



5. Towards a dynamic and inclusive economy



5.1	Addressing the challenges of a changing world	173
5.2	Revitalising and broadening productivity growth	174
5.3	Facilitating regeneration of the economic fabric	182
5.4	Reducing the persistent mismatch between supply and demand on the labour market	187
5.5	Reconciling economic growth and environmental constraints	196
	Box 8 – The National Strategic Investment Pact	
5.6	Enhancing the general well-being of the population	206
	Box 9 – Trend in the beyond-GDP indicators	

5.1 Addressing the challenges of a changing world

In 2018, the Belgian economy saw a continuation of the expansion phase which had begun five years earlier. Over time, certain constraints on production seem to have become increasingly pressing, as is evident from the proliferating signs of labour market tensions. These cyclical developments are taking place in a context of multi-faceted changes which have been in progress for a number of years now.

The reduction of international trade barriers combined with the technological progress made during the past 20 years has accentuated the fragmentation and the international reorganisation of value chains. Like other advanced countries, Belgium has pursued its transformation into a service and knowledge economy, to the detriment of the traditional production structures.

Other factors, such as the digital revolution, population ageing and the need to take account of environmental constraints, likewise bring about profound changes in the structure of the economy and demand for labour.

Both businesses and individuals are exposed to profound changes

Both businesses and individuals are directly exposed to these changes. Some firms, and with them their workers, benefit greatly while others do not succeed in taking advantage of the changes. This tends to foster a degree of polarisation in the distribution of the benefits of growth, although this is less the case in Belgium than in other advanced economies due to the Belgian system of social protection and dialogue. In Belgium, wage inequality and the risk of in-work poverty are low in comparison with other European countries. However, signs of tension are becoming apparent and need to be addressed.

In view of these developments, it is vital to improve the conditions necessary to ensure the economy's resilience and sustainable growth. Those conditions include matching the available labour resources to firms' demand for labour, creating a framework that gives them sufficient incentives to develop via innovation or to permit the emergence of new economic projects while meeting Belgium's international commitments, including those concerning the environment, access to public services and efficient, reliable infrastructure, and fair distribution of the gains associated with these changes and innovations.



5.2 Revitalising and broadening productivity growth

In order to produce sustainable growth, an economy has to make optimum use of the resources at its disposal. Productivity growth is in this respect the main driving force behind the sustainable generation of income. For several decades, the Belgian economy has been among the most productive in the world, but that advantage is gradually diminishing. It is true that the growth of total factor productivity (TFP) has slowed in all the advanced economies since the beginning of the 2000s, well before the economic and financial crisis erupted. Nonetheless, while TFP growth in the EU picked up at the time of the economic recovery, reaching a steady pace of almost 0.5 % in 2016, it has remained slightly negative in Belgium.

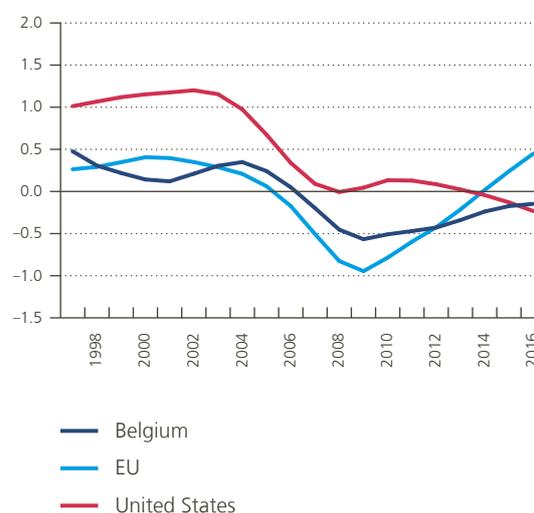
TFP – which reflects how efficiently the production factors (human capital, knowledge and physical assets) are mobilised – is not a concept that can be directly measured. The change in TFP, which was slightly negative at the end of the period although it is recovering, seems to be at odds with the recent significant technological progress. Besides the fact that this progress may take time and may entail fundamental changes in the organisation of businesses and the functioning of the economy before its effects become fully evident, this apparent contradiction may be due in part to the methodological limits of estimation¹ or composition effects. However, alternative ways of measuring productivity, such as apparent labour productivity, also show that the revival in Belgium is less vigorous than for the EU as a whole and in other advanced economies.

However, this issue is difficult to address, especially as the weak aggregate performance masks very wide variations between firms². The analysis of detailed data reveals a marked polarisation of individual performance in terms of the level

Chart 71

Total factor productivity growth strengthened recently in Belgium, but to a much lesser degree than for the EU as a whole

(percentage annual change, smoothed data)



Source: Conference Board.

of productivity between front-runner or “frontier” firms at the cutting edge of their branch of activity (top decile of the distribution), which succeed in

1 Traditional methods of assessing productivity face numerous difficulties, notably in a context where the concepts of quality and dematerialisation of production are increasingly important components of wealth creation. Such phenomena are particularly hard to capture in the prevailing statistical system.

2 In aggregate, the firm data display TFP trends similar to those in the macroeconomic statistics, although the growth rates are higher. This discrepancy is due to constraints concerning microeconomic analysis, which excludes certain sectors (non-market and primary sectors) and does not cover self-employed workers.

maintaining or even increasing their advantage, and a large number of other firms which perform well below the average for their sector and are unable to catch up. This growing disparity between frontier firms and the others is symptomatic of a problem in the diffusion of technology¹.

The breakdown of productivity gains by sector of activity likewise reveals a contrasting pattern. For firms in the manufacturing industry, where the volume of employment has fallen steadily over the past two decades, productivity gains have remained substantial. Nevertheless, apart from the jump that followed the economic recovery, they were smaller in the 2000s than in the past (3% between 2000 and 2016, as opposed to almost 4.5% between 1980 and 2000). For firms in the

market services branch – the main source of job creation – productivity gains have tended to be much smaller. From the year 2000, growth only averaged 1% per annum, and has been virtually zero since 2013. In the context of an increasingly service-based economy, that fact combined with industry’s weaker performance than in the past helps to account for the low growth of aggregate productivity. It is puzzling that, despite the recent acceleration, it seems harder for technological progress to be converted into measurable productivity gains. This is particularly true for the services sector, which has been steadily growing in importance with the tertiarisation of the Belgian economy.

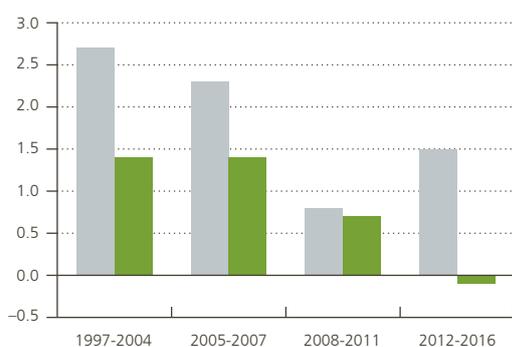
¹ See De Mulder J. and H. Godefroid (2018), “Productivity slowdown: findings and tentative explanations”, NBB, *Economic Review*, December, pp. 51-66.

Chart 72

Productivity gains are still achieved mainly by the top-performing firms

Aggregate productivity growth

(annual averages per sub-period, percentage change)



■ Frontier firms¹
■ Other firms

Contribution to aggregate productivity growth²

(annual averages per sub-period, percentage points)



■ Internal growth of frontier firms
■ Reallocation: frontier firms
■ Internal growth of other firms
■ Reallocation: other firms

Source: NBB.

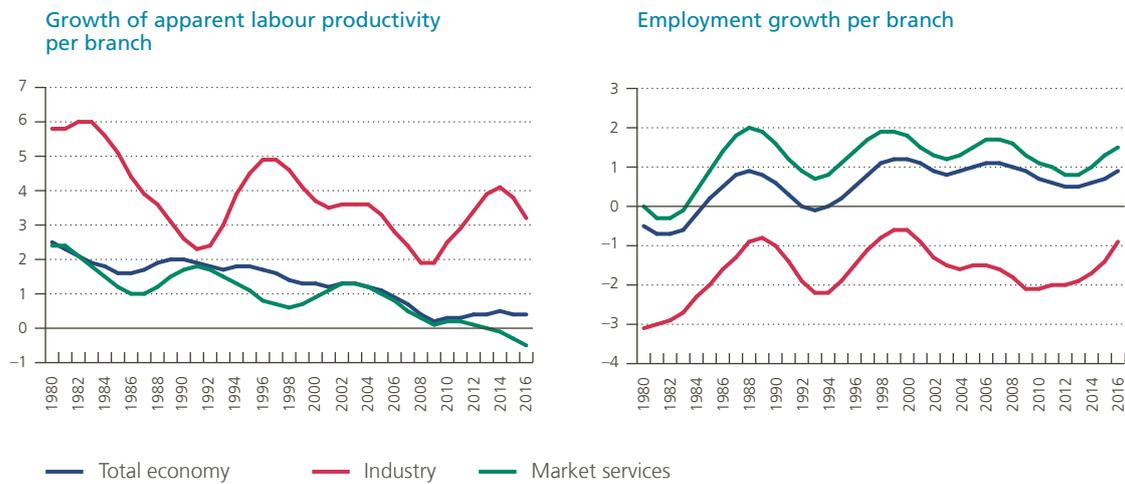
¹ The category comprising frontier firms covers all firms with a productivity level in the top decile of the TFP distribution for their sector for at least two consecutive years.

² The contribution of the reallocation of resources was negative between 2005 and 2007, owing to the departure of several frontier firms and the resulting redistribution of market shares in favour of other firms.

Chart 73

Services create jobs, but productivity gains are smaller than in industry

(percentage annual change, smoothed data)



Source: OECD.

Boosting firms' performance via innovation and research

Up to the end of the last century, internal growth – due to improved intrinsic efficiency of the production processes within the firm or the development of new products – was the main source of productivity gains, but that contribution gradually diminished from the start of the 2000s up to the outbreak of the crisis, contributing to a decline in aggregate productivity. It has only recovered to a small degree in recent years.

To maximise firms' organic growth potential, it is necessary to have substantial innovative capacity. Before the economic and financial crisis, Belgian expenditure on R&D as a percentage of GDP was in line with the European average, but it has risen more strongly since 2010, stimulated by an attractive tax framework in which the tax allowances were expanded and adapted to ensure that R&D activities are anchored in the local economy. In 2017, in order to limit the scope for tax optimisation, the rules on the tax deduction for income derived from patented products or technologies ("patent box")

Innovation reinforces firms' organic growth

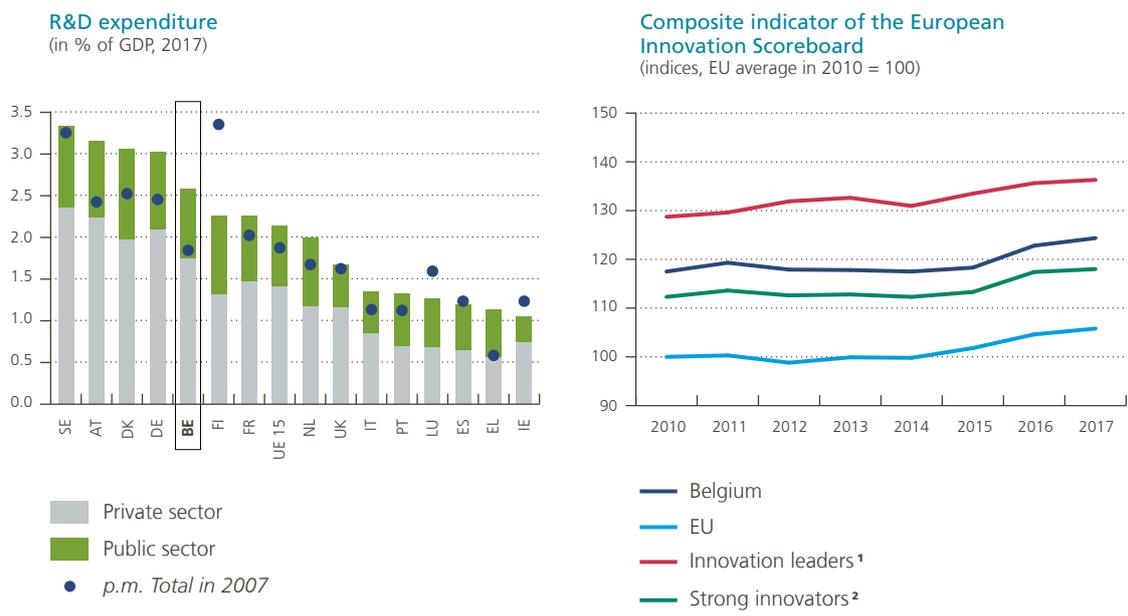
were thus replaced by a new system reserved strictly for research activities conducted on Belgian territory, in accordance with the OECD code of conduct. The deduction increased from 80 % to 85 % of net income and was also extended to new copyright-protected software.

In 2017, R&D expenditure thus represented 2.6 % of GDP, versus an EU average of 2.1 %. Nonetheless, it was still lower than in the Nordic countries and Germany, and also below the national target of 3 % of GDP under the Europe 2020 strategy. Two-thirds of that expenditure comes from the private sector and tends to be concentrated within a few large firms, including subsidiaries of multinationals, and in certain branches of activity, such as chemicals and pharmaceuticals. The highly specific nature of these R&D efforts may explain the limited spillover effects and meagre spread of technology to other firms or sectors. There is thus a need to encourage a much wider range of firms, including SMEs, to step up their investment in intangible assets, extend their innovation activity and adapt their organisational and production models.

