

# Quarterly Newsletter of the Federal Planning Bureau

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*Short Term Update (STU) is the quarterly newsletter of the Belgian Federal Planning Bureau. It contains, in English, 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 latest update of the FPB's medium-term outlook for Belgium shows average GDP growth reaching 2.3% during the 2004-2009 period. This development can be largely accounted for by domestic demand, whereas the role of (net) exports is expected to be more limited. As in 2003, private consumption should evolve in quite a dynamic way during the projection period (1.9% on average), mainly as a result of an expansion of households' disposable income. At the same time, gross fixed capital formation (and particularly business investment) should recover, with annual growth reaching 3%. The structural loss of export market share should be confirmed with exports increasing by 5.3% a year on average, compared with growth of 6.3% of our potential export markets.*

*Inflation should remain slightly below 2% in the medium term, mainly thanks to limited wage increases and moderate rises in imported costs. Employment is expected to increase by about 32,000 jobs a year during the 2005-2009 period. This performance can be explained by several factors: a relatively favourable macroeconomic context, limited wage increases, a reduction in working time and various measures taken to promote employment. At the same time, the working population should rise considerably. As a consequence, despite the creation of many jobs, the fall in the unemployment rate should be very limited.*

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*The FPB's October update of the medium term outlook for Belgium does not yet take into account the measures decided within the framework of the 2005 budget.*

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



# Table of Contents

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<b>Special Topic</b> .....	<b>3</b>
• Geographic market specialisation and export performance	
<b>Economic Forecasts</b> .....	<b>5</b>
• Economic outlook for 2004-2009, dated October 2004	
<b>Summary of Economic Forecast</b> .....	<b>7</b>
• Economic forecasts for Belgium by different institutions	
• Economic forecasts for the euro area by different institutions	
<b>Structural economic performance</b> .....	<b>8</b>
• Introduction	
• Key Indicators: openness	
• Key indicators: foreign direct investment	
• Key indicators: productivity and prices	
• Key indicators: internal market	
• Framework conditions: education	
• Framework conditions: R&D and innovation	
• Framework conditions: taxation	
• Network industries: telecommunications	
• Network industries: gas and electricity	
• Network industries: railways	
• Network industries: postal services	
<b>Recent publications</b> .....	<b>19</b>
• Reductions in social security contributions and alternative methods of financing the social security system	
• Assessment of the impact of electricity savings on the evolution of electricity demand in Belgium	
• Forecasting mortality rates	
• Analysis of the horeca industry in Belgium	
• Other Recent Publications	
<b>Economic Policy Measures</b> .....	<b>23</b>
• Recent history of major economic policy measures	
<b>Abbreviations</b> .....	<b>24</b>

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## Geographic market specialisation and export performance

It is well known that a country's trade pattern as regards destination markets has an impact on its trade performance as measured by its export market share. Shifts in the market distribution of world imports may indeed cause a rise or fall in a country's export market share depending on the geographical market specialisation of its exports. It must therefore be asked which are the destination markets that have increased their share in world imports over the decade from 1991 to 2001 and whether the Belgium-Luxembourg Economic Union (BLEU) and its main trading partners (Germany, France, the Netherlands and the United Kingdom) benefited from these shifts?

### The method of analysis

A country's world export market share measures how much of the relevant import demand is covered by the country's exports<sup>1</sup> and is therefore an indicator of the export performance of this country. This share may be analysed through Constant Market Shares Analysis (CMSA).<sup>2</sup> This is an ex-post accounting method used to analyse the change in this share, which makes it possible, among other things, to determine how much of the rise or fall in the country's world export market share is due to the geographical specialisation of its exports, referred to as the 'market composition effect'.

In the present context, the aim is to show how a country's world export market share would have developed over a particular period if the country had maintained its export market share in every destination market. It is therefore necessary to calculate the impact of the change in a destination market's share in world imports on the country's world export market share. The underlying idea can be illustrated by an example: the BLEU will only benefit from the increase in the imports of the destination market China if a sufficient share of its exports goes to that market. The sum of these impact values, which are also called contributions of the destination markets, corresponds to the 'market share effect'.

Using data for commodity trade<sup>3</sup>, this method has been used to calculate the contributions of the destination markets as well as the overall 'market composition ef-

fect' for the BLEU and its four main trading partners, i.e. France, Germany, the Netherlands and the UK, which are also among its main export competitors. The contributions have been aggregated into 9 destination areas. The calculations were carried out for two periods: 1991-1997 and 1997-2001. Table 1 reports the results.

### The results

To interpret the results reported in Table 1, it is important to keep in mind that these countries have very different weights in world trade. The last line therefore indicates the percentage gain or loss in the world export market share due to the 'market composition effect'. During the period 1991-1997, the market specialisation of the BLEU's exports had a very negative impact on its export performance. Indeed, the world export market share of the BLEU fell by almost half a percentage point (or 12.4% of the 1991 world export market share) due to the 'market composition effect'. Roughly 75% of the BLEU's exports go to the internal market of the European Union (EU15) and the share of this destination area in world imports declined markedly between 1991 and 1997. The impact of the EU15 is therefore very negative and it accounts for most of the negative overall 'market composition effect'. The same reasoning holds for the BLEU's main trading partners, which all suffer from their specialisation in exports to the internal market of the EU15.

The negative impact of the EU15 is to some extent compensated by positive contributions from the destination areas South East Asia and Eastern Europe. The shares of these areas in world imports did indeed increase substantially during the period 1991-1997. The BLEU has not, however, drawn a great benefit from the emergence of those areas as they account for only a very limited share of its exports (5% for South East Asia and 3% for Eastern Europe). The same is true for the Netherlands. By contrast, Germany has gained a lot from the growth of imports by Eastern Europe. Moreover, the gains from the emergence of South East Asia as an export destination were proportionally greater for France, Germany and the United Kingdom than for the BLEU and the Netherlands.

1. The world export market share is calculated by dividing the total exports of a country by total world imports minus the total imports of the country.
2. The method of CMSA has already been used by the Federal Planning Bureau several years ago to analyse export market shares. See the Special Topic in Short Term Update 3-99 and Simonis, D. (2000), "Belgium's export performance", Working Paper 2-00, Federal Planning Bureau, Belgium.
3. The data are taken from the CHELEM database for international trade developed by the 'Centre d'Etudes Prospectives et d'Informations Internationales' (CEPII). They are in current dollar value and cover 62 destination markets and 72 commodity groups. Note that this database does not contain separate data for Belgium and Luxembourg for the 1991/2001 period.

**Table 1 - Market composition effect – contributions and total for the periods 1991/1997 and 1997/2001 (percentage point changes in the world export market share)**

	BLEU		France		Germany		Netherlands		United Kingdom	
	91/97	97/01	91/97	97/01	91/97	97/01	91/97	97/01	91/97	97/01
North America	0.018	0.029	0.044	0.066	0.081	0.155	0.016	0.022	0.085	0.106
South America	0.012	-0.005	0.048	-0.017	0.102	-0.022	0.014	-0.004	0.033	-0.008
EU15	-0.512	0.003	-0.768	0.058	-1.263	-0.107	-0.580	0.017	-0.544	0.045
Eastern Europe	0.036	-0.005	0.070	-0.007	0.410	-0.001	0.044	-0.008	0.051	-0.005
Other Europe	-0.008	-0.011	-0.046	-0.025	-0.133	-0.064	-0.013	-0.015	-0.014	-0.027
Africa Middle-East	-0.023	-0.004	-0.107	-0.002	-0.087	-0.020	-0.024	-0.003	-0.093	-0.015
Japan	-0.003	-0.003	-0.010	-0.007	-0.027	-0.015	-0.002	-0.003	-0.009	-0.009
South East Asia	0.033	-0.009	0.075	-0.035	0.148	-0.049	0.026	-0.020	0.084	-0.053
Oceania	0.000	-0.001	0.000	-0.003	-0.002	-0.006	0.000	-0.001	0.001	-0.007
Total	-0.447	-0.005	-0.694	0.027	-0.770	-0.128	-0.518	-0.015	-0.406	0.028
Total %	-12.4	-0.2	-10.3	0.5	-6.0	-1.2	-13.7	-0.4	-7.1	0.5

Source: Own calculations; CHELEM database (CEPII).

Note: Total % represents the total market composition effect as a percentage of the world export market share for the initial period (1991 or 1997).

During the 1997-2001 period, the changes in the destination area's shares in world trade are fairly small, which limits the scope for gains or losses through market specialisation. Nonetheless, it is noteworthy that the world export market share of the BLEU did not decline anymore due to the market specialisation of its exports. Indeed, the overall 'market share effect' is virtually zero for the BLEU (-0.005 percentage points or -0.2% of the 1997 world export market share) and the other four countries. Nonetheless, it should be noted that the period is shorter than the previous one.

The import growth of the EU15 was actually slightly above world average between 1997 and 2001. The BLEU as well as its main trading partners were therefore no longer handicapped by the substantial share of their exports going to the EU15. The main positive contribution during this period came from the destination area North America, which was particularly important for the United Kingdom, a country with a larger share of exports to that market than other European countries.

The Asian crisis of 1997 gave rise to much slower import growth in the area South East Asia than during the previous period. Moreover, Eastern Europe also recorded slower import growth compared to the years 1991-1997. The share of these two destination areas in world imports even declined slightly between 1997 and 2001. This implies that the BLEU was at an advantage in terms of market specialisation, due to the relatively small share of those destination areas in its exports.

It seems useful to go into greater detail regarding the destination area South East Asia. On the one hand, the share in world imports of the newly industrialised countries in this region such as South Korea, Singapore, Hong Kong or Taiwan is characterised by a

hump-shaped profile for the decade from 1991 to 2001, i.e. a strong rise from 1991 to 1997 is followed by a decline from 1997 to 2001. This reflects the impact of the Asian crisis. On the other hand, a steady increase is recorded for China's and India's shares of world imports. Given the market specialisation of its exports, the BLEU has not benefited either from the emergence of the NICs or from the continuing increase in the importance of China and India, but it has avoided the negative impact of the Asian crisis.

Overall, the empirical results confirm the importance of export market specialisation for export performance. It is generally said that the BLEU is too dependent on the EU15 as regards the market specialisation of its exports and that the share of its exports destined for emerging regions such as Eastern Europe and South East Asia is too small, so that it will not benefit from the growth in imports of these regions. The results for the period 1991-1997 correspond precisely to that pattern and the BLEU recorded a declining export market share due to its export market specialisation. The same was true, although mostly to a lesser extent, for its main trading partners. The results for 1997-2001, however, are quite different. As expected, the very conservative market specialisation of the BLEU's exports offered some protection against the slowdown in import growth in the previously emerging markets. Moreover, the share of the EU15 in world imports was relatively stable during that period, which implies that the BLEU was no longer at a disadvantage because of the focus of its exports on the internal market of the EU15. Nonetheless, it is a widely held belief that the dominant trends in world trade in the future will resemble those of the period from 1991 to 1997. For the BLEU, it must therefore be expected that its export market specialisation will once again be a handicap.

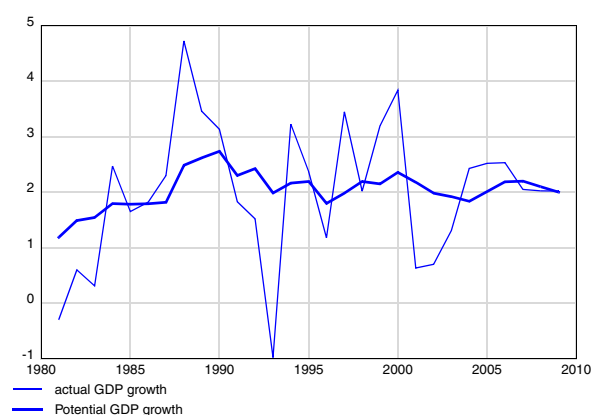
## Economic outlook for 2004-2009, dated October 2004

In October the FPB prepared an update of its medium-term economic outlook from April 2004, covering the 2004-2009 period. This new outlook should serve as the macroeconomic basis for the calculations in the new Belgian Stability Program (prepared for the 2004-2008 period). This projection does not take into account the measures decided within the framework of the 2005 budget.

