



# 6. Strengthening the economy today and preparing for the economy of tomorrow

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## 6.1 Belgium is facing multiple changes

Despite the growing uncertainties and deteriorating global economic climate, the Belgian economy showed some signs of resilience in 2019. Economic activity slowed only slightly, while job creation and private sector investment held up. This performance was helped by reforms pushed through in recent years, especially on pensions, labour cost reductions and the functioning of the labour market. In themselves, however, these reforms are not enough to guarantee sustainable prosperity for everyone.

Like many advanced economies, Belgium faces enormous structural challenges. Those challenges have been described at some length in earlier editions of the Annual Report and in the official reports of other Belgian and international institutions. Against the backdrop of population ageing, Belgium's economic potential in particular needs to be strengthened by maximising efficiency gains and continuing to raise the number of people in employment. This will help generate income for the population and consolidate public finances – and, as a corollary, contribute to the affordability of the social security system.

These findings are still valid. Rather than going over them again, this chapter places the challenges facing the Belgian economy in the context of three trends that are either emerging or becoming more manifest.

First, globalisation and the fragmentation of international value chains appear to be slowing, due partly to a less open

attitude towards free trade, accompanied by technological changes that enable efficient production at local level. Additionally, advanced digital technologies are rapidly finding their way into production methods and patterns of consumption.

Finally, the commitments entered into for the transition to a climate-neutral economy will require changes in both individual behaviour and production methods. This transition will also require considerable investment.

These trends will change the way the economy operates over the next decades. At the same time, some sections of the population that feel more vulnerable because of the high degree of globalisation, rapid technological developments and the consequences of the environmental transition may feel inclined to turn their backs and reject these developments. However, going against the tide is not a viable long-term option.

On the contrary, three conditions must be fulfilled in order to enable these structural changes to be accommodated. First and foremost, the economy must function as efficiently as possible. Second, it must be sufficiently flexible to enable a smooth and rapid reallocation of production assets to new activities. And lastly, it must be inclusive and offer everyone the opportunity both to contribute to and benefit from all these transformations.

A crucial factor in achieving these three goals is an economy's competitiveness or productivity level. In July 2019, the OECD published a detailed re-

view of trends in productivity in Belgium. A few days earlier, the National Productivity Board had been set up, and it published its first annual re-

port in December 2019. Both documents, which are in line with many earlier studies undertaken by the Bank, observed that productivity growth in Belgium is slowing steadily, partly due to a lack of technological dissemination.

*The slowdown in free trade, digital advances and the transition to climate neutrality will change the way the economy works*

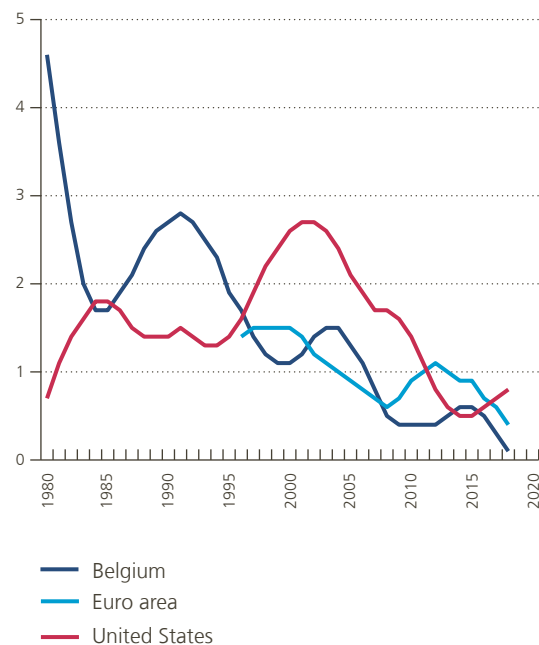
A second essential factor is the ability to invest as efficiently as possible in ensuring that the necessary technological and environmental transitions are successfully accomplished. These transitions not only require new infrastructure, and therefore investment in tangible assets in some essential sectors such as energy, transport and telecommunications, but also intangible investment in R&D and databases.

Finally, maximising the number of available workers involved in the new economy of the future will also require investment in human capital to guarantee that workers have the necessary new skills. Human capital will be the key to the success of the various transitions and will ensure that everyone benefits from them.

**Chart 80**

### Productivity growth in Belgium not as strong as in other advanced economies

(annualised percentage changes in visible labour productivity, smoothed data)



Source: OECD.

## 6.2 Preparing for a new order in production methods

From the early 1990s to the onset of the economic and financial crisis in 2008, global trade grew strongly. This strong expansion was accompanied by an ever more intensive and complex fragmentation of production chains, extending across all the world's continents. All this was made possible by improved access to external production factors and components, a product of the liberalisation of commercial and financial transactions, the lowering of customs duties and transport costs, and technological innovations (the ICT revolution), which also opened the way

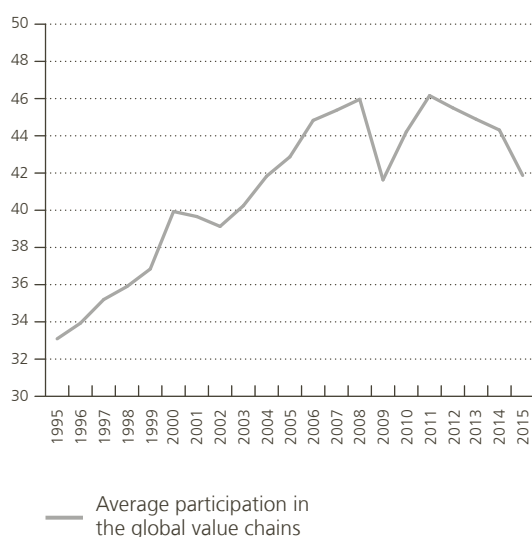
for multinationals to play a greater role. This enabled exploitation of the comparative strengths of countries and businesses involved in the various stages of design, production and sale to users.

Fragmentation of production chains nevertheless does not seem to have increased any further since the crisis. This can be attributed to various factors, with the tendency to question the value of free trade being the clearest. Belgium will undoubtedly be affected by these developments, as a medium-sized economy in Europe and a small economy on a global scale, though one which boasts major port and logistics infrastructure, a dense transport network at the heart of the European Internal Market and businesses which are highly active in the international markets.

**Chart 81**

### Towards a less globalised world?

(weighted average share of value added of third countries in a country's exports and of the value added by a country in the exports of other countries, in percentages of total gross global exports)



Source: IMF.

Note: Extrapolation 2012-2015, based on the OECD Trade in Value Added database (2018).

### Trade tensions influence economic relationships

The trade tensions between the US and its main trading partners, and the departure of the UK from the EU, are symptomatic of the gradual shift taking place in some countries away from a vision of multilateralism and free trade towards a more protectionist and bilateral approach to international trade. Belgium has intensive trade relations with the UK and, to a lesser extent, the US, and could therefore be hit by the introduction of – tariff or non-tariff – barriers imposed on the European Internal Market, and could potentially experience severe supply and demand shocks.

Even though the UK effectively left the EU on 31 January 2020, the uncertainty about how future relations between the two trading partners will be framed will only disappear at the end of the negotiations that take place during the transition period which – unless it is extended by a year – is scheduled





to expire on 31 December 2020. Irrespective of the outcome of these negotiations, from then on stricter rules will apply to the movement of goods and services than those within the EU.

Belgium's gross imports and exports from and to the UK are substantial, accounting for between 5 % and 6 % of Belgian GDP respectively. According to the most recent OECD figures, for the year 2015, the value added realised in Belgium that is exported

directly to the UK amounted to 3.1 % of GDP. To that can be added 0.7 % of GDP in indirect value added after allowing for the share of Belgian value added incorporated in the exports of other countries. Of this total of 3.8 % of GDP, 86 % was consumed in the UK, with the balance being re-exported to other countries after transformation.

From a microeconomic perspective, these flows involve a large number of Belgian companies. According to

**Table 15**

**Number of Belgian companies actively engaged in trade in goods and services with the United Kingdom**

(2018)

	Exporting companies	Importing companies	of which: Exporting and importing companies
<b>Total</b>	<b>19 122</b>	<b>38 334</b>	<b>6 581</b>
of which:			
Companies with fewer than 50 FTEs	7 957	13 270	
Companies for which the UK accounts for at least 50 % of exports to the EU	6 402		
Companies with no experience of the procedures for exporting outside the EU	6 490		

Source: NBB.

VAT data, 19 122 Belgian companies supplied goods or services to 62 602 British companies in 2018. Conversely, 38 334 Belgian companies purchased goods or services from an undetermined number of exporters in the UK.

In total, 50 875 Belgian companies – 51 % of which are located in

Flanders, 22 % in Wallonia and 27 % in the Brussels Capital Region – were directly involved in trade with the UK. For those companies, and for their British counterparties, the introduction of tariffs or non-tariff administrative trade barriers, such as compliance certifications or customs declarations, will impede trade to a greater or lesser extent, depending on the shape of the future relationship between the UK and the EU.

But the exposure of the Belgian economy to Brexit is not limited to firms which export directly to or import directly from the UK. If allowance is made for

### *Many firms will face commercial unrest and Brexit*

Belgian supplier or customer relationships with those companies, the number of companies potentially affected increases sharply. If only the first two tiers of suppliers or customers are taken into account, this

would mean that an estimated two-thirds (65 %) of Belgian non-financial firms are directly or indi-

rectly exposed to British demand and that 89 % of Belgian non-financial firms would be exposed to differing degrees throughout the country to possible rises in prices of imports from the UK.

