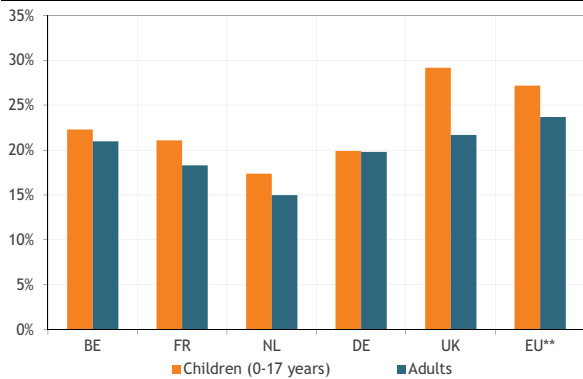**Graph 15 - Share of the population at risk of poverty and exclusion***
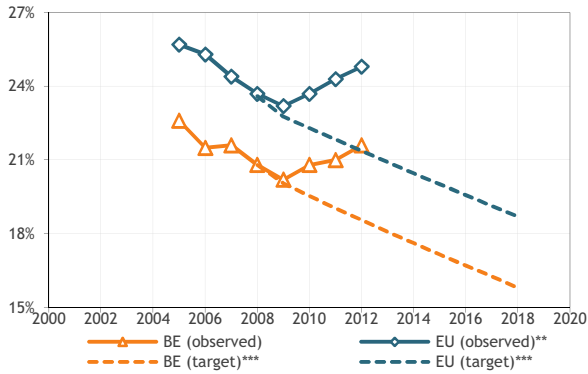
Source: Eurostat (Europe 2020 indicators), Statistics Belgium
* The evolution of the population at risk of poverty or social exclusion (persons suffering from severe material deprivation, living in a very low work intensity household or having an equivalent disposable income below the poverty threshold) is monitored by the Statistics on Income and Living Conditions (SILC), the EU reference source on the matter. The Higher Council of Statistics of Belgium is currently examining future methodological improvements to the Belgian SILC-instrument.
** 2005-2009: EU27; 2010-2012: EU28; 2012: estimate.
***For the period 2012-2018, the % is calculated using the population estimates of the Eurostat Europop 2010 convergence scenario

Graph 16 - Children and adults at risk of poverty or social exclusion, average over 2005-2012 (average by country)*

Source: Eurostat (Europe 2020 indicators), Statistics Belgium
* ** ***) See Graph 15.

Graph 17 - Children and adults at risk of poverty or social exclusion (time series)*

Sources: Eurostat (Europe 2020 indicators), Statistics Belgium
* ** ***) See Graph 15.

The Europe 2020 strategy seeks to reduce the EU population facing a risk of poverty or social exclusion by at least 20 million between 2008 and 2018. Like other Member States, Belgium translated this objective into a national target: it aims for a reduction of 0.38 million in the same period. The share of the targeted population in the EU dropped from 25.7% to 23.2% between 2005 and 2009 and increased to an estimated 24.8% in 2012 (Graph 15). The share of the Belgian targeted population declined between 2005 and 2009, from 22.6% to 20.2% and increased to 21.6% in 2012.

It therefore appears that the Belgian and EU developments are running parallel, but that the share of the targeted population in Belgium is situated at a lower level than in the EU. Also, since 2010, the evolution in Belgium and in the EU has diverged from the hypothetical path to the agreed targets.
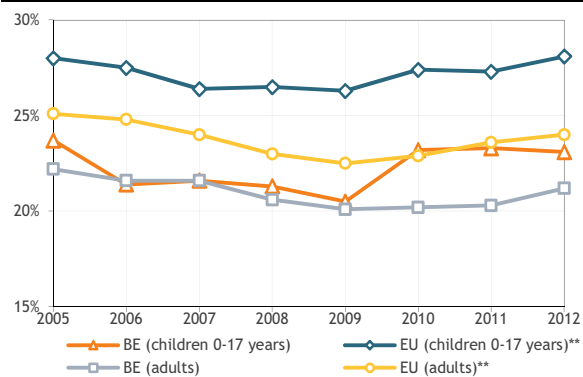
Whether a person is facing a risk of poverty or social exclusion is determined at the household level. In the EU in the period 2005-2012, the share of children (0-17 year) at risk of poverty or social exclusion, i.e. children living in that situation compared to the total number of children, was higher than that of adults on average, respectively 27.2% and 23.7%. This was also the case in Belgium and some neighbouring countries, where this difference was more (UK) or less (Germany) pronounced (Graph 16). Demographic evolutions and whether the household has access to a sufficient income are factors influencing these shares. Globally in the EU, single parent households and large households with dependent children are particularly vulnerable to the problems associated with poverty or social exclusion.

In the EU, the share of children at risk of poverty or social exclusion between 2005 and 2012 was always higher than that of adults (Graph 17). The shares of children and of adults in Belgium from 2005 till 2009 were situated at approximately the same level and during this period they decreased, as in the EU. Since 2010, however, the share of children has risen in Belgium from 20.5% till round 23.2%. This is a more marked increase than the growth in the share of adults at risk of poverty or social exclusion, in Belgium or in the EU, and is an evolution that will have to be analysed further.

The 2013 Belgian National Plan to combat child poverty (announced in the Belgian National Reform Programme) focusses, inter alia, on children's chances of growing up in families with access to sufficient income and quality services, as stressed by the EC recommendation of 2013 for all Member States on the importance of investing in children and breaking the transmission of disadvantages across a person's life-span.

The procedure on the prevention and correction of macroeconomic imbalances

The Macroeconomic Imbalances Procedure (MIP), based on Article 121.6 of the Treaty, aims to identify, prevent, and correct unsustainable macro-economic developments. The first step of the MIP is that the Commission releases the Alert Mechanism Report (AMR), the economic reading of the key indicators scoreboard. In this report, the Commission establishes the list of countries that may be affected by or may be at risk of being affected by imbalances and for which an in-depth analysis is needed. At the end of the in-depth analysis, the Commission concludes on the nature of the detected imbalances, classifying them on a scale from benign to harmful. If the imbalances are considered harmful, the Commission informs the Council. The Council may then, on the recommendation of the Commission, launch the second step of the procedure and recommend that the country take corrective action. The Commission monitors the implementation of the corrective action plan. If a country fails to respond correctly twice, the Council imposes an interest-bearing deposit and an annual fine.

On 28 November 2012, the Commission released its 2013 AMR. In this, 14 Member States ((Belgium, Bulgaria, Cyprus, Denmark, Finland, France, Italy, Hungary, Spain, Slovenia, Sweden, the United Kingdom, the Netherlands and Malta) were selected for an in-depth analysis. Like the 2012 in-depth review, the 2013 in-depth review concluded that Belgium was experiencing macroeconomic imbalances – in particular involving competitiveness and indebtedness, especially concerning the implications for the real economy of the high government debt.

On 13 November 2013, the Commission released its 2014 AMR, in which 16 Member States were selected for an in-depth analysis. Moreover, the Commission identified different in-depth analyses to be conducted according to the nature of the challenges faced by the selected Member State and the potential risks:

- For Spain and Slovenia, the IDRs will assess whether the excessive imbalances are persisting or unwinding, along with the contribution of the structural policies implemented by these Member States to overcome these imbalances;

- For France, Italy and Hungary, Member States with imbalances and for which the Commission has indicated the need to adopt decisive policy actions, the respective IDR will assess the persistence of imbalances;

- For the other Member States previously identified as experiencing imbalances (Belgium, Bulgaria, Denmark, Malta, the Netherlands, Finland, Sweden and the United Kingdom), the IDR will contribute to assessing which Member States continue to experience these imbalances and which been overcome them.

The Commission takes the view that since imbalances are identified after detailed analyses in the previous IDRs, the conclusion that an imbalance has been overcome should also be reached only after duly considering all relevant factors in another in-depth review, which could potentially lead to the closure of the MIP for some Member States;

- IDRs will also be prepared for Germany and Luxembourg in order to better scrutinise their external position and analyse internal developments, and assess whether any of these countries is experiencing imbalances;

- Finally, an IDR for Croatia will look into the nature and potential risks related to its external position, trade performance and competitiveness, as well as internal developments.