Updated medium-term economic outlook based on a revised short-term evolution and slightly more sustained development in potential markets in the medium term.

Based on an updated short term forecast (see economic forecasts for 2004-2005, dated September 2004) and slightly revised growth in potential export markets in the medium-term, the new medium term forecast shows average GDP growth reaching 2.3% during the period 2004-2009. As in the economic forecast for May 2004, this development can be accounted for by largely domestic demand. The role of (net) exports is expected to be more limited.

**Graph 1 - Actual and potential GDP growth**



After performing well in 2003, the evolution of private consumption should still be favourable during the 2005-2009 period, particularly thanks to the development in households' disposable income (with a particular stimulus coming from reductions in personal income tax and the rise in employment). Gross fixed capital formation should recover, with growth attaining an average of 3.0% during the 2004-2009 period, mainly reflecting the increase in business investment.

Growth in exports should be 5.3% on average and the contribution of net exports to GDP growth should be equal to 0.2%. The external surplus should reach 3.6% of GDP in 2009 (partly due to the recovery in the terms of trade). The level of the external surplus also reflects the high level of domestic savings.

**Inflation remains below 2%.**

Limited wage increases (compatible with productivity gains) and a moderate increase in imported costs are the main factors accounting for an inflation rate that will remain slightly below 2% in the medium term. Moreover, a negative output gap during the first two years of the projection will help to keep inflation low.

**Employment growth not sufficient to cause a significant fall in the unemployment rate**

Employment figures are showing a gradual improvement: after nearly 17,000 jobs were created in 2004, a further 32,000 jobs should be created every year during the 2005-2009 period. This result can be explained by a relatively favourable macroeconomic context and limited wage increases (introduced as a hypothesis within the framework of the 1996 law on the promotion of employment and on the safeguarding of competitiveness). Various measures taken to promote employment, and in particular the new reductions in social security contributions (and also activation and insertion programs) and working time reduction should also play a role.

The decline in industrial employment is continuing, with a loss of 52,000 workers in manufacturing during the 2004-2009 period. At the same time the number of jobs created in market services will exceed 250,000, bringing the share of employment in market services up to more than 59% of total employment (43% in 1980 and 50% in 1990).

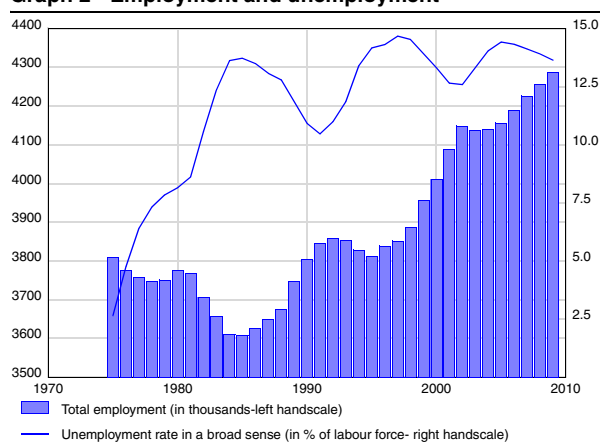
The population of working age will increase considerably (by 150,000 persons, 0.4% per year on average) during the 2004-2009 period, primarily because the less populous generations that were born during the Second World War will be leaving the population of working age. The overall employment rate will be influenced favourably by the increase in the rate of female participation in employment, but will suffer from adverse demographic changes (the increasing share of older age groups) within the population of working age.

Given the strong increase in the population of working age, renewed net job creation from 2004 onwards will only lead to modest increases in the employment rate. The employment rate fell for two consecutive years in 2002 (to 61.8%) and 2003 (to 61.6%); it should remain stable in 2004 and will gradually rise to 62.9% in 2009. The employment rate in the older age groups (50 and above) has been growing and will continue to grow at above the average rate, but will remain substantially lower than the relevant European recommendations. Never-

theless, this will mean a marked increase in the proportion of persons aged 50-64 in the total working population (from 19.3% in 2003 to 22.1% in 2009).

In view of the substantial rise in the labour force, net job creation is only sufficient to force down unemployment gradually in absolute terms. The unemployment rate (broad administrative measure) is continuing to increase in 2004 (from 14.0% to 14.4%), but will fall to 13.4% in 2009. This level is still high, but it should be noted that the growing proportion of people on unemployment benefits who are aged 50 or more will lead to an even wider discrepancy between administrative measures of unemployment and survey measures that register active job seekers.

**Graph 2 - Employment and unemployment**



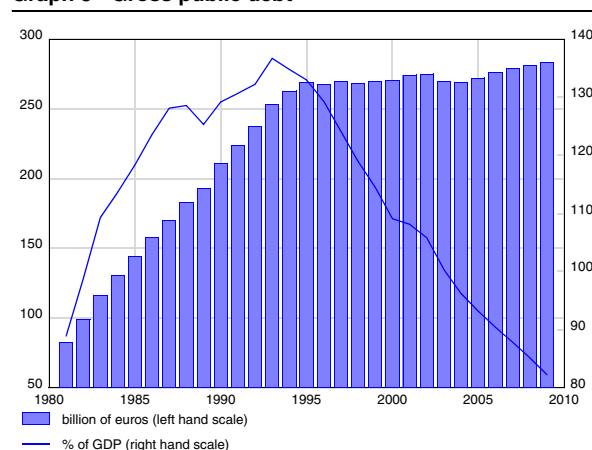
**Public finances not balanced in the medium term**

As usual, the exercise assumes that policy will be unchanged but does not take into account the measures decided within the framework of the 2005 budget.

A deficit in the public account should appear in 2004, fluctuating at around 1.0% of GDP in the 2005-2008 period. The equilibrium should not be restored completely at the end of the projection period (with a deficit still reaching 0.6% of GDP).

The medium term targets of the Government (a structural financing capacity equal to 0.3% of GDP in 2007) is not expected to be reached without additional measures. Nevertheless, the total public debt to GDP ratio should continue to fall, going down by about 18 percentage points between 2003 and 2009.

**Graph 3 - Gross public debt**



The reappearance of public deficits is mainly due to new structural measures, leading to significant increases in social expenditures and income tax rebates between 2003 and 2006. The new deficits mainly stem from Entity I (Federal Government and Social Security). Entity II (Communities, Regions and Local authorities) are expected to continue to report a positive financing capacity throughout the projection period.

**Table 2 - Key figures for the updated medium-term economic outlook in October 2004**  
(period averages- changes in volume unless otherwise stated)

	1990-1996	1997- 2003	2004-2009
Potential export market	5.4	5.9	6.3
Private consumption	1.8	2.0	1.9
Public consumption	1.4	2.2	1.9
Gross fixed capital formation	1.1	2.3	3.0
Stock building (contribution to GDP growth)	-0.1	0.0	0.0
Final domestic demand	1.5	2.2	2.2
Exports	3.9	4.2	5.3
Imports	3.6	4.3	5.4
Net exports (contribution to GDP growth)	0.3	0.1	0.2
GDP	1.8	2.2	2.3
Private consumption prices	2.3	1.8	1.9
Real disposable income households	2.0	1.6	1.8
Domestic Employment (annual changes in '000)	6.7	41.1	29.8
Unemployment rate FPB definition (end of period)			
-thousands	670.6	684.6	674.2
-% of active population	14.3	14.0	13.4
Current account balance (% of GDP,end of period)	5.1	3.7	3.6
General Government financing capacity (% of GDP, end of period)	-3.8	0.3	-0.6

## Economic forecasts for Belgium by different institutions

	GDP-growth		Inflation		Government Balance		Date of Update
	2004	2005	2004	2005	2004	2005	
Federal Planning Bureau	2.4	2.5	2.1	2.0	.	.	10/04
INR/ICN	2.4	2.5	2.1	2.0	.	.	10/04
National Bank of Belgium	2.7	2.5	1.9	2.2	-0.3	-0.4	12/04
European Commission	2.5	2.5	2.0	1.9	-0.1	-0.3	10/04
OECD	2.7	2.4	2.2	1.9	-0.1	-0.4	11/04
IMF	2.5	2.3	1.8	1.6	-0.2	-0.4	09/04
ING	2.8	2.5	2.2	1.9	0.0	-0.2	11/04
Fortis Bank	2.8	2.5	2.1	2.0	-0.2	-0.7	12/04
Dexia	2.6	2.1	2.2	1.9	.	.	11/04
KBC Bank	2.6	2.2	2.0	1.8	-0.2	-0.5	09/04
Morgan Stanley	2.5	1.8	2.1	2.3	-0.5	-0.8	11/04
Petercam	2.5	1.8	2.2	1.8	.	.	11/04
IRES	2.7	2.8	2.0	1.5	-0.3	-0.9	09/04
DULBEA	2.5	2.5	2.0	1.8	-0.5	-0.8	09/04
Consensus Belgian Prime News	2.5	2.5	1.9	1.8	-0.1	-0.4	09/04
Consensus Economics	2.4	2.5	1.8	1.8	.	.	11/04
Consensus The Economist	2.4	2.1	2.0	1.8	.	.	11/04
Consensus Wirtschaftsinstitute	1.9	2.6	1.4	1.5	-0.3	-0.4	10/04
<b>Averages</b>							
All institutions	2.5	2.4	2.0	1.9	-0.3	-0.5	
International public institutions	2.6	2.4	2.0	1.8	-0.1	-0.4	
Credit institutions	2.6	2.2	2.1	1.9	-0.3	-0.5	

## Economic forecasts for the euro area by different institutions

	GDP-growth		Inflation		Government Balance		Date of update
	2004	2005	2004	2005	2004	2005	
European Commission	2.1	2.0	2.1	1.9	-2.9	-2.5	10/04
OECD	1.8	1.9	2.1	2.0	-2.9	-2.6	11/04
IMF	2.2	2.2	2.1	1.9	-2.9	-2.5	09/04
ING	1.8	1.8	2.1	1.8	.	.	11/04
Fortis Bank	1.8	2.1	2.2	1.7	-2.8	-2.5	12/04
Dexia	1.8	1.9	2.1	1.8	.	.	11/04
KBC Bank	1.8	2.0	2.1	1.7	-3.0	-2.6	11/04
Goldman Sachs	1.8	1.8	2.2	2.2	-2.7	-2.4	11/04
Morgan Stanley	1.8	1.6	2.1	2.3	-3.0	-2.7	11/04
Consensus AIECE	1.9	2.2	2.1	1.9	-2.8	-2.7	10/04
Consensus Economics	1.9	2.0	2.1	1.8	.	.	11/04
Consensus Wirtschaftsforschungsinstitute	1.9	2.0	2.1	1.9	-2.9	-2.7	10/04
Consensus The Economist	1.8	1.9	2.1	1.7	.	.	11/04
<b>Averages</b>							
All institutions	1.9	2.0	2.1	1.9	-2.9	-2.6	
International public institutions	2.0	2.0	2.1	1.9	-2.9	-2.5	
Credit institutions	1.8	1.9	2.1	1.9	-2.9	-2.6	

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## Introduction

This Newsletter presents a review of structural developments in the goods and services markets in the Belgian economy. The review consists of an international benchmarking process with 36 indicators.

### The rationale for analysing structural developments

Economic growth and prosperity are determined in the medium and long term by structural characteristics such as market functioning, labour participation, education and innovation. Good performance in these areas is expected to have a positive impact on competitiveness and the allocation of labour and capital. In turn this should move the economy towards a higher growth path.

For this reason, reinforcement of the economic structure is given due attention in economic policy. At the EU level this is best expressed by the Lisbon objective: that the EU should become the most dynamic and competitive economy in the world. One of the key ways of achieving this is to reform product, labour and capital markets.

This Newsletter annually reviews a set of 36 indicators divided into three categories:

- **Key indicators:** openness to trade and foreign direct investment, productivity, prices, labour costs, state aid and internal market development;
- **Framework conditions:** education spending and levels, spending on R&D, innovation, venture capital and fiscal burden;
- **Network industries:** penetration rates, price developments, modal split and productivity.