Apart from the findings concerning R&D expenditure, the EC's European Innovation Scoreboard offers a composite view of the innovation systems in each

Chart 74

R&D and innovation performance is better than the EU average but not as good as in the top-performing countries



Sources: EC, Eurostat.

- 1 Countries performing at least 20 % better than the EU average. In 2017, these were Denmark, Finland, Luxembourg, the Netherlands, Sweden and the United Kingdom.
- 2 Countries with performance ranging between 90 % and 120 % of the EU average. In 2017, that was Austria, Belgium, France, Germany, Ireland and Slovenia.

country. Belgium is ranked as a “strong innovator”, and its performance has been on an upward trend since 2015, to reach a level similar to Germany’s in 2017. Nonetheless, Belgium’s performance still falls short of the leading group.

Innovation in Belgium benefits from the attractiveness of a number of research centres with a considerable international reputation, e.g. in terms of international scientific publications or patents filed. According to the Reuters 2018 ranking of the most innovative universities, almost all the Belgian universities – KU Leuven, Ghent University, ULB, VUB, UCLouvain, ULiège and Antwerp University – are among the top 100 in Europe, with KU Leuven holding first place for several years now. In addition, some inter-university research centres are also prolific and two of them – IMEC and VIB, specialising in micro-, nano- and biotechnologies – ranked among the ten leading patent filers in Belgium in 2017. Public-private partnerships and close collaboration between innovative SMEs and university research

centres likewise generate results which are well above the European average. Nevertheless, there are weaknesses in the case of some intangible assets: in 2017, according to the results of the index compiled on that subject by the EC, Belgium lagged almost 15 % behind the European average as regards both international patent applications, using the procedure laid down by the Patent Cooperation Treaty, and designs and models. Performances related to the spillover effects of innovation, e.g. on local suppliers or in the marketing of new products, are also relatively less favourable.

Supporting the digital revolution on product markets...

The digitisation of activities is a key factor in improving the productive efficiency of firms. In that regard, the pace of innovation is accelerating. However, apart from firms in the information and communication technology (ICT) sector, the productivity gains

associated with the digital revolution are still marginal for the great majority of businesses. The benefits of digital technologies accrue to a small number of firms, and only materialise if the adoption of these new technologies brings a step change in consumption or production methods.

While the new forms of business associated with the digital economy still only represent a small fraction of total activity, they offer non-negligible growth potential. Yet this progress exacerbates the problem of the inadequate spread of technology. Firms which have access to this technological progress see their dominant position reinforced, and that reduces the development scope of their competitors.

The digital economy offers considerable growth potential

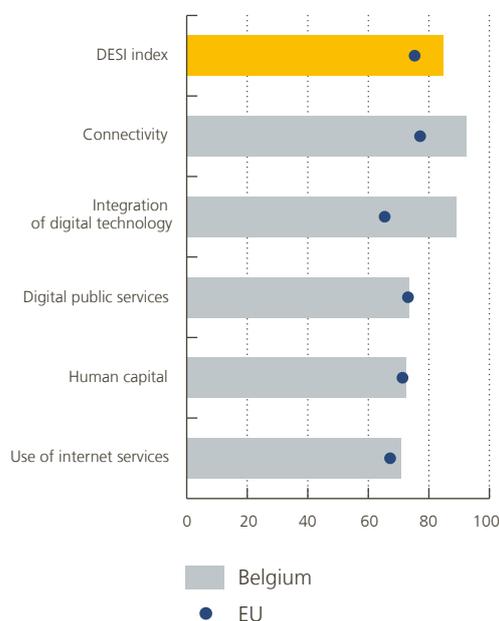
Belgium is in a fairly good position in the European digital landscape according to the EC's Digital Economy and Society Index (DESI), which assesses five separate criteria (connectivity, human capital, use of internet services, integration of technology by firms, and digital public services). In 2018, Belgium was still among the leading group which includes the Nordic countries (Denmark, Finland and Sweden) and the United Kingdom, although the gap in relation to those countries has widened.

Belgium is a European leader in terms of high-speed broadband coverage and use, and there has been significant progress in deploying new-generation networks. However, the penetration of mobile connectivity could still be improved by increasing competition on the market. Full implementation of European Directive 2014/61/EU, whose aim is to reduce the cost of deploying high-speed electronic communications networks, will further encourage investment in these networks. Digital technology is also well integrated in firms in Belgium, except for the relatively disappointing turnover figures in e-commerce, despite recent adjustments to the regulatory framework governing night work, and the number of SMEs selling on-line cross-border.

In addition, most Belgian citizens use a large number of on-line services, particularly as regards social networks, banking, entertainment and shopping. Moreover, almost 61 % of Belgians in the 16-74 age group have general basic or more advanced digital

Chart 75

Belgium outperforms the European average in the digital sphere, except in the case of public services and human capital¹



Source: EC.

¹ Indicators rescheduled between 0 (country with the worst score) and 100 (country with the best score).

skills, a figure slightly above the European average (57 %), but below that of the leading countries in this field, namely Luxembourg (85 %), the Netherlands (79 %) and Sweden (77 %).

In the case of digital public services, the picture is more mixed. While the results are good regarding the provision of pre-completed forms and online health services, the complex structure of the allocation of responsibilities between the various levels of government tends to hamper compatibility between the systems. It also seems that in some spheres such as the judicial system, the potential of digital technologies has yet to be fully exploited.

... and on the labour market

The impact of these new technologies is not confined to the performance of businesses. Leaving aside the jobs directly created by the associated new activities, digitisation of the production processes has

other implications for the labour market. On the one hand, it generates a substitution effect, i.e. the performance of a range of tasks can now be left entirely to machines. On the other hand, it has complementarity effects. The robot or machine helps people to perform their tasks, thereby improving working conditions and boosting the productivity and efficiency of the workers. These productivity gains in turn generate more income and indirectly strengthen demand, activity and employment.

One of the first studies to quantify the effect of digitisation was the one by Frey and Osborne (2013)¹. By applying their methodology to Belgian data, the HCE (2016)² estimated that 39% of jobs could be fully digitalised. More recently, in a 2017 report³, the OECD noted a high risk of digitisation for just 7% of jobs in Belgium. In contrast, an analysis by McKinsey (2017)⁴ estimates that 21% of employees are working in occupations capable of being automated to more than 70%, which means that they are liable to lose their job. The McKinsey study predicts that automation and artificial intelligence could create 200 000 new jobs in Belgium by 2030. While they will be partly offset by job losses, the expected net outcome is positive, with 40 000 additional jobs.

These conclusions are based on analyses of scenarios in which automation will lead in the future to higher productivity in the countries at the forefront of digitisation (including Belgium), with few major unemployment risks and steady wage growth. However, that will not happen unless the leading countries widen the spread of technology, in a context where workers adapt their skills and firms create new products and innovative services. The spectre of technological progress destroying hundreds of thousands of jobs should therefore not be exaggerated. First of all, the long-term picture does not suggest that technical progress will destroy net employment. Secondly, the pace of job creation has been particularly strong in recent years. And lastly, measured technical progress is actually very low at the moment. Such progress therefore transforms jobs rather than destroying them on a massive scale.

- 1 Frey C.B. and M.A. Osborne (2013), *The future of employment: how susceptible are jobs to computerisation?*, Oxford Martin School.
- 2 HCE (2016), *Digital economy and labour market*.
- 3 OECD (2017), "How technology and globalisation are transforming the labour market", *Employment Outlook*, Chapter 3, OECD Publishing, Paris.
- 4 McKinsey & Company (2017), *Digitally-enabled automation and artificial intelligence: shaping the future of work in Europe's digital front-runners*.



Identifying the types of job which will disappear and those that will survive or be created implies reasoning in terms of tasks rather than occupations. In fact, it is a job's content in terms of routine tasks or those suitable for automation that will determine whether or not the job is destined to disappear. Thus, the jobs most likely to be replaced by machines are the most repetitive ones which do not involve interaction with other people, do not require problem-solving skills or creativity. According to this study, this means that the sectors offering the highest potential for automation are transportation, hotels and accommodation, manufacturing and trade. Conversely, the sectors least affected will be education, information and communication, professional services and health.

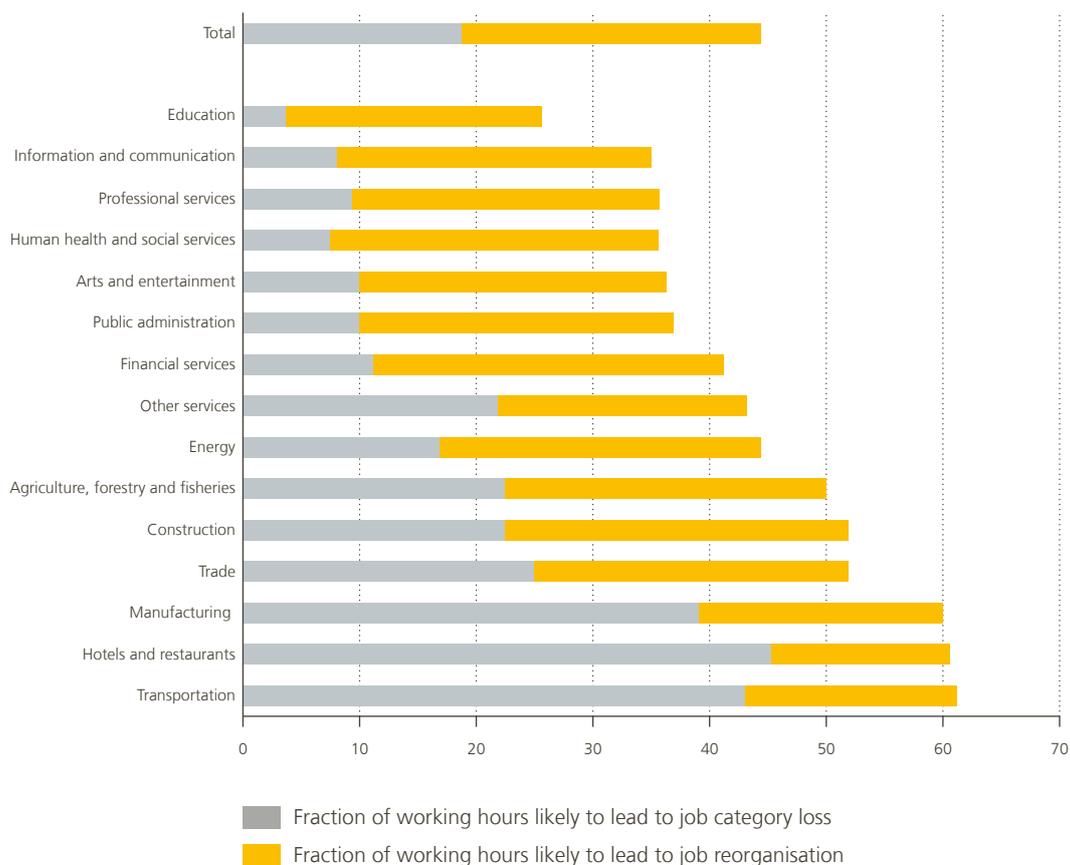
In terms of skill levels, it is currently only highly-skilled tasks that have a low risk of digitisation. According to the HCE's 2016 analysis, barely 13 % of highly-skilled jobs could be almost totally automated, with that figure rising to 30 % for low-skilled jobs and 69 % for medium-skilled jobs.

The education system must likewise adapt to these developments and offer the broadest possible training in digital-related skills. To that end, schools need to have modern technological tools and teachers trained in their use; yet in Belgium, that training includes little specifically ICT-related content. Only 19 % of primary school pupils have teachers who have completed compulsory training in these subjects, a figure close to that for Finland (19 %) and

Chart 76

Almost half the hours worked will be subject to total or partial automation¹

(technical automation possible on the basis of currently available technologies, by branch of activity, in %)



Source: McKinsey.

¹ On the basis of analysis of nine European countries including Belgium, considered to be front-runners in digitisation.

France (25 %), but well below the European average (30 %) and the scores for Sweden (40 %) and Denmark (60 %) ¹.

Enjoying the support of efficient public services

The government has a role to play in reinforcing the actions of firms. In parallel or in synergy with the European initiatives, the Belgian government has devised and implemented plans for supporting the spread of innovation and the adoption of digital technology, and boosting their economic impact. At federal level, apart from tax-related measures, this includes boosting the deployment of ultra-fast digital networks and developing “e-government” services. In particular, the Digital Act introduced in 2016 comprises a series of legal proposals permitting the use of digital media instead of paper, and concerning for example electronic signatures or archiving.

With the support of their universities and research centres, the Regions have set up strategies for supporting high-tech innovation in the areas in which they specialise. In the digital sphere, the Industry 4.0 plan in Flanders supports businesses by developing efficient infrastructure, and also by helping them in their digitisation process and ensuring that the workforce acquires adequate digital skills. In Wallonia, where the Marshall Plan/Digital Wallonia programme led to the launch of around twenty sizeable projects, that strategy will be maintained. In the Brussels-Capital Region, digital.brussels led to the selection of 19 projects while the NexTech plan is intended to assist Brussels-based firms in the use and deployment of ICT.