Based on the Scoreboard (Table 1), three indicators (change in export market shares, gross private sector debt, and general government debt) exceeded their indicative thresholds in the case of Belgium. On the external side, in its economic reading, the Commission mainly underlined the long-term trend in losses in export market shares. These losses accelerated in 2012, with implications on the continued negative development of the goods balance. Concerning internal imbalances, the Commission points the high level of public and private sector debt, even after consolidation for domestic inter-company loans. Finally, "the Commission finds it useful, also taking into account the identification of an imbalance in April 2013, to examine further the persistence of imbalances or their unwinding"[1].

Table 1 - Scoreboard for Belgium, Germany, France, and the Netherlands with values for 2012

	Thresholds	Belgium	Germany	France	Netherlands
Current account (3-year average, % GDP)	-4/+6%	-0.4	6.5	-1.8	8.8
Net international investment position (% GDP)	-35%	48	42	-21	47
Real effective exchange rate (%, 3-year change)	+/-5%	-4.3	-8.9	-7.8	-6.0
Export market shares (%, 5-year change)	-6%	-14.9	-13.1	-14.0	-12.0
Unit labour cost (%, 3-year change)	+9%	6.6	3.0	4.1	3.3
House prices (%, year-on-year change)	+6%	-0.2	1.8	-2.3	-8.7
Private sector credit flow (% GDP)	14%	-1.5	1.5	3.5	0.2
Private sector debt (% GDP)	133%	146	107	141	219
Public sector debt (% GDP)	60%	100	81	90	71
Unemployment rate (%, 3-year average)	10%	7.7	6.2	9.9	4.7
Total financial sector liabilities (%, year-on-year change)	16.5%	-3.9	4.4	-0.1	4.9

Figures in bold: variable outside the thresholds

---

1.   COM(2013) 790 final, page 12.

External imbalances and Competitiveness

Graph 1 - Current account balance - 3-year average (in % of GDP)

Source: Eurostat (Macroeconomic Imbalance Procedure)
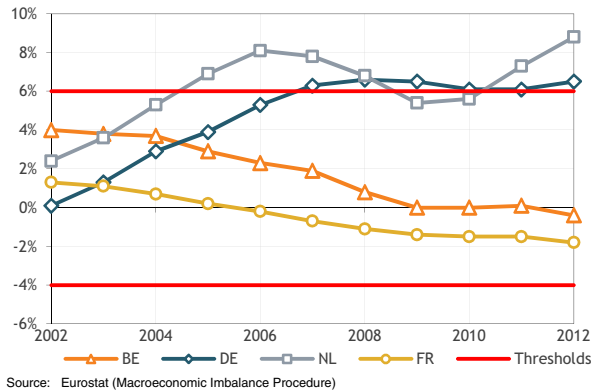
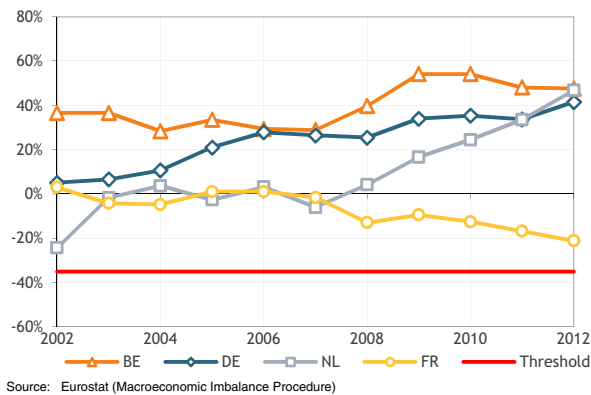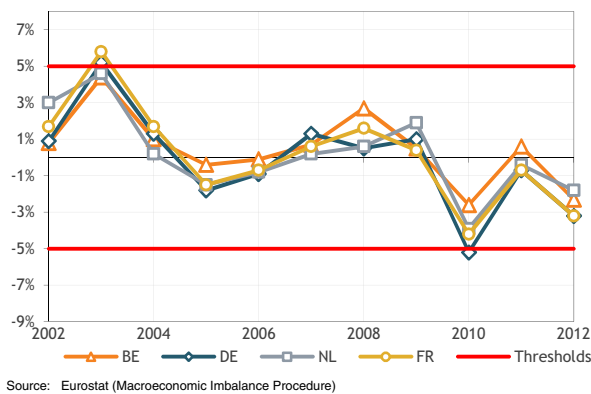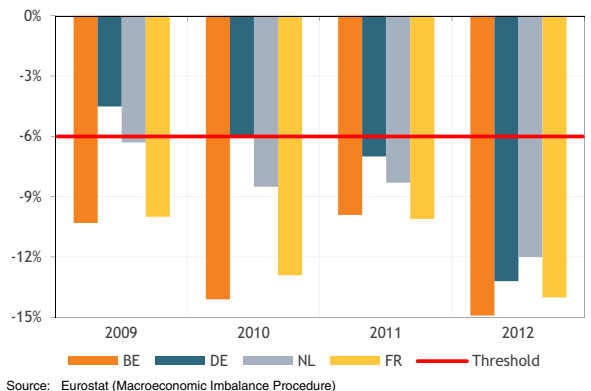**Graph 2 - Net international investment position (in % of GDP)**

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 3 - Real effective exchange rate based on HICP, relative to a panel of 42 countries (3-year change, in %)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 4 - Goods and services export market shares (5-year change, in %)

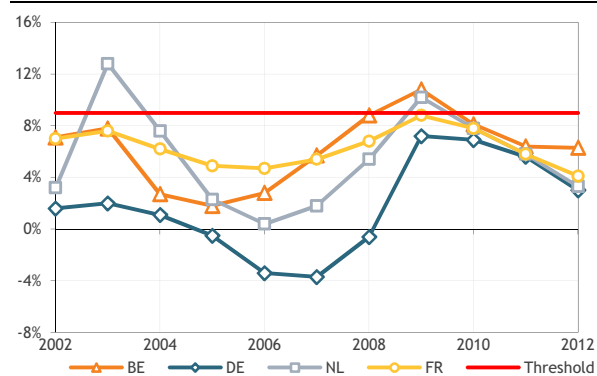Source: Eurostat (Macroeconomic Imbalance Procedure)

The current account balance as a percentage of GDP is the first external imbalances indicator. As it concerns a 3-year backward moving average transformation, the information for the most recent year's data is diluted. According to this indicator (Graph 1), the Belgian current account has been on a declining trend since the beginning of the 2000s. This trend accelerated between 2005 and 2009, before the indicator stabilised at a slightly negative level (-0.4% of GDP). This evolution is similar to that observed for France. However, the French indicator has been negative since 2006 and reached -1.8% of GDP in 2012, indicating a worse external position than that of Belgium.

The Commission also includes the net international investment position (NIIP), as a percentage of GDP (Graph 2). The NIIP is the value of financial assets held by residents abroad less the domestic assets owned by non-residents. The change in the NIIP from one period to another depends mainly on the current account balance and on the revaluation effect due to asset/liability prices and exchange rate movements. Over the whole period, the Belgian NIIP was one of the highest in the EU.

As a measure of persistent changes in prices' competitiveness relative to the major trading partners of the respective country, an indicator on the real effective exchange rate (REER) based on the harmonised index of consumer prices deflators (3-year change in %) is included. As shown in Graph 3, in the four euro area countries, the REER has followed a very similar evolution since 2005, remaining in the narrow band defined by the Commission for EA members (+/-5%). For most of the recent years, Belgium has exhibited the least favourable evolution. This is mainly explained by Belgian inflation. In 2012, however, the indicator was slightly better in Belgium than in the Netherlands.