### The policy framework

Since 2000 the Council has laid down sets of Broad Economic Policy Guidelines (BEPGs) that cover a wide range of economic policy areas, one of which is market reform. The BEPGs consist of both EU-wide and country-specific recommendations and are revised every three years. The EU has also built up a database of Structural Indicators (SIs) that covers many issues of economic structure. In the follow up for the BEPGs, the SIs are used to detect best practices. A number of the indicators discussed below have been drawn from the SI database.

As far as the policy areas in this review are concerned, the following measures are taken.<sup>1</sup> More effective co-ordination of the transposition of internal market directives into Belgian law has been put in place. A process of personal income tax cuts has been started and is still continuing. A further reduction in the wage wedge has

come from cuts in social security contributions, aimed at specific groups. There have been several reforms in network industries, although completion of these reforms will still take some years.

### Summary of Belgium's performance

When making comparisons with the EU average, this issue still refers to the EU15. In next year's issue, a first attempt will be made to include the new member states in the EU averages.

In general, Belgium does not perform better or worse than the other Member States, where 'better' and 'worse' are interpreted from the perspective of market performance. When individual indicators are considered, however, there are differences. Compared to the EU average, Belgium performs well in terms of productivity per hour worked, transposition of internal market directives, education and spending on R&D. Belgium performs poorly on indicators for taxes on labour and consumption, venture capital investment and network industry prices (except gas, where its performance is close to the EU average).

Considering the evolution of the indicators, Belgium has caught up with the EU average for consumer prices and lifelong learning. Some divergence from the EU average, however, was recorded in the case of venture capital investment, local telephone charges and electricity prices. The tax burden on capital increased significantly and was slightly above the EU average.

When benchmarking Belgium against its neighbouring countries rather than the EU average, the above conclusions remain basically unchanged. Nevertheless there are often remarkable differences between individual countries. One factor worth mentioning is the evolution of state aid. When aid to agriculture, fisheries and transport is excluded, state aid is fairly low and stable. It was in the neighbouring countries that the level of aid has converged towards this low Belgian level.

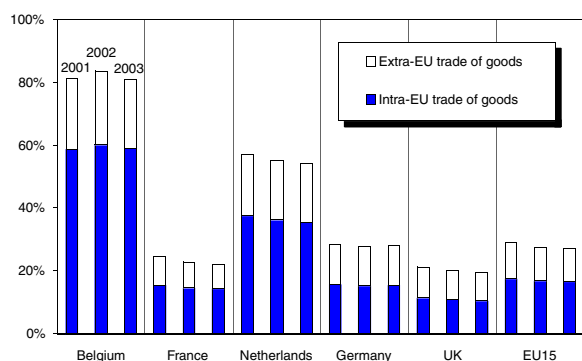
For those indicators where sufficient data was available, a benchmarking against the USA and Japan was carried out. In comparison with Belgium, but also against the EU as a whole, the USA and Japan perform better in terms of R&D, innovation, telephone prices and venture capital.

1. Source: The annual Cardiff reports, 2000-2004 (*Economic Reform of the Products, Services and Capital Markets: Belgian Report for the European Union*).



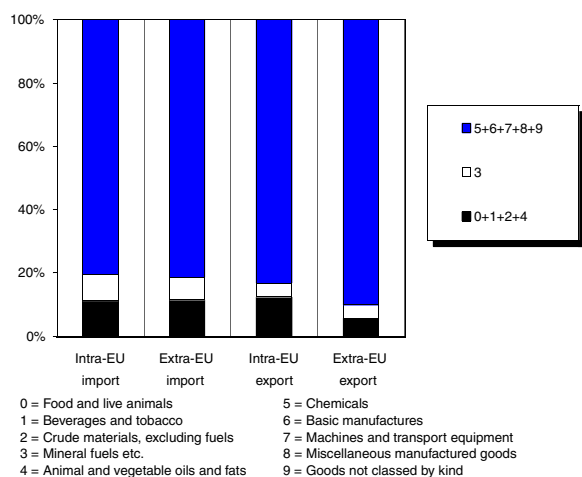
**Key Indicators: openness**

**Graph 1 - Degree of openness, in % of GDP**



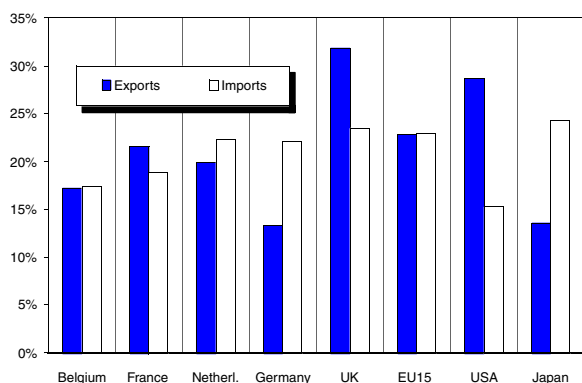
Source: Eurostat, Comex

**Graph 2 - Sectoral composition of Belgian trade, 2002\***



Source: Eurostat, Comext  
 (\*) According to the SITC3-classification

**Graph 3 - Share of commercial services in trade, 2003**



Source: WTO \*  
 (\*) Trade in goods is derived from balance of payments statistics and does not correspond to merchandise trade statistics given elsewhere. It is likely that, for most economies, trade in commercial services is understated.

One of the main goals of EU-wide product market reforms is to enhance competition in European product markets and drive prices down. The opening up of these markets to foreign production contributes to attaining this goal. The degree of openness, the share of services in total trade and the geographical and product distributions of external trade are key indicators in this respect.

As expected, Belgium remains at the top spot in the EU15 in terms of the degree of openness, which is calculated as the average share of imports and exports of goods in GDP. This share amounted to 81% in 2003, which means that it had fallen slightly compared to 2002. Structurally, the small Member States of the EU15 have a higher degree of openness than the large ones. This is confirmed by the data for 2003: the degree of openness of Belgium (81%), the Netherlands (54%), Ireland (48%), Austria (38%), Sweden (30%), Finland (30%) and Denmark (29%) was higher than that of Germany (28%), Spain (23%), France (22%), Italy (22%) and the UK (19%) as well as the EU15 average (27%). Moreover, it was approximately 9% in 2002 for the US and Japan and just above 10% for the EU15 when only extra-EU trade is taken into account.

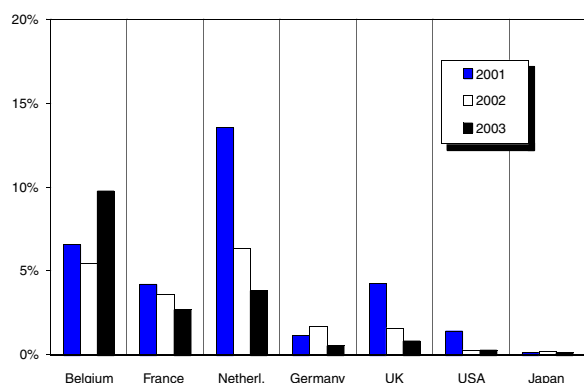
Regarding trade in goods, it is interesting to take a closer look at the geographical and product distributions of Belgian imports and exports. It is well-known that Belgium's external trade is focused on the EU15: in 2003, 74% of all exports went to, and 71% of all imports came from, the EU15. Belgium's main trading partners are its three large neighbours: Germany, France and the Netherlands (roughly 48% of exports and imports). Its share of trade with the new Member States remains small (barely 2.5% of exports and 2.0% of imports in 2003). Outside Europe, the US is by far its most important trading partner (roughly 7% of exports and 6% of imports).

Graph 2 provides a rough global view of the product pattern of Belgium's intra- and extra-EU15 trade in goods in 2002. A closer look at the main class, manufactured goods (5+6+7+8+9), shows that the most important export and import categories for Belgium are 'Machines and transport equipment' (7) and 'Chemicals' (5) followed relatively closely by 'Basic manufactures' (6).

The proportion of total trade accounted for by commercial services lies roughly between 15% and 30% for the countries reported on Graph 3. This probably understates the real weight of services in total trade, but it is in any case still much lower than the share of services in GDP in those countries.

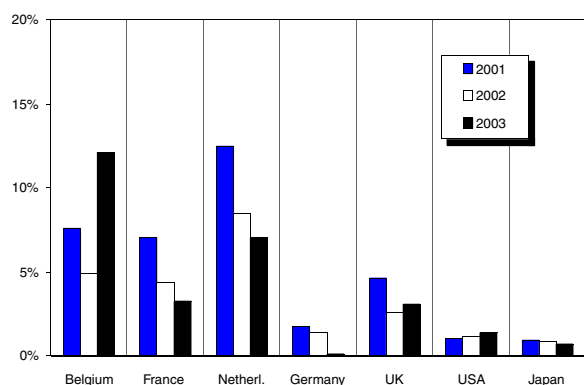
Key indicators: foreign direct investment

**Graph 4 - Inward FDI in % of GDP**



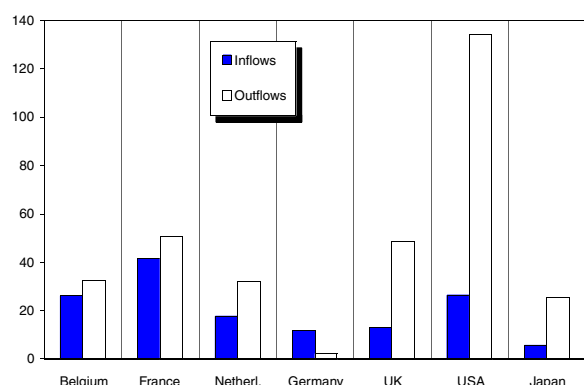
Source: Eurostat (NewCronos), NBB/BNB and UNCTAD

**Graph 5 - Outward FDI in % of GDP**



Source: Eurostat (NewCronos), NBB/BNB and UNCTAD

**Graph 6 - Foreign direct investment flows in billion EUR, 2003**



Source: UNCTAD

It is a widely held belief that host economies can derive important benefits from inward foreign direct investment (FDI). Without going more deeply into an analysis of these benefits, it should be noted that any host economy tries to attract FDI in the hope of positive effects such as technology spillovers, improvements in productivity and job creation.

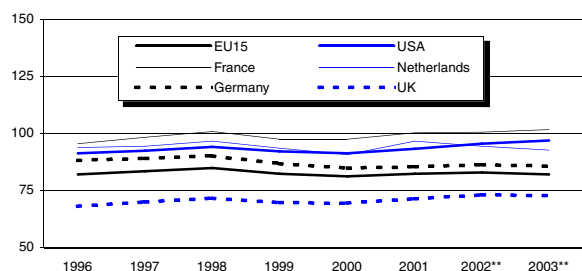
The problem, however, is that FDI flows are relatively volatile. Global FDI flows follow world GDP quite closely with a lag of more or less a year, but the amplitude of the cycles is bigger. Since the early 1970s there have been four global FDI downturns: these occurred in 1976, 1982-3, 1991 and 2001-2 with falls greater than 10% in each case. The strongest decline has been the most recent one. Indeed, the level of global FDI flows has been reduced by half between 2000 and 2002. This downward trend has continued in 2003, although it is slowing considerably. A recovery is expected in 2004.

Regarding short-term developments, the recent downturn in FDI flows can also be observed for most of the countries reported in Graphs 4 and 5. While 2000 was still a peak year, 2001-2003 was marked by a clear downward trend for many of them. Total inward FDI as a percentage of GDP was on the decline between 2001 and 2003 in Germany, France, the Netherlands, the UK and the US. The FDI inflows for Belgium run somewhat counter to this trend, increasing quite substantially in 2003 after falling between 2001 and 2002. The profile is very similar for total outward FDI as a percentage of GDP between 2001 and 2003: this share was declining for Germany, France, the Netherlands and the UK. Again, for Belgium an initial fall was followed by a relatively strong increase in 2003. Note also the slight rise in this share for the US during the period from 2001 to 2003.

In the 2004 edition of its World Development Report, UNCTAD points out that FDI in services is on the rise. This is a consequence of the non-tradable nature of many services, which may indeed be overcome by setting up a foreign affiliate, and it reflects the growing importance of services in developed economies. According to this report, more than two-thirds of global FDI flows were generated by service industries in 2001 and 2002. Eurostat figures show that for FDI in equity capital this share was even bigger for Belgium in 2002.