An efficient and resilient economy is not confined to good performance by the private sector. Stable and efficient public institutions are also a catalyst for long-term growth, as differences between countries in terms of institutional quality can influence decisions on the allocation of physical, human and technological capital. Though the expectations of economic agents depend on the burden of regulatory obligations in their country, they are also affected by the level of confidence in their public institutions, particularly in their ability to act effectively.

According to the Bank’s 2016 analysis of government efficiency in regard to health, education,

security and mobility², Belgium’s performance was average in comparison with that of the other European countries. The government therefore undoubtedly has scope for efficiency gains in each of the areas mentioned,

even if the nature of those respective gains may vary. This finding is in line with the more recent results of surveys by the World Bank and the WEF, which also conclude that there is room for

improving the efficiency of the Belgian public sector, particularly as regards the legal framework and government response to technological and societal changes. In addition, the use of online services to facilitate the provision of information and interaction with government (“e-participation”) could be further advanced and better coordinated between the various levels of power.

There is scope for improving efficiency in the public sector by means of the opportunities offered by digitisation

¹ See EC, *Survey of schools ICT in education*.

² See box 6 in the Annual Report 2016, pp. 141-144.

5.3 Facilitating regeneration of the economic fabric

Apart from internal productivity gains within each firm, the reallocation of resources via the transfer of workers or capital from technologically backward firms to those at the forefront as regards efficiency is another source of aggregate productivity growth. In a flexible economy, barriers to the entry of new players should be low in order to boost competition and permit the emergence of new champions or the establishment of new sectors. At the same time, firms that are increasingly lagging behind in technological terms should either develop innovations enabling them to overcome their handicap or be forced out of the market. Just as the creation of new businesses should not be unduly hindered,

neither should their demise, so as to ensure that the continuation in business of inefficient entities does not take up a substantial share of the resources, whether workers or capital, which could be put to better use elsewhere. If such firms remain in business, that will also depress growth potential due to the gradual de-skilling of workers.

Since the crisis, this reallocation process has played a part in TFP recovery in Belgium, but its contribution has been modest. At the same time, the low rates of business entries and exits bear witness to a structural lack of dynamism in Belgium in that respect.

Chart 77

The dynamics of business creations and closures exhibit greater inertia in Belgium than for the EU as a whole

(in %)



Source: Eurostat.

1 Number of business creations in t divided by the number of businesses active in t .

2 Number of business closures in t divided by the number of businesses active in t .

Stimulating entrepreneurial dynamism

According to the OECD, Belgium has a significantly stricter business liquidation framework compared to other EU countries, both in terms of the scale of the personal costs for the failing entrepreneur and the lack of preventive mechanisms or systems. Moreover, although the level of employment protection in Belgium is comparable overall to that of the reference countries, the specific rules on collective redundancies are more stringent. If these exit barriers are excessive in relation to appropriate protection for creditors and debtors on the one hand and for workers on the other, they may impede the process of closing less efficient firms and hamper restructuring to create sounder entities. They entail costs for the failing entrepreneur and tend to increase the stigma associated with failure. These same aspects may also discourage the development of new risky projects among a population which is sociologically more risk-averse than in other European countries. The 11 August 2017 reform of the bankruptcy and judicial reorganisation laws which took effect on 1 May 2018, extending the scope of the bankruptcy regime to all businesses, is an initial response to this problem and is meant, in particular, to facilitate the launch of new activities by the failing party.

However, encouraging business creation does not only mean simplifying the associated administrative

procedures. Initiatives that improve access to funding appropriate to the needs of new businesses and their risk profile are equally necessary, e.g. by developing the venture capital market. Since 2015, a tax shelter – or tax credit – mechanism granting a 30 % to 45 % exemption under certain conditions to individuals wishing to invest in a new business (start-up) was thus introduced. In 2017, this mechanism was extended to the financing of young, expanding businesses (scale-ups). These measures form part of the federal Start-up Plan, which introduces additional measures aimed at young entrepreneurs (new tax framework for crowdfunding and reduction in labour costs at recruitment). Since 2018, with a view to supporting SME growth following the corporation tax reform, small enterprises have also been subject to a lower rate of corporation tax at 20 % on the first € 100 000 of profits.

Lastly, promoting a positive culture and attitude towards entrepreneurship among young people is also a way of raising the business creation rate in the long term. That naturally involves education. Measures have already been introduced at federal level, such as student-entrepreneur status since 2017, and also at regional level: in Wallonia, with the Enterprising Generations 2015-2020

Encouraging business creation does not only mean simplifying the administrative procedures



programme, which includes an entrepreneurial schools programme and further training in entrepreneurship for teaching staff; in Flanders with the Education Plan 2015-2019, which aims in particular to mobilise the entrepreneurial potential of students and job-seekers; and in Brussels with the Young Entrepreneurship Strategy, established in 2016, which aims to make 100% of young Brussels residents aware of the entrepreneurial approach by 2025. Moves to encourage women entrepreneurs have also been initiated (Female Entrepreneurship Plan) with the support of the federal and regional governments.

Adopting product market regulation more favourable to new activities

In view of the many changes facing our economy, the regulatory framework requires continuous adaptation in regard to both the labour market and the product markets. The regulatory framework should not be assessed solely in the light of firms' performance. Its primary purpose is to meet the needs of consumer and worker protection, plus also

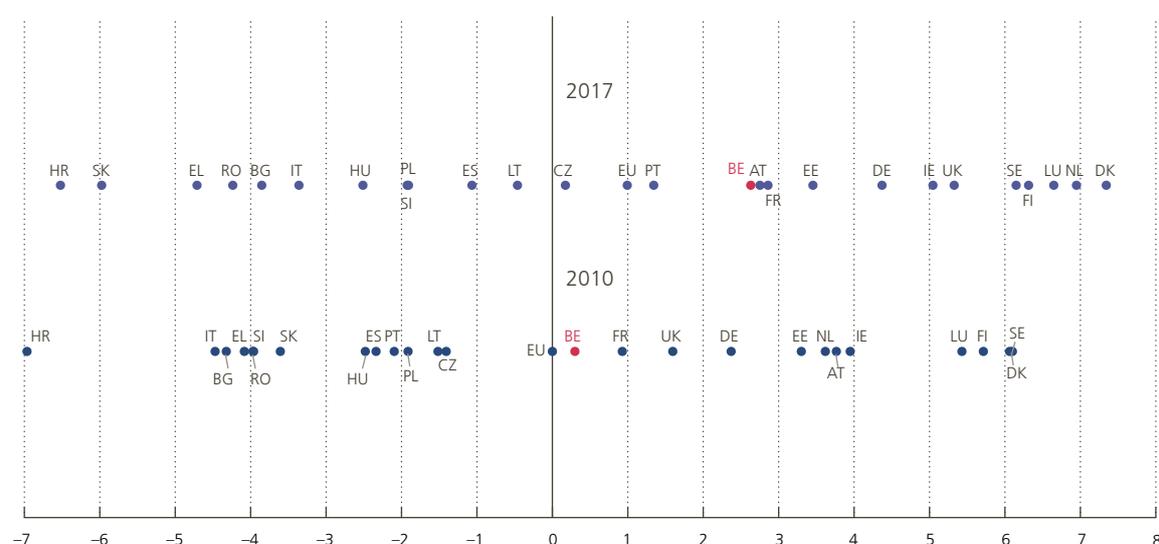
more general aims such as protecting the environment or certain fundamental rights. However, the regulatory framework must not place too many restraints on the development of activities that respond to new needs.

The regulatory environment is one of the factors influencing investors' decisions on developing new projects or setting up an establishment in Belgium. Both national and international economic agents are less inclined to invest if they have to devote too many resources to compliance with unnecessarily stringent contractual or regulatory obligations. The regulatory framework in Belgium has become less strict since 2010, but some weaknesses remain. They include various administrative requirements, such as authorisations, labour market regulations or tax rules, and the obligation to publish reports at regular intervals. According to the business leaders polled by the WEF, such requirements are considered stricter in Belgium than on average in the EU, particularly compared to neighbouring and Nordic countries. In the services sector, while the regulations in Belgium are similar to the EU average, they are still more restrictive than in the three

Chart 78

The Belgian regulatory framework has generally become more flexible

(synthetic index of regulation, a higher value indicates a situation more favourable to the development of economic activity; EU average¹ in 2010 = 0)



Sources: IMD, WEF, NBB.

¹ Excluding Cyprus, Malta and Latvia.

neighbouring countries, despite some improvement since 2010. That may be part of the reason for slower productivity growth in that sector. Although a series of reforms has been implemented, including the Easy Switch procedures in 2017 and Bankswitching in 2018, which make it easier to transfer from one telephone company or bank to another, there is still scope for action, notably as regards openness to competition in the retail trade or in certain professional services.

As the sixth State reform transferred numerous regulatory powers to the Regions, adjustment of the regulatory framework requires adequate coordination in the adoption of new measures, and it is vital to avoid excessive discrepancies which would limit one Region's access to the markets of the country's other Regions and impede the optimum allocation of resources.

Ensuring that the labour market functions in a way that supports transitions

Various indicators, such as the low rate of occupational mobility, the level of taxation and parafiscal charges on labour income, the link between pay and seniority, the unemployment traps and the strict rules on collective redundancies, reflect the rather rigid functioning of the labour market in Belgium. One fact connected with the low rate of business creation and closures is that more than 40 % of employees stay with the same employer for over ten years. That is comparable to the figure in neighbouring countries but is much higher than in the Nordic countries. It can also be linked to the predominance of permanent contracts: nearly nine out of ten employees work on the basis of a permanent contract, while temporary contracts – which are common for young people entering the labour market – become very unusual in the older age groups, from age 25 onwards. The Securex annual staff rotation barometer indicates that in 2017 barely 5.8 % of workers changed their job on their own initiative, while 4 % did so involuntarily. In the case of workers aged over 50, the cumulative total of these rates is no more than 2 %.

A stable job may be a guarantee of career quality, but that stability must be based on economic criteria, i.e. it must reflect the fact that the employee and

employer are well matched. The significant influence of seniority in determining wages could also be a contributory factor in the lower mobility of employees. Workers may fear losing certain pay advantages if they change employer because not all their experience can be put to use with their new employer. It also costs employers more to dismiss a senior employee since redundancy costs increase in direct proportion to length of service at the firm.

More than 40% of employees stay with the same employer for over ten years

In the agreement concluded in the summer of 2018 (Jobs Deal), the federal government had asked the social partners to reconsider the wage progression criteria, so as to link them to skills and productivity rather than seniority, also leaving room for greater flexibility to take better account of specific regional and/or local characteristics.

The heavy burden of taxes and parafiscal levies on wages could also be restricting the use of potential labour. In 2017, Belgium still had the second highest hourly labour cost in the EU after Denmark, at an average of € 39.6 per hour worked for the economy as a whole, with social security charges accounting for € 10.7 of that figure. On the basis of these Eurostat statistics, Belgium's position has improved considerably as a result of the wage moderation measures and the tax shift. While labour costs per hour worked in the economy as a whole increased by 1.5 % in Belgium between 2014 and 2017, the corresponding rise was 8.3 % in Germany, 3.7 % in France and 3.3 % in the Netherlands.

Although the likelihood of losing one's job is lower in Belgium, the lack of occupational mobility is also reflected in long periods of unemployment and a weak transition into work, entailing the risk of de-skilling or discouragement for this population group. More than half of all job-seekers have been unemployed for over a year, and for a third of them that period exceeds two years. This low incidence of return to work is due in part to the relatively high net replacement rates in Belgium. Despite the 2012 unemployment insurance reform, which made unemployment benefits more degressive, Belgium still has a significant unemployment trap (i.e. little difference between unemployment

benefits and net labour incomes). Moreover, in contrast to practice in other countries such as Denmark, Sweden and the Netherlands, the unemployed continue to receive benefits even after a prolonged period. Thus, according to the OECD indicator, people who have been unemployed for up to five years

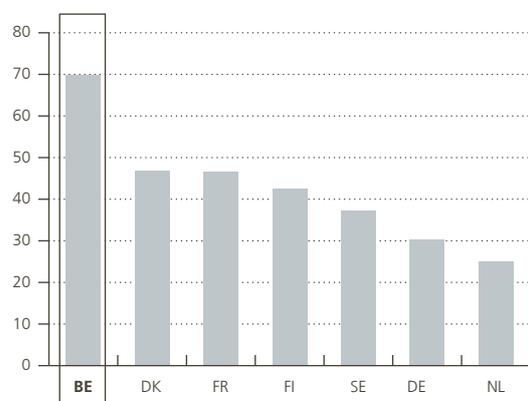
have, on average, a replacement income equivalent to 70 % of their last net wages. Alongside appropriate financial incentives, there is also a need to step up the efforts to provide guidance and training for job-seekers in order to limit the number of long-term unemployed.