In order to identify slow and persistent losses in competitiveness, the Commission also considers an indicator on export market shares (5-year change in %), capturing components of competitiveness or the ability to exploit new sales opportunities due to rapid demand growth in emerging economies (Graph 4). According to this indicator, all four countries have recorded losses in their export market shares since 2010 that are larger than the threshold (-6%). Part of this deterioration is structural and is linked to the increasing role played by the emerging countries in world trade. In 2012, Belgium had the worst score for this indicator.

Graph 5 - Nominal unit labour cost (3-year change, in %)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 6 - Real effective exchange rate, export prices deflators relative to 37 industrial countries (1996=100)
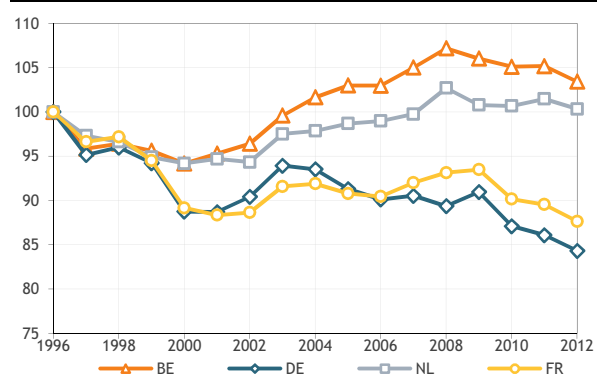
Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 7 - Real effective exchange rate, ULC deflators relative to 37 industrial countries (1996=100)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 8 - Real labour productivity per person employed (1996=100)

Source: Eurostat (Macroeconomic Imbalance Procedure)

The last external imbalance indicator (Graph 5) is the 3-year percentage change in the ratio of nominal compensation per employee to real GDP per person employed (or unit labour cost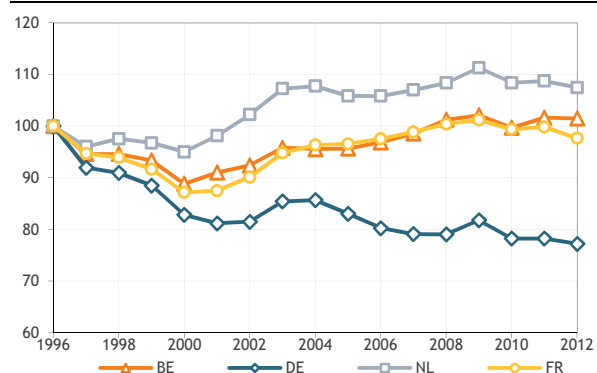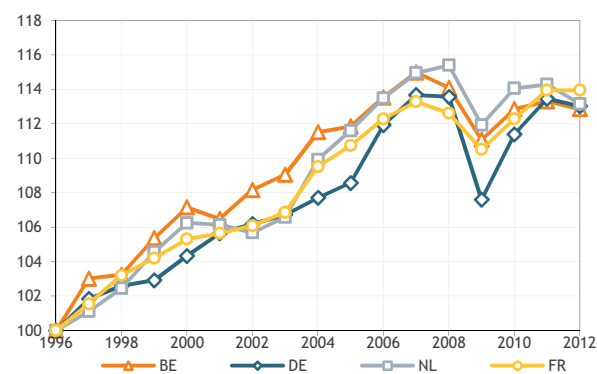s (ULC)). According this indicator, Belgian nominal ULC have increased faster than ULC in neighbouring countries since 2007. Between 2005 and 2011, the profile of the evolution was similar in Belgium and the Netherlands as these two countries crossed the threshold (9%) in 2009 before returning below it from 2010. In 2012, the indicator improved in the three neighbouring countries, while it stabilised in Belgium.

As price competitiveness is important for a small open economy such as Belgium, three other indicators have been taken into account to refine the analysis. Graph 6 shows the evolution of the real effective exchange rate index (1996 = 100), using export prices of goods and services as the deflator, vis-à-vis 37 other industrialised countries. The most striking element is the divergent evolutions of Germany and France, which succeeded in improving their REER, especially recently, and Belgium and the Netherlands, which recorded deteriorations in their REER, mainly over 2003-2009. This confirms a problem of external price competitiveness for Belgium.

As labour costs are usually one of the main determinants of prices, Graph 7 shows the evolution of the real effective exchange rate index (1996 = 100), using ULC as the deflator, vis-à-vis 37 trading partners. In this case, divergences appear between Germany on the one hand and France, the Netherlands and Belgium on the other hand. The three latter experienced a deterioration in their REER.

It is also interesting to compare the evolution of productivity to see if the roots of the divergences are in productivity or wage developments. Graph 8 shows real labour productivity per person employed (index, 1996 = 100). The evolutions of productivity in the four countries appear to be much closer to each other than those observed in terms of ULC-based REER. The divergences in cost competitiveness therefore seem to be mainly due to divergences in nominal wage increases. However, labour productivity growth has been particularly slow in Belgium in the most recent years. This unfavourable evolution of productivity growth is reinforced if the estimation is based on hours worked rather than per head.

Internal imbalances indicators
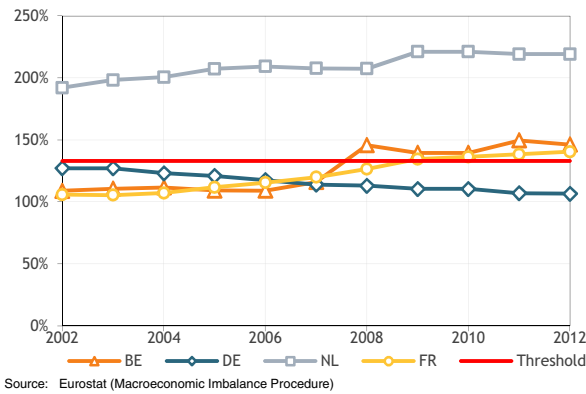
Graph 9 - Private sector credit flow consolidated (in % of GDP)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 10 - Private sector debt consolidated (in % of GDP)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 11 - Real house price (YoY change, in %)

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 12 - Residential construction (in % of GDP)
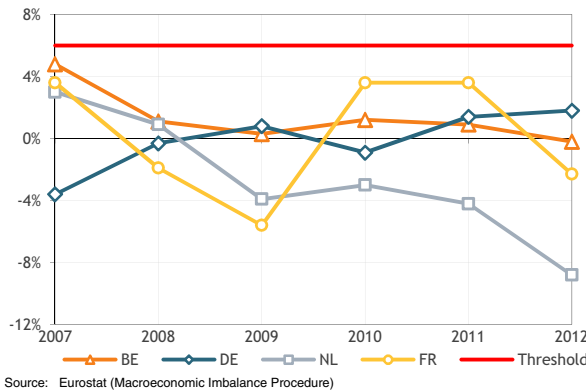

Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 9 presents an indicator on credit flows to the private sector, defined as securities other than shares, and loans to non-financial corporations, households and non-profit institutions serving households on a domestically consolidated basis and expressed as a percentage of GDP. According to the Commission, high credit flows appear to be one of the best early indicators of crises. Contrary to the three neighbouring countries, the flow of credit to the private Belgian sector has recently been large, passing the threshold in 2008 and 2011. However, because of its domestically consolidated nature, this indicator has to be interpreted with caution for Belgium. The presence of many centres of multinational firms usually entails large flows of cross border intra-group loans that are linked to the optimisation of firms' treasury management rather than the emergence of an asset bubble.

The Commission also includes in the scoreboard a stock indicator in the form of the domestically consolidated private sector debt level as a percentage of GDP. According to this indicator (Graph 10), Belgium has been above the threshold since 2008. However, since 2008, the level of private sector debt as a percentage of GDP has remained relatively stable in Belgium.