Of course, the UK's departure from the EU does not mean that trade with the UK will cease, but it does mean it will become more expensive and therefore less intensive. Box 9 presents a macroeconomic simulation of the impact of Brexit on Belgium, based on two scenarios for the organisation of future economic relations.

## BOX 9

### Estimated macroeconomic consequences of a soft and hard Brexit

After a majority of its electorate voted on 23 June 2016 to leave the EU, and the UK triggered Article 50 of the Treaty on European Union on 29 March 2017, a long period of negotiations began to reach a withdrawal agreement. The UK effectively left the EU on 31 January 2020, ushering in a transition period in which the EU and the UK must set out the principles of their future relationship.

That future trade relationship will determine how negative the consequences of Brexit are for the UK, but also for the 27 countries that remain in the EU. The less preferential the trade relationship between the EU and the UK is, and the more it is influenced by all kinds of tariff and non-tariff trade barriers, the more negative Brexit's macroeconomic implications will be. As the outlines of a new trade agreement between the EU and UK are not yet known, two alternative trade scenarios are used in this box to quantify the potential macroeconomic impact.

The first scenario, involving a free trade agreement (FTA), assumes that negotiations will ultimately lead to a trade agreement which is broadly comparable with the CETA free trade deal that was signed between the EU and Canada in September 2017. That agreement scrapped virtually all customs duties on bilateral goods trade flows. In this scenario, such an agreement comes into effect after a transition period. Until the agreement comes into full force, the UK would continue to be subject to all prevailing EU rules.



By contrast, the second scenario, the World Trade Organisation (WTO) scenario, assumes that the EU and UK fail to agree a new trade deal and trade relations, following an identical transition phase to that in the previous scenario, will be governed by the World Trade Organisation's most favoured nation (MFN) principle. This principle means that the customs tariffs and conditions imposed on the trade flows between trading partners cannot be less favourable than those applying to any other country with which there is a trading relationship. After the UK's departure from the EU, the free movement of goods and services will of course continue for the remaining Member States. At the same time, they will impose customs tariffs on the UK *en bloc*, and the UK will have to impose its own customs duties uniformly on all remaining EU Member States.

Even if there is a free trade agreement, under which bilateral trade in goods is exempt from customs duties, non-tariff trade barriers will still pose a major obstacle to trade. In particular, this concerns border checks to determine whether or not a product meets the conditions for exemption from import duties. An important criterion here is that a product respects the economic rules of origin and is not simply transited to a third country for which the tariff exemption does not apply. Checks must also be carried out to ensure compliance with all regulations governing the production process, safety, phytosanitary requirements, publicity campaigns, etc. These non-tariff barriers can pose a bigger obstacle to trade than import tariffs; even a free trade agreement which removes all import duties can in no way be equated to a trade relationship within a customs union, in which goods are able to circulate freely once they have been imported. It is worth noting that new restrictions would then also apply to the international supply of services.

To a large extent, the macroeconomic implications of Brexit for a country are directly proportional to the importance of the relevant trade flows which are lifted out of the European Customs Union and which will be impeded by the potential introduction of import tariffs and the costs associated with administrative red tape. The impact will therefore be the greatest for the UK, given that 45 % of British exports go to the EU, whereas only 8 % of Belgian exports go to the UK. It is assumed that productivity in the British economy will temporarily slow down as a result of the departure of (highly-skilled) workers and lower direct foreign investment, exacerbating the negative implications of Brexit for the UK.

The two scenarios discussed above were simulated using the Bank's "Noname" macroeconomic model, which is also used to produce economic projections for Belgium. In each case, an estimate was made of the expected macroeconomic impact on the Belgian economy in the medium term – i.e. five years after the end of the transition period – compared with a situation in which the UK had not left the EU. No allowance is therefore made for any temporary disruptions to trade flows or greater volatility on financial markets when the new trade rules effectively enter into force. For each scenario, an estimate was constructed of the likely impact of new customs tariffs, non-tariff barriers and exchange rate fluctuations between sterling and the euro on international trade prices between the UK and the EU Member States, and how much damage this would cause to the Belgian economy, primarily as a result of the reduced demand from the UK. The indirect impact of the reduced demand from the other EU Member States for Belgian goods and services was also taken into account, given that those countries will likewise feel the consequences of Brexit.

It is assumed in the FTA scenario that no customs tariffs will be imposed, but that the costs associated with the non-tariff trade barriers will lead to an increase of 6.9 % in the price of Belgian imports from the UK. In the WTO scenario, this price rise is 15.7 %, as a result of the new customs tariffs and the non-tariff





trade barriers. However, the gradual depreciation of sterling against the euro will help reduce the prices paid by Belgian importers by 10 % and 15 % in the FTA and WTO scenarios, respectively, so that import prices in Belgium are unlikely to suffer any major price shocks. Belgian firms will initially have to battle against the cheaper pound, adding to their export difficulties. On the British side, import prices stated in sterling will rise sharply due to the devaluation of the UK currency and the additional costs associated with the trade barriers, temporarily pushing up inflation in the UK.

The results of this exercise show that the negative impact of Brexit for the Belgian economy will be relatively limited, provided the UK and the EU manage to negotiate and ratify a free trade agreement akin to the FTA scenario portrayed here. Belgian exports over the medium term would then be 0.9 % lower than in a reference scenario without Brexit, which would also reduce investments and private consumption by 0.5 % and 0.1 %, respectively. Belgian GDP would ultimately be 0.3 % lower than in the reference scenario without Brexit; the employment rate would be 0.2 % lower, while the unemployment rate would be 0.2 percentage point higher.

The outcomes deteriorate markedly if there is no new trade agreement. Belgian GDP would then be 0.7 % lower in the medium term than in a scenario without Brexit, while exports, investment and employment would be 1.7 %, 0.9 % and 0.5 % lower, respectively; employment would be 0.5 % lower and the unemployment rate 0.4 percentage point higher.

### Impact of Brexit on the Belgian economy in the medium term <sup>1</sup>

(total impact compared with a scenario without Brexit; in %, unless otherwise stated)

	FTA	WTO
Consumer prices	-0.2	-0.1
Export prices	-0.3	-0.2
Import prices	-0.2	0.0
GDP	-0.3	-0.7
Private consumption	-0.1	-0.2
Total investment	-0.5	-0.9
Exports	-0.9	-1.7
Imports	-0.7	-1.4
Unemployment rate (in percentage points)	0.2	0.4
Employment	-0.2	-0.5
Real disposable income	-0.1	-0.2

Source: NBB.

<sup>1</sup> That is five years after the end of the transition phase.



These results show the impact on the Belgian economy in terms of trade. If Brexit were to lead to a slowdown in productivity in Belgium too, for example due to reduced spending on R&D and innovation or other frictions, the implications could of course be greater. The findings of existing comparative studies show that Belgium would be among the EU countries hit relatively heavily by Brexit<sup>1</sup>.

<sup>1</sup> For a general survey of the impact of Brexit based on various simulations, see Bisciari P. (2019), *A survey of the long-term impact of Brexit on the UK and the EU27 economies*, NBB, Working Paper 366.

While Brexit will affect the general economic relationship with the UK, the trade tensions between the EU and the US only affect certain products. The extent to which Belgium is exposed to that trade is not negligible, however, especially for the sectors of industry that are affected. The direct impact on the Belgian economy of the increased tariffs that the US is considering imposing on imports of European cars will, for example, be limited (0.08% of GDP in 2015); however, the total exposure is three times greater (0.24% of GDP in 2015) due to the indirect exposure, for example through the relationships with the German automotive sector.

Pressure on the organisation of international trade is not the only reason for the sluggish performance of international value chains. A degree of reorientation of economic activity and of the demand from emerging economic powers in favour of their domestic markets, for example in China, could also have an effect.

### Technological innovations are changing the international organisation of production

As well as the impact of trade tensions, a wave of new digital technological innovations could also eventually force internationally active companies to review their optimisation plans to transfer part of their production to low-cost countries and prompt them to (partially) repatriate some activities to the local market. This is evidently not yet happening on a large scale, but this 'near-shoring' or 're-shoring' is nonetheless occurring gradually and on an *ad-hoc* basis. The European Reshoring Monitor, a project of

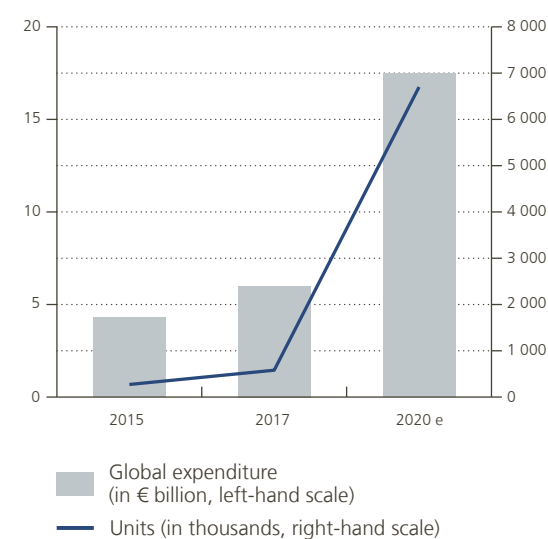
the European agency Eurofound, identified 46 cases of repatriation of activities by European businesses in 2018, and 74 in 2017.