Chart 79

A more marked unemployment trap in Belgium associated with a weak transition into work

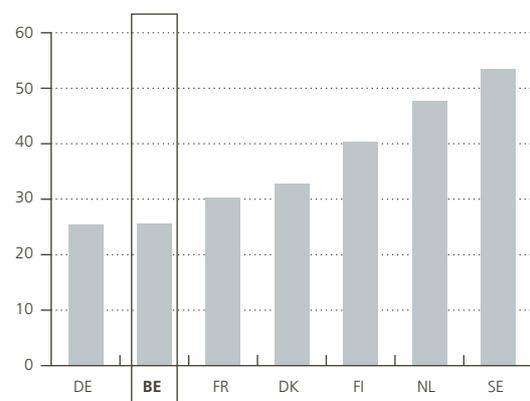
Unemployment trap

(net replacement rate, in %, average over five years of unemployment, for a single person with no children receiving 67 % of the average wage, 2016)



Transition from unemployment into work

(in % of unemployed persons in 2016 who are in work in 2017, 15-64 age group)



Sources: Eurostat (LFS, microdata), OECD.



5.4 Reducing the persistent mismatch between supply and demand on the labour market

The growing use of digital technologies and the greater fragmentation of production chains have contributed to a polarisation of employment in the advanced economies. That means a rise in highly-skilled jobs and, to a lesser degree, low-skilled jobs, while the share of medium-skilled jobs is declining. The reason for the continuing presence of low-skilled jobs is that

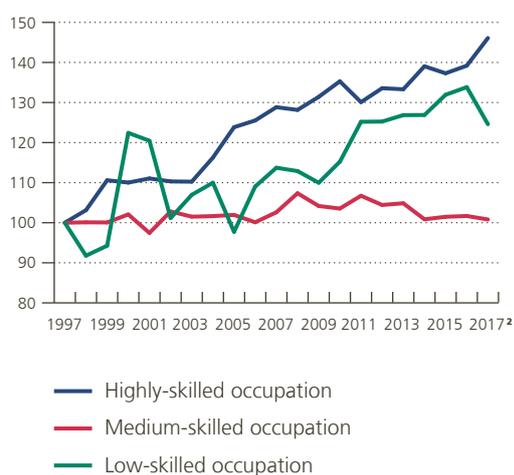
many of them offer services relating to people or physical locations, including services connected with new activities of digital platforms or e-commerce. Belgium's policy of subsidising low-skilled jobs over the past fifteen years through the development of a service voucher system and also taking action in the non-market sector has also helped to expand

Chart 80

Polarisation of employment but not wages

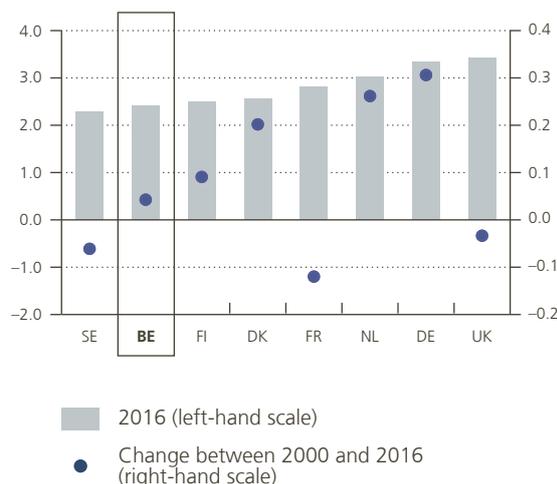
Employment by occupation¹

(indices 1997 = 100, persons in work, 15-64 age group)



Dispersion between high and low wages³

(ratio between the ninth and first wage deciles, gross wages for full-time employees)



Sources: Eurostat, OECD.

1 Based on the International Standard Classification of Occupations (ISCO). A highly-skilled occupation corresponds to the jobs of directors and management, intellectual and scientific occupations, and intermediate occupations (ISCO 1-3). Medium-skilled occupations comprise administrative staff, persons providing services for individuals, traders and sales staff, skilled trades in agriculture, industry and crafts, and operators of machinery and equipment and assembly workers (ISCO 4-8). Finally, a low-skilled occupation is an elementary occupation (ISCO 9).

2 Break in the series due to the change in the method of collecting data from the labour force surveys.

3 The latest available years are 2014 for France and the Netherlands and 2013 for Sweden. The earliest available year is 2002 for Denmark, France and the Netherlands.

less-skilled employment, as have the various measures targeting low wages and alleviating charges for lower-paid workers.

In Belgium, the polarisation of employment is not accompanied by wage polarisation¹. The dispersion between high and low wages has remained more or less stable at a low level, whereas it has widened in most European countries, except Sweden, France and the United Kingdom. This more compressed wage scale helps to reduce income inequality. On the other hand, it may reduce the

Demand for labour is increasingly focused on highly-skilled jobs

financial incentives for investing in the required knowledge and skills to fill highly-skilled jobs.

While demand for labour is tending to focus increasingly on highly-skilled jobs, the proportion of higher education graduates in the population is still insufficient even though it has risen steeply in the past 20 years. That is particularly true if we consider the labour force potential in the economy. Only 27% of the unemployed and barely 16% of inactives are highly-educated,

whereas almost half the personnel recruited on the labour market must have a higher education diploma. Conversely, 10% of jobs only require a low skill level whereas 27% of the population have only lower secondary education qualifications. Substantial though it is, this gap was bigger in the past since almost 43% of the population of working age had no more than lower secondary education qualifications in 1997, at a time when the proportion of low-skilled jobs was virtually the same. Apart from the generalised prolongation of education, the gradual retirement of generations who had a lower level of basic education is a factor in this trend.

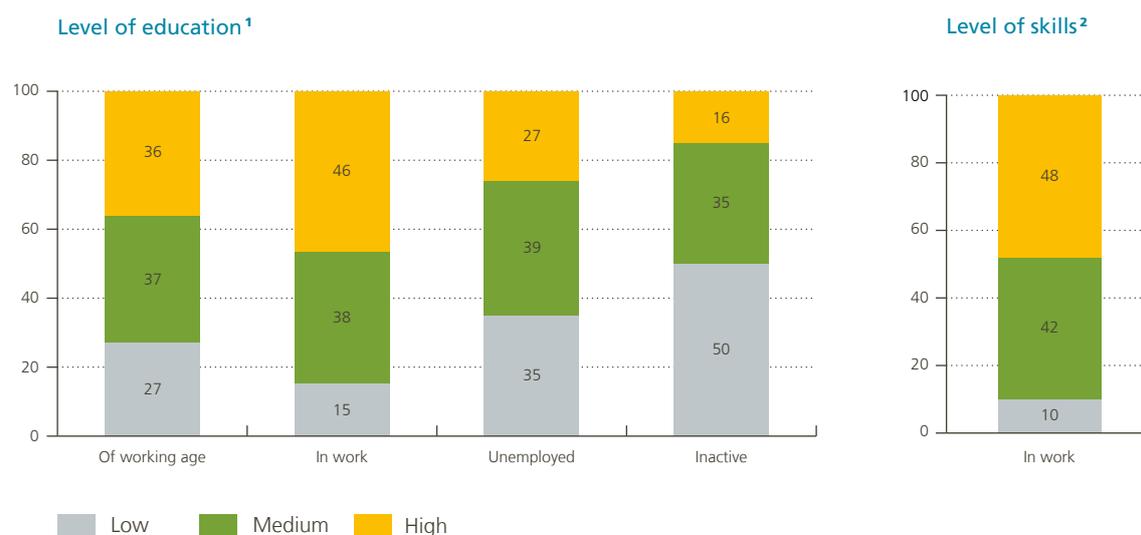
This mismatch between supply and demand for labour influences the extent to which workers are over- or under-qualified. For instance, holders of a higher education diploma usually have a job that matches their level of education (80% in 2017, compared to 78% in 1997). Conversely, it is harder for a person

¹ See De Sloover F. and Y. Saks (2018), "Is job polarisation accompanied by wage polarisation"? NBB, *Economic Review*, September, pp. 79-90.

Chart 81

Too few higher education graduates compared to demand from firms

(in %, 2017)



Source: Eurostat.

¹ Level of education based on the International Standard Classification for Education (ISCED) for the 15-64 age group, by socioeconomic status.

² Skill level of the job for the total population in work based on the ISCO classification.

with a low or medium level of education to secure a more highly-skilled job. Two decades ago, eight out of ten workers with no more than lower secondary education qualifications had a job requiring medium or high skill levels. Today, that proportion is seven out of ten. The same applies to workers with upper secondary education qualifications. While 26% used to gain access to highly-skilled jobs, that figure is now down to 24%. More symptomatic of the downgrading of workers with secondary education diplomas is the fact that 12% of them nowadays are in a low-skilled job, compared to 8% in 1997, and that is having a ripple-through effect, driving out the least-skilled. People completing no more than lower secondary education therefore still have a high unemployment rate (14% in 2017, compared to 7% for the medium-educated and 4% for the highly-educated), despite the continued growth of low-skilled jobs.

Mismatches are holding back economic development in all three Regions

Owing to these mismatches, in a business climate favourable to job creation, growing numbers of firms are reporting difficulties in recruitment. The vacancy

rate, which measures the proportion of vacancies in the total number of potential jobs (filled and vacant), has risen in all European countries since the economic recovery. However, that increase, with a rate of 3.4% in 2017, is much bigger in Belgium, than the EU average of 2%, while those rates stood at 1.5% and 1.2% respectively in 2010. Although the majority of vacancies concern permanent jobs (109 200, against 23 600 temporary posts in 2017), vacancies in temporary employment have risen almost twice as fast as those in permanent jobs over the past four years. Small firms with fewer than ten employees account for the majority of vacancies to a greater extent than in the past.

At 3.4%, the vacancy rate in Belgium is well above the EU average

In order to gain an idea of the shortages prevailing on the labour market, the public employment services examine job vacancies where recruitment problems are greater than the median, i.e. so-called "bottleneck jobs". Apart from the time naturally entailed in matching supply to demand for labour (selection of candidates, recruitment procedure, etc.), other structural factors may affect the process. These include an



Table 16

Pressures expressed in different ways depending on the Region

(2017)

	Belgium	Brussels	Flanders	Wallonia
Unemployment rate ¹	7.1	14.9	4.4	9.7
Vacancy rate ²	3.4	3.2	3.6	2.8
Characteristics of the unemployed ³				
Medium to high level of education	64	59	70	61
25-49 age group	59	70	53	60
Unemployed for less than one year	51	48	62	42
Presenting those three characteristics	20	21	25	17

Source: Eurostat (LFS, microdata).

1 In % of the labour force aged between 15 and 64 years.

2 In % of the total potential jobs.

3 In % of the total number of unemployed aged between 15 and 64 years according to the ILO definition.

inadequate labour supply in terms of both quantity and quality (a mismatch between the skills required and those offered by the available spare labour), mobility, and the employment conditions offered (wages too low, non-standard hours, arduous work, etc.). While the bottleneck jobs are often the same in all three Regions, there are some specific characteristics. In Flanders, the jobs which are hardest to fill are for cleaners, technical occupations, commercial posts and jobs in the health or personal care sector. In Wallonia, the bottleneck jobs are in the construction sector, and also managerial, technical and commercial positions. In Brussels, the main shortages are in administrative and commercial jobs and IT occupations.

These vacancies and bottlenecks exist despite the large number of job-seekers, although that number has fallen sharply

Labour market pressures are greater in Flanders

in recent years. Nonetheless, a considerable proportion of these job-seekers have characteristics which favour a return to work. For instance, in 2017, in Belgium as a whole, 64 % of them had a medium or high level of education, 59 % were in the 25-49 age group, and 51 % had been unemployed for less than one year. At regional level, the pressures are greater in Flanders than in the other two Regions, on account of both a lower proportion of job-seekers and stronger demand for labour. This suggests that

Flanders is moving ever closer towards the frictional unemployment rate – i.e. the unemployment rate arising from the time required for people to find a job commensurate with their skills – while the proportion of unemployed people who are more difficult to get into work is falling. In Brussels and Wallonia, job-seekers' level of education is lower, on average, and the percentage of long-term unemployed is higher; which represents an additional handicap for the employability of this labour reserve.

The labour reserve is not confined to the unemployed

The tightness on the labour market could be alleviated by having greater recourse to the inactive population, some of whom wish to work but are not directly available and are therefore not included among official job-seekers. Although Belgium has created a large number of jobs since 2015, its employment rate is still below the European average, and deviates widely from the rates in the neighbouring countries (except France) and the Nordic countries. Compared to Sweden, regarded as one of the top performers in matters concerning the labour market, the difference does not lie in higher unemployment but in much greater inactivity. In Belgium, one-third of the population of working age is inactive, compared to 17.5 % in Sweden. Thus, while the unemployment rate has

fallen significantly in the past three years, there has been only a slight reduction in the proportion of people not participating in the labour market.

The reasons for the disparate performance in terms of the employment rate vary from one Region to another. The higher employment rate in Flanders is accompanied by a lower unemployment rate and slightly lower inactivity. Conversely, employment rates in Wallonia and Brussels are below the national average. While the situation in Brussels is due mainly to a higher unemployment rate, in Wallonia it is more the reflection of greater inactivity. However, even though Flanders has an employment rate above the European average – an advantage which is nevertheless dwindling as time goes by – none of the three Regions outperforms Sweden in terms of employment and inactivity, so that there is still activation potential in Flanders as well as in Wallonia and Brussels.