Finally, these indicators also have to be interpreted with caution because they are established on a gross and not a net basis. Private sector debt is generally used to accumulate assets (houses, financial assets, etc.). The amount and the nature of the accumulated assets are also important in judging the potential disequilibrium nature of the level of private sector debt.
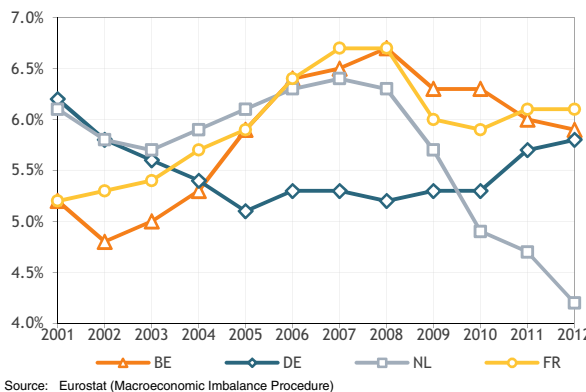
As housing market developments have figured prominently in many of the previous financial crises, the Commission has decided to include the year-on-year change in real house prices, defined as the house price indicator deflated by the national accounts deflator for private final consumption expenditure (households and NPIs). According to this indicator (Graph 11), the Belgian real house price index increased relatively rapidly between 2003 and 2007. However, a correction occurred in subsequent years with, first, a reduction in the rate of growth and then, in 2012, even a decrease in real house prices.

In the economic reading of the scoreboard, the Commission also considers an auxiliary indicator of the relative importance of the construction industry. As shown in Graph 12, the share of construction in the GDP has declined in Belgium since 2008, after a continuous increase between 2002 and 2008.

Graph 13 - Public sector debt (in % of GDP)
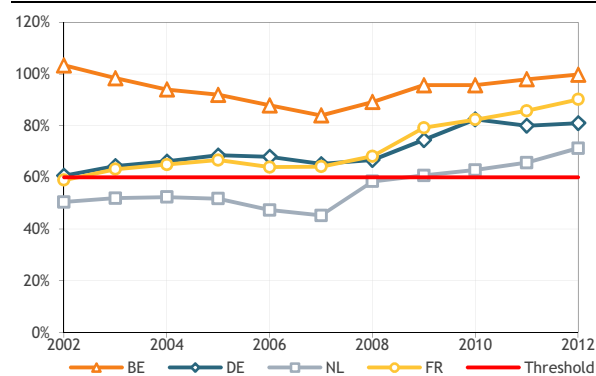
Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 14 - Financial sector liabilities (change, in %)
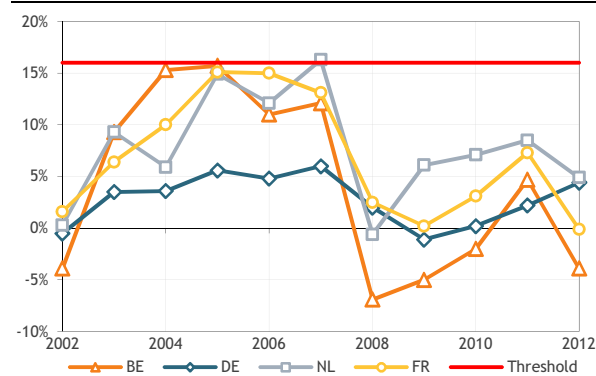
Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 15 - Financial sector leverage (debt-to-equity ratio)
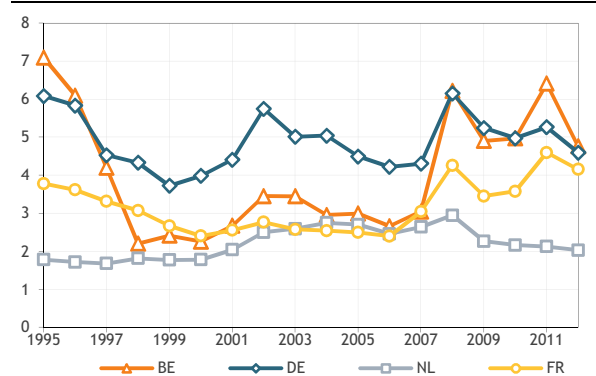
Source: Eurostat (Macroeconomic Imbalance Procedure)

Graph 16 - Unemployment rate (3-year average, in %)
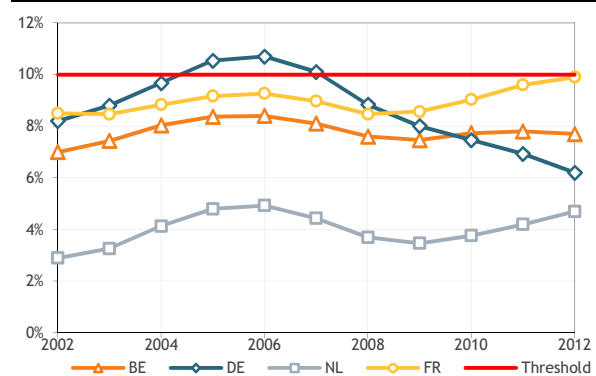
Source: Eurostat (Macroeconomic Imbalance Procedure)

To consider the potential contribution of public debt to macroeconomic imbalances, the Commission has also included in the scoreboard a complementary indicator: the general government consolidated gross debt, as defined in the Excessive Deficit Procedure as a percentage of GDP (Graph 13). As is well-known, Belgium has a large public sector debt, which has exceeded the threshold of 60% of GDP. However, this ratio has been on a clear downward trend since 1994. Since 2008 and the resurgence of public deficits, as a consequence of the financial and economic crisis and the public financial intervention to save the banking systems, the public debt ratio has again increased.

A more recently introduced indicator, the annual growth rate of total financial sector liabilities, measures the evolution of the sum of all liabilities (which includes currency and deposits, securities other than shares, loans, shares and other equity, insurance technical reserves and other accounts payable) of the total financial sector. This indicator is aimed at better capturing the interlinkages between the real economy and the financial sector. The growth rate of financial sector liabilities in Belgium, as in the three neighbouring countries, remains largely below the thresholds (Graph 14).

In the auxiliary indicators set, the Commission also considers the debt-to-equity ratio to judge the health of the financial sector. The financial sector leverage (debt-to-equity ratio) indicator shows the relative proportion of debt used to finance assets to shareholders ' equity. It is obtained as the ratio of the sum of currency and deposits, securities other than shares and loans over shares and other equity. As illustrated by Graph 15, this ratio strongly increased between 2007 and 2008 in Belgium, in Germany and, to a lesser extent, in France. But it remained relatively stable in the Netherlands. In all four countries, this ratio is currently on a decreasing trend.

The Commission also takes into consideration the real economy potential imbalances through an indicator for the unemployment rate that is designed to monitor high and persistent rates of unemployment. Such rates point towards a potential misallocation of resources and general lack of further adjustment capacity in the economy. As illustrated by Graph 16, this indicator is not considered problematic for Belgium. Since 2010, the unemployment rate has been stable in Belgium, decreasing in Germany but increasing in the Netherlands and particularly in France, where it reached 9.9% in 2012.

The NIME outlook for the world economy, period 2013-2024

The December 2013 issue of the NIME Outlook for the World Economy provides economic prospects for the world over the period 2013-2024. The publication also contains a special topical analysis of the effects of fiscal consolidation on euro area growth perspectives.

The new NIME world outlook indicates that the major economic areas of the world should slowly emerge from the recession or tepid growth into which they have fallen since 2008. Real GDP growth should at first be relatively robust, allowing negative output gaps to be closed. Indeed, over 2013-2018, real GDP is projected to rise at average annual rates of 1.5%, 1.8% and 1.1% in the euro area, the US and Japan, respectively. However, real output growth should then fall over the period 2019-2024, reaching just 0.3%, 1.5% and 0.2% in the euro area, the US and Japan, respectively. This decline in growth is due mainly to two factors. First, the exit strategies from previous economic stabilisation plans often require the front-loading of austerity and resort to both spending cuts and tax increases. Such strategies should lead to significant declines in growth prospects. This should be the case in the United States, where further debates and political gridlock on the federal budget and debt ceiling can be expected in the coming years. It should also be the case in the euro area, where the recent adoption of the Fiscal Compact should lead to the imposition of austerity up to 2024 and beyond. As for Japan, although recent declarations have been made in favour of long-term fiscal sustainability, it remains to be seen how such declarations will be translated into effective policy decisions. Secondly, all of the major economic areas of the world should see their trend output growth rates fall below historical rates due to a slowdown in trend productivity growth, to demographic developments or to a combination of these factors. In such a context, the projection indicates that public deficits should

tend to decline, allowing at least a temporary decline in public sector debt to GDP ratios. However, debt ratios should remain high and very sensitive to any rise in interest rates and in unemployment rates, particularly in the euro area and in Japan.

