SHORT TERM UPDATE

3-13

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Headlines Belgian Economy

Special Topic in this issue

Job creation through renewables: getting the green light

Federal Planning Bureau
Economic analyses and forecasts

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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.

HEADLINES BELGIAN ECONOMY

The economy of the euro area as a whole returned to growth in 2013Q2. The favourable evolution of several confidence indicators during recent months suggests that the recovery will persist in the second half of 2013. Nevertheless, euro area GDP should still decline on an annual basis in 2013 (-0.5%) as the six-quarter recession recorded up to 2013Q1 provided an unfavourable starting point. Euro area economic growth should not exceed 1% in 2014. The international context remains surrounded by major uncertainties, with risks on the downside (e.g. renewed financial market stress that could curb the gradual improvement in confidence) as well as on the upside (e.g. a faster than expected recovery in confidence that could lead to a stronger economic upturn in the euro area).

The Belgian economy registered positive growth for the first time in five quarters in 2013Q2 (0.2% qoq) and should maintain this pace over the second half of the year, against the background of a further recovery of the European economy. However, due to an unfavourable starting point, annual GDP growth remains limited to 0.1% this year. In 2014, both export and domestic demand growth should pick up, resulting in a Belgian GDP growth rate of 1.1%.

This year, about 8 000 jobs should be lost, although the labour market situation should slightly improve in the course of the year as economic activity picks up. In 2014, nearly 19 000 new jobs should be created. Given the further increase in the labour force, the number of unemployed persons (broad administrative definition) should increase by 21 000 in 2013 and by 18 000 in 2014. The harmonised Eurostat unemployment rate should increase to 8.9% in 2014, compared to 7.6% in 2012.

Belgian inflation, as measured by the yoy growth rate of the national consumer price index, should cool from 2.8% in 2012 to 1.2% in 2013 and 1.3% in 2014. This decline is mainly due to the deceleration in underlying inflation and a decrease in energy prices. Moreover, as of this year, price reductions during sales periods are now taken into account in calculating the index.

STU 3-13 was finalised on 26 September 2013.

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

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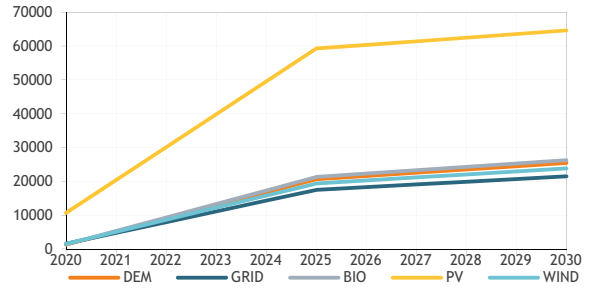
Job creation through renewables: getting the green light

Renewable energy has been pointed to as an interesting instrument for both environmental and economic reasons. Building up a domestically produced renewable energy supply can bring a number of benefits, not only in terms of the environment through its potentially advantageous impact on climate change or in terms of security of energy supply through significantly reducing fossil fuel import needs, but also as a driver for economic growth through continual innovation and as an economic activity through which a considerable number of jobs could be created. This article then looks at jobs and job creation through the very specific channel of renewable energy development, thereby linking the evolution of the energy system with potential job creation opportunities.

Five renewable energy scenarios are analysed with respect to a reference scenario (in which no renewable energy target is imposed beyond the year 2020). The five renewable energy scenarios all integrate an ambitious development of renewable energy sources (RES) to obtain, by the year 2030, a Belgian energy system running for 35% on renewable energy sources[1]. The five alternative scenarios all make full use of the available renewable potential on Belgian soil; the difference between them lies in the fact that one main source of (renewable) energy (be it solar, wind, biomass, electricity imports or energy savings[2]) is "privileged": its potential or technical upper bound is adjusted upwards following less conservative estimations in literature. The renewable scenarios are named according to their 'loosened' constraint, i.e. PV (for solar photovoltaics), WIND (for on- and offshore wind), BIO (for biomass), GRID (for more electricity imports) and DEM (for energy demand reduction or energy savings).

The job estimations are conducted by means of a labour intensity methodology[3] for the period 2020-2030. Under a demand driven philosophy, this labour intensity approach is used to estimate the additional number of full time equivalents (FTEs) created in the five renewable energy scenarios with respect to the fossil reference scenario. Using this methodology, originally derived from a.o. input-output analyses, job gains[4] of between 21 000 and 65 000 FTEs are to be expected in the renewable scenarios by 2030.

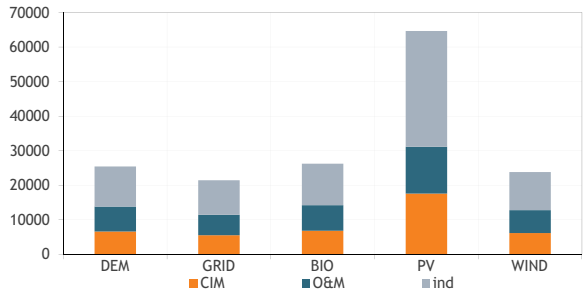
Graph 1 - Annual job years over REF due to the RES trajectories, period 2020-2030 (Total FTEs)



Sources: Wei et al. (2010) and Federal Planning Bureau
Note: FTE = full-time equivalent, REF = reference scenario, RES = renewable energy sources

The renewable trajectories all create more full-time equivalents (FTEs) than the reference scenario in any given year. The solar PV scenario (scenario in which approximately 800 km^2, or some 3% of the Belgian territory, is covered by solar panels) creates the most FTEs. Three major causes are at the heart of this outcome. First, solar PV is a variable renewable energy source with low capacity factors, hence requiring large installed capacities for given production levels. Second, solar PV has a large installation component in its capacity, hence requiring multiple installation teams for a given level of capacity. Third, many other jobs are linked to the solar sector: monitoring (since it is a variable renewable source), certifying (both for production and panel imports), research and development and demolition and recycling at the end of the operational lifetime. Although the PV scenario creates the most employment, this scenario also demands the largest amount of investment[5].

Graph 2 - Composition of type of jobs, difference wrt REF, year 2030 (Total FTEs)



Sources: Wei et al. (2010) and Federal Planning Bureau
Note: FTE = full-time equivalent, CIM = Construction, Installation and Manufacturing jobs, O&M = Operations, Maintenance and Fuel processing jobs, ind = Indirect jobs

1. In fact, these scenarios are built against a 2050 horizon and envisage, by 2050, a national energy system running completely on renewable energy sources. See Devogelaer, D., J. Duerinck, D. Gusbin, Y. Marenne, W. Nijs, M. Orsini, M. Pairon (2012), *Towards 100% renewable energy in Belgium by 2050*, Final report commissioned by the four Energy Ministers.
2. Energy savings (through implementation of energy efficiency) is sometimes called 'the hidden fuel' (see, e.g., the Journal of the International Energy Agency, Spring 2013). This hidden fuel seems to be indispensable in a transformation towards a renewable energy system.
3. Wei, M., S. Patadia and D.M. Kammen (2010), *Putting renewables and energy efficiency to work: How many jobs can the clean energy industry generate in the US?*, Energy Policy 38, pp. 919-931.
4. Job losses in the coal and natural gas industry are taken into account to project net employment impacts.
5. However, it is not the most expensive scenario in terms of total energy system costs due to very low variable (fuel) costs and relatively moderate demand reductions.

In a second step, a distinction is made between direct and indirect jobs. Direct jobs can further be subdivided into Construction, Installation and Manufacturing (CIM) and Operations, Maintenance and Fuel processing (O&M) jobs. In absolute terms, more CIM jobs are created in the PV and WIND scenarios; in all other scenarios, more O&M jobs are generated (particularly in BIO). In relative terms, all renewable scenarios engender more CIM jobs compared to the reference scenario. This is due to the fact that many renewable energies have higher installation requirements than fossil fuels. These installation jobs, along with other types of jobs (such as monitoring and certifying), are bound to stay domestic.

Indirect jobs are jobs created through the "supplier effect": up- and downstream suppliers may hire additional labour because their businesses expand due to the increased demand coming from the 'direct' sector. Examples are additional jobs in the aluminium or glass sector due to a huge expansion in PV panel demand. For the indirect jobs, a job multiplier[1] in the interval [1.8-2.1] is taken. The interval is derived from three reports on indirect job creation in renewable sectors (Bezdek, 2007; EWEA, 2009; Staiss, 2006).

Next to that, a sensitivity analysis on the effect of a decreasing employment multiplier over time was modeled. A decreasing multiplier can be seen as a proxy for increasing labour productivity in the sector. A rather conservative estimate of an increase in labour productivity of 1% annually boils down to a decrease in the number of FTEs of less than 10% in 2020 compared to a situation in which a constant employment multiplier is applied; in 2030, the relative job decrease amounts to about one sixth, or an interval of additional job creation in 2030 that will range between 18 000 and 53 000 FTEs. Although the methodology used is rather simplistic, it seems to be better in line with industry learning and cost cutting. On the other hand, a higher number of jobs can be generated if one is capable of tapping the export potential.

It is important to stress here that the chosen setting does not integrate potential macroeconomic feedback effects. This means that the impact of energy (electricity) cost rises on employment in other sectors is not included in the analysis; in such case, a macrosectoral approach is better fit. The EmployRES report (European Commission, 2009) combines two macrosectoral models to determine the RES-induced employment impacts at the European and Member State levels. The lesson learnt from that study is that although gross figures in terms of employment and value added are rather large, net figures are significantly smaller due to the dampening effect of the higher cost of renewable energies compared with conventional alternatives. The net effect on employment depends heavily on this energy cost increase: if there are substantial cost increases, these may hamper job creation. On the other hand, if (the effect of) energy cost increases can be confined, significant job creation can result. To confine (and, at the same time, explain) these cost increases, different tools can be envisaged. One could be to provide the means to descend renewable learning curves swiftly or to stimulate ambitious energy efficiency programs, another to (fully) integrate the external costs caused by fossil fuels[2]. Coordination and collaboration on an international scale is a prerequisite.

These jobs, nonetheless, will not happen on their own. Targeted education, preferably in close collaboration with industry, and training, (re)tooling and schooling with specific attention to revamping interest in science and engineering are of utmost importance. The crucial role of installing a coherent policy framework and defining adequate measures should not be underestimated and determines the number of jobs actually created. Different policy instruments to encourage such a renewable energy development (and the associated jobs) could be considered, such as fiscal incentives, direct support to RD&D for innovative renewable technologies, aid in financing the energy transition and enhancing international cooperation. Stable and supportive policies and measures are indispensable in tapping the vast job potential created by shifting society towards renewable energy sources.

Conclusion

Given the right policy framework, by 2030 between 21 000 and 65 000 full-time jobs may be created through an ambitious transformation of our current fossil energy system towards a renewable driven one. For these jobs to materialize, 35% of our primary energy needs should be fulfilled by renewable energy sources. If productivity effects are taken into account, the number of additional jobs could decrease to somewhere between 18 000 and 53 000, but (far) more jobs can see the light of day if niches are explored and exports are stimulated. On the other hand, energy cost rises should be contained as they may have an adverse effect on total job creation. This may be done by quickly descending renewable cost curves, pointing to the importance of innovation, as well as through international coordination.

1. Defined here as the sum of direct and indirect jobs over the direct jobs.

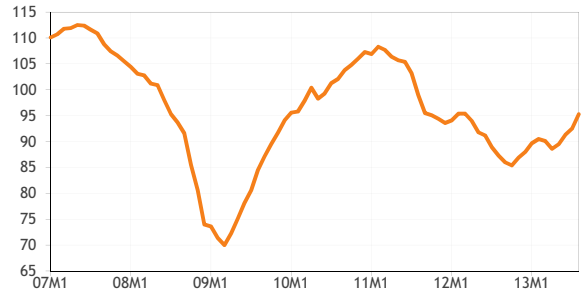
2. Fossil fuel prices do not include the costs of damaging 'side effects' such as air pollution and the associated health care costs for e.g. premature deaths or asthma attacks. Internalising these external cost elements would raise prices, hence reduce cost differentials with renewable energy sources.

Economic forecasts 2013-2014

The economic recovery seems to have started, but GDP growth in the euro area should remain limited to 1% in 2014...

After a six-quarter recession, the economy of the euro area as a whole returned to growth in 2013Q2. However, growth differentials between Member States remained large: Germany and France recovered strongly, while other countries experienced a further slowdown in economic activity. The favourable evolution of several confidence indicators during recent months suggests that the recovery will persist in the second half of 2013. If the current relative calm in financial markets is maintained, the recovery will be able to take hold against the background of a slight acceleration in growth of the global economy.

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



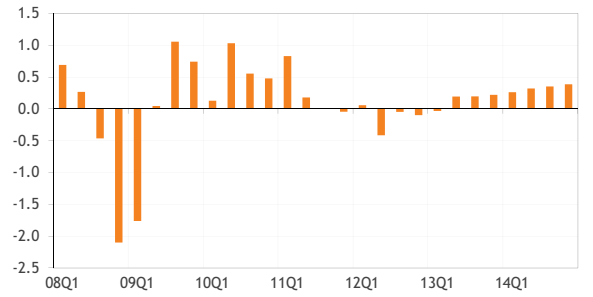
Source: European Commission

Despite positive growth from the second quarter onward, euro area GDP should still decline on an annual basis in 2013 (-0.5%), since the recession recorded up to 2013Q1 provided an unfavourable starting point. Economic growth should not exceed 1% in 2014. The restrictive fiscal policies of national governments continue to weigh on economic activity, albeit to a lesser extent than in 2012, while some Member States face tight credit conditions. Moreover, confidence in the public finances and banking sectors of several euro countries remains frail. A resurgence of the debt crisis in one or more euro countries could put the baseline scenario at risk. In contrast, a faster than expected recovery in confidence could lead to a stronger economic upturn in the euro area.