If it is accompanied by decent employment conditions, getting a greater number of people into work means a lower risk of poverty, greater social inclusion and an additional income source for our social security system. The benefits of stronger attachment to the

labour market, especially for the categories most at risk, are therefore manifold.

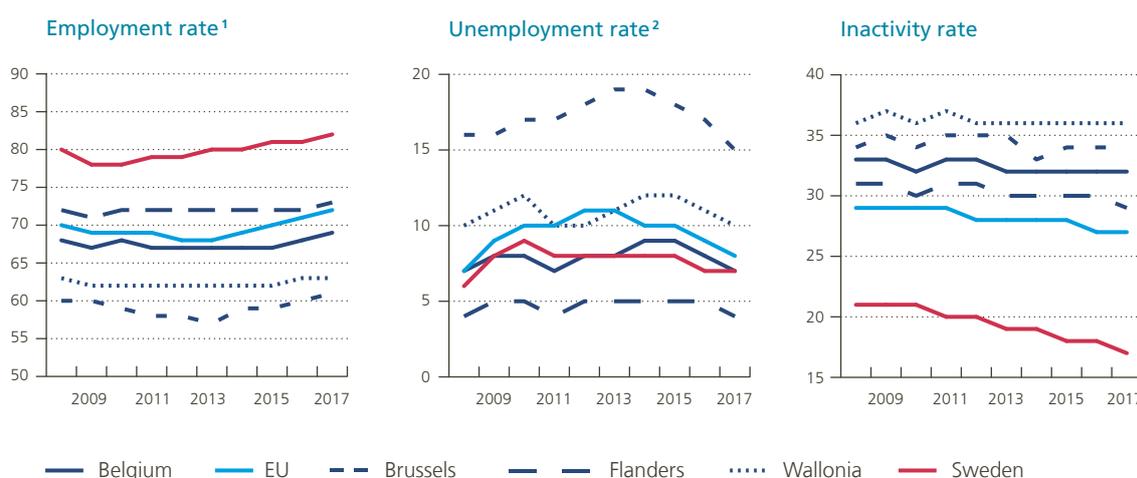
Although in principle a section of the inactive population could easily be mobilised and form part of the potential labour force, the majority of inactives do not wish to participate in the labour market and are not looking for a job. In 2017, that group was estimated at almost 1.6 million people, i.e. 22 % of the working age population. This figure is half as big again as in Sweden (14 %), Denmark (14 %) and the Netherlands (15 %). Among the comparison countries, only France has a higher proportion, at 25 %. The main reasons cited for non-participation are education (41 %), sickness (19 %) and, particularly for women, family responsibilities (20 % of total inactives, but 30 % of all inactive women).

Women are also among the groups with participation rates below the national average, such as people aged 55 and over, young people, non-European nationals, and – across the board – people with a low level of education. The gap in participation rates between men and women was still large in 2017 (9.6 percentage points), although it was slightly below the EU average (11.1 percentage points). Brussels records the

Chart 82

The lower employment rate in Belgium is due to a too high rate of inactivity, rather than a high unemployment rate

(in % of the 15-64 age group, unless otherwise stated)



Source: Eurostat.

1 In % of the population aged between 20 and 64 years.

2 In % of the labour force.

biggest gap (13.6 percentage points); together with Wallonia these are the two Regions where women are less active on the labour market, at 59%, compared to 66% in Flanders. For all Regions of the country, the difference is very marked compared to Sweden, where the female activity rate is 80.7%, the highest figure among the comparison countries, compared to 84.3% for men, i.e. a difference of 3.6 percentage points. This smaller gap also applies to Finland (3.6 percentage points) and Denmark (5.4 percentage points). In contrast, the situation in the neighbouring countries is closer to that of Belgium, although the difference in participation between men and women is also smaller there than in our country. Women likewise account for almost 70% of part-time workers in Belgium who would like to work more. This under-employed population constitutes a considerable potential supply of labour.

The breakdown by age group shows a low participation rate of around 28% for young people between the ages of 15 and 24 years. This rate is tending to fall, mainly on account of longer periods spent in education, with only a minority so far combining a job with their studies. In Flanders, just under one young person in three participates in the labour market, whereas in the other two Regions the figures

are barely 24% in Wallonia and 23% in Brussels. Nonetheless, we could see an upward trend in the future since it is becoming increasingly common for students to have a job, and the conditions allowing student worker status have been eased. This initial job experience could subsequently favour entry to the labour market for young graduates. In this regard, apprenticeships are very important too, although they are still underused in Belgium.

The above findings, particularly the labour market pressures, are also fuelled by the ageing of the population. Not only is there a steady decline in the proportion of the working age population comprising young people to replace the older ones leaving the labour market, but the proportion of people over the age of 55 years is rising: it was up from 16% in 1997 to 20% in 2017. However, their labour market participation rate is still much lower than that of workers aged between 25 and 54 years. This exerts downward pressure on the overall activity rate and the number of active persons. The measures adopted since 2000 to restrict the scope for early departure from the labour market have gradually limited the mass exodus which used to occur from the age of 50 years. In fact, the participation rate of persons in the 55-64 age group has risen by 28 percentage points over 20 years, but at

Table 17

All population groups have a participation rate below the European average

(in % of the corresponding population aged between 15 and 64 years, 2017)

	Belgium	Brussels	Flanders	Wallonia	EU	<i>p.m. Sweden</i>
Total	68.0	66.1	70.6	63.9	73.3	82.5
Men	72.8	72.9	74.9	68.9	78.9	84.3
Women	63.2	59.3	66.3	59.0	67.8	80.7
15-24 years	28.1	22.6	31.5	24.1	41.7	54.7
25-54 years	84.8	79.5	88.0	81.0	85.7	91.3
55-64 years	51.3	55.7	51.9	49.0	60.6	80.5
Low-educated	41.7	44.8	43.2	38.4	53.6	57.7
Medium-educated	70.1	63.3	72.4	67.6	76.2	87.1
Highly-educated	85.9	84.5	86.9	84.3	88.0	91.9
Nationals	68.3	64.2	71.1	64.2	73.5	83.2
EU nationals	72.2	76.9	72.9	66.3	79.3	84.6
Non-EU nationals	52.7	54.8	52.4	50.5	65.5	71.2

Source: Eurostat.

51 % it remains very low compared to the European average, not to mention Sweden where the figure is 80.5 %. For this age group, Brussels has the highest participation rate (56 %), followed by Flanders (52 %) and Wallonia (49 %).

Among the groups most at risk of unemployment are non-EU nationals, who are in a much worse position on the labour market than their European peers in all three Regions of the country. The High Council for Employment¹ has shown that only a small part of the labour market participation gap between Belgians and non-EU nationals is due to the personal characteristics of the individuals, such as age, gender, level of education or Region of residence.

Initial education and lifelong learning are more than ever the passports to a job

As pointed out earlier, people with a low level of education still have more difficulty in joining the labour market. While 86 % of higher education graduates participate in the labour market, that proportion falls to 42 % for people with no more than lower

secondary education qualifications. The new requirements regarding digital skills and the fact that workers with a low education are being driven out by those with a medium level of education are likely to exacerbate this problem in the future.

Owing to the scarcity of job opportunities for them, the number of people with a low level of education needs to be reduced by cutting the school drop-out rate. Although the situation has recently improved, that rate remains high at 9 % in 2017. This phenomenon is particularly marked in the Brussels Region, where 13 % of young people in the 18-24 age group leave the education system without obtaining a higher secondary education diploma or the equivalent. In contrast, the rate in Flanders is 7 %, equalling that in the Netherlands, which achieves the best performance among the comparison countries.

The education system needs to encourage more people to pursue higher education, whether or not at university. Belgium does relatively well in

¹ HCE (2018), *Immigrants born outside the European Union on the labour market in Belgium*.



that respect, since 46 % of the 30-34 age group had a higher education diploma in 2017, a figure similar to that in the comparison countries and almost equal to the target for 2020 (47 %). At regional level, Brussels has the largest proportion of graduates (53 %), followed by Flanders (45 %) and Wallonia (42 %). However, among the highly-skilled jobs, it is those requiring training in science, mathematics, statistics and information

and communication technologies, together with engineering, industry and construction, which will remain most in demand in the future. Although a high proportion of the population holds higher education diplomas, barely 21 % of new graduates in the 30-34 age group chose one of those areas of study. That is particularly true in the case of women, since only 9 % of them obtained degrees in those subjects, even though more women than

Chart 83

Too few women in fields with good job prospects, a continuing high rate of school drop-outs, and low participation in lifelong learning

Graduates, all fields

(in % of the population aged between 30 and 34 years, 2017)



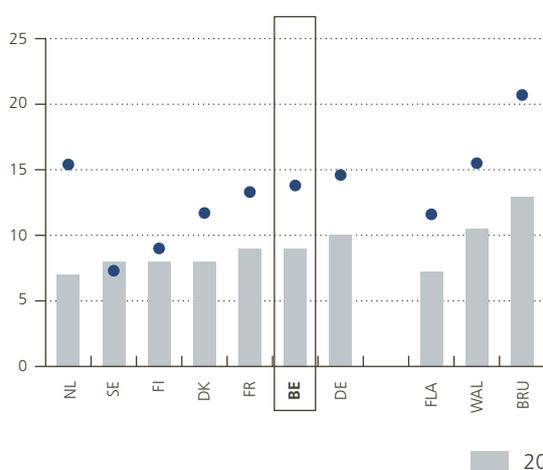
Graduates in fields with good job prospects¹

(in % of graduates aged between 30 and 34 years, 2017)



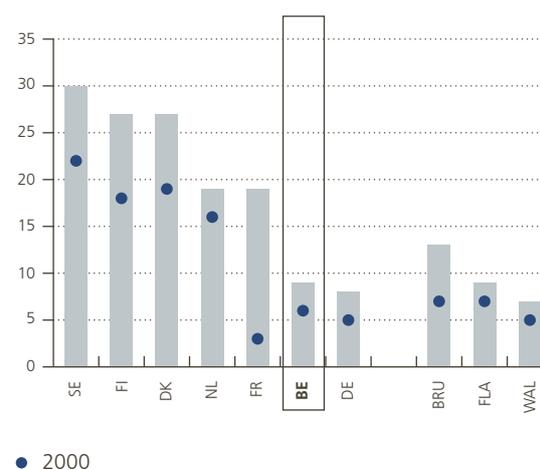
School drop-out rate

(in % of persons aged between 18 and 24 years)



Participation in education and training

(in % of persons aged between 25 and 64 years, during the past four weeks)



Source: Eurostat (LFS, microdata).

¹ Studies in science, mathematics, statistics, ICT, engineering, industry and construction.

men pursue higher education, They thus represent 55 % of total graduates but barely 48 % of highly-skilled jobs. In the case of managerial posts, the proportion of women actually drops to below 33 %.

Not only technical knowledge but also social and inter-personal skills, plus adaptability, enhance the likelihood of finding a job. In general, tasks based on sensory experience and fine motor skills, those concerning ethics, social interaction and emotional intelligence, or interdisciplinary tasks and those requiring creativity, inventiveness and intuition, are still difficult to convert into algorithms.

However, the learning of new skills is not confined to initial education. After leaving the education system, further training is vital to ensure the

employability of potential workers. Yet in Belgium in 2017, barely 8.5 % of people in the 25-64 age group had attended training in the past four weeks. That is a long way from the best practice seen in the comparison coun-

tries, especially the Nordic countries. Moreover, some population groups are under-represented.

Low-skilled workers and those aged 55 and over are among workers with a low training rate, yet these are workers who could derive great benefit from training: the former, in order to match the level of their skills to the labour market requirements, and the latter to maintain their employability.

Lifelong learning is key for employability throughout a career

5.5 Reconciling economic growth and environmental constraints

In order to be sustainable, economic development must be efficient, socially fair and environmentally sound. These goals, which form the basis of the approach adopted in 2016 by the members of the United Nations (UN), are explicitly reiterated in various European policies, and in the long-term federal strategic vision for sustainable development.

More specifically, the environmental transition mainly features in the policies for combating climate change, which originate from the UN Framework Convention on Climate Change. By ratifying it in 1996, Belgium opted to transform itself into an economy generating low greenhouse gas emissions. That decision was taken in the broader European context of reducing greenhouse gas emissions, improving energy efficiency and developing renewable energy sources.

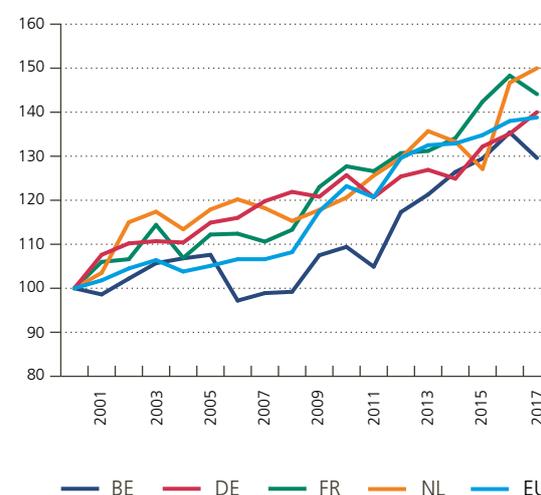
The efforts in this regard should not be seen as hampering economic development but instead should be viewed in relation to the constant need to improve the productive efficiency of firms. The ratio between an economy's GDP and its domestic material consumption (DMC) quantifies that economy's efficiency in its use of natural resources. Since the turn of the millennium, resource productivity has generally improved in the EU, particularly from 2008, following a marked decline in DMC against the backdrop of weak growth. In Belgium, the increase in resource productivity took longer to gather pace. In general, these developments also reflect a composition effect due to the growing importance of service activities, which consume a smaller quantity of raw materials than industry.