This new publication also provides an analysis of the effects of fiscal consolidation policies in the euro area. Five different policy scenarios were analysed. First, an immediate and sustained rise in labour income tax rates; second, a delayed and sustained rise in labour income tax rates; third, reductions in public expenditure via cuts in public sector employment; fourth, a fiscal sustainability policy that is based on raising nominal output through increased public investment; fifth, an increase in trend labour productivity obtained through structural reforms. The first four variants are calibrated at 1% of nominal GDP, ex ante, while the last is defined in terms of an increase in the trend growth rate of labour productivity from 1.1% in 2013 to 2.0% in 2024. The simulation results show that cuts in public employment have the largest negative effects in terms of output and employment, while providing only limited gains in public budget balances. Tax increases are less negative and provide larger gains in terms of reductions in borrowing requirements. However, by far the best results are obtained from an increase in trend productivity, which could follow from significant structural reform measures.

"The NIME outlook for the world economy, 2013-2024. Special Topic: Fiscal consolidation and euro area growth perspectives",
P. Van Brusselen,
December 2013.

Population and household projections 2013-2060

Population Projections 2013-2060 confirms the long-term trends identified in the previous demographic projection exercise (May 2013) made for Belgium: continuing progress in life expectancy, recovery of fertility rates from the very low level of the nineties and the importance of international immigration. Nevertheless, the scale of these two last phenomena has been revised. The number of households is growing even faster than the population due to an ageing population and to the emergence of new forms of living arrangements.

Since 2008, population projections for Belgium have been prepared jointly by Statistics Belgium and the Federal Planning Bureau and are updated annually. This current update relies on the official figures for the Belgian population on 1 January 2013. Since 2013, household projections have been part of the convention between Statistics Belgium and the Federal Planning Bureau.

Life expectancy at birth for men and women is projected to keep increasing, in line with the trends of the last 20 years, although at a very slowly decreasing pace. It increases from 77.6 years and 82.8 years in 2012 to 85.4 years and 87.4 years in 2060 for men and women respectively, confirming the on-going convergence of the life expectancies of men and women.

The total fertility rate increased nearly constantly from 1.55 children per woman in 1995 to 1.86 children in 2008. During the financial crisis, however, fertility rates declined, particularly for women aged below 30. It is assumed that in the short term (2013-2015), fertility will still be affected by the economic crisis. From 2015-2020 it should recover to the pre-crisis level, which should remain constant up to 2060 (slightly above 1.8 children per woman).

As long as a sufficient share of the baby-boom generation has not entered the age classes with the highest death probabilities, the natural balance (difference between the number of births and the number of deaths) remains positive. However, over the projection horizon, it faces a decreasing trend and becomes negative from the late 2040s to 2060.

Regarding international migration, the external migration balance has been revised downwards due to the new policy initiatives restricting family reunification and the recognition of refugees on humanitarian grounds. In the short term, immigration from the southern countries of the EU15 and from Bulgaria and Romania have, however, been revised upwards due to immigration related to the economic crisis (from southern countries of the EU15) and to the total opening of the labour market from 2014 (for Bulgaria and Romania). In the long run, macroeconomic scenarios for Europe are taken into account to determine the relative attractiveness of the Belgian economy. These scenarios usually assume a slow convergence in living standards across Europe. Based on these hypotheses, the external migration balance is projected to be around 28 000 in 2020 and 15-20 000 after 2030. It remains the main source of population growth (at the national level). All in all, the total population in Belgium climbs from 11.1 million in 2013 to 11.9 million in 2030 and 12.5 million in 2060.

The number of private households grows from 4.8 million in 2013 to 5.3 million in 2030 and to 5.8 million in 2060. The average size of the private households is expected to decrease from 2.26 in 2013 to 2.17 in 2030 and 2.08 in 2060. This is explained by an increasing share of one-person households (34% of households in 2013 and 42% in 2060) and, to a lesser extent, of one-parent families (9.7% of households in 2013 and 10.2% in 2060). Finally, at the national level, households composed of married couples with children face a decreasing trend, in favour of, among others, households composed of cohabiting couples. In 2060, the number of households composed of married couples with children decreases by 27% compared to 2013 and the number of households composed of cohabiting couples with children increases by 50%.

"Perspectives démographiques 2013-2060, population, ménages et quotients de mortalité prospectifs /
Demografische vooruitzichten 2013-2060, bevolking, huishoudens en prospectieve sterftekansen",
Federal Planning Bureau and Directorate-general Statistics and Economic information,
March 2014.

Administrative burden in Belgium in 2012

In response to the Council of Ministers and in collaboration with the Dienst voor Administratieve Vereenvoudiging/Agence pour la Simplification Administrative, the FPB has estimated the cost of the administrative burden for companies and self-employed persons in 2012. The Planning Paper analyses the quantitative and qualitative results of the 2012 survey.

The estimation of the administrative burden is based on a national survey and uses the same methodology as that used in the surveys carried out every two years since 2000. Companies, as well as self-employed persons, are invited to assess the administrative burden imposed by three areas of legislation: environmental, employment and tax legislation.

The administrative burden on companies and self-employed persons is estimated to equal EUR 6.36 billion in 2012, or 1.70% of GDP. In comparison with the 2010 survey, the administrative burden stabilised in nominal terms but decreased in relative terms, going from 1.79% of GDP in 2010. The administrative burden on companies increased for the second successive time in nominal terms (+1% in 2012 after +11% in 2010), but in relative terms, it decreased to 1.37% of GDP in 2012 from 1.43% in 2010. Since the first survey in 2000, the administrative burden on companies decreased by 18% in nominal terms and from 2.55% of GDP in 2000 to 1.37% of GDP in 2012. The administrative burden slightly decreased in nominal terms for self-employed persons. It is estimated at EUR 1.23 billion or 0.33% of GDP in 2012, from EUR 1.28

billion or 0.36% of GDP in 2010, and EUR 2.29 billion or 0.93% of GDP in 2000.

As in previous surveys, small businesses (with less than 10 employees) faced the highest administrative burden, expressed per employee or as a percentage of turnover. In comparison with the 2010 survey, small and large businesses saw a decrease in their average administrative cost expressed per employee. This decrease is very high for large firms (-20%) due to a strong decrease in the average administrative cost per employee linked to the employment area. Expressed as a percentage of turnover, the average administrative cost increased for small companies but decreased for medium and large firms.

In addition to this quantitative analysis, the survey also has a qualitative part, in which business sentiment is analysed on issues relating to the quality of legislation and contact with the civil services.

In 2012, as had already been observed in the previous surveys, companies and self-employed persons were generally more satisfied with their contact with the civil

services than with the quality of legislation. For all areas of legislation, companies and self-employed persons were relatively satisfied with the information available to the public that accompanied legislation and the quality of responses obtained from civil services. Lack of flexibility of legislation with regard to specific situations was the most criticised aspect of legislation, whatever the legislative domain considered. For companies, improvement in the quality of legislation and in the quality of contact with the civil servants was mainly visible concerning environmental regulation. The opinion of self-employed persons on the quality of legislation was mainly driven by fiscal regulation, with improvements for a majority of statements submitted for their judgement, while the opinion on the quality of contact with civil servants deteriorated whatever the legislative domain considered.