...as a result, Belgian economic growth will also remain modest

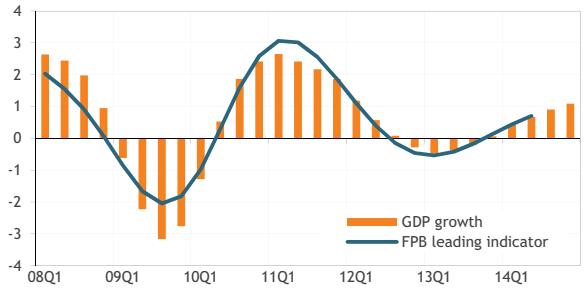
The slowdown in the world economy led to a slight contraction (-0.3%) of Belgian economic activity in 2012. The Belgian economy returned to positive growth in 2013Q2 (0.2% qoq) and should maintain this pace over the second half of the year, against the background of a further recovery of the European economy. However, due to an unfavourable starting point, annual GDP growth should remain limited to 0.1% this year. In 2014, both export and domestic demand growth should pick up, resulting in a GDP growth rate of 1.1%.

Graph 2 - Quarterly GDP growth (qoq growth rates, corrected for seasonal and calendar effects)



Sources: INR/ICN and FPB

Graph 3 - Quarterly GDP growth (yoy growth rates, 4-quarter moving averages)

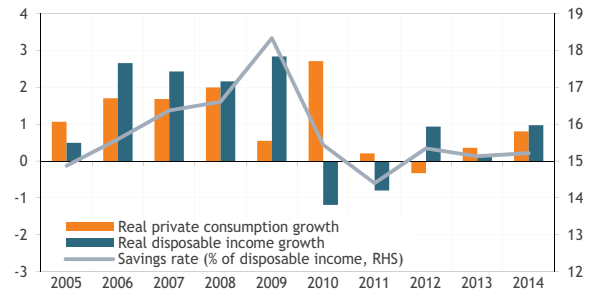


Sources: INR/ICN and FPB

From 2012Q2 onward, Belgian exports have weakened due to the slowdown in foreign markets. Export growth ought to become positive and gain momentum as the international economic situation improves. On an annual basis, export growth should remain modest in 2013 (0.2%) and accelerate to 3.6% in 2014. In both years, net exports should contribute positively to economic growth, which, together with lower oil prices, would reduce the current account balance deficit.

Consumer confidence, which is very sensitive to the situation in the labour market, fell sharply from mid-2011 up to the end of 2012. As a result, households saved a larger share of their income in 2012 (15.3%) than in 2011, at the expense of private consumption. The improvement in consumer confidence since 2013Q2 makes a further rise in households' propensity to save less probable. Consequently, private consumption should increase by 0.4% in 2013 and 0.8% in 2014, which is roughly in line with the evolution of real disposable income. Housing investment should drop strongly for the fifth time in six years in 2013 (-4.4%) and more or less stabilize in 2014 (-0.4%).

Graph 4 - Private consumption, disposable income and savings rate



Sources: INR/ICN and FPB

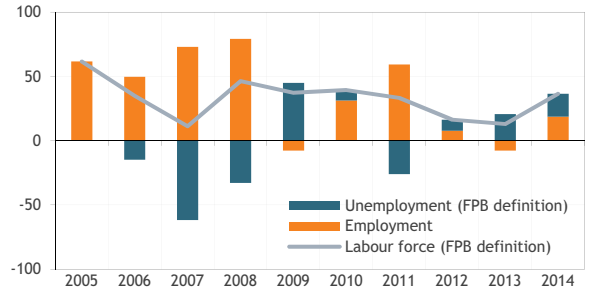
Business investment held up well in 2012 (0.1%), in spite of disappointing sales prospects and a further decline in business confidence. The current low capacity utilisation rate in manufacturing industry has reduced the need for expansion investment and, despite an increase in business confidence during recent months, this has only managed to return to its level of the beginning of 2012. Business investment should decline in 2013 (-1.1%), but the improved economic climate ought to lead to an upturn in investment growth in 2014 (1.8%).

Taking into account all known measures, the annual volume growth of public consumption should amount to 0.3% in 2013 and 1% in 2014. Growth in public investment is largely determined by local authorities' infrastructure projects, which represent over 40% of total public investment. Having increased by 13% over the period 2011-2012, public investment should shrink by 11% in the period 2013-2014.

Unemployment rises sharply

Due to the economic slowdown, domestic employment fell in the course of 2012 and, particularly, in 2013Q1. Thanks to a favourable starting point, there was still a net increase in employment of 8 200 persons on average in 2012. This year, about 8 000 jobs should be lost, although the situation should slightly improve in the course of the year as economic activity picks up. In 2014, nearly 19 000 new jobs should be created.

Graph 5 - Evolution of employment and unemployment (changes in thousands)



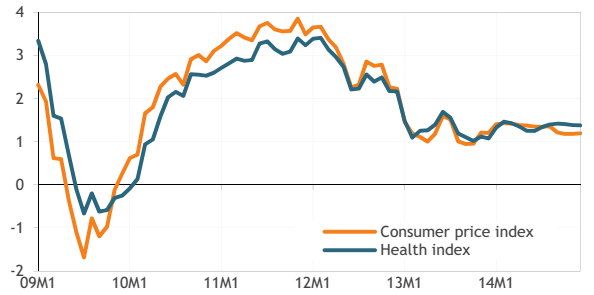
Sources: INR/ICN, RVA/ONEM, FPB

Due to the slackening of the labour market and the further increase in the labour force, the number of unemployed persons (broad administrative definition) rose by 8 500 in 2012. Their number should further increase in 2013 and 2014 (by 21 000 and 18 000 respectively). As a result, the unemployment rate (FPB definition) should rise from 12.1% in 2012 to 12.7% in 2014. The harmonised Eurostat unemployment rate (based on labour force surveys) should increase to 8.9% in 2014, compared to 7.6% in 2012.

Inflation cools substantially

Belgian inflation, as measured by the yoy growth rate of the national consumer price index, should cool from 2.8% in 2012 to 1.2% in 2013 and 1.3% in 2014. This decline is mainly due to the deceleration in underlying inflation and a decrease in energy prices. Energy prices are affected by both a drop in oil prices expressed in euro and the price reductions for gas and electricity that some suppliers implemented at the beginning of this year. Moreover, as of this year, price reductions during sales periods are now taken into account in calculating the index.

Graph 6 - Monthly evolution of inflation (yoy growth rates in %)



Sources: FPS Economy, INR/ICN, FPB

The increase in the health index, which is not affected by price developments for alcoholic beverages, tobacco, petrol and diesel, should slow down somewhat less distinctly: from 2.6% in 2012 to 1.3% in 2013 and 1.4% in 2014. The current pivotal index of public wages and social benefits (122.01) schould be exceeded in May 2014.

"Economische begroting 2013-2014 / Budget économique 2013-2014", INR/ICN, September 2013

Summary of Economic Forecasts

Economic forecasts for Belgium by the Federal Planning Bureau

Changes in volume (unless otherwise specified) (cut-off date of forecasts: 5 September 2013

	2011	2012	2013	2014
Private consumption	0.2	-0.3	0.4	0.8
Public consumption	0.8	0.8	0.3	1.0
Gross fixed capital formation	4.1	-0.1	-2.3	0.6
Final national demand	1.8	-0.4	-0.2	0.8
Exports of goods and services	5.5	0.7	0.2	3.6
Imports of goods and services	5.6	0.6	-0.1	3.4
Net-exports (contribution to growth)	0.0	0.1	0.3	0.3
Gross domestic product	1.8	-0.3	0.1	1.1
p.m. Gross domestic product - in current prices (bn euro)	369.84	376.09	382.71	392.91
National consumer price index	3.5	2.8	1.2	1.3
Consumer prices: health index	3.1	2.6	1.3	1.4
Real disposable income households	-0.8	0.9	0.2	1.0
Household savings ratio (as % of disposable income)	14.4	15.3	15.1	15.2
Domestic employment (change in '000, yearly average)	61.6	8.2	-7.7	18.7
Unemployment (Eurostat standardised rate, yearly average)	7.2	7.6	8.6	8.9
Current account balance (BoP definition, as % of GDP)	-1.1	-1.6	-1.4	-0.9
Short term interbank interest rate (3 m.)	1.4	0.6	0.2	0.4
Long term interest rate (10 y.)	4.2	3.0	2.5	3.1

Economic forecasts for Belgium by different institutions

	GDP-growth		Inflation		Government balance		Date of update
	2013	2014	2013	2014	2013	2014	
Federal Planning Bureau	0.1	1.1	1.2	1.3	.	.	09/13
INR/ICN	0.1	1.1	1.2	1.3	.	.	09/13
National Bank of Belgium	0.0	1.1	1.0	1.2	-2.9	-3.3	06/12
European Commission	0.0	1.2	1.3	1.6	-2.9	-3.1	05/13
OECD	0.0	1.1	1.4	1.2	-2.6	-2.3	05/13
IMF	0.2	1.2	1.7	1.4	-2.6	-2.1	04/13
ING	0.1	1.1	1.4	1.9	-2.5	-2.1	09/13
BNP Paribas Fortis	0.1	1.1	1.2	1.2	-2.7	-2.1	09/13
Belfius	0.2	1.2	1.5	1.6	-2.7	-1.5	06/13
KBC	0.1	1.2	1.2	1.4	-2.8	-3.0	08/13
Deutsche Bank	0.1	1.2	1.2	1.5	-3.0	-3.0	09/13
Oxford Economics	-0.1	0.8	1.4	2.0	-3.4	-3.0	09/13
IRES	-0.1	1.3	1.1	1.3	-2.5	-2.0	07/13
Belgian Prime News	0.1	1.2	1.3	1.5	-2.8	-2.3	06/13
Consensus Economics	-0.1	0.8	1.3	1.7	.	.	09/13
Consensus The Economist	-0.1	0.9	1.3	1.6	.	.	09/13
Consensus Wirtschaftsinstitute	0.2	1.2	1.3	1.5	-3.1	-2.9	04/13
Averages							
All institutions	0.1	1.1	1.3	1.5	-2.8	-2.5	
International public institutions	0.1	1.2	1.5	1.4	-2.7	-2.5	
Credit institutions	0.1	1.1	1.3	1.5	-2.8	-2.3	

Transport Indicators

As part of its collaboration with the Federal Public Service Transport and Mobility, the Federal Planning Bureau develops and maintains a Transport database. In this section, the evolution of the indicators for Belgium from 2000 to 2011 are compared to the European aggregates. The indicators presented cover a wide range of subjects, with varying scope.

Transport industry and household expenditure indicators are both based on the National Accounts, which apply to resident companies and households. Due to considerable growth in 2011, the value added of Belgian transport increased faster between 2000 and 2011 than in the EU27 transport industry. Meanwhile, the Belgian transport industry continued to lose share in the Belgian economy and the EU27 transport industry in terms of employment.

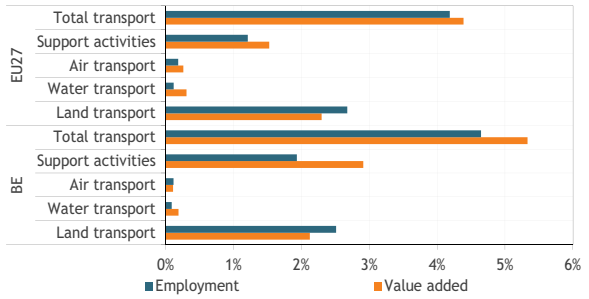
Despite a decrease in 2011, household expenditure statistics show that Belgian transport-related expenditure was still above and EU27 transport-related expenditure below their 2000 levels.

The transport indicators show the evolution of passenger and freight transport within the Belgian and EU27 territories between 2000 and 2011. While Belgian passenger transport continued to increase, EU27 passenger transport levelled off from 2008. In 2011, maritime transport from and to the Belgian ports slowed down. Even so, it performed better than the EU15 average. In particular, Belgian container transport outpaced EU15 container transport.

The energy and emission indicators are also based on the territory principle. The first are based on consumption within the territory, the second on transport emissions within the territory of the reporting country. In 2011, GHG emissions decreased more for the total economy than for transport, implying an increasing share of transport in total GHG emissions for both Belgium and the EU27.

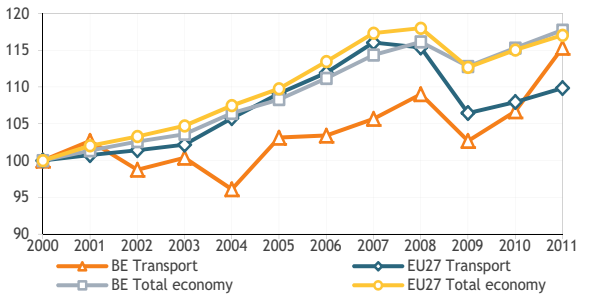
Transport industry indicators

Graph 1 - Relative importance of the transport industry (% share of value added and employment of the total economy)



Source: EUROSTAT (Economy and finance database)
N.B. For Belgium (BE), figures relate to 2011; for the EU27 to 2010.

Graph 2 - Gross value added of the transport industry (chained euros, index 2000 = 100)



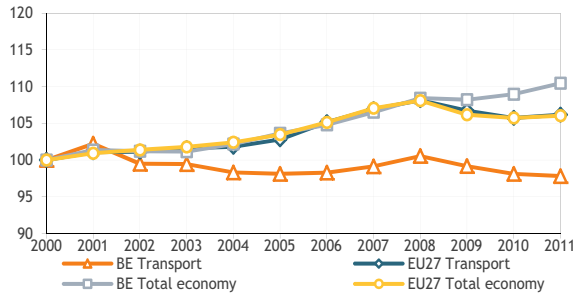
Source: EUROSTAT (Economy and finance database)
N.B. The EU27 Transport includes postal and courier activities.