## Key indicators: productivity and prices

**Graph 7 - Productivity per hour worked (EU15=100)\***

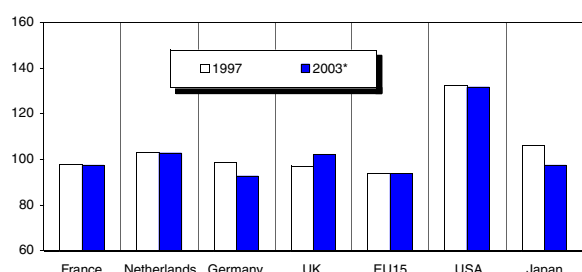


Source: FPB, based on Eurostat, NewCronos (domain Structural Indicators)\*\*\*  
 (\*) Estimates, measured as GDP at current prices in PPS (\*\*) Forecasts (\*\*\*) A new version of the national accounts may not yet have been processed by Eurostat

The creation of an internal market would theoretically lead to convergence in prices and perhaps also in productivity. It is indicated whether this has been the case, and if not, how Belgium is performing in comparison with its neighbouring countries and the EU15 as a whole.

GDP per hour worked in Belgium has been on the high side as compared with the other countries. By comparing the figures for 2003, it can therefore be seen that this measure is 22% higher than in the EU15. Such a high level to some extent offsets the impact of high labour costs and fosters the competitiveness of the Belgian economy.

**Graph 8 - GDP per capita, in PPS (EU15=100)**

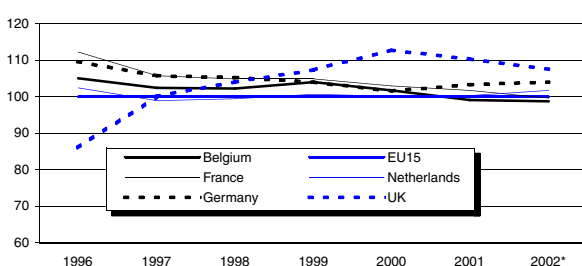


Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Forecasts

In terms of GDP per capita, however, the difference between Belgium and the EU15 is smaller and performance is more in line with the neighbouring countries. The difference was only 7% in 2003. In that respect, the UK economy has even overtaken the Belgian economy and approached the level of the Netherlands. More generally, convergence between European countries seems to be greater in terms of GDP per capita than in terms of GDP per hour worked.

It is also noteworthy that the US is performing significantly better than European countries. The difference in GDP per capita between the US and Europe (+40% in 2003) is influenced by the discrepancies in GDP per hour worked (+18%), the employment rate and in the average number of hours worked. The gap for GDP per hour worked is mainly determined by the higher level of capital deepening, but also by the higher level of total factor productivity (TFP).

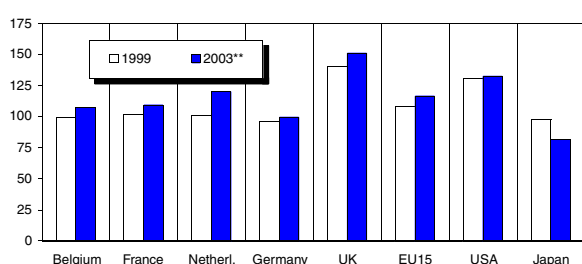
**Graph 9 - Price index of private final consumption (EU15=100)**



Source: Eurostat, NewCronos (domain Prices and Purchasing Power Parities)  
 (\*) Provisional value

The convergence of price levels has been strong for the countries in the Euro area, although the German price level seems to have been diverging somewhat in recent years. Nevertheless, the price indices for Germany were up to 10% above the European average at the beginning of the period, whereas they only reached 4% above the European average in 2002. The UK is an exception, because a strong currency has pushed prices well above average for the last few years.

**Graph 10 - Labour cost per unit of value added (1995=100)\***

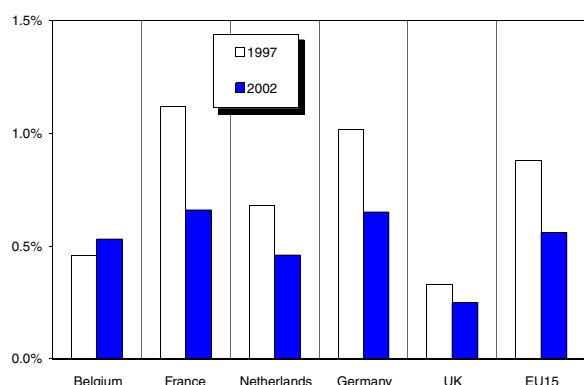


Source: European Commission, Ameco database  
 (\*) Nominal unit labour cost per unit of real value added, in common currency (Ecu/EUR)  
 (\*\*) Provisional

To assess the international cost competitiveness of the Belgian economy, the evolution of the unit labour cost (ULC) in common currency terms has been evaluated. ULC in Belgium has been constant during the second half of the nineties, whereas in the European Union it increased by almost 12%. ULC in Belgium has only been rising again since 2001. Hence, because of a period of effective labour cost limitation, Belgium's intra-EU cost competitiveness has gained the advantage over the other Member States.

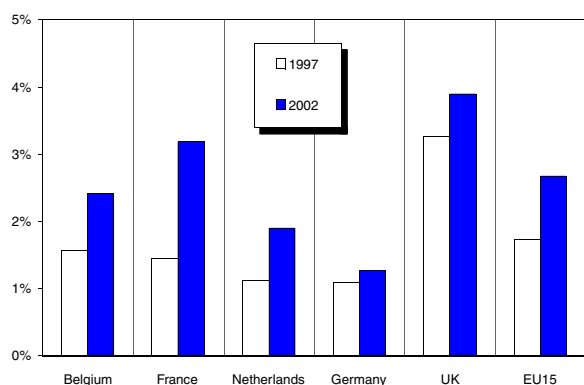
Key indicators: internal market

**Graph 11 - State aid, as % of GDP\***



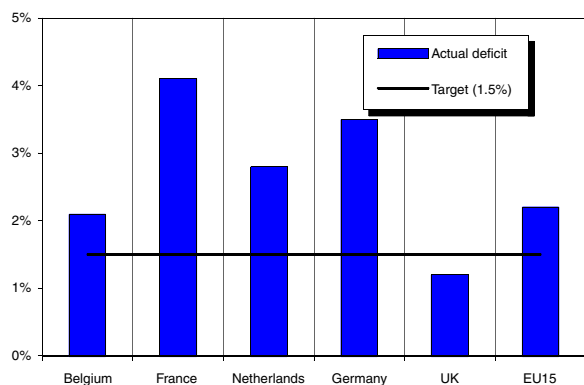
Source: European Commission, DG Competition  
 (\*) Total state aid, excluding support for railways, but including support for agriculture and fisheries

**Graph 12 - Openly advertised public procurement, as % of GDP\***



Source: Eurostat, NewCronos (domain Structural Indicators)

**Graph 13 - Transposition deficit of internal market directives (31 May 2004)\***



Source: European Commission, DG Internal Market  
 (\*) Percentage of internal market directives that has not yet been transposed into national law, although the transposition deadline has been passed.

State aid in the EU has declined from 0.9% of GDP in 1997 to 0.6% in 2002. Belgium did not take part in this trend but was already starting from a low level and remained at around the 0.5% mark. It should be noted that these figures do not include aid to the railway sector because this aid is not state aid in the sense of Article 87.1 of the Treaty. Instead, the Commission actually considers aid to the railway sector to be a means of pursuing environmentally friendly transport and public service provision.<sup>1</sup> If railway aid were included, the Belgian (and Dutch) figures would double to 1.1%, making them higher than those of the other countries.

The Stockholm European Council in 2001 asked Member States not only to reduce State aid but also to “redirect aid towards horizontal objectives”. The share of EU aid granted for horizontal objectives - including cohesion objectives such as aid for regional development - thus increased, between 1997 and 2002, from 54% to 73% of total EU aid minus agriculture, fisheries and transport. The figures for Belgium during that period were already approaching 100%, with an average of 98%.

Another area in which a move is being made towards an internal market is the increasing amount of openly advertised public procurement whose value as a percentage of GDP in EU15 rose between 1997 and 2002. Belgium followed the same positive course as the EU15. During the whole period, it did not differ much from the EU average.

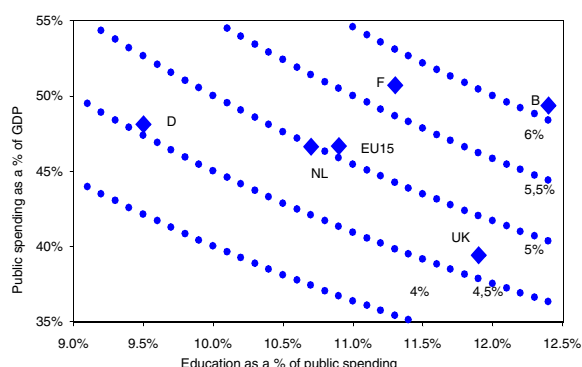
It should also be stressed that the estimate only covers procurement for which tenders have to be published in the Official Journal, i.e. procurement in excess of the European thresholds. The figure may underestimate the actual degree of opening as it does not include procurement that remains below the thresholds of the relevant directives but is nevertheless openly advertised by national authorities.

To assess the progress towards the completion of the Single Market Program, one should also consider the rate at which Member States transpose into national legislation the various directives and regulations relating to the Internal Market. The so-called transposition deficit is the number of directives not yet transposed into national law by Member States as a percentage of all directives pertaining to the Internal Market. The European Council required the Member States to keep their deficit to 1.5% or below, but only 5 out of 15 countries - Belgium is not among them - are meeting this target.

1. See Commission of the European Communities, 2004, *State Aid Scoreboard: Spring 2004 Update*.

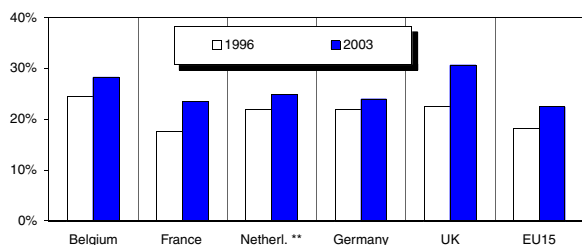
Framework conditions: education

**Graph 14 - Public spending on education (2001)**



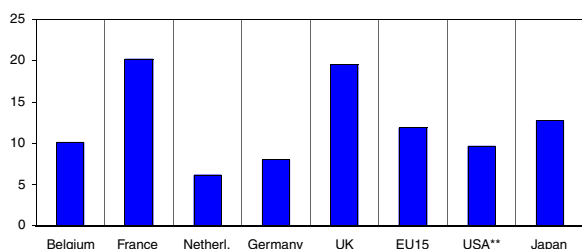
Source: Eurostat, NewCronos (domain Education)

**Graph 15 - People with higher education \***



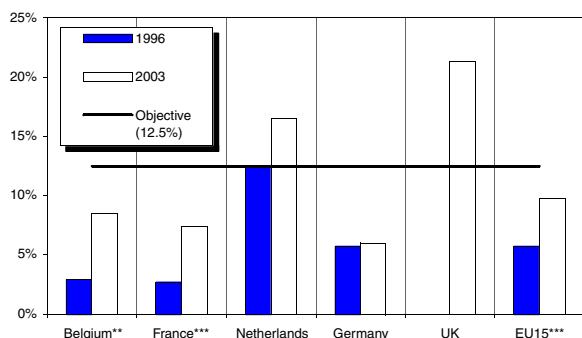
Source: Eurostat, NewCronos (domain Labour Force Survey)  
 (\*) Percentage of people aged 25-64 who completed higher education (ISCED 5-6)  
 (\*\*) 2002 instead of 2003

**Graph 16 - Graduates in science & technology, in % (2001)\***



Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Number of persons per 1000 of population aged 20-29 who graduated in science and technology at post-secondary level (ISCED 5a and above) during the given year  
 (\*\*) 2000

**Graph 17 - Participation in Lifelong learning\***



Source: Eurostat, NewCronos (domain Labour Force Survey)  
 (\*) % of people aged 25 to 64  
 (\*\*) Break in series for 1999  
 (\*\*\*) Break in series for 2003

In a knowledge-based economy, where ideas and knowledge are central factors in the innovation and growth process, a country must take care of its educational level. Moreover, the availability of a skilled labour force is an essential condition for competitiveness. In order to achieve optimal utilization of human capital there is a need to be able to anticipate shortfalls in the supply of specific skilled persons. It is also in the interests of the countries to provide training opportunities during a person's professional career.