Accounting for 78 % of the EU's greenhouse gas emissions, both energy production and energy consumption methods are central to this transition.

Chart 84

An economy that makes more efficient use of natural resources

(resource productivity¹; indices 2000 = 100)



Source: Eurostat.

¹ Real GDP divided by domestic material consumption (DMC). The latter is defined as the annual quantity of raw materials extracted from domestic territory plus physical imports minus physical exports. The raw materials concerned are: biomass, metallic minerals, non-metallic minerals and fossil fuels.

This is not just a matter for energy policy but requires the coordination of provisions which come under various subjects – energy, transport, town planning, industry, innovation, digital technology, and the legal system – which traditionally have few, if any, mutual links and in which the powers are shared among the federated entities whose way of dealing with the issues sometimes varies. Nevertheless, a consistent approach and effective coordination are vital for a transition entailing the

least cost to the community while still being socially acceptable: we must avoid any lack of coordination and stability in the regulatory framework causing either businesses or individuals to make ill-advised investment resulting in losses.

Achieving an energy transition that guarantees security of supply

The commitments made in connection with the energy and environmental transition, be it at Belgian¹, European or global level, imply considerable adjustments to the energy mix and are therefore bound to affect the functioning of the economy and security of energy supplies. To guarantee the maintenance and deployment of economic activities, it is crucial to ensure everyday energy supplies while adapting the infrastructure and equipment so as to put the transition strategy into effect. That applies in particular to electricity.

In the final quarter of 2018, there were serious doubts about the ability of the Belgian electricity

¹ Notably the commitment on closing down nuclear power stations between 2022 and 2025, confirmed by the Regions and by the federal government in the Interfederal Energy Pact.

generating facilities to meet demand during the winter period, owing to the temporary closure of a number of nuclear power stations. Planned and unplanned non-availability amounted to between 3 900 and 4 900 megawatts (MW), i.e. 30-37% of non-intermittent generating capacity (nuclear, fossil fuel power plants, cogeneration, biomass) over which the transmission system operator can in principle exercise some discretionary control in order to safeguard the stability of the system, and hence the continuity of electricity supplies. At the same time, while the installed renewable energy capacity (excluding pumped storage) represented around 36% of the total installed capacity in 2017, it accounted for barely 19.2% of net production.

Consistent and coordinated policies are necessary for a successful ecological transition

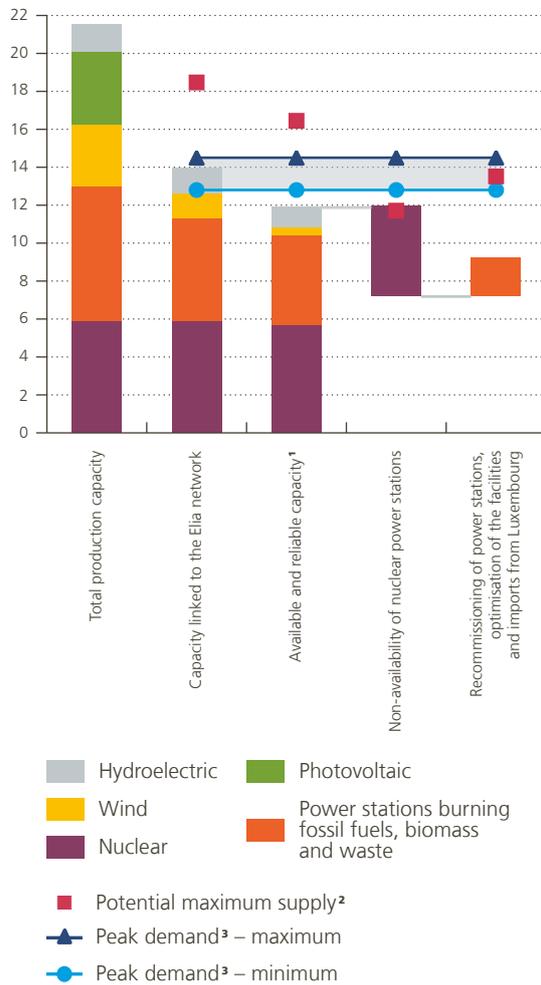
To alleviate this uncertainty, various measures were taken such as the recommissioning of gas power plants which had been mothballed, and optimisation of both power-generating facilities and interconnection to the Luxembourg network. Net imports totalled around 17.4 TWh in 2018, more than



Chart 85

Potential electricity supply on the basis of the non-availability of generating units in Belgium

(2018, capacity in GW)



Sources: DG Energy, Elia.

- 1 Taking account of availability and load factors, excluding producers connected to the distribution networks.
- 2 Remaining domestic production capacity after the successive non-availabilities considered plus maximum import capacity.
- 3 Elia estimates for the winter of 2018-2019.

2.5 times higher than in the two preceding years but similar to the figure recorded at the time of the previous supply crisis in 2014-2015. However, the option of using the 4 500 MW maximum import capacity depends on the available scope in neighbouring countries in terms of production and transport, as well as their own domestic demand, which varies according to the weather.

Temporary interruptions in the electricity supply would be detrimental both to citizens' comfort and to economic activity. Apart from the costs incurred in lost production and the restarting of installations, the perception of a deterioration in security of electricity supply is harmful in the long term to the reputation and attractiveness of Belgium in the eyes of foreign investors. Even if this risk of interruption does not materialise, its mere presence affects the competitiveness of some firms owing to the pressures that this situation creates on the wholesale electricity markets. Thus, prices for electricity delivery scheduled at various maturities during the 2018-2019 winter period in Belgium diverged from those in the neighbouring countries during the last four months of 2018, in a general context of rising prices in Europe. If these price discrepancies persist, firms will face a higher cost for this essential input, particularly in certain industrial branches. Ultimately, these price rises will also have an indirect impact on wages via wage indexation to consumer prices, and on the health index.

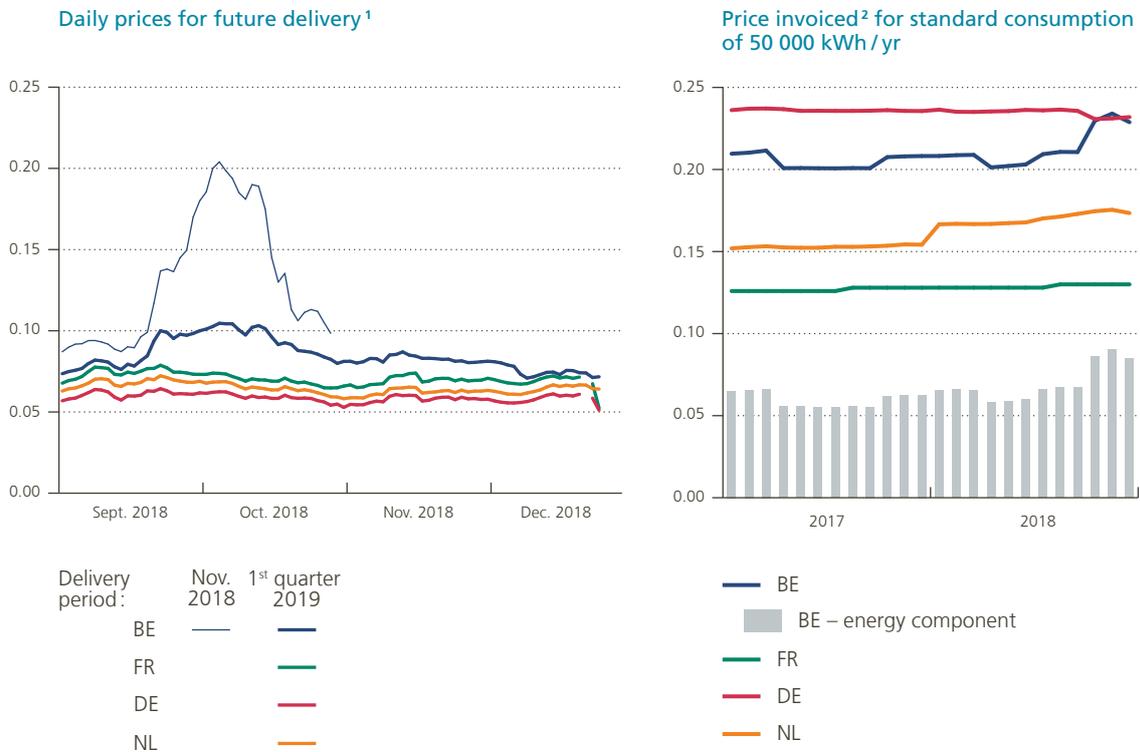
Where electricity supplies are concerned, the authorities' scope for intervention varies according to whether the activities concerned are regulated (transmission and distribution) or subject to competition (production and supply of electricity). In the former case, the regulators determine the conditions and prices for access to the networks while ensuring a balance between the costs and efficiency of the infrastructure. For activities subject to competition, it is necessary to adopt a regulatory framework that offers sufficient incentives to attract flexible means of production into the market at the right time and in accordance with future needs, including during the transitional period. For that, suppliers and producers must be able to rely on a stable and predictable regulatory framework, with a coordinated approach by the various levels of government in drawing up and implementing the legislative framework.

The emergency solutions described previously to address the risk of an interruption in supplies are not the answer to the need to establish sufficient supplies in line with the long-term goals, namely the phasing out of nuclear power in 2022-2025 and the transition to a lower carbon economy. There must be no further significant delays in adapting and modernising the production facilities as necessary, in view of the time taken to decide on investment and to install

Chart 86

Contrasting trends compared to the neighbouring countries as regards electricity prices on wholesale markets and the prices invoiced to business customers

(in €/kWh)



Sources: CREG, European Energy Exchange, ICE Index.

1 Daily prices for delivery of baseload electricity in November 2018 and in the first quarter of 2019.

2 Weighted average of the prices for the standard supplier's standard package in a given supply zone, the best bid in the same zone and a competing bid from the second supplier on the market.

the facilities and put them into operation. This also applies to the transmission and distribution infrastructure, which must be strengthened in order to permit the integration of new uses and new, more decentralised electricity production configurations.

Pursuing an ambitious mobility policy

While the question of mobility is also central to the transition to a lower carbon economy, the difficulties that Belgium faces are currently damaging economic activity. Workers struggle to get to work owing to the saturation of public transport and/or congestion on the road network. This congestion problem is shared with users in the freight transport sector and therefore affects Belgium's attractiveness

as a logistical hub, though Belgium occupies a central position in Europe and has major development advantages thanks to its port and airport infrastructure.

Congestion affects Belgium's attractiveness and is a source of negative externalities

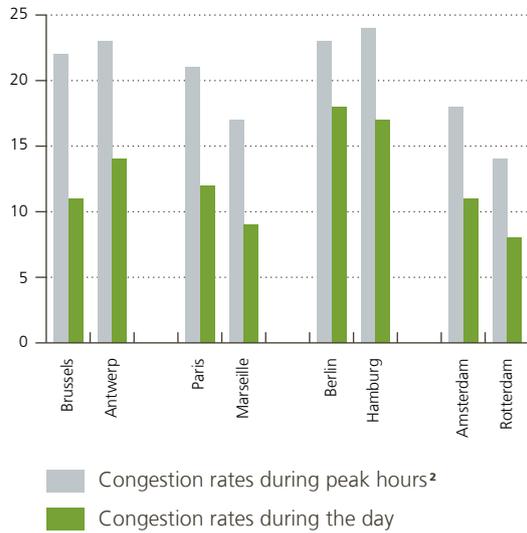
The increase in road transport flows creates congestion primarily around the large urban centres and in areas of economic activity. According to the INRIX indicator of congestion rates at peak hours, which mainly affect commuter travel, the cities of Brussels and Antwerp are ranked 7th and 9th among the most congested major European cities, well ahead of Lyon or Stockholm, although those cities are similar

Chart 87

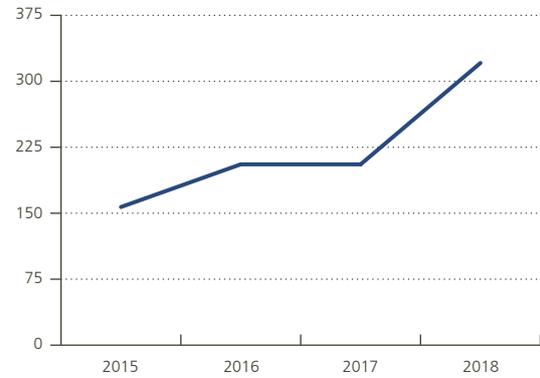
An increasingly saturated road network

Congestion rates

(in % of hours affected by congestion¹)



Incidence of queues



— Number of hours per year in which the total length of motorway queues³ exceeds 100 km in Belgium between 10.00 and 15.00

Sources: INRIX, Touring.