The transport industry comprises companies having transport as their principal activity and covers four branches: land, water and air transport on the one hand and support activities for transport on the other. In 2011, Belgium's transport industry accounted for 5.3% of GDP, compared to 4.4% in 2010 for the EU27. As support activities for transport are the main transport branch, with a share of GDP of 2.9%, the structure of Belgium's transport industry differs from that of the European transport industry. At the EU27 level, land transport is the largest transport branch, with a share of 2.3% of GDP in 2010, compared to 2.1% for Belgium.

Real gross value added growth of the Belgian transport industry (+15.3%) was smaller than GDP growth (+17.7%) between 2000 and 2011. Mainly during the 2000-2004 period, value added by the transport industry lagged behind GDP growth. In 2009, the crisis hit the industry hard. However, driven by the growth of land transport and support activities, the Belgian transport industry recovered completely in 2011. In 2011, value added of the transport industry surpassed its pre-crisis level (2008).

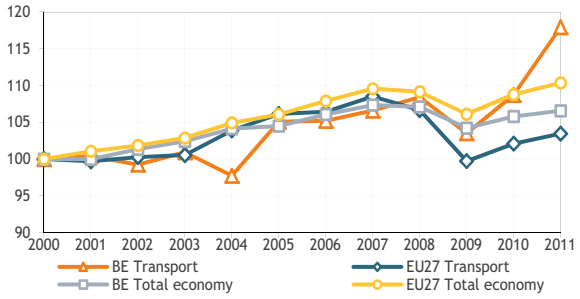
Over the period 2000-2011, the growth of the European transport industry was smaller than that of the Belgian transport industry. From 2007, EU27 transport growth was lower than GDP growth. The EU27 transport industry was hit harder by the crisis and recovered less than the Belgian transport industry. In 2011, value added was still lower than its pre-crisis level.

Graph 3 - Employment in the transport industry (thousand persons, index 2000 = 100)



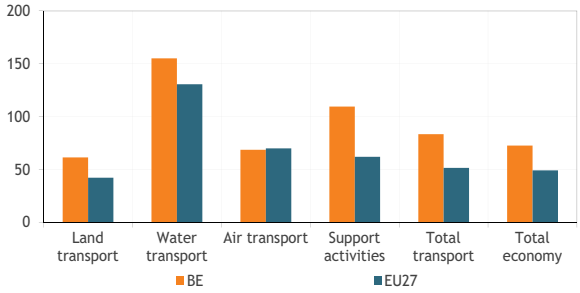
Source: EUROSTAT (Economy and finance database)

Graph 4 - Labour productivity (chained euros per person employed, index 2000 = 100)



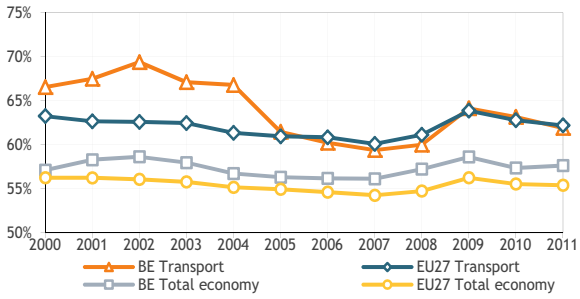
Source: EUROSTAT (Economy and finance database)
N.B. The EU27 Transport includes postal and courier activities.

Graph 5 - Sectoral breakdown of labour productivity (thousands of euros per person employed)



Source: EUROSTAT (Economy and finance database)
N.B. For Belgium (BE), figures relate to 2011; for EU27, to 2010.

Graph 6 - Wage share (% of gross value added)



Source: EUROSTAT (Economy and finance database)
N.B. The EU27 Transport includes postal and courier activities.

Like gross value added, the share of transport employment in total employment (4.6% in 2011) was higher in Belgium than the EU27 average (4.2%). As in the EU27, the land transport branch was the transport industry's largest employer. Its share in total Belgian employment (2.5%) was slightly lower than the EU27 average (2.7%). As was the case for value added, Belgian support activities (1.9%) accounted for a higher share of total employment than in the EU27 (1.2%).

Both Belgian and European employment in the transport industry increased at a lower rate than value added over the 2000-2011 period. The Belgian transport industry suffered more from the crisis than the total economy, while the EU27 transport industry and total economy evolved in line. Thanks to anti-crisis measures, the crisis had little impact on Belgian employment, in particular in the transport industry. Divergence between employment and value added growth was highest for the Belgian transport industry, implying higher productivity growth in Belgium than in the EU27. Contrary to the EU27, the Belgian transport industry showed higher labour productivity growth than the rest of the economy. While in 2011 labour productivity in the Belgian transport industry was higher than its pre-crisis level, this was not the case for the EU27.

The fact that the transport industry accounts for a larger share in value added than in employment indicates that the labour productivity level is higher in the transport industry than in the total economy. Belgian productivity in the transport industry in 2011 was 15% higher than for the total economy. In the EU27, the difference was 5%.

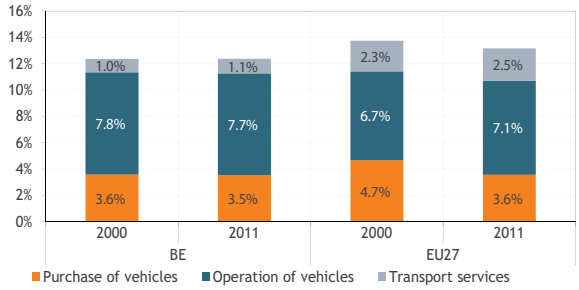
Belgian and, to a larger extent, the transport industry's labour productivity were higher than the European average (respectively, 48% and 61% higher). Only for air transport was Belgian labour productivity slightly lower than the European average (2%). For the other branches, the differences in labour productivity ranged from 19% for water transport to 76% for support activities.

In both Belgium and the EU27, water transport recorded the highest labour productivity among the four branches. Its labour productivity was more than twice that of the total economy. Labour productivity was lowest in land transport.

Wages did not grow as fast as value added between 2000 and 2011. In 2000, Belgian wages, examined as a proportion of value added, the so-called wage share, were higher than in the EU27, but then converged to the European average of 62% (62%) in 2011. The transport industry's wage share was higher than that of the total economy.

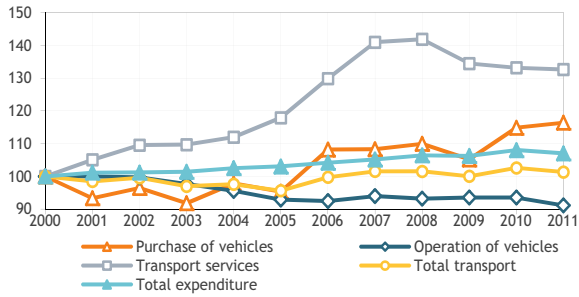
Household expenditure

Graph 7 - Relative size of household expenditure on transport (% share of total household expenditure, current prices)



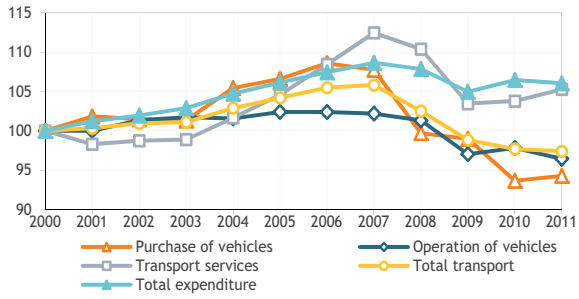
Sources: EUROSTAT (Economy and finance database) and FPB (Transport database)

Graph 8 - Household expenditure for transport per capita - Belgium (chained euros, index 2000 = 100)



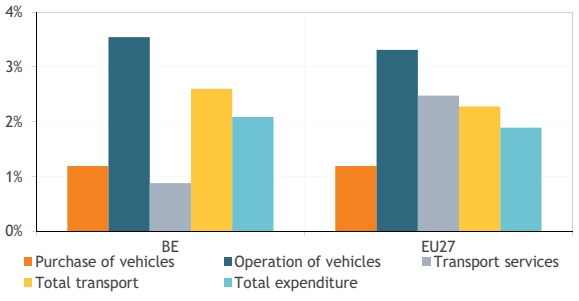
Source: FPB (Transport database)

Graph 9 - Household expenditure on transport per capita – EU27 (chained euros, index 2000 = 100)



Source: EUROSTAT (Economy and finance database)

Graph 10 - Average annual growth in consumer prices for transport (2000-2011) (%)



Sources: EUROSTAT (Economy and finance database) and FPB (Transport database)

Household expenditure for transport covers three products: the purchase of vehicles, the operation of vehicles and transport services. Between 2000 and 2011, the share of Belgian transport expenses in total household expenditure remained constant at 12.4%. For the EU27, a decline by 0.6 %-points is noted. The EU27's transport expenses constituted 13.2% of 2011 total household expenditure.

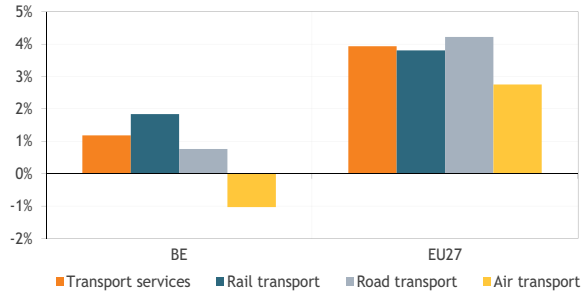
As Graphs 8 and 9 show, real transport expenditure grew at a lower rate than total real expenditure. Belgian transport expenditure grew by 0.9% between 2000 and 2011, while the EU27 recorded negative growth of 2.6%. Over the same period, consumer prices for transport grew at higher rates than average expenditure prices. Belgian transport prices rose by 2.6% on average annually, compared to 2.3% for the EU27.

For Belgium, no major shift between transport products is observed; in the EU27 the share of *vehicle purchases* receded significantly by 1.1 %-points. In 2011, the purchase of vehicles accounted for 3.5% and 3.6% of total expenditure in Belgium and the EU27, respectively. While Belgian vehicle purchases dropped in only 2009 and rebounded in 2010, EU27 purchases continued to drop from 2007 until 2011. Belgian vehicle purchases increased by 16% between 2000 and 2011, compared to a 6% decrease for European purchases. For both Belgium and the EU27, vehicle prices increased at a lower rate than average expenditure prices. Both Belgium and the EU27 recorded an annual growth rate of 1.2%.

Transport services cover passenger transport by railway, road, air, sea and inland waterways transport, with the first three modes constituting the main products. Transport services constituted the smallest part of transport expenditure. For Belgium (1.1% in total 2011 expenditure), its share was considerably lower than in the EU27 (2.5%), but slightly increased (+0.1 %-points). This increase was due to the increasing expenditure for transport services (+32%). For the EU27, the share grew by 0.2 %-points. The growth can be attributed to rising prices (+2.5% per year).

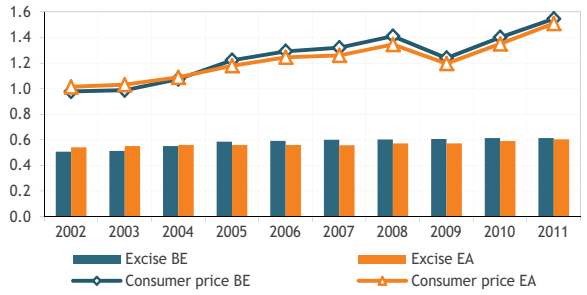
Transport services price growth was considerably lower in Belgium than in the EU27. Graph 11 shows contrasting price evolutions for Belgian rail, road and air transport. Rail transport recorded the highest growth rate (+1.8% per year), more than twice the growth rate for road transport (+0.8% per year). Air transport even showed a negative growth rate (-1.0%). The contrast between European price evolutions was less pronounced. The growth rates varied between 2.8% (air transport) and 4.2% (road transport), all higher than the HICP growth rate.

Graph 11 - Average annual growth in consumer prices for transport services (2000-2011) (%)



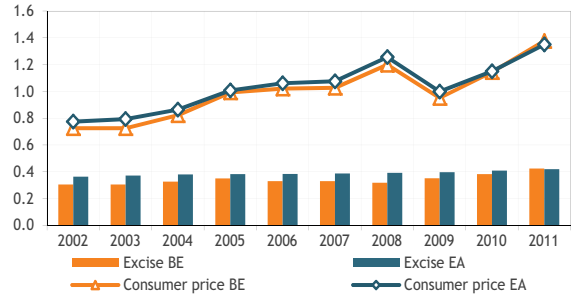
Source: EUROSTAT (Economy and finance database)

Graph 12 - Gasoline (RON 95) excise duties and consumer prices (euro/l)



Sources: European Commission and FPB calculations

Graph 13 - Diesel excise duties and consumer prices (euro/l)



Sources: European Commission and FPB calculations

Operation of vehicles is the main transport product category, covering the purchase of spare parts, accessories, fuels and lubricants for personal transport equipment, as well as the maintenance and repair of this equipment. In 2011, its share in total expenditure amounted to 7.7% for Belgium and 7.1% for the EU27. While in Belgium a structural decline in expenditure for the operation of vehicles is observed (-9% between 2000 and 2011), this is not the case for the EU27. Only when recession struck, was the gradual increase in expenditure for operation inverted to a decrease (-4%), over the 2000-2011 period. Prices for the operation of vehicles tended to grow at a higher rate than total transport prices: in Belgium at 3.5% per year; in the EU27 at 3.3%. The combination of these two effects resulted in a decline in the share of 'Operation of vehicles' for Belgium and a slight increase for the EU27.

The main product within the category 'Operation of vehicles' is fuel. In 2002, Belgian fuel prices were below the average fuel prices of the euro area (EA). Between 2002 and 2011, Belgian petrol prices recorded an annual growth rate of 5.2%, considerably higher than the average of 4.5% in the EA. From 2005, Belgian gasoline prices exceeded the EA average. In 2011, Belgian gasoline prices amount to EUR 1.546/l, the EA average to EUR 1.509/l.