"Administratieve lasten in België voor het jaar 2012 /
Les charges administratives en Belgique pour l'année 2012",
Ch. Kegels,
Planning Paper 114, February 2014

Financial and social sustainability of the Belgian social protection system

This Working Paper studies the financial and social sustainability of the Belgian social protection system. Assuming constant policy and against a background of population ageing, the long-term public finance projections highlight a major budgetary challenge. Within that framework, this paper investigates a number of pathways based on the three-pronged European strategy, as defined at the 2001 Stockholm summit.

The results of this analysis were presented in November at the 20th Congrès des économistes belges de langue française and were published in the conference proceedings.

In a context of population ageing, the constant policy scenario (without additional measures) leads to unrealistic long-term projections of public finance, including explosive debt. The sustainability gap, i.e. the direct and permanent adjustment of the primary balance necessary to stabilize public debt in % of GDP in the long term, should amount to 5% of GDP. In that framework, this publication examines different pathways to facing this challenge, all of which are in line with the three-pronged European strategy, as defined at the 2001 Stockholm summit.

Though substantially reducing the sustainability gap, the prefinancing strategy (through public debt reduction), as defined in the "Belgian Stability Programme 2013-2016", in itself cannot guarantee the long-term stability of public debt. After its implementation, a sustainability gap of 1.8% of GDP should still remain. Therefore, the prefinancing strategy should be accompanied by additional reforms.

The reforms considered in this publication cannot, separately, eliminate the remaining sustainability gap after the stability programme's implementation. In combination with the prefinancing strategy, the structural reforms with regard to productivity (+0.25 %-points) and the labour market (employment rate increase of 2.2 %-points) in support of economic growth (the second prong of the European strategy), lead to a sustainability gap of 1.1% and 0.7% of GDP, respectively.

The third prong of the European strategy is founded on reforms of the benefits systems. In that framework, stricter age (62 years) and career (45 years) conditions for early retirement, in combination with the prefinancing scenario, should result in a sustainability gap of 0.8% of GDP. Finally, a lower welfare increase in social allowances (-0.5 %-points, except for wage ceilings),

linked to the prefinancing scenario, should result in a sustainability gap of 0.4% of GDP. Future reforms should, therefore, be ambitious, following different trajectories, but also taking into account certain inherent costs.

In this publication, the scenario of a lower welfare increase in social allowances allowed the social costs to be assessed. It clearly shows that reducing pension amounts may increase the poverty risk among the elder-

ly. Other costs, budgetary or macroeconomic, may also occur and decrease the expected effect of certain measures on the budgetary costs of ageing. They are, however, not considered in the publication; nor is the issue of the political acceptability of certain reforms.

"La soutenabilité de la protection sociale",
R. Desmet, N. Fasquelle, Ch. Joyeux, S. Weemaes,
Working Paper 15-13, December 2013

Downstream offshoring and firm-level employment

When engaging in offshoring, firms not only import intermediates they used to produce in-house, but also intermediates previously sourced from non-affiliated domestic suppliers. This leads to a negative demand shock for the latter. Prior empirical research has so far neglected this channel through which offshoring may affect domestic employment. We label this demand shock 'downstream offshoring', develop a novel measure for capturing its extent for a firm in a given upstream industry and estimate its effect on firm-level employment.

The large scale reorganisation of manufacturing production processes within global value chains over the last couple of decades has been achieved through fragmentation and offshoring. Fostered by the fall in coordination costs due to information and communication technology developments, offshoring implies that firms increasingly source intermediates from abroad. In developed economies, this has raised fears of massive job losses. However, most academic work fails to find evidence that offshoring contributes to lowering employment. Standard arguments to explain this are that job creation through rising sales fostered by productivity gains from offshoring may offset direct job losses, and that the number of job losses due to offshoring is likely to be small compared to total labour market turnover.

In this paper, we investigate a channel through which offshoring may nonetheless affect employment, but which has been neglected by the literature. The basic idea is that offshoring may have important consequences, not only for the firm that engages into offshoring but also for other domestic firms that are part of the same value chain. Indeed, when they engage into offshoring, firms import either intermediates they previously produced domestically in-house or intermediates they previously sourced from domestic suppliers beyond the boundaries of the firm. While the former channel has received ample attention as a channel for potential decreases in employment, the latter channel has not yet been considered by the literature. A switch from domes-

tic to foreign suppliers by firms in downstream industries clearly leads to a negative demand shock for domestic suppliers in upstream industries and may thereby depress domestic employment. We label this demand shock 'downstream offshoring' and develop a measure to capture its extent for a firm in a given upstream industry. The measure takes into account the relative size of purchases by downstream industries of the goods produced by the firm as well as the offshoring intensity in downstream industries.

We estimate the employment effect of downstream offshoring using a representative sample of Belgian manufacturing firms over the period 1997-2007. For this purpose, we introduce the measure into a standard labour demand framework. According to the results, downstream offshoring has a highly significant negative impact on firm level employment. We calculate that increases in downstream offshoring directly account for a loss of almost 7 000 jobs over the sample period, which corresponds to 2.4% of in-sample employment in 1997. The negative employment effect of downstream offshoring is robust to the use of alternative estimation techniques and we are able to show that it is not driven by exit. It holds in various subperiods of the sample period. Sample splits by firm size class reveal that the effect is strongest for medium-sized firms, followed by small firms, while large firms are not affected by downstream offshoring. This finding is consistent with an industry structure where a smaller number of large firms is surrounded by a set of small and medium-sized suppliers that are influenced by sourcing decisions of large firms. Nevertheless, it must be emphasized that even if the employment effect of downstream offshoring turns out to be negative, this does not preclude overall welfare gains from offshoring, driven by productivity improvements.

"Downstream offshoring and firm-level employment: evidence for Belgian manufacturing firms",
B. Michel,
Working Paper 16-13, December 2013

The 6th state reform: issues with regard to the sustainability of public finances

The 6th state reform was elaborated at a moment when large fiscal consolidation measures are required to restore the long-term sustainability of Belgian public finances. The 2011 institutional agreement provided that the federated entities contribute, through the reform, to the fiscal consolidation. That contribution can be justified by the fact that the reform, by reducing the budgetary size of the federal level, decreases the federal level's room for manoeuvre and its capacity to resolve on its own the sustainability issue. In this study, the magnitude of the contribution necessary to prevent the sustainability challenge from deteriorating is assessed and compared to the redistribution of the public deficit as organized by the reform.

In a previous study (WP 23-10), the FPB showed that preserving the capacity to improve the sustainability of public finances would entail transferring to the federated entities, jointly with a budgetary capacity, the consolidation effort (estimated at 20%) that the federal level could have made in proportion to that budget. With the transfer of powers organized by the state reform estimated at 4.9% of GDP, the transfer of burden required by this criterion amounts to 1% of GDP. Based on more recent data, this study updates the required transfer of burden to 0.8% of GDP.

Within the macroeconomic reference framework and assuming the reform has a 10-year lifespan (close to the average lifespan observed for previous reforms), the study estimates the transfer of burden to the federated entities in a constant legislation scenario at 0.7% of GDP (measured in terms of a sustainability gap transfer). The transfer increases only slightly for longer lifespans. However, this result holds, provided that the regions take full advantage of the personal income tax revenue dynamics that can be expected in a constant legislation scenario. At constant legislation, on the one hand, the tax burden increases as a result of the progressivity of the personal income tax in the case of positive growth of real per capita incomes, as assumed in the reference scenario; on the other hand, the tax base increases faster than GDP, given the development of pension incomes which contribute to a large extent to the ageing cost estimated by the Study Committee on Ageing. Under a constant tax to GDP ratio assumption, the transfer of burden amounts to 0.9% of GDP for a 10-year lifespan.

In conclusion, assuming a reform lifespan close to the average observed for previous reforms and within the macroeconomic reference framework, the transfer of burden from entity I (federal government and social security) to entity II (regions, communities and local government) seems to meet the criterion of not worsening the sustainability problem in view of the reduced budget size of entity I, as presented in the November 2010 FPB study. The federated entities have gained scale and powers but will have to contribute substantially to the efforts to restore fiscal sustainability.