Among the new technologies, robotics and artificial intelligence (AI) are growing exponentially and are starting to become an integral part of production processes in many companies throughout the world. These new processes are also becoming more significant in Belgium. This country scores fairly well in this regard thanks to the progress made in fundamental

Chart 82

#### 3D printing is booming

(global use of 3D printers)



Source: EC (European Political Strategy Centre).

research and industrial applications. The federal and regional governments are also keen to support these technologies. As an example, the AI 4 Belgium coalition was formed in March 2019, bringing together a group of private sector operators to promote the use of AI and facilitate the transition to AI, with support from federal and regional agencies.

The industrial-scale introduction of 3D printing processes, sometimes referred to as 'additive manufacturing', also creates opportunities for re-shoring production processes. The first sectors involved in this technology stem from the manufacturing industry (aeronautics, optical instruments and medical apparatus), where this new process enables specific – for example more solid – materials to be used, but where the costs are relatively high and production volumes more limited. However, this production process covers a wider range of businesses and sectors. In the earlier production phases, companies can create and test prototypes directly themselves, autonomously and on the spot. In the later production stages, the technology offers companies flexibility, enabling them to respond to end-user demands and shorten lead times based on need. This could lead to a restructuring of value chains to create "demand chains", which in turn could prompt businesses to repatriate segments of their production activities closer to the demand, linked to high-tech production and opening the way for a faster and more targeted response to consumer preferences.

Lastly, environmental obligations could also depress international trade volumes and lead to growing repatriation of businesses that are active close to the end-user. The development of the circular economy could also lead to changes in the organisation of production systems in order to reduce their carbon footprint.

### **This reorganisation of production processes will also impact the Belgian economy**

At first sight, an analysis of the structure of the Belgian economy suggests that international trade in 2018 was concentrated on a limited number of

firms. Of the 495 876 non-financial corporations considered, only 2.9 % were significantly engaged in exports and 4.1 % imported production factors or capital goods; 1.6 % of these companies were both importers and exporters. However, these companies accounted for 37 % of employment in the non-financial private sector, with companies that were both exporters and importers taking a 23 % share.

In addition, around 54 % of non-financial firms are rank 1 or rank 2 domestic suppliers of exporters, illustrating the strong indirect exposure of the Belgian economy to international demand. Similarly, 66 % of Belgian non-financial companies are direct customers of importing companies, while 27 % of customers are rank 2 customers, meaning that around 93 % of Belgian non-financial firms are indirectly dependent on access to the global flow of goods and services.

Among exporting and importing companies, multinationals – companies which hold at least 10 % of the capital in a foreign company – form a sub-population numbering fewer than 1 000 companies in Belgium, but they employed around 20 % of non-financial private-sector employees in 2018. Like importers and exporters, multinationals depend on domestic economic activity for the development of their operations. Almost half of non-financial corporations (47 %), accounting for almost 55 % of employment in the private sector, are rank 1 or rank 2 suppliers of such global companies. Only just over 30 % of Belgian companies are not suppliers to multinationals.

Companies that engage directly in international trade have specific characteristics. There is a positive correlation between participation in international trade and productivity. On average, employees of an exporting firm are 28 % more productive than their peers in companies that are not exposed to the rest of the world through their domestic trade. This productivity gap rises to no less than 50 % if the company also imports. Globalised firms thus play a key role in creating domestic wealth.

In fact, the contribution of these companies goes beyond their own activities; they also play an important role in the spread of technological innovations.

*New technologies are helping to shorten production chains*

*A substantial proportion of domestic economic activity depends on foreign trade*

Chart 83

### Integration of non-financial firms in global value chains

(in % of the number of firms and of total employment in the non-financial sector, 2018)



Outermost circle: share in total number of non-financial corporations  
Innermost circle: share in total employment of non-financial corporations

Exporters/Importers/Multinationals  
Suppliers (upstream)/Customers (downstream)

- Rank 1
- Rank 2
- Rank > 2
- Non-exposed

Source: NBB.

1 Note: A rank 1 supplier is a firm that supplies directly to an exporter or multinational. A rank 2 supplier is a firm that supplies a rank 1 supplier, and so on. A rank 1 customer is a company that buys direct from an importer or multinational; a rank 2 customer is one that purchases from a rank 1 customer, and so on.

Because they trade with companies that are exclusively domestic, they are able to disseminate various innovations to their customers and their suppliers, whether these are new products, new production methods or new management techniques. Studies have shown that trading with globalised companies, and particularly multinationals, can have considerable spillover effects on the results of domestic companies. As the dissemination of innovation seems less than optimum, widening the productivity gap between the best-performing companies and the rest, these potential spillover effects are to be encouraged.

The highlighted changes could have a fundamental impact on Belgium's economy. Some Belgian export or import companies could see their international competitiveness deteriorate sharply if trade barriers are erected, or due to poor technological positioning in the face of new environmental constraints, forcing them to curtail their activities or exit the market. This could also lead to a breaking of the economic ties with some domestic companies that would no longer

### **Belgian Regions still most important market for domestic companies**

enjoy spillover effects from their indirect participation in international trade. At the same time, the new international trade environment could offer opportunities to other firms to increase their orientation towards other markets, thus opening up new domestic channels for the dissemination of innovations.

These processes of creation and destruction at international level are not new. Over a period of five years, the population of Belgian companies engaging in international trade changes radically, with thousands of firms withdrawing from the global markets and being replaced by a similar number of new entrants. Given the social costs associated with this process, however, it is crucial to ensure that the reallocation of activities at international level proceeds smoothly and quickly.

### **Despite frictions, there is a great deal of interregional trade in the domestic market**

An analysis of business typologies based on their intra-regional and interregional activities in Belgium<sup>1</sup> reveals that most firms – between 89 % and 91 %, depending on the Region – have only one base and are accordingly active in only one Region. This limits their ability to engage in economic relationships across regional borders. The majority of intercompany economic transactions take place within a relatively limited radius of about 30 kilometres<sup>2</sup>.

Yet compared with the international trade flows, the amount of trade between the Belgian Regions is substantial. This means that trade between the three Regions forms the core of the sales activities of Belgian companies, even when compared with the most important partner countries.

In practical terms, for establishments located in Flanders, sales to Brussels and to Wallonia come to 29 % of total extra-regional sales. By way of comparison, Germany accounts for 10 %, the Netherlands and France 9 %. The interregional market is even

**Table 16**

#### **Productivity differentials and spillover effects based on companies' degree of globalisation**

(in %, average over the 2000-2018 period)

	Average productivity differential <sup>1</sup>	Average productivity surplus due to closer integration into global value chains <sup>2</sup>
Exporting company	27.9	1.6
Importing company	21.8	5.3
Rank 1 supplier <sup>3</sup>	18.4	1.3
Rank 2 supplier <sup>3</sup>	13.0	2.8
Rank 3 supplier <sup>3</sup>	7.7	1.9
Rank 1 customer <sup>3</sup>	8.5	4.2

Source: NBB.

1 Compared with a business that is not exposed to the rest of the world.

2 Compared with the lower level of integration (exemple exporter compared with rank 1 supplier, importer compared with rank 1 customer, rank 1 supplier compared with rank 2 supplier, etc.).

3 A rank 1 supplier is a firm that supplies an exporting company. A rank 2 supplier is a company that supplies a rank 1 supplier, and so on. A rank 1 customer is a company that purchases directly from an importing company.

1 See Duprez C. & M. Nautet (2019), "Economic flows between Regions in Belgium", NBB, *Economic Review*, December, pp. 1–16.

2 See Dhyne E. & C. Duprez (2016), "Three regions, three economies?", NBB, *Economic Review*, December, pp. 59–73.

bigger for Walloon establishments, representing 44 %, compared to 13 % for France, 8 % for Germany and 4 % for the Netherlands. In the case of Brussels, the interregional market takes the lion's share, of as much as 57 %, compared to 7 % for the United States, 6 % for France and 5 % for the Netherlands.

The importance of the interregional market is further underscored by the fact that 6 % of companies export goods or services to other countries, while 55 % sell to at least one other Belgian Region. There are thus far more firms involved in trade between the national Regions than in international trade.

Firms with interregional trade relations are not affected by tariff barriers, though this does not mean that establishing trade flows is without its problems. Just like an export company does not export its production to all countries, so a Belgian company need not necessarily be active across the entire territory of Belgium. For example, 45 % of non-financial companies only do business in their own Region. As well as the costs of doing business with a distant customer or supplier – costs which also exist within one and the same Region – entering into trade relations across regional borders also brings additional costs. Poor command of the language in a different Region or insufficient knowledge of that Region's local market put a clear brake on trade – and in fact more so for trade in services than for goods. Divergent regulatory regimes can also pose administrative obstacles and impede trade between Regions, despite this benefiting both parties.

### **As the benefits of globalisation wear off, domestic productivity levers need to be strengthened**

With the prospect of a potential international reorganisation of production, it is important for Belgium to remain among the most competitive economies, and Belgian businesses will have to become more efficient, partly by bolstering their non-cost competitiveness. These changes will require stepping up the drive to intensify innovation efforts. To achieve this, the government will need to encourage as many firms as possible not only to invest in R&D, but to begin using new technologies developed by other companies, in a bid to address the problem of imperfect technological dissemination between companies.