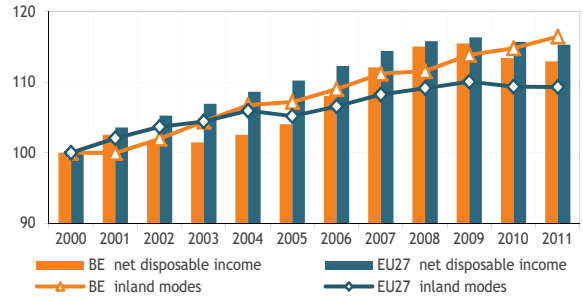
Diesel prices grew at a higher rate. Recording a growth rate of 5.9% per year, Belgian diesel prices outpaced EA diesel prices (+5.1% per year). In 2011, the Belgian diesel price was higher than the EA average: EUR 1.377/l compared to EUR 1.350/l.

Belgian fuel prices grew at a higher rate than the average in the euro area due to the introduction of the 'positive cliquet' system in 2003 by the Belgian government. This system enabled the Belgian government to increase excises when maximum fuel prices fell due to decreasing international oil prices. One year later, the government presented the 'negative cliquet' system, compensating consumers with reduced excises should fuel prices rise. In 2004 and 2005, the positive cliquet system was applied several times for gasoline. From 2005, Belgian gasoline excises and consumer prices were higher than in the EA. In 2008, the negative cliquet system was applied for gasoline.

Belgian diesel excises show fluctuating rates. This is due to the varying application of the positive and the negative cliquet systems: the positive in the period 2003-2005, the negative in the period 2005-2007, and finally the positive from 2009 on.

Passenger transport

Graph 14 - Passenger transport (passenger-km and real net disposable income, index 2000 = 100)

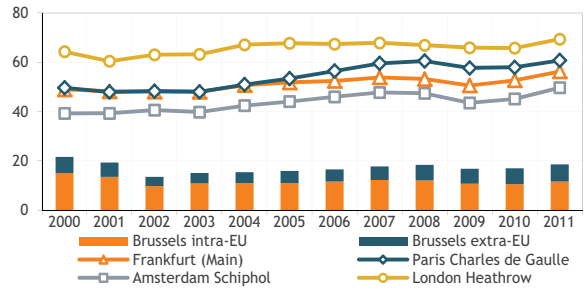


Sources: EUROSTAT (Economy and finance database) and European Commission

Graph 15 - Modal split of passenger transport (% of total transport in passenger-km)

Source: European Commission

Graph 16 - Passenger air transport (million passengers)



Sources: EUROSTAT (Transport database) and European Commission

Graph 14 compares the evolution of passenger transport demand in terms of passenger-km for inland modes (passenger cars, buses and coaches, tram and metro and rail) with the evolution of real net disposable income.

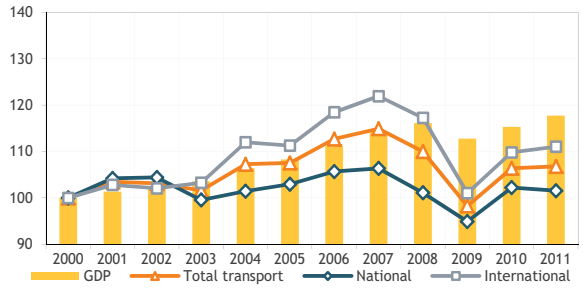
Belgian passenger transport evolved independently from net disposable income. While net disposable income decreased from 2009, passenger transport continued to increase. Over the 2000-2011 period, passenger transport growth (16.5%) was higher than real net disposable income growth (13.0%). EU27 passenger transport was more sensitive to the evolution of net disposable income. The decrease in net disposable income from 2009 resulted in a decrease in passenger transport. Contrary to Belgium, EU27 real net disposable income growth was higher than that of passenger demand: 15.3% compared to 9.3%.

While the share of passenger cars in total passenger transport demand decreased in Belgium between 2000 and 2011, it rose in the EU27. In 2011, the share of passenger cars in Belgium amounted to 79%, compared to 83% in the EU27. Buses and coaches and, to a lesser extent, rail increased their shares in Belgian passenger transport demand. In 2011, their share amounted to 13% and 7% respectively. The share of buses and coaches was higher than the European average.

Graph 16 compares the evolution of Brussels airport with the evolution of the four largest European airports. At the beginning of the decade, the Belgian airport suffered from the consequences of the attacks of 9/11 on the one hand and the bankruptcy of SABENA on the other. Over a period of two years, the airport lost more than one third of its passengers. In 2011, activity at the airport attained its highest level since 2002, with 18.6 million passengers carried. This was still well below the 21.6 million passengers carried in 2000. Intra-EU travel remained the primary activity at Brussels airport. The share of extra-EU travel dropped significantly after the bankruptcy of SABENA. However, from then on, its share grew continuously. All top four airports grew over the 2000-2011 period. Growth was smallest for Europe's largest airport (London Heathrow) due to saturation.

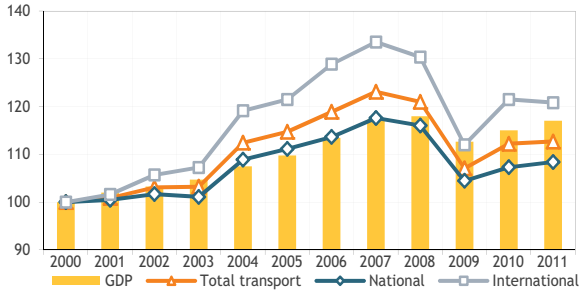
Freight transport

Graph 17 - Freight transport in Belgium (tonne-km and GDP, index 2000 = 100)



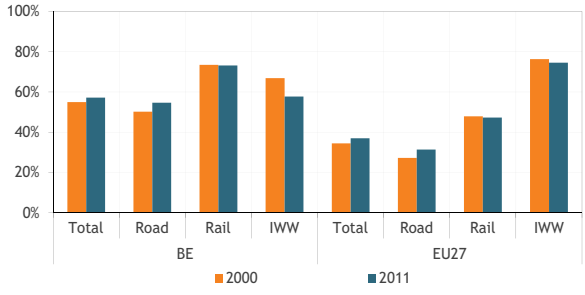
Sources: EUROSTAT (Transport database) and FPB (Transport database)
N.B. For road transport, the number of countries reporting international transport from and/or to Belgium evolves over time. For IWW, 2011 figures for Belgium are provisional.

Graph 18 - Freight transport in the EU27 (tonne-km and GDP, index 2000 = 100)



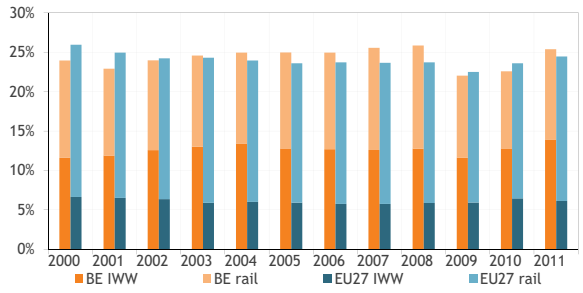
Sources: EUROSTAT (Transport database) and European Commission
N.B. Road transport figures relate to transport by EU27-registered vehicles.

Graph 19 - Relative importance of international transport (% of total transport in tonne-km)



Sources: EUROSTAT (Transport database); European Commission; FPB (Transport database)
N.B. For IWW, 2011 figures for Belgium are provisional.

Graph 20 - Share of inland waterways and rail in freight transport (% of total transport in tonne-km)



Sources: EUROSTAT (Transport database); European Commission; FPB (Transport database)
N.B. For IWW, 2011 figures for Belgium are provisional.

Graphs 17 and 18 compare the evolution of GDP with the evolution of national and international (transport with its origin and/or destination abroad) freight transport demand in terms of tonne-km, for heavy duty vehicles, inland waterways (IWW), and rail. Over the 2000-2011 period, freight transport in Belgium increased by 7%, compared to 13% for the EU27. For Belgium, this was considerably lower than GDP growth (+18%). For the EU27, the difference was smaller, with GDP attaining +17%. Between 2008 and 2010, freight transport first decreased at a higher rate than GDP then outpaced GDP the next year. In 2011, GDP increased faster than freight transport, in Belgium and the EU27.

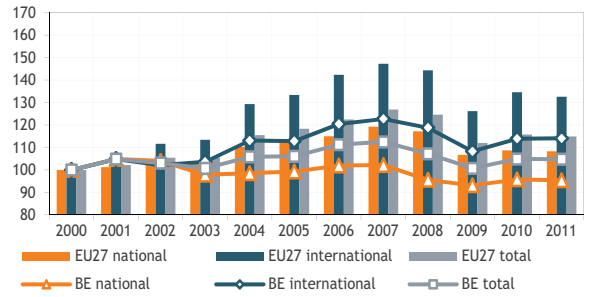
International transport is more elastic with respect to GDP than national transport. Between 2000 and 2007, this resulted in international transport growth surpassing GDP growth. Over the same period, Belgian national transport growth was below GDP growth and that of the EU27 in line with GDP growth. In 2008 and 2009, the crisis hit freight transport hard. In 2010, freight transport recovered partially, recording growth figures higher than GDP growth. In 2011, recovery slowed down. Freight transport growth in Belgium and the EU27 was limited to 0.4%, considerably lower than GDP growth. International transport suffered most from the recession, but recovered better than national transport. Over the period 2000-2011, national transport within the Belgian territory recorded 2% growth, compared to growth of 8% for the EU27. EU27 international transport growth was also significantly higher (+21%) than that within the Belgian territory (+11%).

With a share of 55%, international freight transport was already predominant in Belgium in 2000, while the EU27 average amounted to 35%. Between 2000 and 2011, the share of international transport increased by 2 %-points, for both Belgium and the EU27. For rail and road, the Belgian shares were higher than the European averages. Only for inland waterways was the Belgian share lower.

The evolution of the share of international transport in road transport contrasts with its evolution for rail and IWW. Road transport recorded an increase of 5 and 4 %-points in Belgium and the EU27 respectively. For rail transport, the share decreased by 1 %-point for both Belgium and the EU27. The decline was highest for IWW. International transport's share in Belgian inland navigation dropped significantly by 9 %-points; in the EU27, the decline amounted to 2 %-points.

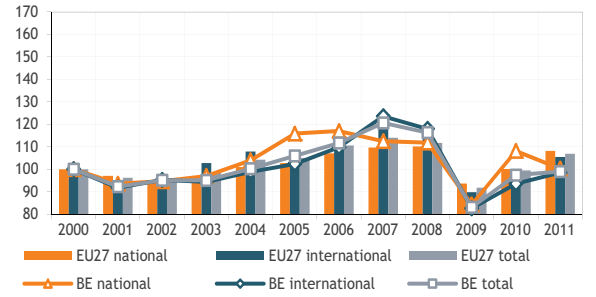
Road was the dominant freight transport mode, both in Belgium and the EU27, with a modal share of about 75% in 2011. Up to 2009, the share of Belgian and EU27 IWW and rail in total transport showed diverging evolutions.

Graph 21 - Road freight transport (tonne-km, index 2000 = 100)



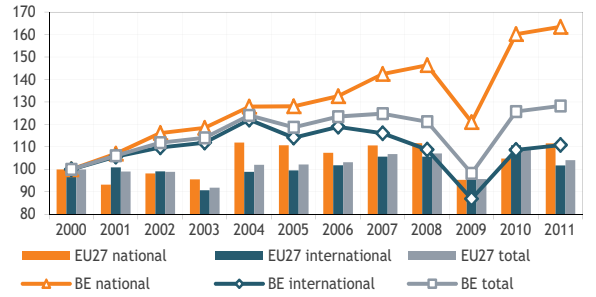
Sources: European Commission and FPB (Transport database)
N.B. For Belgium, the number of countries reporting international transport from and/or to Belgium evolves over time.

Graph 22 - Rail freight transport (tonne-km, index 2000 = 100)



Source: EUROSTAT (Transport database)

Graph 23 - Inland waterways freight (tonne-km, index 2000 = 100)



Source: EUROSTAT (Transport database)
N.B. For IWW, 2011 figures for Belgium are provisional.

In Belgium, the increase in the share of these modes came abruptly to an end, while the gradual decline of their shares in the EU27 recorded an acceleration. From 2010, the share of these modes entered into growth in both Belgium and the EU27. The Belgian share of IWW was higher than the European share; that of rail smaller.

In 2010, Belgian and European transport recovered partially from the recession. Limited growth in 2011 kept transport activity below its pre-crisis level. Only Belgian inland waterways exceeded their pre-crisis level.

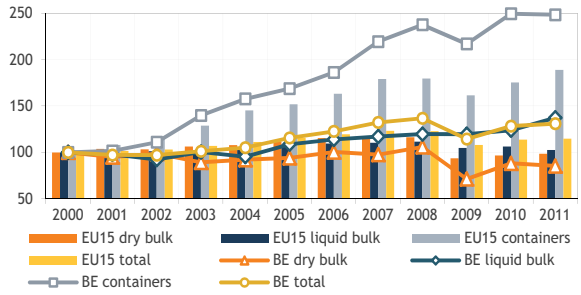
Between 2000 and 2011, national transport's growth exceeded international transport growth for rail and IWW, both for Belgium and the EU27. The reverse was true for road transport. In 2010-2011, recovery from the bottom was stimulated by international transport for road and rail transport. This contrasted with national transport growth exceeding international transport growth for IWW during this period.

Over the 2000-2011 period, road transport within the Belgian territory grew by 5%. National and international transport showed diverging evolutions with a decrease of 5% and an increase of 14% respectively. These growth rates are considerably lower than the EU27 averages. Both national and international road transport recorded positive growth of 8% and 32% respectively. From 2009, road transport within the Belgian territory increased more than in the EU27.