"La 6e réforme de l'État : enjeux en termes de soutenabilité budgétaire",
V. Frogneux, M. Saintrain,
Working Paper 1-14, January 2014

Household expenditure for transport

This analysis describes recent evolutions in household expenditure on transport in Belgium. Results are based on data from national accounts (National Accounts Institute, Eurostat) as well as data from household budget surveys (Statistics Belgium).

In 2012, 12.0% of household expenditure was allocated to transport in Belgium. This expenditure has increased over the period covered (2000-2012), at current prices (+42.0%) and in volume (+4.3%). Operation of personal transport equipment (i.e. fuel, maintenance) represents more than 50% of transport expenditure. This increased by 46.3% at current prices between 2000 and 2012, mainly due to a price variation (in particular in fuels) rather than a volume effect (4.0% decrease between 2000 and 2012). Purchases of vehicles (motor cars mainly) are the second type of transport expenditure for households. They increased at current prices and in volume during the period studied, as did expenditure on transport services, the third and last category of transport expense in household expenditure. Transport services have a limited weight in households' expenses but their share in transport expenditure is increasing (8.3% in 2000 and 9.1% in 2012). They are mainly composed of rail, road and air transport expenditures, which have increased at current prices and in volume over the period 2000-2012.

Evolutions observed in Belgium are then briefly compared to those in Germany, France, the Netherlands and the EU27. The share of transport in total household expenditure is slightly lower in Belgium than in the other countries examined. This proportion is especially low for transport services expenditure (1.1% of total expenditure in 2012 against 2.7% in Germany, 2.6% in the EU27, 2.3% in France and 2.0% in the Netherlands). However, these results must be interpreted with caution as consumption expenditure does not precisely reflect household behaviour in terms of mobility.

The analysis concludes with some results from household budget surveys in Belgium over the period 2008-2010. Results show that, on average, annual transport expenditure increased with household income (in levels and as a percentage of total expenditure) and de-creased when the person of reference in the survey was 40 years old or more (both in levels and as a percentage of total expenditure). Besides, households living in Brussels spent less overall on transport than households living in the Flemish region or Wallonia, though they spent twice the amount on transport services (including public transport). The largest transport expenditures were related to operation of personal transport equipment, followed by purchases of vehicles and transport services, regardless of age, income or the region the household lived in.

"Dépenses des ménages et transport",
C. Daubresse,
Working Paper 2-14, February 2014

The impact of health care on health, the economy and equality

On the occasion of its 50th anniversary, the National Institute for Health and Invalidity Insurance (RIZIV/INAMI) asked the Federal Planning Bureau to draft a report on the social significance of public health care and health care insurance. Between 1970 and 2011, public expenditure per capita on health care has increased fourfold in real terms; relative to gross domestic product it has risen from 2.9% to 7.9%. We focused on the impact of the expansion of health care in three domains: population health, the economy and social inequality.

First, what was the contribution of health care to population health during the past half-century? Lacking sufficient data on other dimensions of health, we looked at mortality and life expectancy. Based on the results of a time-series analysis for a panel of OECD countries, we estimate that the expansion of health care in Belgium has produced 5.9 additional life years for men and 4.5 life years for women, or 66% and 55% respectively of the total improvement in life expectancy during this period. Another approach to the question uses the concept of avoidable mortality, which occurs if persons die from causes that could have been remedied or prevented by appropriate and timely care. In Belgium, as in most European countries, avoidable mortality has declined faster during the last five decades than mortality from other causes, although the decline slowed down appreciably after 1980. The biggest gains in life expectancy were due to a decrease in avoidable mortality among new born children during the fifties and sixties.

The second question concerned the role of health care in the economy. The national accounts show that between 1970 and 2012, value added in the branches health care and social services grew on average by 3.5% per year in real terms (using the sector-specific price deflator). Over the same period, the share of these branches in overall GDP has sharply increased, from 3.2% in 1970 to 7.8% in 2012. During the same period, the share in total employment of the branches health care and social services has risen from 2.7% to 12%. In the period after 1999, the growth in employment is concentrated in the age group 45-64. As these branches purchase goods and services from other sectors, an increase in final demand for health care will lead to increased production in the rest of economy as well. Estimates indicate that the latter effect amounts to 36 euro for every rise by 100 euro in the demand for health care.

The third question is about the impact of health care and public health care insurance on inequalities in health and income. Among other findings, we report that in Belgium there is no social inequality in the use of the general practitioner, but people with low income or low education are less likely to visit specialists than people with higher income or more education and the same level of health. Also, survey results indicate that in Belgium 21% of all people aged 50 years and over and with a low income are confronted by out of pocket payments exceeding 10% of their disposable income.

"De maatschappelijke betekenis van de gezondheidszorg",
K. Van den Bosch, P. Willemé,
January 2014

The Belgian Input-Output Tables for 2010

In this publication, the Belgian Input-Output Tables for the year 2010 are presented. In accordance with the Law of December 1994 on the reform of the Belgian statistical system, the Federal Planning Bureau is responsible for drawing up these five-yearly input-output tables within the framework of the National Accounts Institute.

According to the European System of Accounts (ESA 1995), the input-output framework consists of supply and use tables (SUT) and symmetric input-output tables (IOT), where the latter are derived from the former. It provides a detailed view of the economy in terms of production processes, the use of goods and services and income generated through production. As part of the national accounts system, SUT and IOT provide a consistent framework for balancing the national accounts. Moreover, they constitute the basis for different types of economic analyses, e.g. multipliers, cumulated costs and linkages based on input-output models or calculations of environmental leakage.

This publication describes the methodology applied for compiling symmetric (product-by-product) input-output tables for Belgium at current prices for the year 2010. In line with the ESA 1995 transmission programme, the Belgian SUT and IOT for 2010 were transmitted to Eurostat in December 2013. The 2010 IOT are the first input-output tables for Belgium in the NACE Rev. 2 / CPA 2008 classification.

The compilation of the SUT and IOT is a complex process, as data from many different sources are combined in a balancing process. Moreover, SUT and IOT must fully comply with the rest of the national accounts system, especially with the production account and the distribution and use of income accounts. An additional element of complexity in the Belgian context is the fact that the compilation work of SUT and IOT is spread over two institutions (namely the NBB and the FPB).

Starting from a first version of balanced SUT at purchasers' prices (133 industries by 347 products), valuation matrices (for distribution margins and taxes and subsidies on products) are computed to convert the use table valued at purchasers' prices into a use table valued at basic prices. Next, the use table is broken down into two sub-tables according to the origin of supply: imports and domestic output.

The final stage is the transformation of the SUT into symmetric (product-by-product) IOT (136 x 136), both for the total table and the tables differentiating between domestically produced and imported products. In most cases, this transformation is based on the product technology assumption, according to which each product is produced in its own specific way, irrespective of the industry where it is produced. In some cases, however, the assumption of product technology has been relaxed and (exceptionally) even replaced by the industry technology assumption, which is that an industry has its own specific way of production that applies to all products it produces. The resulting compilation model is best described as a 'mixed technology model', with a clear predominance of product technology.

The application of the product technology assumption to compile product-by-product IOT gives rise to negative input elements. In the first run, the share of negatives amounted to 6.5% of total intermediate consumption. Based on an analysis of the underlying causes of these negative input elements, several types of adaptations can be applied to reduce the share of negatives: adjustments and correction of errors in the SUT, disaggregations of industries, or application of industry technology (only in the financial sector and in the retail sale of automotive fuel). The remaining negatives (2.1% of total intermediate consumption) were treated by applying the Almon procedure, which is a purely mathematical method for eliminating negative input values.

As an illustration of the methodology, the publication presents results at all stages of the compilation process (including valuation matrices and import tables) at a very aggregated level (6 x 6). Detailed tables (64 x 64) are available on the FPB website.