### **Innovation is the basis of sustainable competitiveness**

Strong innovative capacity is one of the levers that can be used to strengthen non-cost competitiveness. Belgium's position within the EU has improved over the last decade, and it is now among the countries regarded by the EC as strong innovators, coming in just behind the European leaders in this field: Sweden, Austria, Germany and Denmark. R&D expenditure in Belgium amounted to 2.8 % of GDP in 2018; two-thirds of this investment was made at the initiative of the private sector. The average across the EU is 2.1 % of GDP. However, that still leaves Belgium lagging behind the target of 3 % of GDP set out in the Europe 2020 strategy. Despite its size, expenditure on R&D is also relatively concentrated, not just in terms of sectors (chemicals and pharmaceuticals industries), but also in terms of individual companies, in that this investment is mainly by large Belgian entities (31 %), and above all by foreign multinationals (58 %).

These figures confirm the key role that multinationals can play in the spread of innovation, for one thing because they are readily able to import new technologies developed at other group entities (expressed in spending on patents or licences), and for another because they are themselves major producers of domestic innovations. It is worth noting that the research activities of many of these companies are not entirely separate from the national research centres; on the contrary, these activities are generally organised in the context of technological clusters that are located close to major university centres and are therefore able to generate spillover effects from fundamental research to the development of new products or processes.

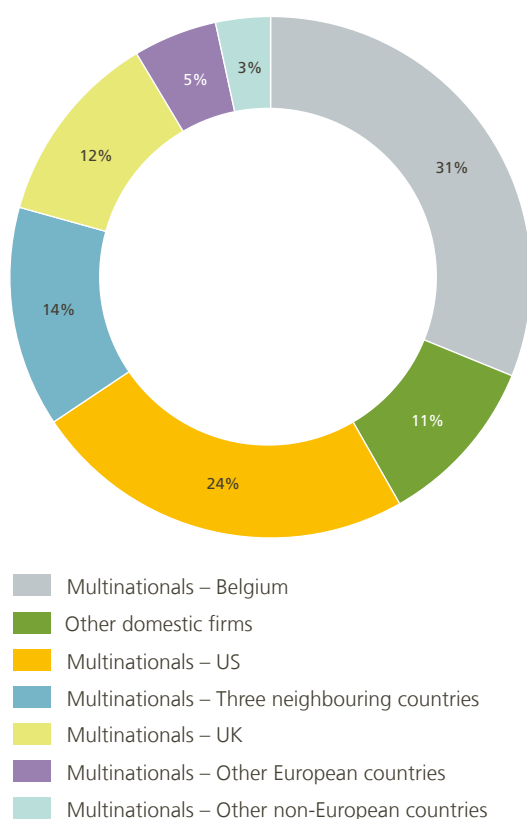
The concentration of R&D expenditure does, however, demonstrate that there is still scope to provide further stimulus for these investments, especially for small or medium-sized, non-globalised companies. The current type of government support for R&D investment, in which the emphasis is on grants and, in particular, on tax breaks, could be improved in order to reach and provide better targeted support and guidance for smaller and younger entities that are still looking to establish themselves in the market. While direct grants are useful for supporting fundamental research at an early stage of the innovation process, the advantage of tax incentives such as tax credits and reductions in employment levies is that they also benefit companies that are not yet profitable. An evaluation by the



**Chart 84**

### Foreign multinationals invest the most in R&D

(in % of total private sector R&D expenditure, 2015)



Source: Vennix S. (2019), *Research and development activities in Belgium: A snapshot of past investment for the country's future*, NBB Working Paper 373.

Federal Planning Bureau (FPB) of the tax incentives for R&D in Belgium showed that the systems for granting partial exemption from payroll tax on the salaries of R&D staff do lead to additional R&D activities<sup>1</sup>.

### The deployment of digital technologies is accelerating

Digital technologies are disseminated more quickly than many other innovations, both by companies and by citizens who take them into use more rapidly, and they are set to become even more important in the future. In 2019, Belgium enjoyed a relatively favourable position in the European digital landscape, still securing a place in the top 10 on the EC's Digital Economy and Society Index (DESI). This was achieved thanks to the high degree of connectivity, a product of the wide

availability of historical networks of fast and super-fast fixed and mobile broadband. However, the failure by the federal and regional governments to reach agreement on dividing up the proceeds of the spectrum auctions for the 5G mobile network – three-quarters of which have yet to be allocated – could put this leading position in jeopardy. The good general results achieved by Belgium are also linked to the fact that companies are increasingly making use of digital technology (e-business) in their business operations. Belgium takes third place in this regard, well above the EU average but below the Netherlands. Belgian companies are increasingly making use of the opportunities offered by the cloud: 31 % use these services, almost double the European average (18 %). Belgian businesses are also leaders in electronic information sharing. There is one caveat, though: not all companies use these technological advances to the same degree, nor do they all derive the same benefit from them. The most complex innovations are still in the hands of large companies, which also – especially those in manufacturing – tend to derive more benefit from those innovations through greater productivity gains<sup>2</sup>.

1 Dumont M. (2019), *Tax incentives for business R&D in Belgium – Third evaluation*, Federal Planning Bureau, Working Paper 04-19.

2 See Dhyne et al. (2018), *IT and productivity: A firm level analysis*, NBB Working Paper 346.

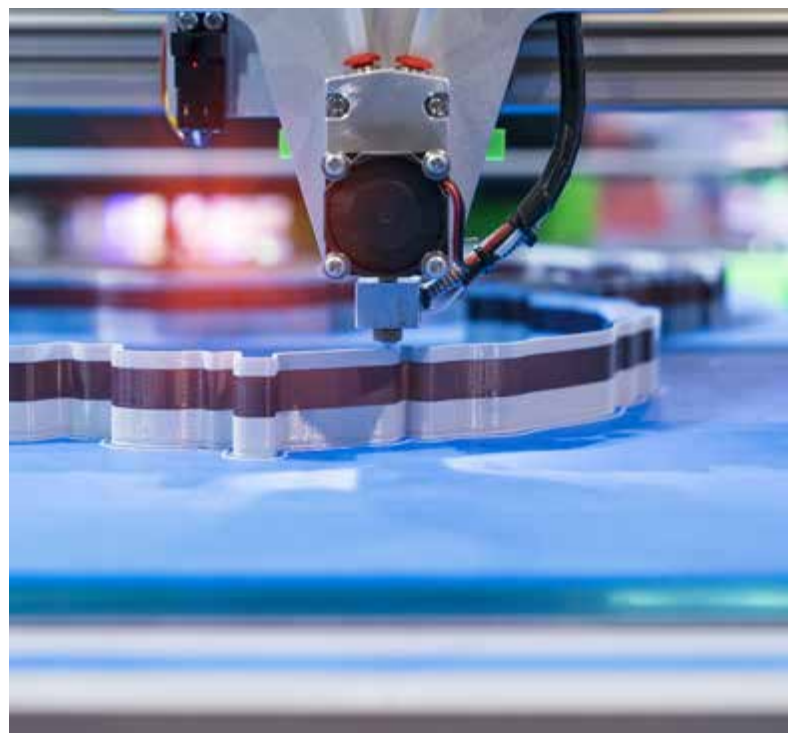
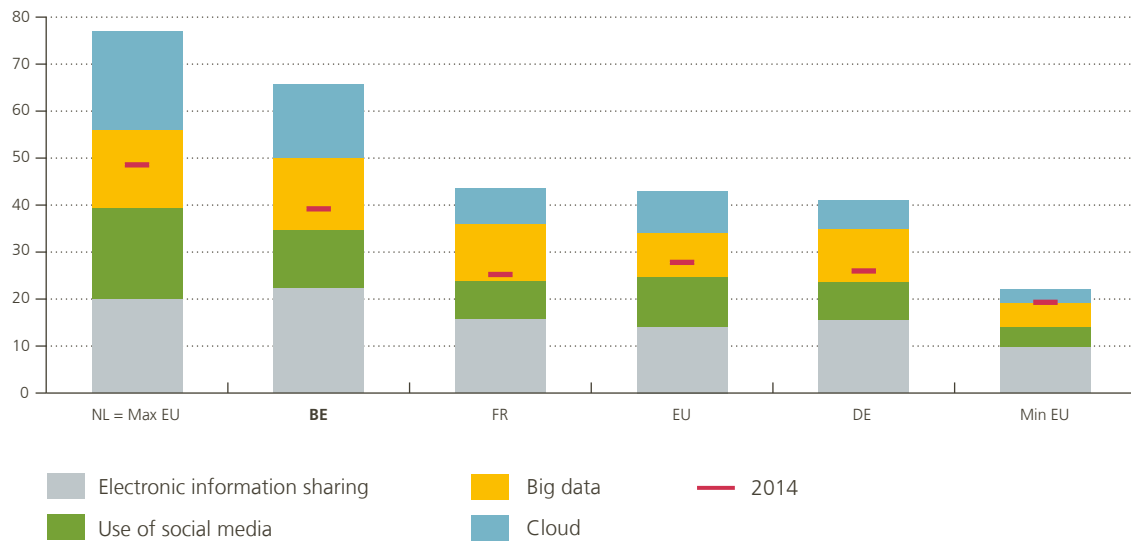


Chart 85

### Belgian businesses are embracing digital tools

(DESI index of the degree of integration of digital technologies in companies' operational processes, 2019)



Source: EC.