Rail freight activity on Belgian soil decreased by 1% over the 2000-2011 period, while the EU27 recorded 7% growth. Belgian international transport by rail decreased by 1.5%, while national transport recorded marginal growth of 0.3%. On average, European national transport grew by 8%, compared to 5% growth for international transport. Belgian rail transport was hit hardest by the crisis, but growth from 2009 was 3 %-points higher than in the EU27.

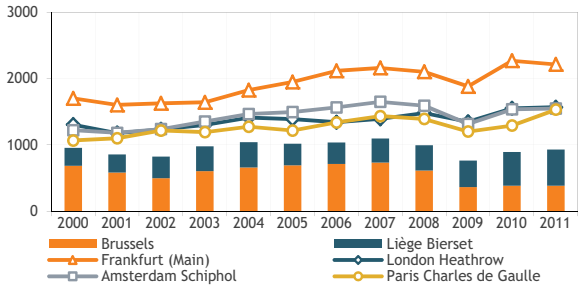
Freight activity on Belgian inland waterways grew by 28% over the 2000-2011 period. As for the EU27, national transport growth (+63%) exceeded international transport growth (+11%). Driven by national transport, Belgian IWW was already above its pre-crisis level by 2010. EU27 IWW transport growth was significantly lower than Belgium's, both for national and international transport. After recovery in 2010, EU27 total IWW transport dropped back in 2011.

Graph 24 - Maritime freight transport (tonnes loaded and unloaded, index 2000 = 100)



Source: EUROSTAT (Transport database)

Graph 25 - Air freight transport (thousand tonnes)



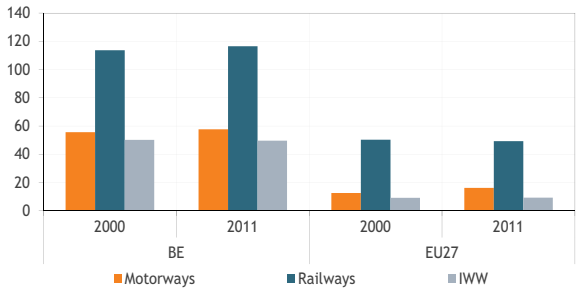
Sources: EUROSTAT (Transport database) and European Commission

The Belgian maritime ports showed growth of 31% between 2000 and 2011, compared to 15% for the EU15 ports. Graph 24 compares the evolution of the amount of goods handled in Belgian and in the EU15 ports for the three main types of goods. The main driver of this evolution was the growth of container transport, in both Belgium and the EU15. In Belgium, container transport increased by 150%; in the EU15 by 88%. After the 2010 rebound, maritime transport growth decelerated in 2011. In 2011, total maritime transport had not yet fully recovered from the drop in 2009. In particular, dry bulk had not reached the level of before the crisis. Already in 2010, the level of container transport in Belgian maritime ports exceeded the 2008 level.

With 687 000 tonnes handled in 2000, the cargo division of Brussels National airport was one of the top 10 cargo airports in Europe. In 2008, DHL moved its European hub from the Belgian airport to Leipzig. From 2010, Brussels airport stood behind the Liège airport at Bierset. In 2011, the volume handled at Brussels Airport stagnated, while the Liège Airport recorded growth of 7%. Of the top four cargo airports, only Paris Charles de Gaulle could present better growth figures.

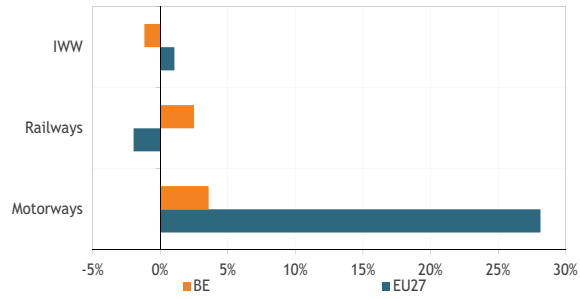
Infrastructure

Graph 26 - Infrastructure density (km/1000 km²)



Source: FPB (Transport database)

Graph 27 - Growth in length of transport infrastructure 2000-2011 (%)



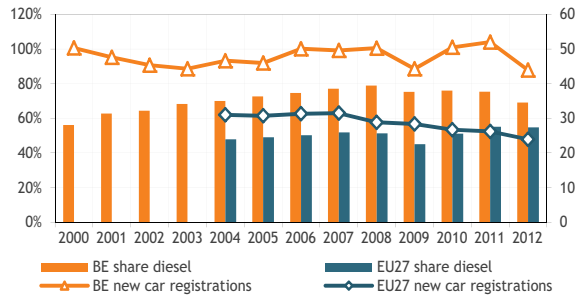
Source: FPB (Transport database)

Belgium is one of the countries with the densest transport networks in Europe. The comparison of the length of networks with a country's area gives a good picture of the concentration of networks. Remarkably, the density of the railways is the highest. In Belgium, a density of 117 km/1000 km² was observed in 2011. Only in the Czech Republic was the railway density higher. The EU27 average is 49 km/1000 km². Rail densities were more than twice the motorway or inland waterways densities. Belgian motorway densities attained 58 km/1000 km². This was more than three times the European average. Only the Netherlands and Luxembourg had a higher motorway density (respectively 63 and 59 km/1000 km²). For Belgian inland waterways, a density of 50 km/1000 km² was observed. The Netherlands had a higher inland waterways density, while the EU27 average was 9 km/1000 km².

Graph 27 compares the evolution of the length of the Belgian transport networks with their evolution in the EU27. The length of the Belgian railways recorded growth of 2.5%, despite an already high density. In the EU27, the length of railways is tending to shrink. Over the 2000-2011 period, the length of Belgian motorways grew by 3.6%. This was considerably lower than the European average. The decrease in the length of Belgian inland waterways was due to reclassification of certain parts of the network. In the EU27, the length of the inland waterways increased by 1.0%.

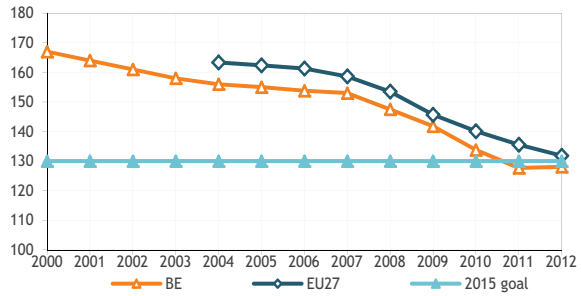
Passenger car stock

Graph 28 - Newly registered passenger cars and share of diesel (number/1000 inhabitants (R-axis) and % (L-axis))



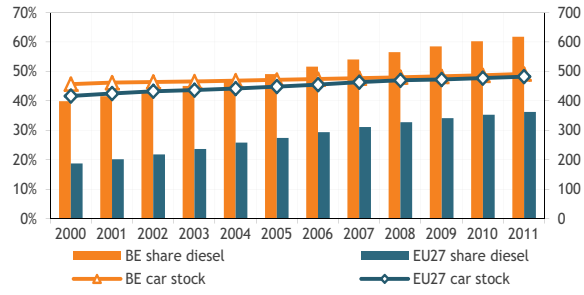
Sources: European Environmental Agency and FPB (Transport database)

Graph 29 - Average CO_2 emissions of newly registered passenger cars ($g\ CO_2/km$)



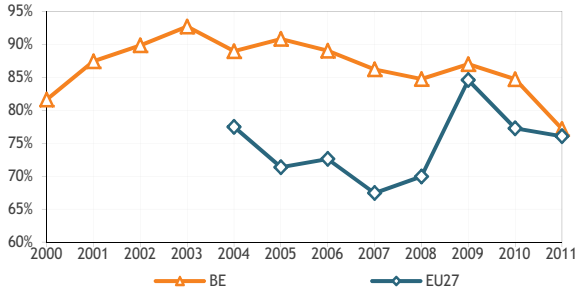
Sources: European Environmental Agency and FEBIAC

Graph 30 - Passenger car stock and share of diesel (number/1000 inhabitants (R-axis) and % (L-axis))



Source: FPB (Transport database)

Graph 31 - Degree of replacement (% of new cars replacing existing cars)



Source: FPB (Transport database)

In 2012, Belgium recorded one of the highest numbers of newly registered cars per thousand inhabitants (44) in the EU27. Only Luxembourg showed a higher rate. The EU27 rate was significantly lower: 24 per thousand inhabitants. While in 2011 the number of newly registered cars exceeded its pre-crisis level, Belgian numbers significantly dropped in 2012. EU27 figures continued to shrink steadily from 2007.

In Belgium, the continuous growth of the share of diesel in newly registered cars seems to have come to an end. In 2012, 69% of new cars had diesel motorisation. The share of diesel peaked in 2008, with a share in newly registered cars of 79%. The decrease in 2012 was the second consecutive decrease. In the EU27, the share of diesel cars attained 55%.

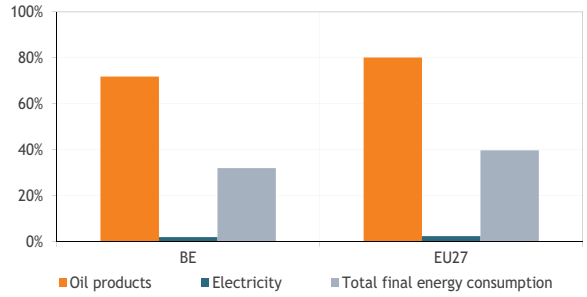
The main drivers for the decreasing average CO_2 emissions for newly registered cars were technological improvements and the evolution of the shares of the different fuel technologies. Indeed, diesel cars emit less CO_2 than gasoline cars. The increasing share of diesel motorisation thus contributed to the decrease in average CO_2 emissions per km from passenger cars. Belgian average CO_2 emissions were lower than the European average, due to the higher diesel share. In 2012, average emissions increased for the first time, albeit marginally (+0.3%). This was the result of (i) the shift towards gasoline cars and (ii) the increase in average emissions by these cars. Increased car size was responsible for the increase in average gasoline emissions. Belgian average emissions (128 g/km) were still below the 130 g/km target set for 2015. At the European level, average emissions continued to decrease and attained 132 g/km in 2012.

For the passenger car stock, there were 492 passenger cars for every thousand inhabitants in 2011 for Belgium, compared to 482 for the EU27. Over the 2000-2011 period, the Belgian car stock growth was below the European average. Belgian stock per capita grew 8% over the 2000-2011 period, compared to 16% for the EU27. In recent years, EU27 and Belgian growth converged. From 2006, more than half of the Belgian car stock had diesel motorisation. In 2011, the share of diesel cars amounted to 62%; in the EU27, the share of diesel cars attained 36%.

In 2011, 77% of Belgian newly registered cars replaced existing cars. This is only 1 %-point higher than the EU27 average. In previous years, a considerably higher share of newly registered cars and a lower growth rate of the car stock resulted in a significantly higher replacement rate in Belgium than in the EU27. The significant drop in 2011 is due to a considerable increase in the Belgium car stock growth rate.

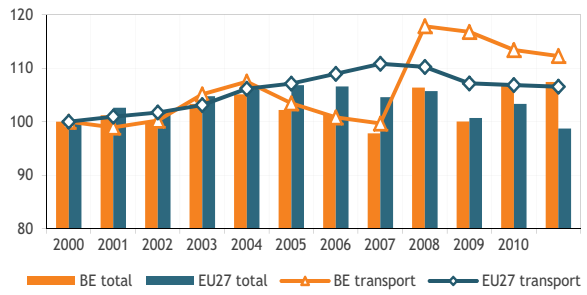
Transport energy consumption

Graph 32 - Share of transport in energy consumption in 2011 (% per energy carrier)



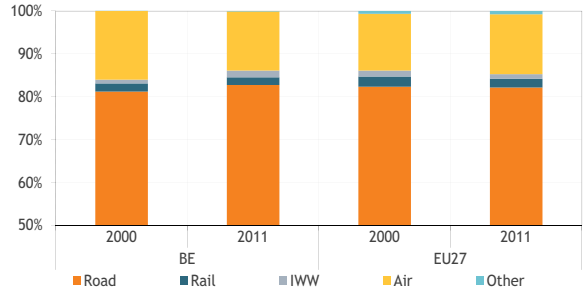
Source: EUROSTAT (Energy and environment database)

Graph 33 - Total and transport final energy consumption (TJ, index 2000 = 100)



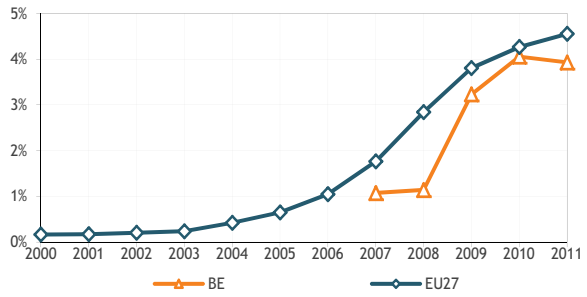
Source: EUROSTAT (Energy and environment database)

Graph 34 - Modal share of transport in final energy consumption (%)



Source: EUROSTAT (Energy and environment database)

Graph 35 - Share of biofuels in road transport final energy consumption (%)



Source: EUROSTAT (Energy and environment database)

In Belgium, the transport sector accounted for 32% of 2011 total final energy consumption, compared to 40% in the EU27. The relatively lower share for Belgium was mainly due to the different structure of final energy consumption, with Belgium having a large energy-intensive industrial sector.