"Tableaux Entrées-Sorties 2010 /
Input-outputtabellen 2010",
National Accounts Institute, Federal Planning Bureau,
December 2013

Environmental economic accounts 2008-2011

Regulation (EU) No. 691/2011 obliges the Member States of the European Union to produce three environmental economic accounts as of 2013. The accounts concerned are the Environmental Taxes by Economic Activity (ETEA), the Air Emissions Accounts (AEA) and the Economy-Wide Material Flow Accounts (EW-MFA). The 2013 publications of these accounts contain data for the period 2008-2011. In accordance with the Law of December 1994, the Federal Planning Bureau (FPB) is responsible, within the framework of the National Accounts Institute (NAI), for drawing up these accounts.

The ETEA distinguish four types of environmental taxes (taxes on energy, on transport, on pollution and on resources). The first three types are distributed across industries (NACE Rev.2 A64), households and non-residents. For taxes on resources, only the total is presented.

Total environmental taxes increased from EUR 7.4 billion in 2008 to EUR 8.3 billion in 2011. Since this rise was somewhat faster than the increase in total tax income, the share of environmental taxes in total taxes increased from 7.2% to 7.7%. On average, energy taxes accounted for 59% of the environmental taxes during 2008-2011, transport taxes for 34%, taxes on pollution for 6%, and taxes on resources for 1%. The share of households in environmental taxes was equal to 54%, the share of enterprises 45% and the share of non-residents 1%. When considering environmental taxes paid by enterprises separately, the land transport industry was by far the largest contributor, with a share of 22%.

The AEA present the emissions of all Belgian residents of CO_2, CH_4, N_2O, HFC, PFC, SF_6, SO_2, NO_X, NH_3, NMVOC, CO, PM_{10}, and $PM_{2.5}$, expressed in physical units by economic activity (NACE Rev.2 A64) and by three household consumption categories (heating, transport, other).

On average over the years 2008-2011, 77% of all greenhouse gas (CO_2, CH_4, N_2O, HFC, PFC, SF_6) emissions were emitted by enterprises, and 23% by the households. The manufacturing, water, waste and construction industries combined accounted for 36% of the total, and the energy industry for 16%. Concerning acidifying gases (SO_2, NO_X, NH_3), the share of enterprises was even higher, equaling 86%. The largest contributor to this type of air emissions was the primary sector, with a share of 36%. Manufacturing, water, waste and construction accounted for 30%. The share of enterprises in the emissions of photochemical gases (NO_X, CO, CH_4, NMVOC) equaled 73%, 40%-points of which could be attributed to manu-

facturing, water, waste and construction. Concerning particulate matter (PM_{10}, $PM_{2.5}$), enterprises accounted for 78% of total emissions. Once again, the combination of manufacturing, water, waste and construction accounted for the largest part (33%). With a share of 30%, the primary sector was also an important source of this type of emissions.

The EW-MFA present the evolution of the domestic extraction of and the international trade in four types of materials (biomass, metal ores, non-metallic minerals and fossil energy materials/-carriers), expressed in physical units (tonnes). As far as trade is concerned, it is not just materials that are taken into account, but rather all traded goods, the weight of which is attributed to the material constituting the largest share of each particular good.

Domestic extraction of materials in Belgium decreased from 161 million tonnes in 2008 to 132 million tonnes in 2010 as a consequence of the fall in extraction of non-metallic minerals, the most important domestic material, which accounted for about three quarters of total domestic extraction. In 2011, domestic extraction rose to 132 million tonnes. Trade slumped between 2008 and 2009 as a consequence of the economic crisis, but rebounded in 2010 and 2011. Imports of materials in 2011, standing at 257 million tonnes, were only 1% below their 2008 level. Exports, equaling 181 million tonnes, were 3% below their 2008 level. Fossil energy materials/-carriers were the material with by far the largest share in Belgian imports as well as in exports.

"Milieubelastingen naar economische activiteit 2008-2011 / Taxes environnementales par activité économique 2008-2011",
National Accounts Institute, Federal Planning Bureau, September 2013

"Luchtemissierekeningen 2008-2011 / Comptes des émissions atmosphériques 2008-2011",
National Accounts Institute, Federal Planning Bureau, September 2013

"Materiaalstroomrekeningen voor de gehele economie 2008-2011 / Comptes des flux de matières à l'échelle de l'économie 2008-2011",
National Accounts Institute, Federal Planning Bureau, December 2013

Recent history of major economic policy measures

February 2014	Existing employers' SSC cuts for specific jobs (art performers, domestic helpers, daytime child carers) and employment statuses (subsidised labour contracted by local authorities, art.60 social aid job programmes) will be brought inside the general framework of employers' SSC cuts (Proposal of Law 3.354).

January 2014

The parameters of the three-stage increase (2015, 2017 and 2019) in employers' SSC cuts (across the board and targeting low-wage employment), wage subsidies for night and shift work and the tax credit for workers eligible for the low-wage employees' SSC cuts were made explicit by a draft of proposal of law.

The severance conditions for blue-collar and white-collar workers will be gradually harmonized. The agreement also spells out the severance payments to be paid by the National Employment Office to blue-collar workers to compensate for the rise in labour costs caused by the unified statute of blue-collar and white-collar workers.

Railway incumbent NMBS Groep/Groupe SNCB was reorganised. Infrastructure and train operations became separate entities (Infrabel and NMBS/SNCB, respectively) instead of being under a single holding. Both entities are state owned and draw all their staff from a joint third entity, called HR-Rail.

December 2013

Measures to secure electricity generation capacity were taken. First, a procedure for the procurement of new power plants was established, supporting partial public financing. Second, it was announced that the proceeds of the operating-life extension of one of the Tihange nuclear plants will be used to fund flexible offshore wind farm capacity. Third, the Minister of Energy received the competence to order the TSO to install reserve capacity when shortages are foreseen.

CVC Capital Partners floated the remainder of its stake in the postal incumbent Bpost, which was slightly less than 20%. Because of this transaction, the state becomes the only significant shareholder, making – according to certain commenators – the company prone to stronger political interference.

November 2013

On 1 July 2014, family allowances between self-employed persons and employees will be harmonised.

The 29 November 2013 federal competitiveness pact charts three labour market measures:
- VAT on electricity consumption will be reduced to 6%, down from 21% (as from April 2014).
- The additional (across-the board) SSC cuts in 2015-2016 and 2017-2018 that are conditional on hitting the wage norm in 2013-2014 and 2015-2016 are to be replaced with a three-stage increase in employers' SSC cuts and wage subsidies (2015, 2017 and 2019) and will be financed by alternative taxes. Of this increase, 1/3 will be earmarked for low-wage workers, 1/3 will be across the board (80% profit, 20% nonprofit) and 1/3 will be channeled to industries under pressure from international competition.
- A three-stage increase (2015, 2017 and 2019) in the tax credit for workers eligible for the low-wage employees' SSC cuts will be implemented.

Measures were taken in the area of electronic communications. Two elements of the universal service were cancelled, the telephone directory and the information service. It was considered that both are, to a sufficient extent, commercially accessible at affordable prices. Even so, market regulator BIPT/IBPT will supervise the quality and availabilty of both services. One year after the successful campaign to make citizens more aware of the liberalised energy markets, a similar campaign was held for telecommunications, mobile communications, internet and television. At several hundred town halls, federal and municipal public servants guided people through the process of choosing their supplier. It should be noted that this is more complicated than choosing an energy supplier. In the same spirit, the federal government approved a royal decree that will make operators draw up a standardised information card for each tariff scheme. This will allow consumers to compare services more easily. The government also approved bills that will streamline certain procedures and create more transparency in various areas of the industry. Finally, three 4G licences for the important 800MHz frequency band were auctioned. Since there were only three candidates - the incumbent (Belgacom) and the two other mobile network operators (Mobistar en Base) - the auction did not yield more than the basic stake of EUR 120 million per licence.

The ECB lowered its main policy rate by 25 basis points to 0.25%.

A more complete overview of "Recent history of major economic policy measures" is available on the FPB web site (http://www.plan.be)