### The regulatory framework must support the development of economic activity, ...

A suitable regulatory framework is needed to meet demands such as consumer and worker protection, correction of market imperfections or to achieve general goals, such as environmental protection or respect for privacy. However, it is important to strike a good balance to prevent unnecessarily strict constraints putting a brake on the emergence of new, promising activities. Such constraints can also impact the choices made by investors if they are accompanied by disproportionately high costs, especially for the smallest businesses, and so discourage the development of new projects. Overly restrictive regulation thus strengthens the position of established businesses and technologies at the expense of potential newcomers and of new processes and products.

Although it is difficult to measure regulation statistically, by its very nature partly because of the diversity of areas and aspects that have to be considered, it is generally assessed using a compound indicator developed by the OECD. The indicator for the

regulation of product markets (the PMR indicator, revised in 2018) shows that the Belgian regulatory framework is fairly restrictive. This indicator assesses the regulatory context from the perspective of the distortions induced by State involvement and from barriers to entry. Compared with other countries, and even with EU Member States, the access restrictions in Belgium appear to be greater, both as regards the administrative burdens on start-ups, the barriers to international trade and investment and the barriers in service and network sectors.

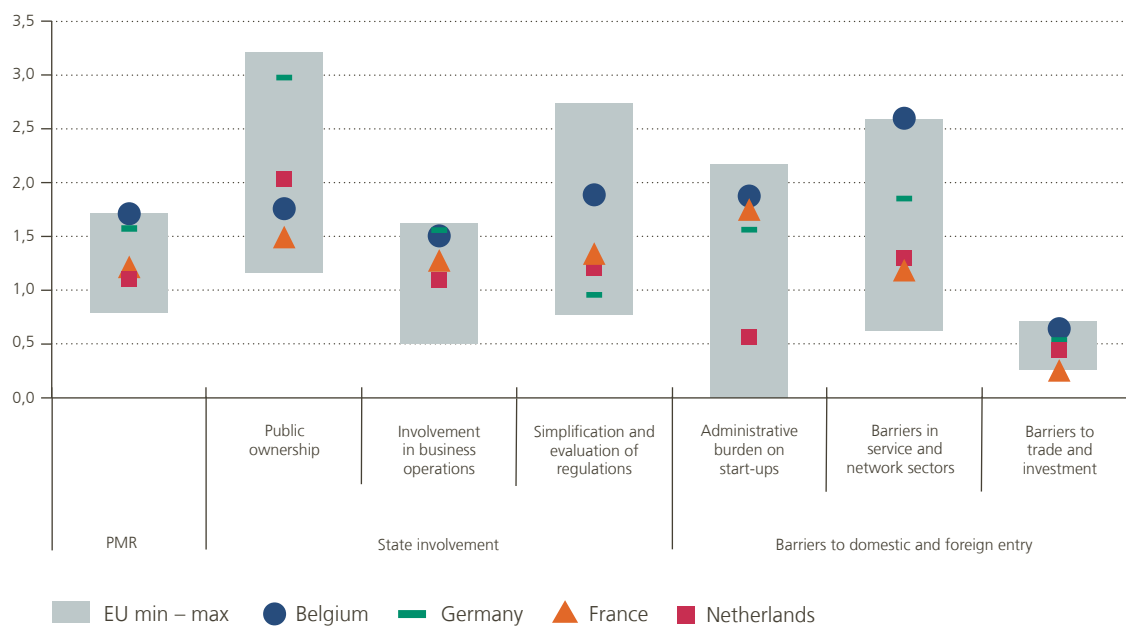
### ... encourage more competitive services...

Turning more specifically to services activities, Belgium's regulatory framework would appear to be highly restrictive for some of them when compared with its neighbouring countries and other European nations. In fact, the rules for architects and estate agents are the strictest in the EU15 countries. For accountants and lawyers, Belgium is among the group of countries that have most restrictions imposed, and it is really only civil engineers in Belgium that encounter few restrictions. Obviously, then,

Chart 86

### Regulatory context could do with improving

(PMR indicator, on a scale of 0 to 6, with 6 being the most restrictive)



Source: OECD.

Belgium has some scope to make the rules and regulations governing some professions more conducive to competition. Note that such rules and regulations do not merely influence the positions they govern: by creating dysfunction, they also get in the way of the smooth operation of activities

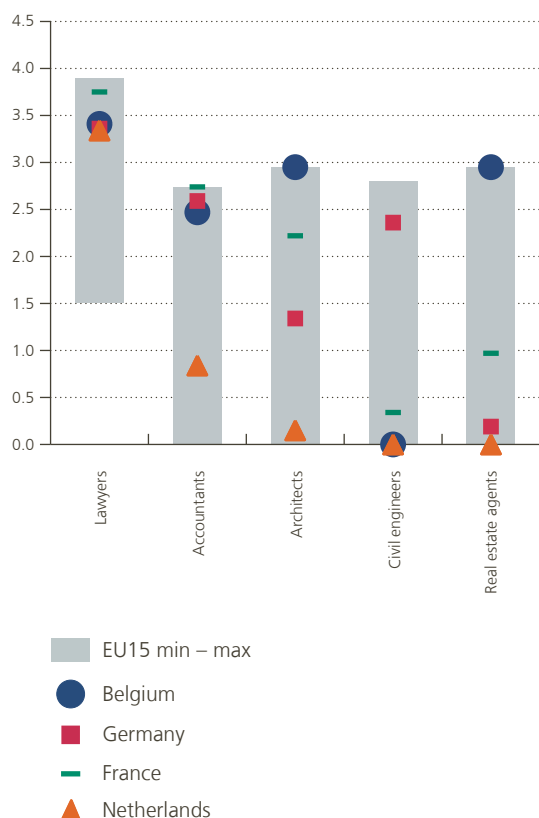
dependent on such services, and hence of the economy at large. A 2018 evaluation by the FPB confirmed that pro-competitive easing of the rules in some professions – i.e. for lawyers, accountants and architects – would prove a boon for productivity and economic growth.



Chart 87

### Rules governing professional services often stricter in Belgium

(on a scale of 0 to 6, with 6 being the most restrictive regulatory context)



Source: OECD.

### ... and fully leverage the potential of data exchange and digital transactions

Some emerging activities might well turn into sources of future growth for Belgium and should be nurtured for optimum development and full use of their potential. E-commerce is one of those rapidly growing areas, with the past two decades having seen the rise of online sales that create new opportunities for business and expand choice for consumers.

On OECD figures, Belgian companies generated 32 % of their turnover via online orders in 2018, one of

the highest ratios in Europe (just behind Ireland), compared with an EU average of 17 %. This share has surged in the past decade, widening the gap with the share of online revenues in France (22 %), the Netherlands (15 %) and Germany (14 %). This excellent performance primarily reflects sales underpinned by electronic data exchange and via websites between companies (B2B) and with the government (B2G), for instance on government tenders, whereas companies' sales to consumers (B2C) via websites accounted for a mere 3 % of turnover, a percentage comparable with Belgium's neighbouring countries. However, the digital transformation is not proceeding at the same clip across the board. Small firms, for instance, are falling behind: their participation in the transformation has gone up but is more limited. When these firms put new technologies in place, they need to address obstacles related to restructuring of their activities, acquire specific competences and keep the technology they use up to date.

A range of initiatives has helped to adapt the regulatory framework in such a way that it accelerates companies' digital transition even faster, such as the Digital Act, cyber security measures and a federal open data strategy. In keeping with regional strategies for smart specialisation, these measures mainly target manufacturing and some generic key technologies. Lastly, in April 2019, FPS Economy launched an awareness-raising campaign to encourage particularly SMEs and micro companies to start using digital tools and to get active in e-commerce.