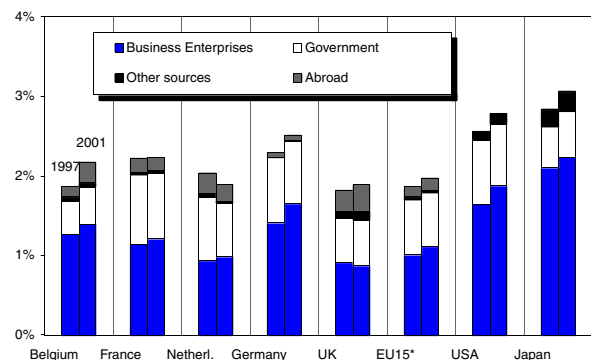
Within the EU15, even in countries with a rather small share of overall public spending in GDP, the proportion of public expenditure on education may be relatively high. Also in Belgium, quite a high level of the public budget is allocated to education. In 2001, for instance, about 6.1% of GDP (shown on the curved dotted lines in Graph 14) or 12.4% of total public expenditure was devoted to education, which is higher in both cases than the European average.

With regard to the highly skilled population, the percentage of people aged between 25 and 64 with tertiary education is relatively high in Belgium. This indicator, which is a measure of the supply of advanced skills, is significantly higher than the European average. Due to major discrepancies between educational systems, however, differences between countries must be interpreted with care. Because of their critical role in the national innovation system, the supply of new graduates with training in Science and Engineering (% of the 20-29 year old age group) is of great interest. This share, which shows a major difference between the sexes, is significantly lower in Belgium than in France and the UK, but still higher than in Germany and the Netherlands.

Against a background of crucial technological developments and new business practices it is essential, for social and competitive reasons, that the people of the European Union should be able to acquire new knowledge and skills at any time during their life. As such the notion of lifelong learning covers all learning activities in a wide range of environments, which are undertaken to improve knowledge and skills, whether personal, social or employment-related. Participation in lifelong learning has improved significantly in Belgium during the last few years. The participation rate, however, (8.5%) is still lower than the European average (9.7%). The European Union has put in place a target of 12.5% for adult participation in lifelong learning by 2010.

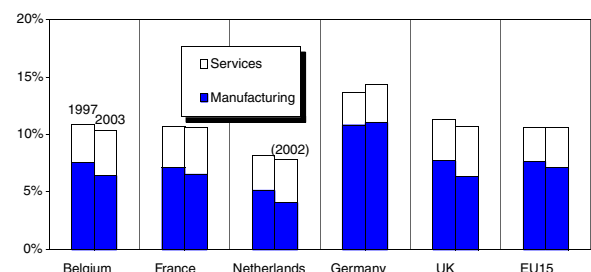
Framework conditions: R&D and innovation

**Graph 18 - R&D expenditure by sector, as % of GDP\***



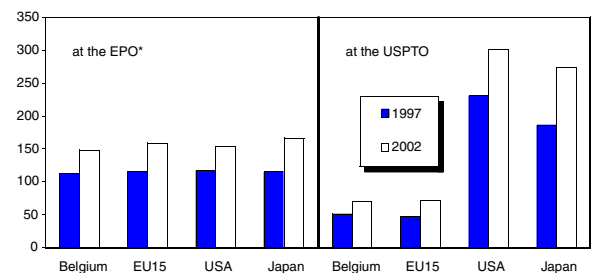
Source: Eurostat, NewCronos (domain R&D Expenditure and Personnel)  
 (\*) Provisional values for 2001

**Graph 19 - Share of MHT sectors in total employment\***



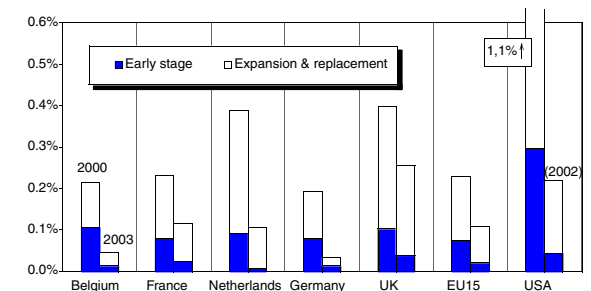
Source: Eurostat, NewCronos (domain Statistics on high-tech industries and knowledge-intensive services) (\*) MHT = medium- and high-technology sectors

**Graph 20 - Patent applications per million inhabitants**



Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Provisional values for 2002

**Graph 21 - Venture capital investment as % of GDP**



Source: Eurostat, NewCronos (domain Structural Indicators)

Innovation is a major source of productivity growth in the long run and consequently plays an important role in economic growth. It depends directly on the level of R&D activities. That is why reinforcing our R&D and innovation systems is vital if we are to be the most competitive and dynamic knowledge-based economy in the world. In Belgium, R&D investment represents 2.17% of GDP in 2001, which is above the European average. This is the result of faster growth in R&D expenditure in Belgium than in the EU over a few years.

In Belgium, enterprises financed 64.3% of R&D expenditures in 2001, which was close to the level of two-thirds set for 2010 at the Barcelona Council. On the other hand, the proportion financed by the public authorities remains lower than the equivalent measure in the majority of Member States.

R&D activities and innovation are greatly concentrated in the medium and high technology branches (MHT). In Belgium, the most R&D intensive industries (in % of value added) are: Manufacturing of electric and optical equipment and Chemical industry. The MHT branches represent 10.4% of total employment in Belgium in 2003, which is close to the European average (10.6%) and similar to the level achieved in 1997 (10.8%).

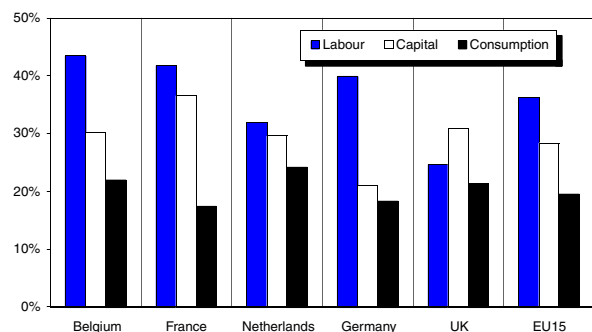
The number of patent applications is an indicator of the productivity of innovation and R&D. In Belgium, the number of patent applications filed with the European and US Patent Offices was slightly below the European average in 2002. The number of high-tech patents as a proportion of all patents was 18.7% for the EPO and 12.5% for the USPTO, which is lower than the equivalent measures for the EU15, US and Japan.

Easy access to venture capital makes it easier to disseminate innovation. In Belgium, investment in venture capital amounted to 0.05% of GDP in 2003, which is lower than the European average (0.11%) and also lower than the levels achieved by its neighbours, with the exception of Germany. This performance is mainly explained by the very low level of investment in expansion and replacement compared with its competitors. After a few years of figures above the European average, investment in the early stage of development was also lower than the European average in 2003. The fall in this type of investment since 2000 has been more marked in Belgium than in the reference countries.



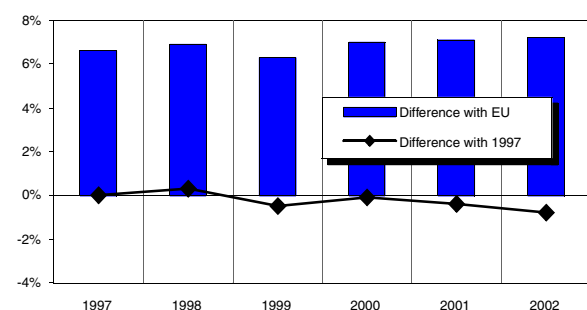
Framework conditions: taxation

**Graph 22 - Implicit tax rates (2002)**



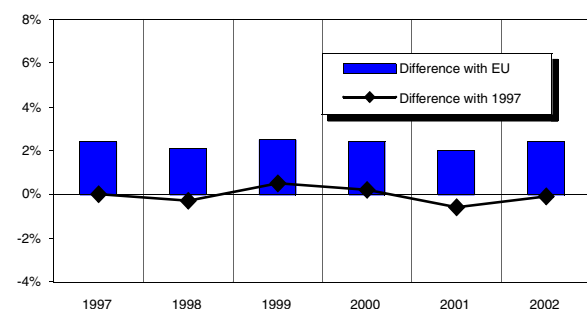
Source: European Commission, The structures of the taxation system in the EU

**Graph 23 - Implicit tax rate on labour in Belgium, %-points**



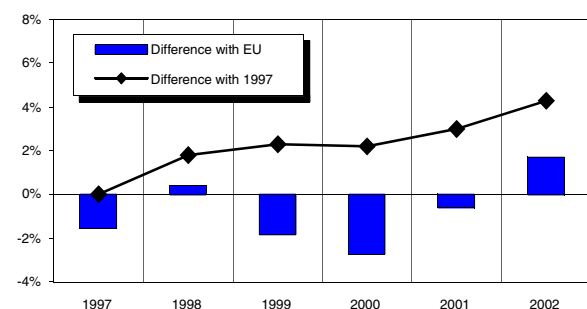
Source: European Commission, The structures of the taxation system in the EU

**Graph 24 - Implicit tax rate on consumption in Belgium, %-points**



Source: European Commission, The structures of the taxation system in the EU

**Graph 25 - Implicit tax rate on capital in Belgium, %-points**



Source: European Commission, The structures of the taxation system in the EU

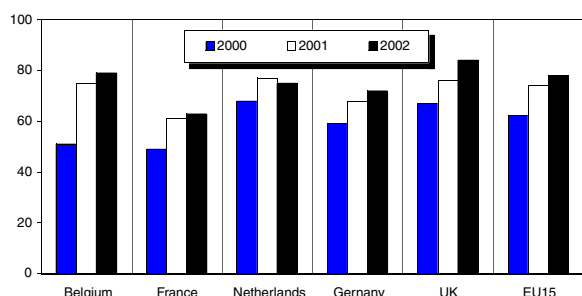
The implicit tax rate on labour has dropped by 0.4 percentage points in 2002, while the implicit tax rates on consumption (+0.5%-points) and capital (+1.3%-points) have risen. The levels of these tax rates, which are based on economic functions, are now higher for Belgium than for the EU15.

The implicit tax rate on labour has dropped from 44.6% in 1998 (the highest level in the past eight years) to 43.5% in 2002 (the lowest level in the past eight years). The successive cuts in the rate of social security contributions since the mid-nineties (accounting for some 3 billion euro in 2002, or 3% of gross wages) have contributed to a fall in the tax rate. During the 1995-2000 period, however, these cuts were offset by increases in personal income taxes. From 2001 onwards, reductions in personal income taxes have contributed to a decline in the global taxation of labour. This decline should continue from now until 2006. While the tax rate in Belgium has dropped, the decline in Europe (EU15) has at least been equally important, leading to a consistently higher tax rate in Belgium (with a difference from the EU15 average of 6.6%-points in 1997 and 7.2%-points in 2002).

The rise in the implicit tax rate on capital has been remarkable: from 23.7% in 1995 to 30.1% in 2002. This phenomenon has been seen in many other European countries. For conceptual reasons, this ratio is not easy to interpret: the numerator incorporates very heterogeneous categories of levies; the denominator is a flow concept whereas certain taxes relate to stocks. The European Commission has tried to analyse the tax rate and its components. It is a result of the analysis that the evolution of the tax rate was influenced by a decrease in the interest payments in line with the drop in the public debt ratio. Moreover, the implicit rate of corporate income taxation (as part of the total taxation on capital) has been on the rise in Belgium during recent decades. Nevertheless, the corporate income tax reform decided upon in 2002 provides for a cut in the statutory rates from 2003 onwards (from 39% to 33% for the normal rate), but simultaneously for measures that widen the tax base.