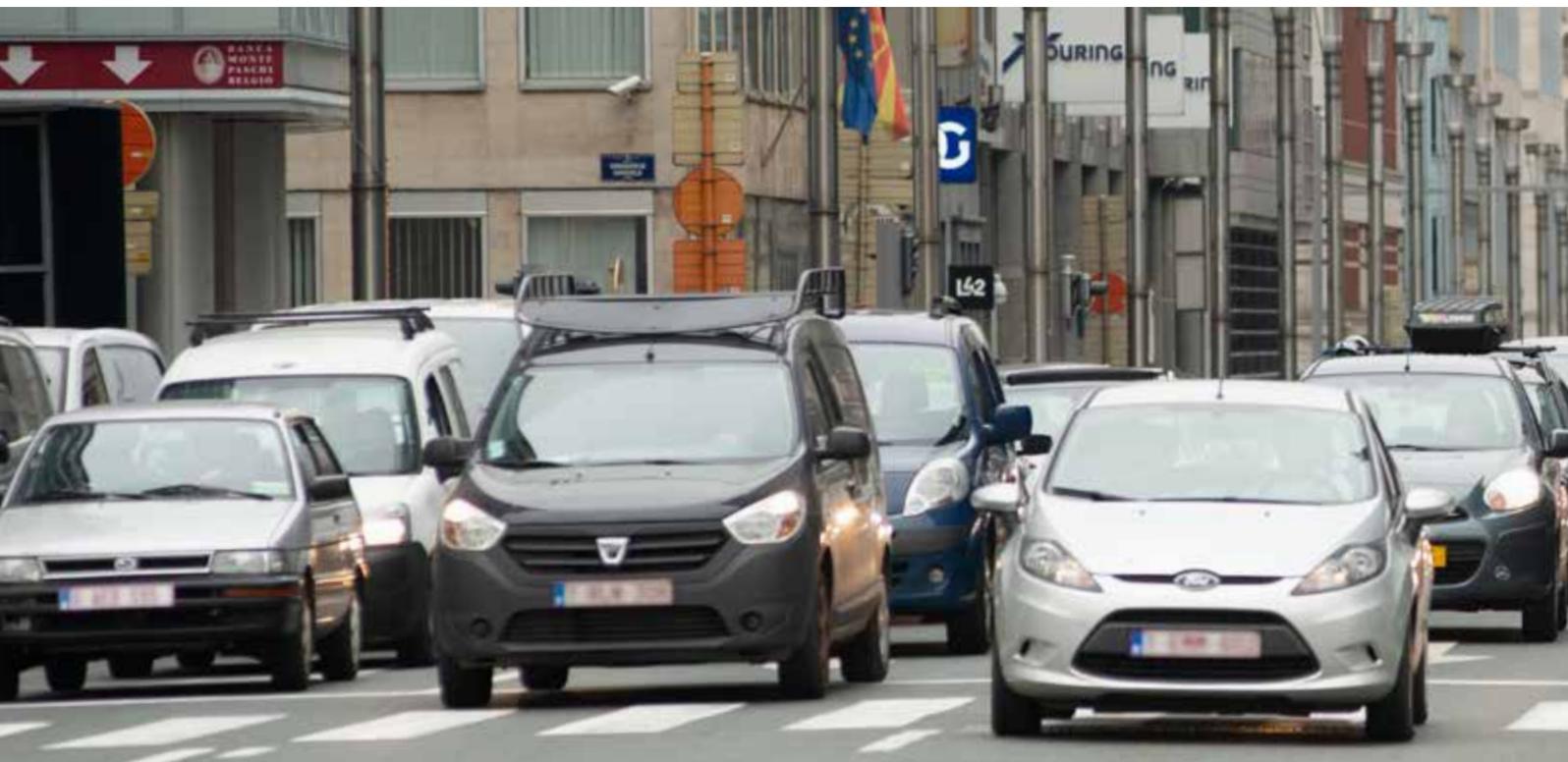
1 INRIX considers that there is congestion if the speed is less than 65% of the free-flow speed.

2 Peak times defined locally.

3 Touring takes account of the length of motorway traffic queues at places where recorded speeds are less than 50 km/h.

in terms of population size. With regard to congestion during the day, which concerns logistics activities to a greater degree, Antwerp and its region suffer more frequent traffic jams than Brussels

or Paris. In the neighbouring countries, only the major German cities have bigger problems in that respect. But the effects of traffic jams also extend beyond urban areas. Thus, the cumulative number



of hours in the year when the Belgian motorway network records traffic queues of more than 100 km (with speeds of less than 50 km/h) is rising with each passing year, including during off-peak hours: in addition to the growing road freight traffic, an increasing number of drivers and commuters prefer to travel outside the peak congestion periods.

Apart from its direct economic impact, saturation of the road transport networks gives rise to negative externalities for the well-being of citizens (noise, stress relating to travel difficulties) and the level of the air quality, with implications for public health and the environment. In 2016, the emissions generated by road travel accounted for 28% of CO₂ emissions in Belgium (i.e. 20% of total greenhouse gas emissions), 48% of NO_x emissions and 15% of emissions of particulate matter with a diameter smaller than 2.5 microns and 10 microns respectively.

The growing density in vehicle numbers is due partly to favourable tax treatment of individual car travel, via company car schemes (including cars provided for workers as part of their wages but available for private use), which concerns 8% of the stock of vehicles. Harmonisation of the tax treatment of the various modes of transport could curb the growth of road traffic. In 2017-2018, the federal government initiated the implementation of various tax measures relating to motor vehicle use, such as the harmonisation of excise duties on diesel with those on petrol, reduction of the tax allowance for use of a fuel

card, and a radical revision of the tax framework for company cars. On the one hand, the introduction of the travel allowance or "cash for cars" on 1 January 2018 offers workers with a company car (and the associated benefits) the option of giving it up and receiving in return a sum of money to fund their various private and/or business journeys. On the other hand, providing workers with a "mobility" budget corresponding to the total annual cost to the employer of financing a company car and the associated expenses (fuel, insurance, maintenance, taxes, etc.) enables workers to spend that sum on an environment-friendly car and/or alternative, sustainable modes of transport, with the right to receive cash payment of the unspent balance of the budget.

Harmonise the tax treatment of modes of transport to curb congestion



The National Strategic Investment Pact

In the face of the challenges confronting the Belgian economy, investment in general and the government-funded part of that investment are among the levers for reinforcing economic potential. Over the past 20 years, public investment has declined. By 2017, it accounted for only 2.2 % of GDP, well below the public investment rates in Scandinavia (4.4 %), France or the Netherlands (both at 3.4 %). Consequently, Belgium is trailing behind, which has visible repercussions on the state of various types of infrastructure, particularly public infrastructure.

In general, the availability of efficient infrastructure promotes citizens' well-being and business competitiveness. Conversely, infrastructure defects or congestion affect the smooth operation of business and the country's economic attractiveness. Contrary to what is seen in France and the Netherlands, but in common with what is happening in Germany, user ratings on these subjects in Belgium are tending to deteriorate. This is particularly true of network infrastructure such as energy and telecommunications. While the ratings on infrastructure for commercial logistic services is stable in Belgium, mainly thanks to the quality of its port and airport infrastructure, it is not improving

Infrastructure quality indicators

(scores between 0 and 10, 10 corresponding to the top score, average per sub-period)

	Basic infrastructure	Energy	ICT	Infrastructure relating to transport and trade
	Maintenance and development are adequately planned and financed ¹	Infrastructure adequate and efficient ¹	Infrastructure meets business requirements ¹	Ports, railways, roads and ICT ² 2007-2010
	2005-2008			2007-2010
Belgium	6.1	7.3	8.3	8.0
France	7.9	8.5	8.2	7.8
Netherlands	6.6	8.0	8.7	8.5
Germany	7.4	8.1	8.8	8.5
EU	5.5	6.5	7.7	6.6
	2015-2018			2016-2018
Belgium	5.4	6.2	7.9	8.0
France	7.7	8.5	8.2	8.0
Netherlands	8.8	9.0	9.2	8.5
Germany	6.4	7.1	7.1	8.8
EU	6.1	7.1	8.0	7.0

Sources: World Bank, IMD.

1 Rating based on IMD survey of senior executives.

2 Rating based on World Bank survey of logistics professionals.





as is the case in the neighbouring countries which, overall, are seen as having strengthened their infrastructure networks.

In view of this, the Prime Minister formed a strategic committee with six members from the economic world, in order to establish the basis of a National Strategic Investment Pact. This committee was given the task of setting the – public or private – investment priorities intended to strengthen the foundations of the economy, innovation and employment, thus leading to sustainable and inclusive growth by 2030. This move is in line with the Investment Plan for Europe.

On that basis, the committee reported to the Prime Minister and the Minister-Presidents of the Communities and Regions in September 2018. Six investment areas were identified: the digital transition, cyber security, education, the health system, the energy transition and transport. Practical plans were put forward for each of them, based on the experience of numerous players in the field. Investment and operating expenditure amounting to € 144 to 155 billion, directly supporting efficiency (such as infrastructure maintenance or the strengthening of human capital in the digital sphere) were set for the period up to 2030, with the government bearing around 45 % of the cost.

The committee also identified four transversal factors which would favour implementation of the plans and are partly a matter for the government. These factors are: a) a more effective and predictable legal and regulatory framework for permits and appeals; b) improved ability to mobilise the capital available from the government and also from private investors and EU institutions; c) wise use of public-private partnerships based on stronger governance of investment projects; and d) a budget strategy and European rules that encourage public investment. Practical recommendations were also made on these



issues. In particular, with regard to both the areas for investment and the transversal conditions, the strategic committee's report highlights the need for discussion and coordination between the various levels of power.

At this stage, the report on the National Strategic Investment Pact does not, in itself, represent any commitments for either the federal government or the federated entities. However, it does form an appropriate benchmark for the practical implementation of a coordinated public investment strategy in Belgium.

Other financial incentives may also help to stagger demand for road transport over time, such as the use of tolls, including in cities, varying according to the level of congestion. As well as reducing the actual costs resulting from congestion, such demand management can be a source of funding for transport infrastructures and services. With regard to users, demand for commuter travel can be smoothed out by flexible working arrangements and tele-working, or the length of commuter journeys can be reduced by the use of satellite offices or shared ("co-working") premises. In 2017, no fewer than 23% of workers made use of teleworking arrangements, an increase of around a third in four years. The use of real-time travel data could improve the efficiency of transport systems. Apart from the positive impact on all users, centralisation of that information would permit the grouping of freight flows to common destinations and the development of intermodality.

More generally, demand for travel should be steered towards alternative, additional modes of transport, thus easing the pressure on the existing infrastructure, especially at peak periods, by promoting public transport or "softer" modes of mobility. Consequently, there needs to be sufficient suitable and efficient infrastructure for that purpose. In the case of freight transport, that means improving rail access to the ports and economic activity zones, and modifying waterways to take larger vessels. In the case of passenger transport, this includes, for example, the provision of parking facilities close to railway stations, or the creation of cycle paths. Between 2000 and 2013, the

total number of passengers travelling on the three regional public transport networks doubled, but has since remained steady. The authorities need to avoid transferring the congestion problems from one mode of transport to another, but should instead, where appropriate, plan ahead for investment in public transport to cater for this growth and perpetuate it by maintaining or improving the attractiveness, reliability and punctuality of public transport. More generally, town planning policy and decisions on where to live or where to locate new activity zones are likewise closely linked to this transport issue.

The problem of transport infrastructure congestion exacerbates the low geographical mobility of workers. Except for the residents of Flemish and Walloon Brabant, who are more likely to travel to Brussels, very few commuters travel from their home to another province, and hardly any travel between Flanders and Wallonia.

This low geographical mobility is reflected in sizeable disparities in unemployment rates between the provinces, including neighbouring ones. Despite successive adjustments to the unemployment regulations to help the jobless get back into work (definition of suitable work, degressive benefits, greater support and guidance for the young and for those aged 50 and over) and the cooperation agreements between the regional public employment services, the geographical mobility of job-seekers is still insufficient.

The constraint of the distance between home and place of work is compounded by the language

Table 18

Few workers are employed outside their province of residence

(in % of workers in the province of residence, 2017)

		Province of residence										
		WEST FL	ANTW'P	LIMB'G	EAST FL	FL BRAB	BRUSS	WALL'N BRAB	HAIN'T	NAM	LIEG	LUX
Place of work	WEST FL	89	0	0	4	0	0	0	1	0	0	0
	ANTW'P	0	87	5	6	7	1	0	0	0	0	0
	LIMB'G	0	2	80	0	2	0	1	0	0	1	0
	EAST FL	6	3	1	77	2	1	0	1	0	0	0
	FL BRAB	1	3	5	4	61	8	6	1	1	0	0
	BRUSS	2	3	2	7	25	82	28	8	8	3	1
	WALL'N BRAB	0	0	0	0	1	4	54	5	8	1	0
	HAIN'T	1	0	0	0	0	2	5	75	8	0	0
	NAM	0	0	0	0	0	0	3	4	67	4	6
	LIEG	0	0	1	0	0	0	1	1	2	84	3
	LUX	0	0	0	0	0	0	0	0	4	1	62
	Abroad	1	2	7	1	1	1	1	3	1	4	27

Source: Eurostat (LFS, microdata).

barrier, which in practice limits mobility between the Regions. The distance problem is also exacerbated by the lack of financial incentives to work, particularly for low wage earners and those with a low level

of education. Taking account of the relatively high replacement rate for the unemployed, the wage levels offered do not seem sufficiently attractive to compensate for the travel costs.