Belgian private individuals buy nearly as much online from suppliers in other EU countries as they do from domestic suppliers. For purchases in other EU countries, this proportion is around twice the EU average. This can partly be explained by various obstacles in the development of e-commerce in Belgium. The small size of Belgium's domestic market and – perhaps even more so – its split into different regions based on the languages spoken by its consumers, plays a part in this, all the more so as consumers are able to access the same service offering the same facilities on websites in its neighbouring countries. In addition,

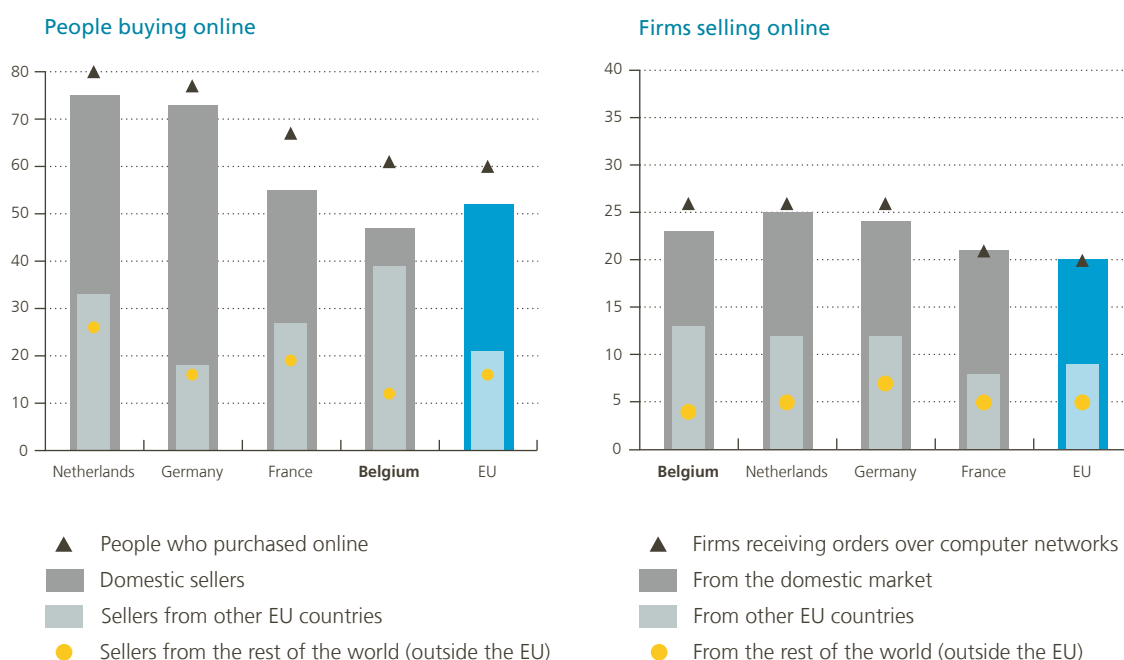
the Belgian logistics sector is struggling with a whole host of issues. Belgium ranks significantly lower than its neighbouring countries in the UNCTAD B2C E-commerce Index, which tracks economies' ability to develop e-commerce. The index shows that the

### *E-commerce opportunities not fully leveraged*

Chart 88

### Online transactions in the domestic and global markets

(proportion, in %, of people between the ages of 16 and 74 that have made online purchases in the past twelve months, by country of sellers, and proportion, in %, of firms that have sold online in the past calendar year, by destination of sales, 2017-18)



Source: OECD.

Note: As the various categories are not mutually exclusive, the sum does not necessarily equal the total individuals/firms that made/received sales/orders over computer networks.

quality of parcel deliveries is particularly lagging in Belgium (which scores 72), compared with a much better score for the Netherlands (94), Germany (91) and France (87). It would also appear that logistics resources in these countries have developed faster and more cheaply. Relaxing the rules governing night-time work and flexible hours might go a long way towards addressing this logistics weakness, allowing the expansion of e-commerce with physical delivery of goods.

### The regulatory approach should be coherent, at both global and regional level

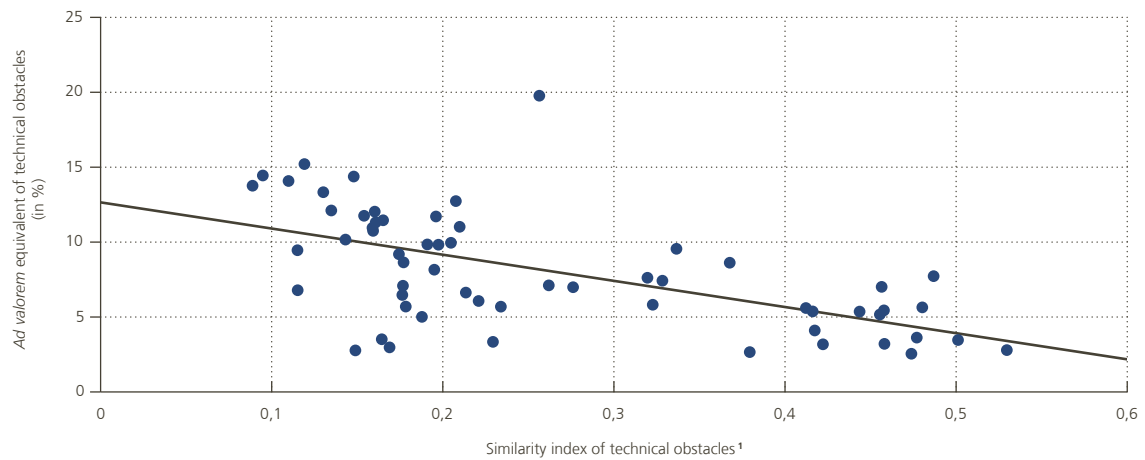
Even within Europe's Single Market regulatory obstacles differ, but the OECD argues that more coordinated regulation by the various governments can help push down trade costs. Indeed, in the European market, whenever a Member State creates more obstacles – or imposes unnecessarily restrictive rules – which only apply to it and

deviate from its trading partners, there is a greater risk of it seeing trade flows deflect to its neighbours.

The necessity to align regulatory frameworks applies equally at the Belgian level. Trade between companies not incorporated in the same Region – and especially between Flemish and Walloon companies – can be stymied by a whole range of factors, with rules and regulations as well as the institutional context playing a part. Under the sixth State reform, a range of market access powers were transferred to the Regions. This fragmentation of powers between regional entities has led to a series of regional regulations, which in the best case just spell more rules, but in the worst case imply divergence. For economic agents looking to retain access to their markets, this regional dimension of the rules – just like differences in international rules – creates domestic obstacles to trade, such as additional expense to keep abreast of developments, to conform with and apply these in daily management, and possibly costs for different permits to carry out selected activities.

Chart 89

### Aligning regulatory frameworks leads to lower costs due to non-tariff barriers



Source: OECD (2018), *Economic Outlook*, Volume 2018 Issue 2, OECD Publishing, Paris.

<sup>1</sup> Regulatory similarity is determined by scoring if a country pair has the same measure on a given product at six digits of the Harmonised Commodity Description and Coding system, with account being taken of sanitary and phytosanitary measures and technical obstacles to trade. The scores are subsequently aggregated and normalised to a number between 0 (heterogeneity) and 1 (similarity).





## A swift reallocation of resources between companies is necessary

To be part of the economy's transformation process, businesses must be able to reinvent their activities, new players must find their way into the market and less strong performers will need to be able to exit easily. However, Belgium's business community is relatively inert, and numbers of new businesses and business closures are few and far between. Rates for gross business creation and gross business closures, relative to active companies, are among the lowest in the EU, at 6.4 % and 3.3 % respectively in 2017 (comparable EU figures are 10.7 % and 8.7 %). This suggests that the reallocation of resources has fallen behind.

Graydon's most recent data on business creation point to an upward trend between 2016 and 2019, although the definition it uses – which includes the resumption of activities – may deviate slightly from the economic concept of business creation. These recent developments are encouraging, but the gap with other countries is narrowing only gradually. The

past couple of years have seen the government take

a range of measures, of which the rewards are beginning to show. Various federal and regional initiatives are aimed at revving up the entrepreneurial engine through financial support – Start-Up Plan, for example – or by boosting the image of entrepreneurs and an entrepreneurial culture (student-entrepreneur status). These drives aim to raise the number of new companies founded by young entrepreneurs, initially

in new sectors of activity, and particularly to foster their later-stage development by adapting finance to the various stages of expansion. The percentage of young, high-growth firms or gazelles, that accounted for nearly 3.5 % of business creation in the 2000s, also needs to go up. These players are active across all sectors of the economy and have made a positive contribution to productivity growth in the past decade and are thus helping to transform the Belgian economy.

Obstacles to business closures in Belgium, which the OECD reckons reflect a significantly stricter framework than in other countries, have now been eased. For one thing, new legislation to make it easier to wind up companies came into force in June 2017, expanding the number of situations in which a company can be dissolved. The new law accelerated the legal closure of dormant companies, especially at the initiative of the law courts in Wallonia. New insolvency laws came into force on 1 May 2018, with a new book added to the Belgian Code of Economic Law.

The definition of a company was extended and any organisation meeting this definition can now file

for insolvency. In addition, both the government and some law courts, particularly the Brussels courts, are proving increasingly willing to track down and stamp out any corporations engaged in fraudulent practices. This has caused a surge in the number of bankruptcies as registered by Graydon in 2019, which derived more from the changes in the law than from a weakening economic climate.

### *First positive signs of reallocation between companies*

## 6.3 Towards a climate-neutral economy

### Meeting commitments efficiently

Another key challenge is the much-needed transition to a climate-neutral economy. Production and consumption systems should not just meet today's needs but also ensure that future generations prosper. The COP21 commitments at Paris in 2015 aim to reduce the concentration of greenhouse gas emissions to the atmosphere in order to limit global warming to well below 2 degrees Celsius compared with pre-industrial levels, and pursue efforts to limit the rise to 1.5 degrees in order to avoid the hardest, even irreversible consequences of climate change.

Against this backdrop, the EU has set itself climate action goals to reduce emissions, improve energy efficiency and develop renewable energy sources. It had initially set targets for 2020 – 20 % of energy from renewable sources, 20 % reduction in greenhouse gas emissions and a 20 % improvement in energy efficiency – which it had later tightened up for 2030. In the wake of the Paris Climate Agreement, it revisited its objectives for 2030, deciding that the production of renewable energy sources should amount to at least 32 % of final energy consumption by then, while its objective for energy efficiency entailed a cut in usage of at least 32.5 %.