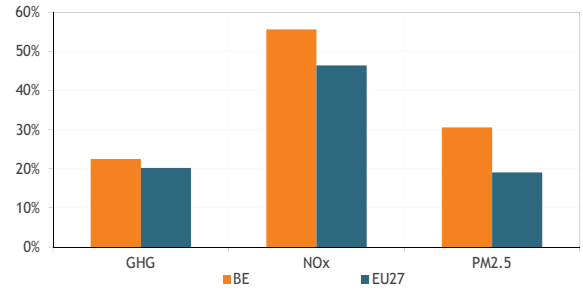
Oil products were the main energy sources, with a share of about 95%. In Belgium, transport accounted for 72% of the final consumption of oil products. In the EU27, this share amounted to more than 80%. The smaller share for Belgium is due to the fact that a large share of Belgian houses are heated with domestic fuel oil. Belgian electricity consumption by transport accounted for 2.0% of total final electricity consumption. This was slightly lower than for the EU27 (2.4%).

Until 2007, Belgian transport and total energy consumption evolved at almost identical growth rates. The significant rise in 2008 was caused by methodological changes in the collection of data for aviation and road transport. The significant decline since 2009 was on account of the same two sectors. In terms of energy consumption, road transport was the main mode, with a share of more than 80% in both Belgium and the EU27. The share of aviation amounted to 16%. This was higher than the EU27 average of 13%. The share of rail and inland navigation was marginal: 2%.

In 2011, neither Belgium (3.93%) nor the EU27 (4.55%) met the indicative target of 5.75% biofuel for all petrol and diesel for transport purposes placed on their markets by 31 December 2010. In order to increase biofuel penetration, Belgium uses a quota mechanism, where the amount of biofuel benefiting from support is shared amongst different suppliers through calls for tender. This mechanism was put into place in 2006, with 2007 thus being the first year with biofuel consumption. In 2011, the share of biofuel in Belgian diesel and petrol consumption still lagged behind the European average. For Belgium, the share even decreased by 0.1 %-point, compared to a 0.3 %-point increase for the EU27.

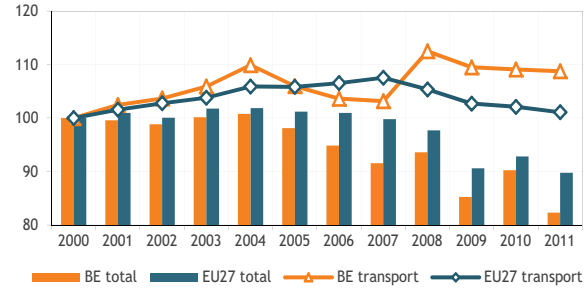
Transport emissions

Graph 36 - Share of transport in total emissions of greenhouse gases (GHG), NO_x and $PM_{2.5}$ in 2011 (%)



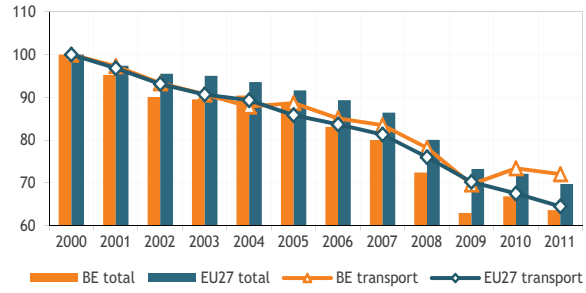
Source: European Environmental Agency

Graph 37 - Total and transport greenhouse gas emissions (tonnes CO_2-eq, index 2000 = 100)



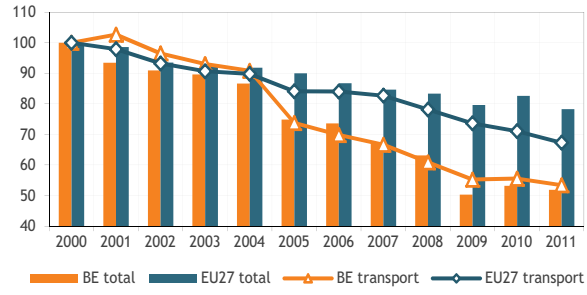
Source: European Environmental Agency

Graph 38 - Total and transport NO_x emissions (tonnes, index 2000 = 100)



Source: European Environmental Agency

Graph 39 - Total and transport $PM_{2.5}$ emissions (tonnes, index 2000 = 100)



Source: European Environmental Agency

Transport activity emits greenhouse gases and air pollutants. Greenhouse gases emitted by transport encompass carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), with CO_2 being the most important. The key air pollutants are nitrogen oxides (NO_x) and PM (particulate matter). The reported $PM_{2.5}$ emissions comprise the fine particles, which are smaller than 2.5 micrometers in diameter.

The share of transport in total emissions depends on the pollutant and is highest for NO_x. For NO_x and $PM_{2.5}$, the share of transport in total emissions was higher in Belgium than the EU27 average. For $PM_{2.5}$ emissions, the share was remarkably higher than in the EU27. This is mainly due to the fact that emission inventories also include emissions from the transformation sector. With more than half of the electricity produced in nuclear power stations, which do not emit NO_x or $PM_{2.5}$, emissions by this sector were considerably lower than the EU averages, thus increasing transport's share in total emissions.

The fact that the Belgian transport sector consumes more diesel (71% of transport energy consumption) than the European average (57%) also added to this effect. Diesel cars emit more NO_x and $PM_{2.5}$ per km than their petrol counterparts.

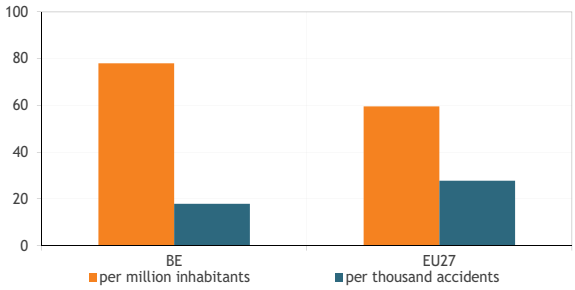
Between 2000 and 2011, GHG emissions by transport in Belgium increased by 9%. In the EU27, an increase of 1% was recorded. As transport GHG emissions growth was higher than total emissions growth, transport increased its share in total GHG emissions in 2011 compared to 2000.

Over the same period, Belgian NO_x transport emissions dropped by 28%. This was lower than the reduction for the EU27 (-35%). EU27 transport emissions reduction was higher than its total emissions reduction, thus reducing the share of transport in total emissions. In Belgium, transport increased its share in total emissions.

Belgian transport $PM_{2.5}$ emissions dropped even more than NO_x emissions. Over the 2000-2011 period, they almost halved. This reduction was considerably higher than for the EU27. This was due to the fact that diesel car stock growth was considerably higher in the EU27 than in Belgium. Between 2000 and 2011, the number of diesel cars grew by 79% in Belgium, compared to 132% for EU27. For Belgium, the reduction in transport $PM_{2.5}$ emissions was in line with the reduction in total $PM_{2.5}$ emissions; for the EU27, it was lower.

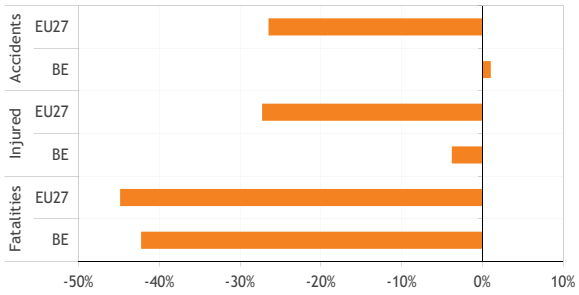
Road security

Graph 40 - Road fatalities in 2011 (number per million inhabitants and per thousand accidents)



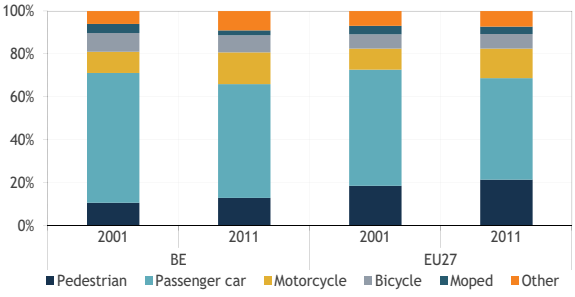
Source: European Commission

Graph 41 - Evolution of road fatalities, injured and accidents (2001-2011) (%)



Source: European Commission

Graph 42 - Shares of road user types in road fatalities (%)



Source: European Commission.

In 2011, road traffic accidents claimed 861 lives on the Belgian roads. As a proportion of the number of inhabitants, Belgium scores worse than the European average. In Belgium 78 people out of one million inhabitants were killed in road traffic accidents. This was well above the EU27 average of 60 fatalities/million inhabitants. When decomposed to the location of the accident, Belgium records above-EU-average fatalities on motorways and outside urban areas. The first might indicate that the fact that Belgium is a transit country contributes to the higher accident rate. The second might indicate that ribbon development along major feeder roads contributes to a higher accident rate.

When examined in terms of accidents, the picture looks completely different. The severity of accidents, expressed by the number of fatalities per accident, was significantly lower than the EU27 average (18 fatalities per thousand accidents compared to 28).

The target of the EU was to halve the number of fatalities on European roads over the 2001-2010 period. In 2010, this target was not achieved, for neither Belgium nor the EU27. While EU27 fatalities continued to decline in 2011, Belgian fatalities increased. Graph 41 shows that in 2011, the target had still not been attained. For Belgium, the reduction over the period 2001-2011 amounted to 42%, compared to 45% for the EU27. The reduction in the number of fatalities contrasts heavily with the, albeit limited, increase in the number of accidents. These diverging evolutions reflect a declining severity of road traffic accidents.

Car occupants represented almost half of the road traffic fatalities in 2011. Graph 42 shows a clear decline of the share of car occupants in the number of fatalities. This decline contrasts with the rising share of motorcyclists and pedestrians. In Belgium, the share of motorcyclists rose from 10% to 15%. In the EU27, the share amounted to 14%. In 2011, 21% of EU27 fatalities were pedestrians. In Belgium, the share was smaller: 13%.

As Belgium is a cycling nation, the share of cyclists among fatalities (8%) was higher than the EU27 average (7%).

Regional economic outlook 2013-2018

Following the national medium-term economic outlook issued in May 2013, the Federal Planning Bureau has published its new regional economic outlook for the period 2013-2018. This publication is, as usual, the result of a collaboration between the Federal Planning Bureau, the Brussels Institute for Analysis and Statistics (IBSA), the Research Centre of the Flemish Government (SVR) and the Walloon Institute for Evaluation, Prospects and Statistics (IWEPS).

As with the previous outlook, the new study is based on an econometric, multi-regional and multisectoral model (HERMREG), which has been developed since 2005 by the four above-mentioned institutions. In its current version, the HERMREG model can be categorised as a top-down medium-term macroeconometric model. HERMREG is fully consistent with the national model HERMES, which provides national and international starting points. HERMREG calculates regional projections for: GDP and value added per industry, employment, productivity and unemployment, wages, income of households, public finances and greenhouse gas emissions, etc.

Several interesting regional developments can be pointed out in this new regional outlook. In line with the relatively moderate national outlook, economic growth in the three regions should remain very weak in 2013. The three regions should register similar economic growth of 1.2% in 2014 and between 1.6 and 1.8% per year over the period 2015-2018. The outlook also points to the increases in the unemployment rate which should be observed in Flanders and Brussels in the short term (and its stagnation in the Walloon Region). All regional unemployment rates should, however, decrease in the medium term, notably as a result of an acceleration of employment growth.

As regards public finances, the new outlook shows that, in the case of unchanged policy (based on the information available mid-April 2013), the account of the communities and regions should be back in balance by 2015, mainly as a result of a surplus in the Flemish Region (including the Flemish Community). The Brussels Capital Region should also gradually register a surplus from 2015 onward. The French Community should reach a budgetary surplus from 2016 onward, whereas the Walloon Region - although it should accumulate primary surpluses over the whole period - should only reach a balance by 2018.

Finally, according to these regional projections, GHG emissions should be slightly reduced between 2012 and 2018, both at the national level and for the Walloon and Flemish Regions, due to a moderate increase in final energy consumption and structural changes in favour of less polluting and/or renewable energies. Emissions should increase slightly in the Brussels Region.

"Perspectives économiques régionales 2013-2018 / Regionale economische vooruitzichten 2013-2018", D. Bassilière, D. Baudewyns. F. Bossier, I. Bracke, V. Frogneux, G. Gentil, K. Hendrickx, L. Laroy (FPB) and B. Laine, P.-F. Michiels (IBSA), D. Hoorelbeke (SVR), F. Caruso, O. Meunier (IWEPS) Report, July 2013

Generation adequacy outlook for Belgium to 2030

The Directorate General for Energy of the FPS Economy, SMEs, the Self-employed and Energy and the Federal Planning Bureau have recently released their draft study of the Belgian electricity supply over the period 2010-2030, also called the "Prospective Study for Electricity" (or PSE2). The scope and frequency of the Prospective Studies for Electricity are specified in the Electricity Act, last revised in January 2012. In particular, the PSEs examine how to match electricity demand and supply in the medium and long term. They are updated every four years. PSE2 is the second edition, the final version of which is due by the end of 2013. This study rests on and complements PSE2 by studying the generation adequacy issue further.

A major part of PSE2 is devoted to the quantitative analysis of the Belgian electricity supply up to 2030. It is carried out by the Federal Planning Bureau over several contrasting scenarios, covering different evolutions for the energy/technology mix and electricity demand, but using the same criteria for the assessment of the equilibrium between electricity supply and demand. The scenario analysis is based on the PRIMES energy model, which determines the least cost generating capacity required to match electricity demand not only in terms of energy (TWh) but also in terms of capacity (GW). In the latter case, the evolution of the power capacity takes into account a security margin, called the "system reserve margin", between the peak load and the reliable

available capacity. The reliable available capacity is the part of the total generating capacity which is actually available in the power system to cover the load in normal conditions.