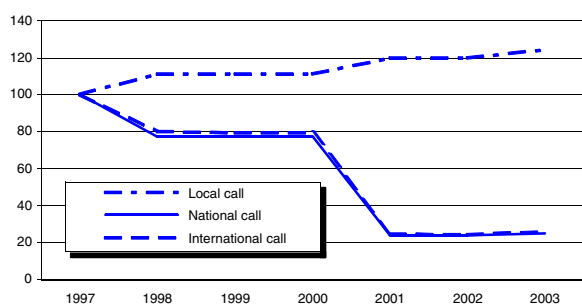
Network industries: telecommunications

**Graph 26 - Mobile phone subscriptions per 100 inhabitants**



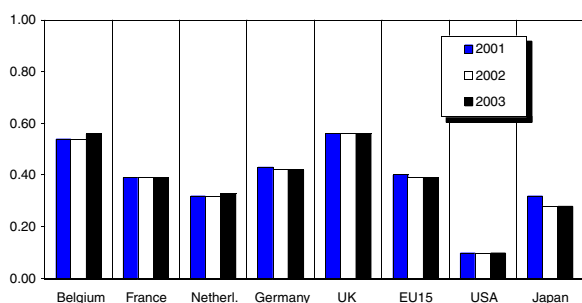
Source: Eurostat, NewCronos (domain Communications)

**Graph 27 - Price of telephone calls in Belgium (1997=100)**



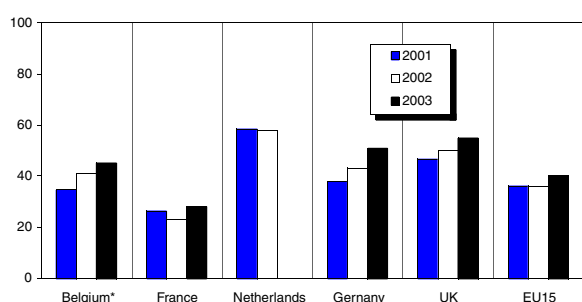
Source: Eurostat, NewCronos (domain Communications)

**Graph 28 - Local call charge per 10 min. (EUR, VAT incl.)**



Source: Eurostat, NewCronos (domain Communications)

**Graph 29 - Internet connections per 100 households**



Source: Eurostat, NewCronos (domain Information Society Statistics)  
 (\*) 2003 is estimated (Source: BIPT/IBPT)

In Belgium, on 1 March 2004, there were 46 operators holding licences to operate public networks and 29 operators had been given authorisation to provide voice telephony services. These figures reflect a stabilisation in the number of market participants after the fluctuations seen in previous years. Belgacom, the incumbent, has still maintained its dominant position, however, especially in the local loop where the process of unbundling, is in progress but by the end of 2003 only concerned 6,500 lines or 0.14% of all the incumbent's copper lines.

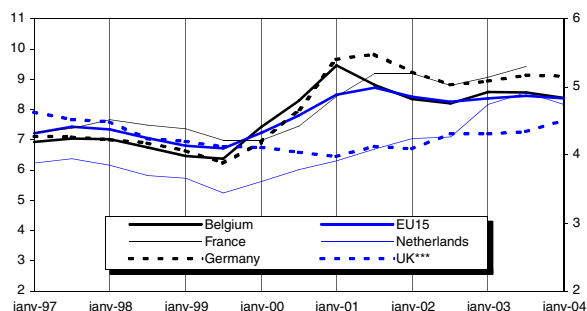
After the stabilisation in the price of fixed telephony during 2002, a rising trend has been noticeable since last year. Prices of national and local calls, as measured by structural indicators which only take into account the prices applied by the incumbent, increased at a rate of 3.7% in 2003 while international call tariffs saw a growth rate of 6.0%. Since the same rising trend cannot be seen in the other Member States, with the principal exception of the Netherlands, Belgian local calls are still among the most expensive in Europe and Belgium was in 13<sup>th</sup> place in the ranking of the 15 European Member States in 2003. With regard to international call charges, in 2003, Belgium fell from 5<sup>th</sup> to 7<sup>th</sup> position in this European ranking based on structural indicators.

In mobile telephony, the three Belgian operators shared about 8.7 million customers at the end of 2003. This figure corresponds to a penetration rate of 83%, up from 79% at the end of 2002. On 13 May 2004, Proximus, the incumbent's subsidiary, opened its first commercial 3G services. This service offers a mobile data connection at a maximum of 384 kbps and is mainly designed for business customers.

The growth rate in the number of Internet connections in Belgium is still slowing. In July 2004, almost 2 million connections were recorded by ISPA, which included some 360,000 connections in firms. Internet service providers consider that the private market has reached its saturation point and new progress will be contingent on the extension of computer equipment by households. Although the rise in the number of connections is growing more slowly, the quality of those connections is rising, with broadband access accounting for 74% of all connections, and 89% of business connections. The development of "ADSL light" offers from telephony services operators and the extension of cable offers, especially in the northern part of the country, have been the recent positive developments in this market.

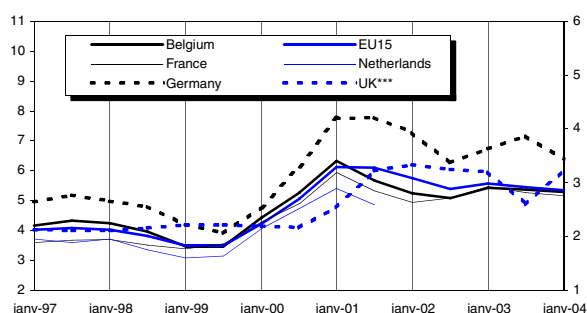
Network industries: gas and electricity

**Graph 30 - Gas prices for households in EUR/GJ\* \*\***



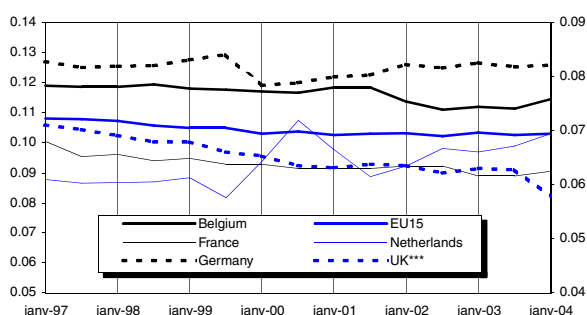
Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Standard consumer group: domestic consumer 83.7 GJ/year, net of taxes  
 (\*\*) Up to 1999 measured in Ecu/GJ, (\*\*\*) £/GJ, right-hand scale

**Graph 31 - Gas prices for industry in EUR/GJ\* \*\***



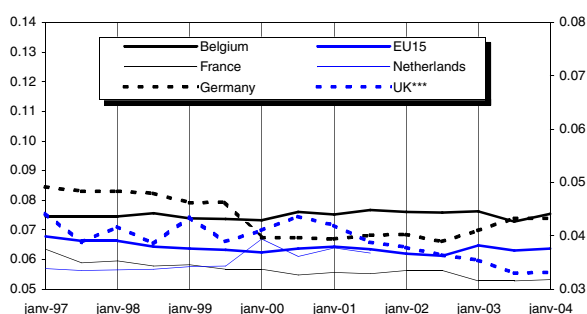
Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Standard consumer group: industrial consumer 41,860 GJ/year, net of taxes  
 (\*\*) Up to 1999 measured in Ecu/GJ, (\*\*\*) £/GJ, right-hand scale

**Graph 32 - Electricity prices for households in EUR/kWh\* \*\***



Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Standard consumer group: domestic consumer 3,500 kWh/year, net of taxes  
 (\*\*) Up to 1999 measured in Ecu/kWh, (\*\*\*) £/kWh, right-hand scale

**Graph 33 - Electricity prices for industry in EUR/kWh\* \*\***



Source: Eurostat, NewCronos (domain Structural Indicators)  
 (\*) Standard consumer group: industrial consumer 2 GWh/year, net of taxes  
 (\*\*) Up to 1999 measured in Ecu/kWh, (\*\*\*) £/kWh, right-hand scale

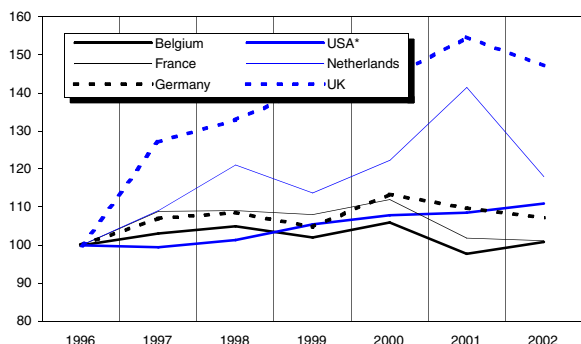
The evolution of gas prices is mainly driven by the development of international gas prices, which in turn are closely related to oil prices. Until the beginning of 2001, gas prices for the two standard consumer categories as defined by Eurostat were higher in Belgium than in all its neighbouring countries except Germany, and also above the EU average. During 2001, however, Belgian gas prices fell faster than those in other countries, moving below or close to the EU average, depending on the category of consumers. Since then Belgium has retained its competitive position: gas prices remained close to the EU average for both categories of customers. In 2003, the gas prices for the representative category of households fell by about 2.2%, whereas they increased somewhat in most neighbouring countries. Belgian gas prices for the selected category of industrial customers decreased by 2.6% over the same period, a slightly smaller reduction than was seen in France and Germany.

In the case of electricity prices, downward pressure from significant price reforms over 1999-2002, combined with the evolution of natural gas prices (natural gas is used to produce electricity) has led to a stabilisation in electricity prices for households in Belgium during 1999-2001, then to a decrease until mid 2002 and finally to an increase since the second half of 2002. This rising trend was also seen in the Netherlands, France and the EU average, whereas the increase was smoother in the last two cases. In contrast, electricity prices fell slightly in Germany and remarkably rapidly in the United Kingdom for customers in the same category and over the same period. Electricity prices for Belgian households are among the highest and are higher than the EU average. Nevertheless, electricity prices including taxes put Belgium close to the EU average.

On the other hand, electricity prices for the selected category of industrial customers increased slightly in Belgium during 1999-2003 (+2.2%), while they decreased in almost all other Member States and stabilised for the EU average. Nevertheless, it is worth underlining that, during 2002-2003, Belgian electricity prices remained rather stable, whereas these prices rose considerably in Germany and to a lesser extent for the EU average. As a result, Belgian electricity prices for this consumer group are still higher than those for its European competitors, with the exception of Germany since the second half of 2003. Belgium's position is unchanged when taxes are included except at the beginning of 2003 when prices with taxes in Germany became higher than those in Belgium.

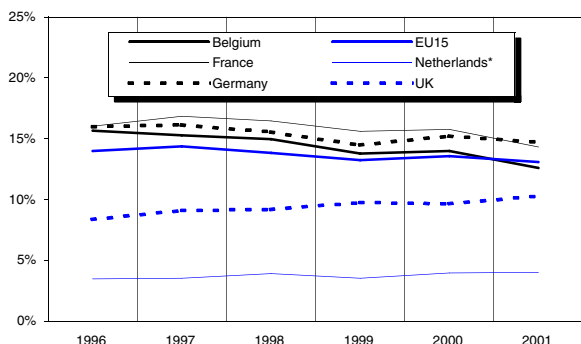
Network industries: railways

Graph 34 - Freight transport by rail (tkm, 1996=100)



Source: FPB/BfP, own calculations based on European Commission, DG Energy and Transport  
 (\*) Referring to the Class 1 railways (±90% of rail freight traffic)

Graph 35 - Market share of freight transport by rail (tkm)\*



Source: FPB/BfP, own calculations based on European Commission, DG Energy and Transport  
 (\*) Market share of land transport modes (excluding shortsea shipping)

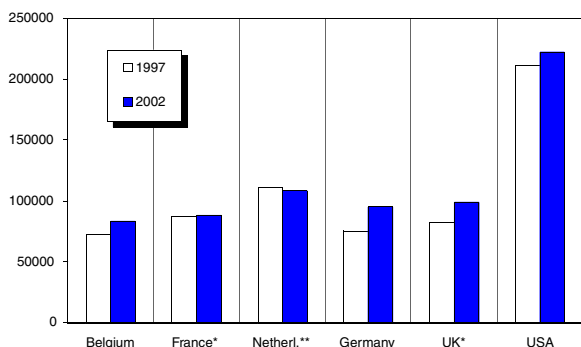
Since 1990, especially as a consequence of just-in-time industrial organisation to reduce stocks and working capital, and also specialisation within the EU, goods transport in the EU15 increased by 31% (2001). During this period, however, freight traffic by rail fell by 5%. Freight traffic by rail has been more or less stable in Belgium and France since 1996, but has risen slightly in Germany and the USA. Strong growth was seen, however, in the UK (47%) and the Netherlands (18%). It should be noted that the UK, Germany and the Netherlands, based on the Liberalisation-index 2004,<sup>1</sup> which measures market reforms, are ranked in the top four most liberalised countries.