And lastly, by 2030, greenhouse gas emissions in the EU should be at least 40 % lower than in 1990. In practical terms, the EU converted this general goal of reducing emissions into objectives relative to 2005, by making a distinction between, on the one hand, European goals for the biggest greenhouse-gas-emitting industries that take part in the European emissions trading system (–43 % in emissions) and, on the other, binding, specific goals for each Member State for those sectors that do not participate in the emissions trading system, including building and transport. For Belgium, it decided

that those sectors must cut their emissions by 35 % relative to their levels in 2005.

To meet the EU's energy and climate targets for 2030, EU Member States must each establish an integrated National Energy and Climate Plan (NECP) for the 2021–30 period. It aims to provide clarity and visibility based on accurate data about the instruments used to achieve these targets, as well as about security of supply, integration into the European energy market, transition research and innovation, and competitiveness. This should help identify the scope and the extent of the required additional investment and encourage the use of private resources. In December 2018, Belgium put a first draft NECP to the European Commission for review, comprising the commitments of the Belgian federal government and Regions; based on the EC's analysis, the Plan was refined and added to at the end of December 2019. Belgium's final NECP contains an extensive description of these planned measures' impact relative to the goal of a 35 % reduction in greenhouse gas emissions by 2030. The Brussels Capital Region's quantifiable measures work out at a 40 % reduction in greenhouse gas emissions compared with 2005 levels, whereas those planned

by Wallonia would cut emissions by around 37 %.

Both Regions are working towards a carbon-neutral

### *The government's climate commitments demand action*

society by 2050, but that objective has not been translated into a concrete action plan at this stage. The Flemish plan lists a series of measures to cut the greenhouse gas emissions in its territory by 32.6 %. The Plan also spells out a pledge to take additional measures – particularly in terms of technological innovation – to bring Flemish objectives into line with those of the EU. These proposed measures cover the entire spectrum – mobility, buildings, the circular economy, renewable energy sources, etc. – within the constraints of their respective powers and take into account the specific territorial characteristics and economic fabric

of each individual Region. At the federal end, the plan is notably proposing to invest more in rail, to scrap subsidies on fossil energy sources by 2030 and to introduce environmental energy levies on buildings (together with the Regions).

At the European Summit in December 2019, the EU ratcheted its environmental ambitions up a couple more notches. The European Green Deal, an initiative spearheaded by European Commission President Ursula von der Leyen, aims to make Europe the first climate-neutral continent by 2050. Achieving this ambitious goal would have significant consequences for all EU actors, including Belgium. The Commission aims to put in place all available levers and to make sustainability key in all European Union measures to drive a fair and inclusive transition for the most vulnerable countries, sectors and individuals. A raft of law-making proposals will be tabled to offer investors predictability and to help make the transition irreversible. Decarbonisation of energy and mobility systems will need to be continued, in terms of both equipment and behaviour, and energy consumption in buildings will

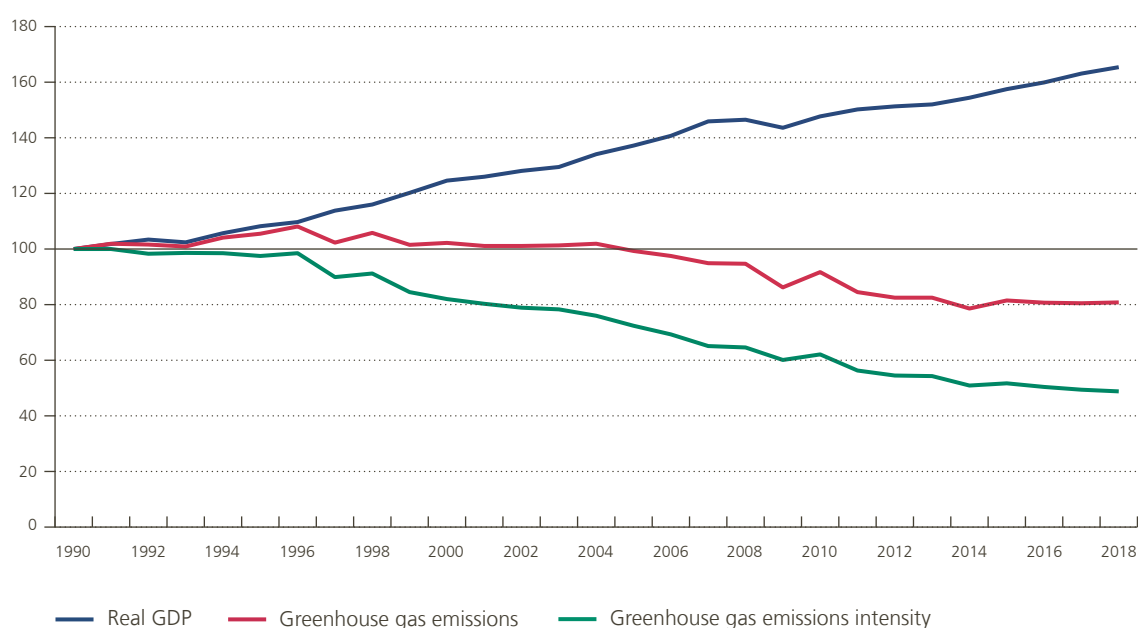
need to be better managed through renovation. The Commission has also adopted an industrial strategy to help create a solid industrial base in Europe to support the transition and, as a result, economic activity that creates sustainable employment. In fact, by striving for global leadership in terms of sustainable products, services and business models, European industry might well gain itself a competitive edge. The Commission is considering the introduction of a carbon border adjustment mechanism, which would ensure that the price of imports reflects more accurately their carbon content. The aim is to reduce the risk of carbon leakage, i.e. either because production is transferred from the EU to other countries with lower ambitions for emission reduction, or because EU products are replaced by more carbon-intensive imports.

Through this new growth strategy, the European Green Deal aims to face down the challenges of climate change and limit environmental degradation. To date, progress in reducing greenhouse gas emissions has made it possible to decouple emissions from GDP trends, but these much more ambitious commitments and goals for the

Chart 90

### Trends in GDP (in real terms), greenhouse gas emissions and the intensity of those emissions in Belgium

(index 1990 = 100)



Source: EC.

decades ahead require far bolder measures – there are no one-off or easy ways to achieve these objectives. Responsibility should be put squarely with consumers and manufacturers of goods and services: they must change their behaviour in favour of activities, equipment and products that promote sustainability. The environmental cost of their decisions needs to be passed on by sending price signals that reflect the carbon emissions related to their activities.

### Government must guide these transitions and have the necessary levers

Government has various levers it can use to encourage appropriate behaviour, i.e. switching to goods and services with a low carbon footprint, saving energy and implementing low-emission technologies. Environmental taxation through exemptions or taxes on carbon emissions, emissions trading, and subsidies granted for selected activities – these are all intended to influence relative prices and choices by economic agents. By approving technical standards for equipment and buildings, and by labelling products, government can focus energy savings more directly. More broadly, the introduction of energy-related education and advisory programmes for the public and companies could help promote decent behaviour and choices. The government must at all times make sure the burden is equally and fairly shared, if these measures are not to be rejected by the people.

Just as in every other area in Belgium, the relevant powers are split across various levels. The federal government is responsible for matters at the national level (such as security of energy supply, infrastructure for storage and transport of energy, energy labels for products, and tax on fuels), while the Regions address local issues (electricity and gas distribution, development of renewable energy sources, and implementation of rational energy use solutions such as insulation standards for buildings). The federated entities must consult efficiently to ensure a coherent approach when implementing these measures. Moreover, achieving these environmental objectives requires concrete measures in countless other areas – e.g. transport infrastructure and intelligent mobility, urban planning, digital infrastructure, teleworking, tax on non-cash benefits and

income, R&D – in order to lead the various economic agents towards a carbon-neutral society.

### Significant investment needed to achieve objectives

Sound application of these levers should help economic stakeholders to make appropriate choices, particularly in the area of infrastructure investment and low-emission technologies. Major investment will be needed if the objective of carbon neutrality by 2050 is to be achieved. When setting out its long-term strategic vision in “A Clean Planet for all” in November 2018, the Commission noted that achievement of this objective would require annual investment in the energy system and related infrastructure – just for investment related to the energy use and performance of buildings, equipment and industrial processes – to the tune of 2.8 % of GDP between 2031 and 2050. Compared with a scenario that only aims to achieve the previously agreed energy and climate targets for 2030, this boils down to additional investment of around € 170 billion a year (0.9 % of GDP). These estimates are similar to those cited in an IPCC special report on the impact of global warming of 1.5°C above pre-industrial levels, which put the annual investment requirements for adapting the worldwide energy system between 2016 and 2035 at around 2.5 % of global GDP. In addition, a major transport drive will be needed, costing nearly 4.5 % of GDP, of which 4.1 % was already incorporated in the objectives for 2030, meaning that the Commission puts the extra effort to achieve carbon neutrality at a mere € 62 billion, or 0.3 % of GDP<sup>1</sup>. The reference scenario already envisaged 58 % of vehicles to be electric, hybrid or fuel cell by 2050. A carbon-neutral scenario would see the proportion of vehicles with internal combustion

engines fall to 1 % of the fleet, and hybrids to 2 %. Replacing lorries and buses is less straightforward, and the proportion of such vehicles still running on internal combustion engines is

pegged at 60-65 % by 2050, with the targeted carbon neutrality approached by (with the exception of electric vehicles) fuels with lower carbon content such as biomethane, hydrogen and other synthetic fuels.