This deterministic approach to assessing the required generating capacity in Belgium to 2030 is different but close to that used by ENTSO-E (European Network of Transmission System Operators for Electricity) in its Scenario Outlook & Adequacy Forecast. In this report, published every year, ENTSO-E provides an assessment of the generation adequacy of individual countries, blocks of countries and the whole ENTSO-E as well. The objective of our analysis is to check whether the evolution of the generating capacity calculated in PSE2 - which counts on 5.8 TWh of net import on an annual basis - is compatible with ENTSO-E's methodology for the assessment of generation adequacy. The analysis is carried out in two steps: adequacy is first evaluated under normal conditions; then it is assessed against the occurrence of unforeseen extreme conditions.

Under normal conditions, the analysis shows that generation adequacy is met in almost all scenarios of PSE2 and all future years until 2030. In most circumstances, the reliable available capacity is thus always higher than the peak load. Adequacy levels are inadequate for only two scenarios in the year 2025. These two scenarios are those mimicking the implementation of the indicative energy efficiency target of 18% in 2020. In these cases, peak load exceeds the reliable available capacity by 0.2 GW. This lack of capacity is, however, small (less than 1% of total generation capacity) and is manageable (much lower than import capacity).

The assessment of generation adequacy under severe conditions entails adding spare capacity to peak load. This spare capacity reflects the additional capacity which should be available to cope with unforeseen extreme situations. In line with the figure used by ENTSO-E, the spare capacity was set equal to 5% of net generating capacity. The analysis concludes that there is a deficit of generating capacity for all scenarios and all future years up to 2030. The deficit ranges from 0.2 GW to 1.4 GW; in all cases, it remains, however, lower than the current import capacity in the winter, i.e. when the peak load occurs.

In conclusion, the evolution of generating capacity in Belgium calculated in PSE2 fits the adequacy levels defined in ENTSO-E's deterministic approach in both normal and extreme conditions.

"Analyse de l'adéquation de la production électrique en Belgique à l'horizon 2030 - Analyse basée sur les scénarios du projet d'EPE2",
D. Gusbin,
Working Paper 4-13, April 2013

The evolution of poverty among older people: a closer look

During the last ten years, the minimum income protection for older people in Belgium has been raised substantially. In particular, the Income Guarantee for Older people (IGO) has seen an increase of 36% in real terms over the period 2000-2012, with a particularly large jump in December 2006. Yet the proportion of older people living at risk of poverty, as measured in the European Union Statistics of Income and Living Conditions (EU-SILC), has hardly fallen, going from 21% in 2003 to 20% in 2010. This Working Paper looks at the question of why the measures taken have not produced a bigger decline in the risk of poverty for older people. Is it because the minimum income protection somehow fails to reach some older people with low incomes? Alternatively, the indicators of poverty or the data used could have shortcomings.

The Working Paper finds that when using a lower income threshold of poverty (50% of median equivalent income, instead of the commonly used 60%), there is a statistically significant decrease in the risk of poverty among older people. However, the decline is not very large and only occurs among single people (one-person households). A detailed analysis of the development of incomes of older people below or around the poverty line revealed that the very large increase in the IGO at the end of 2006 has raised the incomes of single older people below and around the poverty line, though with a one-year delay. A comparison of the EU-SILC results with external adminstrative data indicated that there could be data problems in the EU-SILC which might have upwardly biased the evolution of the risk of poverty among older people.

Another important and surprising finding is that during the period 2007-2010 about 8-9% of all older people had an income (according to the EU-SILC definition) which was lower than the level of the IGO. For about 30% of these situations, the explanation could be found in the wider definition of income according to the IGO regulations, which encompasses a progressive proportion of financial assets and the imputed rent for owner occupiers and which does not subtract private transfers to other households and tax settlements. The imputed rent for

owner occupiers was the most important factor. Other possible explanations, such as older people living with people aged below 65 and unreliable measurement of incomes did not appear to be quantitatively important. For the remaining situations of older people with an income below the IGO level, then, non-take up could be the explanation. The administration checks whether people are eligible for the IGO at the moment they become of pensionable age, but this is not routinely done for all pensioners who may have become eligible due to the increases in the IGO.

"De evolutie van de armoede bij ouderen nader bekeken",
K. Van den Bosch, G. De Vil,
Working Paper 6-13, August 2013

Walking the green mile in employment: employment projections for a green future

This Working Paper looks at jobs and job creation through the very specific channel of renewable energy development, thereby linking the evolution of the energy system to potential job creation opportunities. More specifically, this paper goes into the number of full time equivalents created by a transformation of the current Belgian energy system, which is largely based on fossil fuels, towards a system that, by 2030, would address 35% of the national primary energy needs through renewable energy sources. Such a transformation is believed to bring benefits on three different levels: climate change (renewable energy sources (RES) do not release (net) greenhouse gas emissions), security of supply (RES can help to reduce a nation's growing dependence on imported fossil fuels) and as an economic activity through which a considerable number of jobs can be created. This last thesis then forms the leitmotif of the Working Paper.

The first hurdle in identifying the job potential from renewable energy development is finding an adequate definition of the renewable sector itself. The renewable sector is not a traditional sector with a separate NACE code for which statistical data can be gathered in a standard way. So first, a literature review is performed to find an accurate definition of the sector, as well as to set the scene for further understanding.

In a second step, quantitative estimations are performed by means of a labour intensity methodology for the period 2020-2030. This methodology is applied to one reference scenario (in which no renewable energy target is imposed beyond the year 2020) and five renewable energy scenarios. The five renewable energy scenarios all integrate an ambitious development of renewable energy sources (RES) to obtain, by the year 2030, a Belgian energy system running for 35% on renewable energy sources. The results show that net job gains are to be expected when society switches from a fossil-fuel based energy system towards a system in which about a third of the primary energy needs are met by renewable energy sources: the renewable trajectories all create more full time equivalents (FTE) than the fossil based reference scenario in any given year. By 2030, between 21 000 and 65 000 FTEs could be created in the renewable scenarios.

In a third step, a distinction is made between Construction, Installation and Manufacturing (CIM) and Operations, Maintenance and Fuel processing (O&M) jobs. It has also been possible to extend the analysis and project net employment forecasts to the years up to 2020. Next to that, a sensitivity analysis on the effect of increasing labour productivity throughout time has been modelled.

At the end of the paper, a number of reflections on jobs and job content are brought to the fore. It then becomes obvious that targeted education, preferably in close collaboration with industry, and training, (re)tooling and schooling with specific attention to revamping interest in science, engineering and RD&D are of utmost importance. The crucial role of installing a coherent policy framework and defining adequate measures should not be underestimated and in fact determines the number of jobs actually created.

"Walking the green mile in employment: employment projections for a green future",
D. Devogelaer,
Working Paper 7-13, September 2013

Input-output analyses for 1995, 2000 and 2005 at constant prices

The compilation of a consistent time series of updated Belgian input-output tables at constant prices for the years 1995, 2000 and 2005 allows us, for the first time, to realise a series of traditional input-output analysis without methodological break and without price effects. The four Working Papers described below present the results of these input-output analyses at constant prices, focusing on the year 2005 as well as on the evolution from 1995 to 2005.

The first Working Paper presents the output, income and employment multipliers of final demand in Belgium. The input-output analysis developed in the other papers consists of computing the cumulated cost structures of the industries. Through a process of a chain of intermediate supplies, the industry classification in this analytical form of the input-output table (IOT) collects the direct and indirect value added created in all industries, as well as all industries' intermediate imports which are initiated by the supplies to the final demand of a particular industry.

Output, Income and Employment Multipliers

When a company announces its intention to open or close a production site in Belgium, the question often arises as to what impact that decision will have on the economy and, in particular, on employment. Likewise, when public authorities have to choose between several investment programs in a period of budget restrictions, their decisions should be grounded on a measure of the total economic impact of the investment proposals.

Final demand multipliers are frequently used in economic impact analyses and constitute synthetic measures of how an economy reacts to an exogenous shock on one of the final demand components. The reaction can be measured in different economic terms: output, employment, etc. This study aims to offer both a detailed analysis of the output, income and employment multipliers of the final demand in Belgium for the year 2005 and an analysis at constant prices of their evolution over the period 1995-2005.

In 2005, the output multiplier of the Belgian economy amounted to 1.58 and the average simple income multiplier amounted to 0.70. This indicates that on average the output of the entire economy had to increase by EUR 1.58 million in order to respond to a EUR 1 million increase in final demand for Belgian output, with the country's wealth increasing by EUR 0.70 million and its direct and indirect imported intermediates by EUR 0.30 million. The simple employment multiplier for 2005 amounted to 10.7 jobs, generated directly and indirectly in the economy through the chain of suppliers, per million euro of final demand.

Over the period 1995-2005, the economy's output multiplier remained stable, whereas the entire economy lowered its direct and indirect use of primary inputs by EUR 0.04 million and reduced by 1.8 the number of total jobs necessary to respond to EUR 1 million of final demand at constant prices.

Output multipliers measure the production necessary in the entire economy, at all stages of production, to respond to a change in final demand for the domestic output of a good or service. They represent a measure of the interdependencies among industries, indicating the industries with the most linkages to other industries. In total, goods tend to have higher output multipliers than services as a result of the former's close ties with other goods-producing industries as well as with services industries such as wholesale trade or transport services. Output multipliers not only allow assessment of the size of the ripple effect of one output on the others, but also indicate the industries in which this effect will occur. In 2005, distribution services, business services and real estate were among the main direct and indirect beneficiaries of a change in the final demand for different products of the economy, mirroring the tendency for companies to outsource a whole range of services. The analysis also shows that, in general, the share of domestic intermediate inputs in the output is the main factor determining output multipliers. Finally, the analysis of the evolution over time of output multipliers can provide information on structural shifts in the organisation of corporate production processes.

By netting out the purchases of intermediate products at each stage of production, income multipliers measure the real contribution of the different outputs to the wealth of a nation. This contribution is measured in terms of value added, increased by taxes without subsidies on intermediate products. The simple income multiplier of an industry is determined by two elements: the coefficient of primary inputs and the coefficient of imported intermediate inputs. The former has a positive effect and represents the income created directly within the industry by a change in final demand, whereas imports represent a direct leakage out of the Belgian economy and have a negative effect. In general, services create more income per million euro of final demand than goods, but are responsible for weaker relative multiplier effects.

Employment multipliers express the importance of a product with respect to labour by measuring the number of jobs that are necessary, directly and indirectly in the whole economy, to respond to a change in final demand for the domestic output of a product. The employment coefficient, i.e. the opposite of labour productivity, is the main factor determining the simple employment multipliers. It explains why several highly employment-intensive products, including personnel selection and placement services and numerous non-market services such as education, show the highest simple employment multipliers while having the lowest output multipliers of the economy.

"Les multiplicateurs de production, de revenu et d'emploi 1995-2005 - Une analyse entrées-sorties à prix constants",
C. Hambÿe,
Working Paper 8-13, September 2013

Cumulated costs 1995-2005: a general overview

In this Working Paper, the total value added generated by the supplies to the final demand of one industry - its so-called analytical contribution to GDP - is compared to the value added created within each industry in the 'traditional' IOT form (the difference between the two is referred to as the 'intermediate gap').

Over the examined decennium, two commonly anticipated changes are found: a general increase in intermediate imports in the industries' cost structure (at the expense of value added) and a deindustrialisation (decrease in the contribution to GDP of manufacturing industry in favour of the service industries). However, these two changes are clearly disconnected over the 2000 and 2005 IOT.

In the transition from 1995 to 2000, a general increase in imported intermediates in the total cost structure is found. The increase is spread over all industries, but slightly more concentrated in the service industries. Deindustrialisation is not recorded in the 2000 IOT. The traditional and accumulated GDP contribution of manufacturing industry has maintained approximately the same size as in the 1995 IOT. On the level of the economy's six main industries , manufacturing industry offers the largest analytical contribution to GDP, which broadly exceeds its traditional contribution. The opposite applies to business services since intermediate consumption of services to companies by manufacturing industry is far higher than the use of intermediates in the service industries. Business services made the largest 'traditional' GDP contribution in 2000, whereas the distributive trades were the biggest contributor in 1995. Manufacturing industry's intermediate gap slightly diminished. In general, intermediate consumption of services by enterprises increased (a familiar phenomenon) but this originated more from imports than from domestic output (a new phenomenon).

In the transition from 2000 to 2005, the share of intermediate imports in production costs remained globally constant (a small increase is found in manufacturing industry), but deindustrialisation was clearly recorded. Manufacturing industry's analytical and 'traditional" GDP contributions both decreased (the former slightly more than the latter). Still, manufacturing industry made the largest analytical GDP contribution and business services remained the biggest 'traditional' contributor (even more than in 2000). Manufacturing industry's intermediate gap diminished further. Intermediate consumption of services decreased in manufacturing industry but increased in the service industries.

"De gecumuleerde kosten 1995-2005 - Een input-output analyse in constante prijzen",
L. Avonds,
Working Paper 9-13, September 2013

The components of final demand and GDP 1995-2005

This paper considers the cumulated costs per final demand component, computing the GDP contribution of each component.

In 1995, private consumption and exports generated 39.4% of GDP and 26.3% of GDP respectively. The contribution of public spending and investments amounted to 21.0% and 13.3% respectively.

The general trend in the transition of 1995 to 2000 consists of an increase in intermediate imports in total final output. The decrease in the amount of primary inputs is manifest in all final demand components. In 2000, the GDP contribution of exports increased to 30.2% at the expense of the three remaining components - private consumption (37.5%), public consumption (20.3%) and investments (12.1%) - as a result of a higher share of exports in total final output (40.2%, compared to 36.8% in 1995).

In 2005, the composition of total final output in primary inputs and imported intermediates remained virtually unaltered. The same stability is found in the components of final demand. The GDP contribution of exports increased to 31.0% (again, as a result of an increase in the share of exports in total final output, from 42.0% to 42.9%). The contribution of public consumption and investments remained practically identical. Only the contribution of private consumption decreased (to 36.3%). Moreover, when gross value added (excl. indirect taxes on final consumption) instead of GDP is used as a standard, exports (by a short head) made the largest contribution (and no longer private consumption).