5.6 Enhancing the general well-being of the population

The polarisation of society caused by the changes mentioned above highlights the need for economic growth to be inclusive, in order to promote not just wealth creation but also the well-being of the population as a whole.

The composite indicator of average well-being – “Here and now” – devised by the Federal Planning Bureau (FPB) provides the best picture of changes observed in the well-being of Belgians¹. It combines the changes in six indicators, namely state of health (40 % weighting in the composite indicator), material deprivation (19 %), social support (15 %), incapacity for work (13 %), dropping out of education (9 %) and unemployment (4 %)².

The composite indicator had been rising since 2005, but deteriorated significantly with the outbreak of

The Belgians’ well-being indicator has returned to a level comparable to that before the crisis

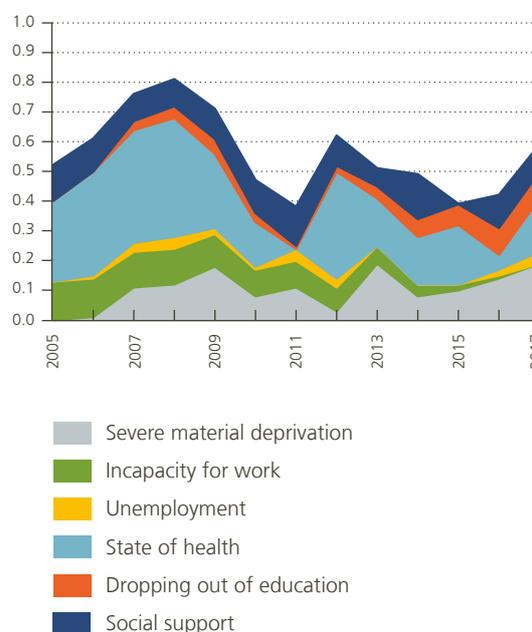
the economic and financial crisis, and fell to its lowest level in 2011. Since 2015, however, the well-being of Belgian people has recovered, and in 2017 was comparable to its 2005 level. The trend

between 2008 and 2011 was closely linked to the deterioration in the general state of health of the population during that period, as the indicator dropped to its minimum value in that last year. This deterioration in the health indicator during the

Chart 88

Well-being¹ is rising, but has yet to regain its pre-crisis level

(scale of 0 to 1)



Source: FPB.

¹ 0 corresponds to a situation in which the six indicators were simultaneously at their minimum level over the period 2005-2017, while 1 corresponds to a situation in which they were all simultaneously at their maximum level over that same period.

economic crisis bears out the results of the latest national health survey in Belgium, which revealed mental health problems in particular. This issue, regarded as important in Belgium, has proven economic consequences beyond the effect on people’s well-being: the OECD estimates the associated direct costs (health care) and indirect costs (unemployment, absences from work, loss of productivity, etc.)

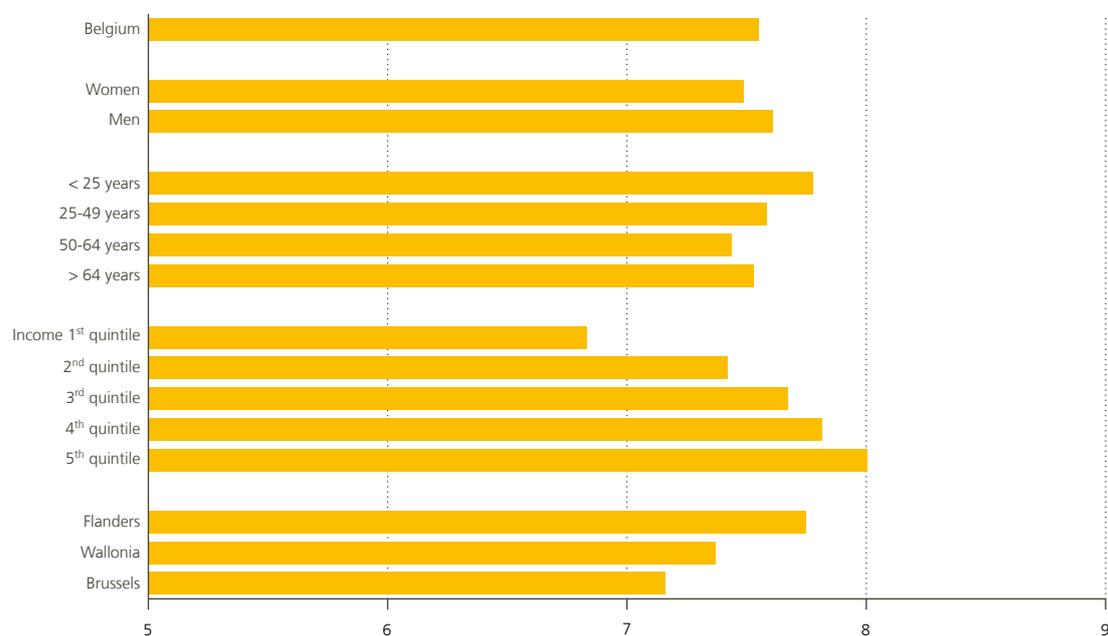
¹ Well-being as expressed in the answers to the question: “Overall, how satisfied are you with your life nowadays?” taken from the 2013 EU-SILC survey (see box 9 for a brief account of the beyond-GDP indicators).

² These six indicators are included in the composite well-being index so that an increase in one of these indicators improves general well-being.

Chart 89

Unequal satisfaction with life according to population group

(scale of 0 to 10; 2013)¹



Source: FPB.

¹ Satisfaction with life is measured by the question: "Overall, how satisfied are you with your life nowadays?". The answer to that question is given on a scale ranging from 0 (not at all satisfied) to 10 (totally satisfied).

at around 5.1 % of GDP in Belgium in 2015, compared to 4.1 % for the EU. Investing in preventive health care therefore achieves the two-fold aim of well-being and economic growth.

Apart from the state of health, the improvement in the well-being indicator in recent years also concerns all the other dimensions except for incapacity for work. However, this general trend in well-being masks wide variations between different sub-populations. While there are few differences in the assessment of well-being by gender in terms of satisfaction with life, that is not so in the case of other sub-groups. For instance, younger people (16-24 years) are on average more satisfied with their lives than older people, and especially those in the 50-64 age group. Also, although income is not a key determinant of well-being, satisfaction increases with the level of income. This also differs between the Regions, with people in Flanders being the most satisfied and Brussels residents the least.

On the basis of this finding, the FPB identified the well-being determinants specific to the various population categories: for women and men; for four age groups (16-24 years, 25-49 years, 50-64 years and over 64 years); for five income categories (quintiles); and according to the Region of residence.

Whichever sub-population is considered, health is always the main determinant of well-being. However, men's well-being is more affected by their labour market status, especially if they are job-seekers. Conversely, lack of qualifications affects the well-being of women but not that of men. The well-being of young people (16-24 years) depends more particularly on the level of social support that they receive, their inclusion in the labour market (unemployment or incapacity for work) and their level of education. In contrast, in the 25-64 age group, it is the variables relating to standard of living (income, material deprivation) that influence well-being. Lack of qualifications also affects well-being in the first two income quintiles. When it comes to measuring



the standard of living, the degree of material deprivation and hence access – or otherwise – to a normal living standard matters more than income level. Some regional disparities are also apparent: health is more important for the well-being of the

Flemish and Walloon populations than for Brussels residents, who are more sensitive to the variables relating to standard of living. Labour market status and level of education are also key factors for well-being in Wallonia.

BOX 9

Trend in the beyond-GDP indicators

Under the Law of 14 March 2014 supplementing the Law of 21 December 1994 containing social and miscellaneous provisions, the National Accounts Institute (NAI) and the Federal Planning Bureau (FPB) publish a report each year on beyond-GDP indicators, relating to various topics in relation to well-being. A summary is given here in accordance with the Law.

In this edition, the FPB reviews 67 indicators selected in order to measure “quality of life, human development, social progress and the sustainability of our economy”, grouped around three dimensions based on the definition of sustainable development: “Here and now”, “Later”, and “Elsewhere”.



Where appropriate, the indicators are broken down according to relevant population categories. A detailed description of the methods of selecting the topics and indicators is given in the report published by the NAI and the FPB in February 2016.

In the 2019 report, as well as taking account of comments by users and Parliament, some adjustments were made to the list of indicators for methodological reasons, the aim being to find more relevant measures for constructing the composite indicator on the basis of indicators available annually. The presentation of the indicators is now arranged around the 17 Sustainable Development Goals (SDGs) set by the UN for the period up to 2030. According to the Agenda for Sustainable Development designed to achieve these goals, it is essential to reconcile economic growth, social inclusion and environmental protection on the basis of integrated and sustainable management of the planet's resources. In fact, these SDGs are consistent with the FPB's approach.

Trend in the indicators

The "Here and now" dimension concerns changes in people's well-being and the development of society in Belgium since 1990. Some 41 indicators concerning poverty, decent work, inequality, health, education, cities and justice cover this dimension, for which there is no apparent systematic trend in relation to the respective SDGs:

- with regard to education (SDG 4), gender equality (SDG 5) and peace and justice (SDG 16), the trend is favourable, i.e. heading towards their goals;
- in contrast, trends relating to poverty (SDG 1) are unfavourable;
- in regard to health (SDG 3), the three indicators relating to life expectancy, death due to chronic illness and road accidents, the trend is favourable; conversely, the subjective indicators concerning people's perception of their state of health point to a deterioration;
- the indicators relating to decent work (SDG 8), inequality (SDG 10) and cities (SDG 11) do not display any clear tendencies.

Comparison of these indicators with those at EU level or, failing that, in the three neighbouring countries favours Belgium in the case of 17 of the 28 indicators which can be compared.

There are 32 indicators covering the "Later" dimension, which concerns the ability of future generations to maintain and improve that well-being. These indicators are taken mainly from the environmental SDGs concerning hunger (SDG 2), health (SDG 3), education (SDG 4), water (SDG 6), energy (SDG 7), infrastructure (SDG 9), consumption and production (SDG 12), climate (SDG 13), life on land and life below water (SDG 14 and 15), and ways of implementing global sustainable development partnerships (SDG 17). Most of these are moving towards their goals, with the following notable exceptions:

- life expectancy and good health (SDG 3), which is no longer improving (in contrast to life expectancy at birth);
- the wild bird population (one of the few indicators of biological diversity available over a long period), which continues to deviate further from its goal.



An international comparison shows that 12 of the 23 indicators which can be compared record a more favourable situation in Belgium; this primarily concerns social indicators. The environmental indicators are less favourable in Belgium than in the rest of Europe.

The “Elsewhere” indicators reflecting Belgium’s impact on the rest of the world – namely the ability of other countries to develop and the well-being of their population – display a favourable trend as regards the consumption of natural resources (energy (SDG 7) and commodities (SDG 12)) and greenhouse gas emissions (SDG 13). Conversely, the trend in the public development aid indicator (SDG 17) is unfavourable.

The international comparison of these indicators is favourable to Belgium with regard to domestic material consumption and public development aid, but not as regards the primary energy consumption indicators and those concerning greenhouse gas emissions.

Breakdown of the indicators

Of the 67 indicators adopted, 31 can be broken down by population sub-categories, defined according to gender, income level, level of education or age. It emerges that:

- according to gender (28 indicators), many differences are smaller though there are still some substantial discrepancies unfavourable to women. This concerns the risk of poverty or social exclusion, including a very low work intensity, perceived health, depression, leisure time and feeling safe in public places;
- according to income level (15 indicators), the situations are more favourable for the highest income groups, which is hardly surprising;
- according to level of education (12 indicators), the conditions are more favourable for persons with a better level of education, and the differences are tending to increase. People with no more than



a lower secondary education certificate are at a particular disadvantage, and the gap in relation to others (with at least an upper secondary education certificate) is generally very marked;

- according to age (12 indicators), various divergent trends are apparent which could ultimately have implications for the well-being of certain groups and the development of society. Thus, long-term incapacity for work among the 25-64 age group may affect economic activity. Similarly, while the improvement in living conditions for the over-65 age group is positive, it contrasts with the tougher conditions experienced by younger people, which may harm solidarity between the generations. While there are differences of level relating to age (e.g. in terms of health, incapacity for work, employment or unemployment), it is evident that the trends are almost always more favourable to the older age groups. Apart from the – predominant – health indicator, it is the trend in indicators relating to work and poverty that needs to be monitored.

In accordance with its mission, the FPB will continue to update these indicators, taking account of changes in the state of knowledge and social debates. Future work will focus in particular on the development of a composite indicator for the “Later” and “Elsewhere” dimensions of well-being and an indicator on the carbon footprint as presented in the 2018 report on the beyond-GDP indicators. That work will also ensure consistency between this set of beyond-GDP indicators and the sustainable development indicators, particularly in the context of the monitoring of the UN SDGs.