In the growing transport market, stable rail traffic in Belgium implies a falling market share. Compared to other transport modes (road, inland waterways and pipelines) this share accounted for 12.6% in 2001 while it still accounted for 21% in 1990. In the EU as a whole the market share of railways in the goods transport market declined from 18.1 % in 1990 to 13.1% in 2001 and is expected to decline to 9% by 2030.<sup>2</sup> The low share of rail transport in total freight transport in the Netherlands is offset by a large share of inland waterways (43.4%). In contrast to the overall declining trend in the EU, the market share of rail traffic in the goods transport market in the UK increased from 8.4% in 1996 to 10.3% in 2001. This trend is due to the sharp increase in tonne km by rail, 24% compared to 2% for road traffic. The share of road traffic in the UK is still high, however, (83.4%) as compared to EU15 (75.5%) and Belgium (71.0%).

1. Kirchner, C., 2004, *Rail Liberalisation Index 2004*, IBM.
2. European Commission, 2003, *European Energy and Transport: Trends to 2030*. Brussels

Network industries: postal services

Graph 36 - Number of domestic items per worker



Source: FPB/BfP, own calculations based on data from De Post/La Poste and UPU  
 (\*) 2001 instead of 2002  
 (\*\*) Figures for the Netherlands 2002 include international service - receipt. Based on 1999 figures this may have overestimated the figures for the Netherlands by about 4%

The number of domestic postal items sent and received in Belgium increased by 2.2% between 1997 and 2002. In the same period, the number of employees of the incumbent (De Post/La Poste) decreased by 10.9%. These developments led to an improvement in productivity in terms of items delivered per employee by almost 15% during 1997-2002. Nevertheless, Belgium is still somewhat behind other European countries, and all countries considered are far behind the productivity achieved in the US. As regards the volume of letter post in Belgium, there was a decline of 5.3% in 2002. This can be explained mainly by the substitution of traditional letter post traffic for electronic mail. The forthcoming market opening has already led to the entry of some foreign incumbents into certain niches of the Belgian market.

## Reductions in social security contributions and alternative methods of financing the social security system

This Planning Paper presents the macroeconomic and public-finance effects of a variety of cuts in social security contributions (SSCs) in the short and medium run. It also documents the impact of different types of alternative sources of financing social security. These simulations have been carried out using the HERMES model. In a number of cases, the real wages generated by the labour market model LABMOD were fed into the HERMES model.

Ten policy shocks were simulated: three types of SSC reductions (across-the-board employees' and employer SSC cuts, cuts in employer SSCs on low-wage employment) and seven methods of compensatory financing (increases in VAT sales taxes, excise duties, energy taxes, personal-income taxes, or corporate taxes; the introduction of a value-added factor-income tax, an all-income tax). In all cases, the ex ante impact on government receipts was calibrated to be identical to 0.5% of GDP throughout the simulation period (which corresponds to 1.5 billion euros in the first year of the simulation period). The net impact on the government budget depends on the knock-on effects on the tax base, unemployment benefits, and price-induced changes in government spending.

Furthermore, these policy shocks were analysed under various assumptions concerning wage formation. The first set of simulations assumes that real gross salaries are unaffected by the policy shock, i.e. identical at the baseline and in the policy scenarios. In the second set of simulations, based on a more conventional Phillips curve mechanism, real gross wage inflation is supposed to react to changes in labour productivity and the unemployment rate. In the third set of simulations, real wages are based on the LABMOD bargaining framework, implying that the real wage level is determined by labour productivity and the unemployment rate and also by the replacement rate and the tax wedge. In all three cases, it is assumed that labour supply remains unchanged.

Regardless of the wage formation process, cuts in employer SSCs targeted at low-wage workers produce better results in terms of job creation and budgetary cost per additional job than across-the-board cuts in employer SSC. Furthermore, employer SSC cuts are far more effective at generating additional jobs and growth if gross wages are unaffected, albeit at a higher budgetary cost relative to GDP. In the case of across-the-board cuts in employer SSCs, the wage bargaining model and the Phillips curve model generate very similar results. In contrast, employee SSC cuts hardly create any jobs in the Phillips wage curve model, while they increase employ-

ment considerably in the wage bargaining framework. The ranking of across-the-board employers and employee SSC cuts in terms of job creation and budgetary cost is therefore highly sensitive to the nature of the wage formation. If the tax wedge has no direct impact on wages, i.e. if gross wages are unaffected or if wages are set in the Phillips curve framework, then employer SSC cuts produce far better results. In contrast, if the tax wedge does impact on wages, i.e. in the wage bargaining framework, then cutting employee SSCs is the more effective strategy.

Whatever the wage hypothesis, less jobs are lost by raising indirect or direct taxes than jobs are created by cuts in employer SSCs. This also holds in comparison with employee SSC cuts, but only if wages are determined by the wage bargaining model. Still, comparing the different methods of alternative social security financing does not lead to clear-cut conclusions. With unchanged gross wages, increasing direct taxes - whether on personal income, corporate income, value added or all-factor income - or energy taxes seem to be more favourable because of the relatively low level of job losses and the relatively high increase in the government surplus (relative to GDP) than increasing the VAT or other sales taxes. If wages are allowed to react to changing macroeconomic conditions but are not directly affected by the tax wedge, raising direct taxes is also more benign in terms of the government surplus, but more harmful to employment than all indirect taxes, with the exception of the energy tax. In fact, the latter seems to be the best option in terms of net budgetary cost per job destroyed. The wage bargaining framework produces results which are approximately the same as those of the Phillips curve framework in the case of a general tax on factor income, meaning that replacing across-the-board SSCs with an all-factor income tax benefits both employment and the government surplus. By contrast, in the case of a rise in the personal-income tax, the HERMES model with LABMOD wages predicts effects far less benign effects on the government surplus and far greater damage to employment than the Phillips curve version of HERMES. Unfortunately, a more encompassing comparison between sources of compensatory financing is not possible because indirect taxation is not represented in the LABMOD model.

*“Simulaties betreffende de vermindering van de socialezekerheidsbijdragen en vormen van alternatieve financiering - Variantes de réduction des cotisations sociales et de modalités de financement alternatif”*,

*D. Bassilière, F. Bossier, I. Bracke, P. Stockman, Planning Paper 98, January 2005*



## Assessment of the impact of electricity savings on the evolution of electricity demand in Belgium

This Working Paper addresses the issue of energy efficiency improvements in Belgium and their likely impacts on the evolution of electricity demand up to 2020 at the global and sectoral levels. The analysis is mainly based on two recent studies. This paper also provides a detailed description of the methodological approach used to obtain an alternative projection of electricity demand which takes into account the potential for electricity savings.

In the context of the elaboration of the indicative programme 2005-2014 for electricity generation, the Federal Planning Bureau has worked out, at the request of CREG (the Commission for the Regulation of Electricity and Gas), an alternative profile for the evolution of electricity demand up to 2020. This alternative projection is intended to take into account the impact of policies and measures aimed at reducing overall energy demand in Belgium. Combined with the baseline projection for electricity demand described in the FPB study "Belgian energy outlook to 2030" (Planning Paper 95, April 2004), this makes it possible to put forward two possible alternatives for the evolution of electricity demand. These different projections can also be viewed as an indication of the many uncertainties surrounding long-term electricity demand projections.

The electricity savings implemented in the alternative electricity demand projection are based on the results of a study published in May 2003 by the Fraunhofer Institute, in cooperation with other energy institutes, and carried out at the Belgian government's request. More specifically they are based on the potential savings calculated in the "Benchmarking" scenario used in this

study, assuming that Belgium brings its energy efficiency level into line with European best practices.

To ensure consistency between the alternative projection and the FPB baseline projection, a specific methodology has been developed and implemented that makes use of the elasticities of electricity demand in relation to value added and household income.

Applying this methodology results in an alternative electricity demand projection that is characterised by an average growth rate of 0.86% per year during 2000-2020. This must be compared with the average annual growth rate of 1.39% in the reference scenario of the FPB study "Belgian energy outlook to 2030".

A detailed comparison of the two projections yields a further insight into the contributions of the different sectors to estimated electricity savings: in 2020, 25% of the electricity savings would come from industry, about 22% from the tertiary sector and slightly more than 50% from the residential sector. On the other hand, electricity consumption by the transport sector would be higher in the alternative projection than in the reference one, reflecting the impact of policy measures aiming at reducing road transport and developing rail transport. The increase in electricity demand from the railways is small, however, when compared with electricity savings in the other sectors (less than 10%) and it does not offset the positive effects of the latter.

*"Demande maîtrisée d'électricité: élaboration d'une projection à l'horizon 2020", D. Gusbin, Working Paper 19-04, October 2004.*

## Forecasting mortality rates

In its Royal Decrees of execution<sup>1</sup>, the law of 28 April 2003 regarding supplementary pensions provides that "... the rules that are used [for converting a lump sum into a pension benefit] cannot lead to results that would be inferior to those that would be obtained by using the mortality tables as forecast by the Banking, Finance and Insurance Commission [BFIC] on the basis of the latest demographic studies carried out by the National Institute of Statistics [NIS] and the Federal Planning Bureau [FPB]." To that end, the FPB, in collaboration with the NIS,

now known as Statistics Belgium, a Division of the Federal Public Service Economy, the BFIC, representatives of the Royal Association of Belgian Actuaries (ARAB-KVBA) and several professors from the Université catholique de Louvain (UCL) who previously worked with the ARAB-KVBA, revamped the methodology aimed at forecasting mortality rates to make it more accurate and to allow the latest trends and observations to be taken into account.

Working Paper 20-04 introduces a novel approach to forecasting mortality rates using two different methods.

1. cf. M.B.-B.S. of November 14th 2003



The first method, which is used for those age groups for which the collected data show a clear trend (i.e. age groups under 90), is based on classical evaluation and smoothing methods. The second method, used for ages over 90 - where the data is more erratic -, relies on an original mathematical formulation that harmoniously carries through results obtained using the first method.

The projected mortality rates thus obtained were set against the results provided by the UCL, which applied the Lee-Carter method to the same set of data. These two approaches, although methodologically different, generated similar results.

Those results were analysed and compared to previous exercises. They were then used in order to calculate generational life expectancies.

The advantage of such calculations lies in their ability to generate mortality rates by age and by sex for a given calendar year. In other words, they make it possible to assess the probability that someone of a given age will die in the course of that year.

Life expectancy, which sums up the impact of mortality rates at several ages, helps to visualize the progress achieved in reducing mortality. Life expectancy can be of the "period" or of the "generational" type.

Period life expectancy, as is calculated in the official mortality tables, is the number of remaining years that a person at any given time would live if he or she were to actually experience the mortality conditions that are prevailing at that time. In this approach, men's life expectancy at birth was 65 years in 1950 and 75 in 2000, and according to current estimates, will reach 83 years by 2050 and 88 years by 2100. For women, the corresponding values were and would be 70, 82, 90 and 96 years respectively. Life expectancy at 65 is an important indicator for the discussion on how to finance the consequences of an ageing population, particularly as regards the problem of pensions, given the fact that as health

costs tend to peak in the final years of life, the bulk of these costs is gradually moving up the age ladder. From 13 years in 1950, men's life expectancy at 65 rose to 16 years in 2000 and should reach 21 years by 2050 and 25 years by 2100. For women, it rose from 14 years in 1950 to 20 years in 2000 and should reach 27 years by 2050 and 31 years by 2100. One factor worth noting is that those projections, which are based on the evolution of mortality rates by age and by sex since 1970 -in order to provide a coherent and sufficiently long observation period - do not reflect the recent converging trend between men's and women's mortality patterns that has become apparent in the last ten years or so. In this long-term exercise, however, it seemed premature to start adjusting trends obtained through careful analysis.