Since only domestic production generates value added, solely the final consumption of this output contributes to GDP; final consumption of imported goods and services logically does not. These pure imports of final products consumed are also considered. In 1995, on average, 16.1% of final consumption was directly imported. The import quota was the highest for investments and exports (21.3%), considerable for private consumption (14.2%) and very low for public consumption (1.2%). Over the decade considered, the import quota continued to increase, to 17.7% in 2000 and to 20.5% in 2005. In final outputs, the share of services increased (from 55.6% in 1995 to 57.9% in 2005). This trend is also found in all components of the final consumption of domestic output. In final imports, however, the already (very) high share of goods continued to increase (from 95.2% in 1995 to 98.0% in 2005), with the exclusion of imported investments.

"Bijdrage van de componenten van de finale vraag van het bbp 1995-2005 - Een input-output analyse in constante prijzen",
L. Avonds,
Working Paper 10-13, September 2013

Belgian energy intensity 1995-2005

In this Working Paper, using the cumulated costs approach, the direct and indirect energy content of (final) output is computed per final demand component and per industry, giving the share of energy in their (cumulated) cost structure.

In 2005, total energy intensity amounted to 6.3% (1.5% primary inputs and 4.9% intermediate imports). Exports recorded the highest level of energy intensity (9.2%). The energy intensity of public consumption was rather low (1.9%), with private consumption (5.7%) and investments (3.7%) lying in between.

The energy intensity of agricultural products and industrial goods (excl. energy carriers) was fairly high, reaching 7.8% and 5.3% respectively. Construction works and distribution services displayed similar intensities (3.3% and 3.6%). For business and other services, energy intensities were also comparable, though considerably lower (1.2% and 1.9%). Of course, the energy intensity of energy products was far higher at 81.0%

Compared to 1995, the energy intensity of the total economy decreased (from 6.6% to 6.3%), due to a reduction in the intensity of primary energy inputs, which exceeded the increase in imported intermediates and applied to all final demand components, excluding public consumption (which recorded a small increase in energy intensity). Per energy product, the main substitution consists of a decrease in refined oil consumption (primarily primary inputs) and a slightly smaller increase in natural gas consumption (exclusively for imported intermediates; the margin for distribution slightly decreased). The inputs of the other energy products hardly changed. This reduction is not spread evenly over the decade. In 2000, energy intensity lost more ground (exclusively from primary inputs) and then increased somewhat (the increase in imported intermediates exceeded the continued decrease in primary inputs).

In 2005, the Belgian economy recorded a higher energy intensity than its neighbouring countries and the euro area (especially for investments and exports; there is little difference for private and public consumption), mainly as a result of a different composition of final demand and not due to technological differences.

"De energie-intensiteit van de componenten van de finale vraag 1995-2005 - Een input-output analyse in constante prijzen",
L. Avonds,
Working Paper 11-13, September 2013

Other Recent Publications

Planning Paper 113, March 2013
"Visions à long terme de développement durable. Concepts, applications et élaboration / Langetermijnvisies inzake duurzame ontwikkeling. Begrippen, toepassingen en uitwerking",
Task Force on Sustainable Development

Working Paper 5-13, May 2013
"Does Offshoring Contribute to Reducing Air Emissions? Evidence from Belgian Manufacturing",
B. Michel

Outlook, May 2013
"Perspectives de population 2012-2060 / Bevolkingsvooruitzichten 2012-2060",
J. Duyck, M. Englert, L. Masure, J.-M. Paul (FPB) and Directorate-general Statistics and Economic information

Outlook, March 2013
"Economische vooruitzichten 2012-2013 / Prévisions économiques 2012-2013"

Outlook, February 2013
"Economische vooruitzichten 2013 / Prévisions économiques 2013"

Working Paper 3-13, February 2013
"Mesures prises en 2012 dans les branches chômage et pension : évaluation des effets selon le genre / Maatregelen genomen in 2012 in de takken werkloosheid en pensioenen: evaluatie van de effecten volgens geslacht",
G. Dekkers, R. Desmet, N. Fasquelle, M.-J. Festjens, Ch. Joyeux, B. Scholtus, S. Weemaes

Working Paper 2-13, January 2013
"Machines that go 'ping': medical technology and health expenditures in OECD countries",
P. Willemé, M. Dumont

Working Paper 1-13, January 2013
"The impact of subsidies and fiscal incentives on corporate R&D expenditures in Belgium (2001-2009)",
M. Dumont

Working Paper 15-12, December 2012
"Specification and estimation of a dynamic consumption allocation model",
I. Bracke, P. Willemé

Report, December 2012
"Towards 100% renewable energy in Belgium by 2050",
D. Devogelaer, D. Gusbin, collective publication with VITO and ICEDD

Planning Paper 112, November 2012
"Compétitivité de la Belgique - Défis et pistes de croissance / Concurrentievermogen van België - Uitdagingen en groeipistes"
H. Bogaert, Ch. Kegels

Working Paper 14-12, November 2012
"Analysing the impact of eligibility and financial measures aiming at delaying early retirement in Belgium: a "difference-in-differences" approach using panel data",
M. López Novella

Outlook, September 2012
"Economische vooruitzichten 2012-2013 / Prévisions économiques 2012-2013"

Working Paper 13-12, October 2012
"Consumer prices in Belgium and its neighbouring countries: Policy issues / Consumptieprijzen in België en de buurlanden: Aandachtspunten voor het beleid",
J. van der Linden

Working Paper 12-12, September 2012
"Input-outputanalyse - Modellen, Multiplicatoren, Linkages / Analyse entrées-sorties - Modèles, Multiplicateurs, Linkages", C. Hambÿe

Working Paper 11-12, September 2012
"De milieu-impact van de evolutie van de transportvraag tegen 2030 / L'impact sur l'environnement de l'évolution de la demande de transport à l'horizon 2030",
Dominique Gusbin, Bruno Hoornaert, Marie Vandresse (Federal Planning Bureau) and Ina De Vlieger, Inge Mayeres, Hans Michiels, Marlies Vanhulsel (Vlaamse Instelling voor Technologisch Onderzoek)

Outlook, September 2012
"Perspectives de l'évolution de la demande de transport en Belgique à l'horizon 2030 / Vooruitzichten van de transportvraag in België tegen 2030",
D. Gusbin, B. Hertveldt, B. Hoornaert, M. Vandresse

Research in progress

The long-term budgetary and social challenges of ageing

Different aspects of the long-term dynamics of acute health care, long-term care and pension expenditure are being scrutinized. A long-term model is being used to project the budgetary consequences of ageing, notably taking the new pension reform into account; the social dimension of pension benefits is being investigated using a microsimulation model.

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Employment in the civil service

The question of whether the level and the structure of employment in government bodies in Belgium is appropriate has been raised frequently. A research project at FPB addresses this question, including the implications of public employment dynamics on public pensions.

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Macroeconomic, budgetary and GHG emissions prospects

Using a consistent modelling approach, medium-term macroeconomic and budgetary prospects as well as the evolution of greenhouse gas (GHG) emissions are investigated. A consistent regional-national version of the model developed in collaboration with experts from the regional governments of Brussels, Flanders and Wallonia generates regional results.

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Input-Output tables 2010

The FPB is preparing the Belgian Input-Output tables for 2010.These are compiled using the European System of National and Regional Accounts ESA95, and will incorporate the new NACE Rev. 2 - CPA 2008 nomenclature. The National Accounts Institute will transmit the data to Eurostat. The tables will be available in a 60-industry disaggregation by the end of 2013.

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Offshoring

The FPB is continuing to work on offshoring. The project describes the level and evolution over time of offshoring of activities carried out in Belgium, as well as the impact on employment and productivity. The analysis is made on an industry-level, as well as on data for individual companies.

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Innovation

Innovation is a key determinant of productivity growth. A comprehensive publication on this subject is planned for 2014. Particular attention will be given to public policy that will facilitate innovation leading to the creation of economic activity and jobs.

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Progress in economic modelling at the FPB

On-going projects aimed at incorporating new approaches in economic modelling are supported by different institutions. Partners from the three Regions (IBSA-BISA, SVR and IWEPS) support the development of a "bottom-up" approach in the regional/national medium-term model. The federal sickness and disability fund (RIZIV-INAMI) collaborates on modelling health care expenditure. The EC supports the development of a sectoral international model. A federal research fund (BELSPO) and the Federal Public Service Social Security support modelling migrations in the dynamic microsimulation model, which is managed using the LIAM2 software developed at the FPB with the support of Luxembourg partners (IGSS - the Ministry of Social Security - and CEPS/INSTEAD).

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Transport modelling

The FPB model on transport demand for passengers and goods PLANET will be further developed by introducing a regional dimension. The aim is to present the 2015 outlook for transport demand with a new version of the model. As regional governments have the competence on major issues affecting transport demand, a correct modelling of transport demand requires a development of the regional dimension.

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Environmental accounts

In September 2013, the environmental accounts for Belgium were officially published for the first time by the INA. These concerned the Air Emissions Accounts and the Environmental Taxes by Economic Activity for the period 2008-2011. By the end of 2013, the Economy-Wide Material Flow Accounts will also be published. The environmental accounts are satellite accounts to the national accounts and fall therefore within the remit of the FPB.

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Recent history of major economic policy measures

July 2013

A second budget adjustment for entity I (federal government and social security) led to new measures complementing those taken in the initial 2013 budget and in the budget adjustment of March. A foreshadowing of the 2014 budget was established in parallel. Among the measures is the creation of a "fairness tax" on corporate businesses (in order to collect tax from companies that would not have contributed, through their use of notional interest deductions and carrying forward losses), increased taxes from financial institutions, increased excise duties and, as from 2014, the imposition of VAT on lawyers' services. The operating costs of public services remain highly constrained, as does health care expenditure; some top-ups in family allowances for specific groups of beneficiaries have been removed.

Different measures concerning SSC reductions are being put in place: the across-the-board employers' SSC cuts announced in 2012 (published in June), specific employers' SSC cuts for contracted and casual labour in the catering industry and the linking of employees' SSC reduction for low-wage earners to the minimum wage. Reductions and penalty increases in SSC rates will encourage the employment of the "high-risk unemployed"; abusing the "temporary employment" facility will also be subject to penalties through higher SSC rates. All long-term, low-schooled unemployed aged up to 26 and entitled to unemployment benefits will be eligible for the "Activa" wage cost reduction programme (which combines targeted employers' SSC reductions and wage subsidies).

June 2013

Postal incumbent Bpost was floated on the Euronext Brussels stock exchange. Private shareholder CVC sold 30.3% of its 50% stake, mostly to Belgian and Japanese investors. The Belgian State retained its majority stake of 50% plus one share. The shares were issued at EUR 14.50, only 50 eurocents below the top of the price interval. The company can thus be valued at EUR 2.9 billion. The stock has been positioned to be stable and give a strong yield. A few weeks before the IPO, the European Commission approved the fifth management contract between Bpost and the Belgian State. This approval allows Bpost to be granted EUR 300 million state aid per year for public service obligations. The major part of the aid is intended for the early-morning delivery of newspapers and magazines.

May 2013

The ECB lowered its main refinancing rate by 25 basis points to 0.5%.

April 2013

In a 2013-2016 update to the Stability Programme, the Belgian authorities committed to reducing the headline deficit to 2.5% of GDP in 2013 by improving the structural balance by 1% of GDP as compared to 2012, and to hold the public debt at 100% of GDP. The MTO (medium term objective), a surplus of 0.75% of GDP in structural terms, should be reached in 2016.

March 2013

For the 2013 budget review, considering the downward revision of growth and inflation prospects for 2013 to, respectively, 0.2% and 1.0% (instead of 0.7% and 1.8% as initially forecasted), the federal government decided to relax the deficit target to 2.5% of GDP (instead of the initial 2.15% of GDP target). This applies to Entity I (federal government and social security) since the federal government assumes budgetary balance at Entity II level (sub-federal entities). Some measures complementing those taken in the initial budget were also decided to constrain expenditure growth further and raise tax revenue. For instance, health care expenditure has been reduced by 0.63% yearly. Accordingly, the real growth rate norm for the financing of the health care budget will be limited to 1.37% instead of 2% in 2013 and 2.37% instead of 3% in 2014 (government decision on 26 April 2013).

The federal Parliament approved two bills on product market competition. One reforms competition policy, the other strengthens price monitoring. The institutional structure of the competition authority will be simplified. The three presently separate bodies (for investigation, prosecution and decision, respectively) will be unified into the Belgian Competition Authority, while securing the independence of the three functions. The reform will improve transparency, and shorten and simplify the procedures, while maintaining the current rights of defense. The Price Observatory - established in 2009 - receives the power to notify the new competition authority when it has detected unusual price and/or margin changes or other structural market malfunctioning. The competition authority may then take measures to correct the situation. Both institutions will receive more funding. The approved bills will be inserted into the Code of Economic Law as Books IV and V.

In the domain of pensions, two measures were taken. The pension bonus has been reformed (from 1 January 2014) to take into account the stricter conditions of access to early retirement that came into effect with the 2011 pension reform. The reform will also aim to make the system more incentivizing (progressive bonus). Furthermore, the pension bonus will no longer be transferred to the surviving partner. From 1 April 2013, the minimum pension (household rate) will increase for the self-employed scheme (under the government agreement which provides for the gradual alignment of the minimum pensions of self-employed workers to those of wage earners).

The federal Parliament unanimously ratified the Treaty relating to the establishment of the 'Europe Central' functional airspace block (FABEC) between Germany, Belgium, Luxembourg, the Netherlands and Switzerland. In telecommunications, mobile operators will be charged a non-compliance penalty of EUR 3 per day per customer when they delay the transfer of a number to another operator.

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