Generational life expectancy is a different concept. It follows the individuals of a given generation as they grow older and it applies, for every age group, the mortality rate of the year in which they reach that particular age. This provides a much better reflection of the number of years that an individual can really expect to live. In this approach, total life expectancy for a man born in 1950, 2000, 2050 and 2100 would be 74, 85, 90 and 94 years respectively, and 82, 93, 99 and 103 years for a woman, the 100-year threshold thus being crossed by women during the second half of the 21<sup>st</sup> century. At the age of 65, generational life expectancy values do not differ much from those obtained for period life expectancy, which points to the fact that, as historical trends show, the greatest progress that has been made in reducing mortality is not specifically linked to the older ages. Progress is rather evenly spread across the age ladder, with the best results among the 45-75 age group. Conversely, little improvement has been seen among young adults, as this specific age group is most affected by accidents, a problem that is proving difficult to reduce even more.

*"Quotients de mortalité prospectifs- Prospectieve sterfte-quotiënten", M. Lambrecht, J.-M. Paul, Working Paper 20-04, November 2004.*

## Analysis of the horeca industry in Belgium

This Working Paper gives an overall picture of the hotel and catering (cafes, restaurants etc.) industry in Belgium. The study focuses in particular on aspects of business demography, the importance of the sector for the Belgian economy and its development since the mid-nineties. Since the provision of horeca services is a very labour-intensive activity, special attention is paid to employment features. Several data sources have been used in this paper: the national accounts for 1995-2003, the input-output tables for 2000, administrative databases and surveys.

The horeca industry responds both to final demand (from domestic households and tourists) and intermediate demand (business to business). The share of intermediate demand is particularly high in the hotels sub-sector. Belgian households spend about 5% of their annual budget on domestic horeca expenditures.

With 55 000 enterprises, the horeca industry accounts for about 8% of all enterprises in Belgium, creating 1.7% of total value added (at basic prices). About 145 000 persons work in the sector, corresponding to 3.5% of total

domestic employment. This means that horeca enterprises are on average very small. The vast majority (more than 90%) of all enterprises in the horeca industry employ less than five persons.

Taking into account direct and indirect effects (on the basis of the input-output tables for 2000), the total contribution from the production of horeca services accounts for 3.2% of GDP (at market prices) and 4.7% of total employment. The indirect effects stem mainly from deliveries from agriculture, the food industry and various business services.

From the middle of the nineties onwards, the number of enterprises in the horeca industry, as well as employment and value added at constant prices, have been on a downward trend. This decline has been particularly situated in the catering sub-sector and specifically the number of cafés run by self-employed people has fallen significantly. Since the decline in value added has been less marked than the fall in the number of enterprises, some rationalizing and scaling up has taken place in that segment of the horeca industry.

The main characteristics of employment in the horeca industry can be summarised as follows. The number of self-employed people as a proportion of total employment is, although declining, still very high (more than

30%, as compared with 16% for the economy as a whole). More than 60% of all employees in the horeca industry work part-time (as against less than 30% in the economy as a whole), partly due to the high share (50%) of women in this employment. Hourly productivity and hourly wages are significantly lower than in the rest of the economy, which is linked to the fact that a great deal of employees in the horeca industry are relatively young and poorly qualified.

Belgium belongs to the group of European countries with a low total employment rate. Some southern countries also belonging to this group (like Spain, Greece and Italy) succeed in offsetting this to some extent by a high employment rate in the horeca industry, which is not the case for Belgium.

The profitability of the horeca industry is relatively sensitive to fluctuations in the global business cycle. The average profitability level in the horeca industry is slightly lower than the level across all sectors, and differences in profitability between firms are significant, especially in the catering sub-sector.

*“Analyse du secteur Horeca - Analyse van de horecasector”,  
V. Deguel, C. Hambijé, B. Hertveldt, J. Wera,  
Working Paper 21-04, December 2004.*

## Other Recent Publications

**Planning Paper 96**, September 2004

“Coût budgétaire d’un chômeur de 1987 à 2002 - Une actualisation du Planning Paper 79 de septembre 1997 - Budgettaire kost van een werkloze van 1987 tot 2002 - Een update van de Planning Paper 79 van september 1997”,

V. Bresseleers, N. Fasquelle, K. Hendrickx,  
L. Masure, M. Saintrain, B. Scholtus, P. Stockman

“Tableaux Entrées-Sorties de la Belgique pour 2000

Input-outputtabellen van België voor 2000”,  
July 2004

**Working Paper 15-04**, Mai 2004

“La R&D et l’innovation en Belgique:  
diagnostic sectoriel”

B. Biatour

**Working Paper 16-04**, August 2004

“The NIME Economic Outlook for the World Economy 2004-2010 - Also on this issue: oil price shocks”,  
E. Meyermans, P. Van Brusselen

**Working Paper 17-04**, September 2004

“Duurzame ontwikkeling en bestaansmiddelen voor  
oudere inactieven: een verkenning”

J.-M. Frère

**Working Paper 18-04**, September 2004

“Een kink in de kabel: de kosten van een storing in  
de stroomvoorziening”

D. Devogelaer, D. Gusbin

## Recent history of major economic policy measures

- November 2004** There were two significant developments in the gas industry and one in the electricity industry. The federal market regulator (CREG) published its ten-year indicative plan for the supply of natural gas, covering 2004-2014. Private shareholder Suez-Tractebel obtained a majority stake in the incumbent gas trading company Distrigas and the gas transport company Fluxys. Construction work began to enhance interconnection with the French electricity network, an area which is currently a bottleneck limiting competition.
- October 2004** The federal government announced that the general government finances would be in balance in 2005: the federal government deficit would reach 0.4% of GDP and social security would record a surplus of 0.1 % of GDP; the communities and the regions, which are invited to share the consolidation effort, would be in surplus overall, as would local authorities. The total State debt-to-GDP ratio should decrease from 100% in 2003 and 96.9 % in 2004 to 95.8 % in 2005, despite including the 2.5% of GDP debt of the national railway company which will be taken over by the federal government.
- The government intends to keep the growth of expenses strictly under control. This means savings measures and the postponement of some measures already decided. The budget does, however, provide room for manoeuvre for new initiatives in the areas of justice and security and the standard of 4.5% growth for health care expenses is still in place.
- Important measures decided previously in taxation matters are confirmed for 2005. These include both tax cuts (in personal income taxes and social security contributions) and tax increases (on energy products and tobacco). Nevertheless, some minor tax initiatives decided in 2004 are being postponed until the end of 2005 or indefinitely. The 2005 budgets also provide for increased taxation in favour of social security (tobacco, company cars, beverage packaging) and some tax rate reductions, where these are expected to have a positive impact on the corresponding tax revenues (lower “exit-tax” paid by Belgian real estate investment trusts “SICAFI/VastgoedBEVAK”, lower gift taxes in the Brussels-Capital Region).
- There were two significant developments in the postal and delivery services and one in aviation. For cost and profitability reasons, the postal incumbent has decided not to reduce the working-week of its employees to 36 hours. After unsuccessful negotiations with the federal government, the logistics operator DHL decided to move its European hub activities from Belgium to Germany in 2008. The former aviation incumbent SNBA will merge with low-cost carrier Virgin Express but will retain its products and service level.
- September 2004** Transport system operator ELIA announces to establish next year a short term electricity exchange. This exchange will cooperate with the Dutch and French electricity exchanges.
- July 2004** In accordance with EU legislation, the electricity and gas markets have been opened up for all business customers. This increases the total degree of market opening in both markets to 90%. The remaining captive customers are residential customers in Wallonia and Brussels, who make up less than half of the Belgian population.
- The federal government has approved a draft bill that will transpose the European package of directives on electronic communications into Belgian law.
- May 2004** There were two small but significant commercial developments in telecommunication. In mobile communications, a first commercial UMTS service was introduced, albeit on a limited scale. For the time being, this service will be available to professional customers and in the six largest cities only. In the area of broadband connections, Belgacom has followed Telenet in launching an offer for a light Internet service at a price of less than 30 euros per month and with a limit on the connection speed and download capacity.
- April 2004** Two small but noticeable measures relating to renewable energy were taken: one was positive and the other was negative. The positive measure is the provision of a license to build a windmill site in the North Sea. From 2007 onwards this site may produce electricity for 400,000 households. The negative one is the decision by the Government of Flanders to suspend the exemption from network access fees for renewable electricity. It was warned by the European Commission because the exemption did not apply to imported electricity.
- March 2004** The telecommunications incumbent Belgacom has been floated on the Brussels stock exchange. The equity involved was already held by a private investment consortium. The federal government remains the majority shareholder (51.6%).
- The federal government has made significant progress in the development and financing of two important railway investment projects for the coming decade. One project is the creation of a high-capacity commuter network around Brussels (RER/GEN), while the other is the building of direct connections to the national airport from cities other than Brussels.
- Social policy measures are announced, mainly consisting in adjustments to the welfare system affecting certain benefits: in particular, a 2% increase for older pensioners and people with long-term disabilities (wage-earners scheme) in 2005, 2006 and 2007, and increases and wage indexation of ceilings in disability insurance.
- February 2004** The federal Council of Ministers speeds up the transposition of European directives into Belgian law. The transposition of at least half of 59 directives falling within the competence of the federal government is scheduled to take place before the end of March. The remainder will follow soon afterwards.

Abbreviations for names of institutions used in this publication

BIPT/IBPT	Belgian Institute for Postal services and Telecommunications
EPO	European Patent Office
ISPA	Internet Service Providers Association Belgium
UNCTAD	United Nations Conference on Trade and Development
UPU	Universal Postal Union
USPTO	United States Patent and Trademark Office
WTO	World Trade Organisation

Glossary / Other Abbreviations

3G	Third generation system of mobile communication, also called Universal Mobile Telecommunications System (UMTS)
Broadband	High-speed telecommunications link
BEPG	Broad Economic Policy Guidelines
DSL	Digital Subscriber Line: broadband connection via a traditional analog telephone line
FDI	Foreign Direct Investment: investments in domestic assets and equity by foreign economic agents, and in foreign assets and equity by domestic agents
GJ	Billion joule: measure of the energy content of gas
GWh	Million kWh
Implicit tax rate	Effective tax rates, obtained by relating the broad categories of tax revenues to the corresponding taxable bases
ISCED	International Standard Classification of Education
Life long learning	All learning activities in a wide range of environments undertaken to improve knowledge and skills continuously
Local loop	The last section of a telecommunications network, providing direct connections to the premises of the customer
MHT	Medium and high-technology sectors: chemicals, chemical products, all machinery and equipment, post & telecommunications, computer services, research & development (NACE 24, 29-35, 64, 72 and 73)
Openness	Ratio of the average of imports and exports to GDP
PPS	Purchasing Power Standard: a fictitious 'currency' unit that eliminates differences in purchasing power, i.e. different price levels, between countries
Public procurement	Purchases of consumables and capital goods (and services) by public authorities, <i>ie</i> works, supplies and services
Science & technology	Life sciences (ISC42), physical sciences (ISC44), mathematics and statistics (ISC46), computing (ISC48), engineering and engineering trades (ISC52), manufacturing and processing (ISC54) and architecture and building (ISC58)
SITC	Standard International Trade Classification
State aid	Transfer of State resources to private and public enterprises
Statutory corporate tax rate	Legal tax rate on profits
TFP	Total Factor Productivity: measure to proxy technological progress, based on the residual output growth after accounting for labour and capital inputs
Tkm	Tonne kilometer: measure of goods transport activity
Transposition deficit	Percentage of internal market directives that has not yet been converted into national law, although the transposition deadline has been passed
ULC	Unit Labour Cost, the nominal unit labour cost per unit of real value added
VAT	Value Added Tax
Venture capital	Capital that provides long-term, committed, risk sharing equity to help unquoted companies to grow and compete.