<sup>1</sup> See European Commission website: [https://ec.europa.eu/knowledge4policy/publication/depth-analysis-support-com2018-773-clean-planet-all-european-strategic-long-term-vision\\_en](https://ec.europa.eu/knowledge4policy/publication/depth-analysis-support-com2018-773-clean-planet-all-european-strategic-long-term-vision_en).



Given the massive amounts involved, investments will have to be efficient, relating costs to the expected returns in terms of curbing environmental externalities. Great uncertainty remains over current and future technologies, but doing nothing would not merely pose heavy challenges in terms of biodiversity, the safety and security of the world's population and the effects of major climate-related events: there would also be a heavy economic price to pay in the long term, even if the world's advanced economies were to escape relatively lightly. In its 2015 study "The Economic Consequences of Climate Change", the OECD puts the losses of doing nothing at between 0.2% and 0.6% of GDP by 2060 for the EU and North America, but much higher in other parts of the world. However, the current economic situation offers an opportunity to make these investments at lower cost at this point in time: significant financial resources can be tapped into, as total available savings are quite substantial at the moment (see box 1) and the low interest rate environment makes for favourable conditions to invest. Although primarily important to ensure sustainability in the longer term, this green investment could also – (partially) offset the negative effects of higher energy prices on economic activity and the competitiveness of the European economy.

*A stable and predictable regulatory framework to secure the involvement of all stakeholders in the energy transition*

Transition investment is a matter for both the government and the private sector. A lot of the onus will be on housebuilding and the services industry to improve the energy performance of machines and buildings, and to adapt transport resources to more carbon-neutral mobility. Industry and the energy sector will have to continue to adapt their processes. But various authorities, including at the European level, will also have to step in and shoulder a share of the infrastructure spend, either through direct investment or by implementing specific finance arrangements, such as public-private partnerships. Yet it is up to the public sector to set the direction:

the government must design a stable and clear regulatory framework which guarantees the continuity of agreed commitments and guides the choices made by

private individuals. Companies and households, which will have to do the bulk of the investment, should be given ample incentive to make the desired decisions in order to innovate and accomplish the transition as efficiently as possible. The thing to avoid is that they strike out on a course today that will no longer be allowed at a later date and/or would leave them stuck with unsustainable practices and investments, and running the risk of no longer being able to divest stranded assets, i.e. assets whose value would fall more rapidly after a change in the law. After all, clear impetus from the government will have to change the mindsets of all those involved.

## An opportunity to improve existing infrastructure and make it sustainable

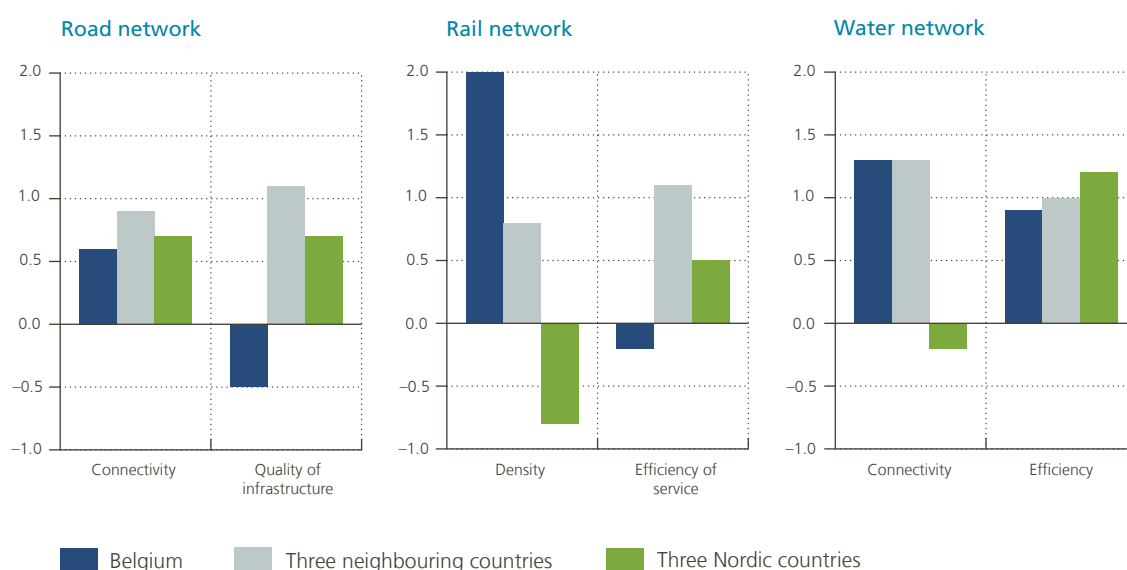
A proportion of this investment will have to be made irrespective of the transition to a zero-carbon economy, including spending on infrastructure. After all, high-quality infrastructure is a necessary precondition for companies to run their business operations and trade as normal, while also keeping the country attractive. And although Belgium has relatively dense transport networks – in terms of the distance between two points, the rail network's density per kilometre, the availability of port and airport infrastructure – their quality would appear to be declining. Infrastructure has a crucial role to play, as it ensures smooth connections between economic agents particularly in terms of logistics, in which Belgium serves as a European hub. In a broader sense, networks are key to the mobility issue, as ever-growing queues on the roads are hampering economic activity and workers' commutes. Such negative externalities erode Belgium's attractiveness and require a coherent policy across the country. Digital infrastructure is just as important: the availability of stable and up-to-date digital networks is very much among the criteria companies consider when investing in a country.

In part, these considerations tally with the outcomes as put down in the National Pact for Strategic Investments released in September 2018. This found that infrastructure needed improving and updating to secure a prosperous, inclusive Belgian economy that is sustainable in the long term. The Strategic Committee tasked with the work involved in the Pact identified priority investment and measures directly supporting these investments in six areas – digitalisation, cyber security, health, education, energy and mobility. To simplify coordination between the various policy levels, the federal government and the governments of the federated entities have set up an Interministerial Conference for Strategic Investments. This Conference is supported by the Strategic Committee in an advisory role and by two task forces that prepare the work, one focusing on country-wide investment projects and the other on improving Belgium's investment climate. In view of political circumstances, it was decided in March 2019 to concentrate on four cross-cutting projects already mapped out in the previous exercise, and so coordinate government investment policy better. Two more projects were added to the list, one pertaining to the environment – waste management and the circular economy – and the other to energy recovery from waste.

Chart 91

### Transport infrastructure is available in Belgium, but quality can be lacking

(around EU average standardised index)



Source: WEF.



Regarding cross-cutting projects, the first thing to do is to ease the investment process by harmonising the regulatory and administrative framework, creating greater legal and fiscal security, and to simplify licensing and review procedures, which are currently so complicated that they can hinder the actual implementation of major infrastructure projects. Firstly, this implies improved inter-federal coordination towards funding these projects, together with European authorities, to make it easier to tap into capital from both private sector, governments and Europe; and secondly, it means creating public-private partnerships that make it possible to invest without abruptly adding to public debt. This is being partly addressed by promoting a shift in public spending to sustainable investment that targets for instance more efficient public services with a view to repeated savings. The aim is to cleverly promote and finance strategic investments that can boost the economy's growth potential, while still running a healthy and responsible budget.

### **Belgium also requires a sustainable and reliable supply of energy**

In its transition to a zero-carbon economy in future, Belgium will face a huge challenge to bring its energy system up to scratch to meet its commitments, while at the same time guaranteeing the continuity of daily energy supply at affordable prices. Both energy production and consumption have a role to play here. Lower energy consumption has unmistakable economic advantages, supports the security of supply and significantly reduces greenhouse gas emissions. In real-life terms, this means a transition to a stock of low emission buildings, environmentally friendly transport and energy-efficient industry and services.

Fossil fuels consumption will have to come down sharply if emission targets are to be met. With the cut-off date drawing ever nearer, Belgium must also meet the conditions of the Law passed on 31 January 2003 on the gradual phasing out of nuclear energy by 2022-25, which was confirmed by the federal government on 30 March 2018 as part of the inter-federal energy pact. The dismantling of around 5.9 GW in nuclear power capacity spells a significant change in the electricity mix. In 2019, natural gas accounted for 27 % of power generation

in Belgium, whereas nuclear energy still made up around 48 % of total electricity production. Investors must be able to count on a stable legal framework to make their decisions and help guarantee electricity provision in Belgium after 2025, in view of the time it typically takes for major energy projects to start generating electricity and given the time required to obtain the necessary permits and build installations.

As it gradually moves away from power produced by carbon-based fuels, and with the decision on the nuclear energy phase-out, the country must steeply push up power generation from renewable energy sources, such as wind and solar. According to the International Energy Agency, the levelised cost of electricity generated by those sources came sharply down between 2012 and 2017: by 65 % for photovoltaic solar, by 15 % for wind on land and by 25 % for wind at sea – with a further 54 % drop predicted for offshore wind between 2018 and 2040. However, the integration of these types of generation units into the grid requires adaptation of transport and distribution infrastructure to more decentralised generation (supported by increasing digitalisation of equipment, among other factors), and this is making it harder for alternative energy supply sources to compete with other, more centralised generation processes.

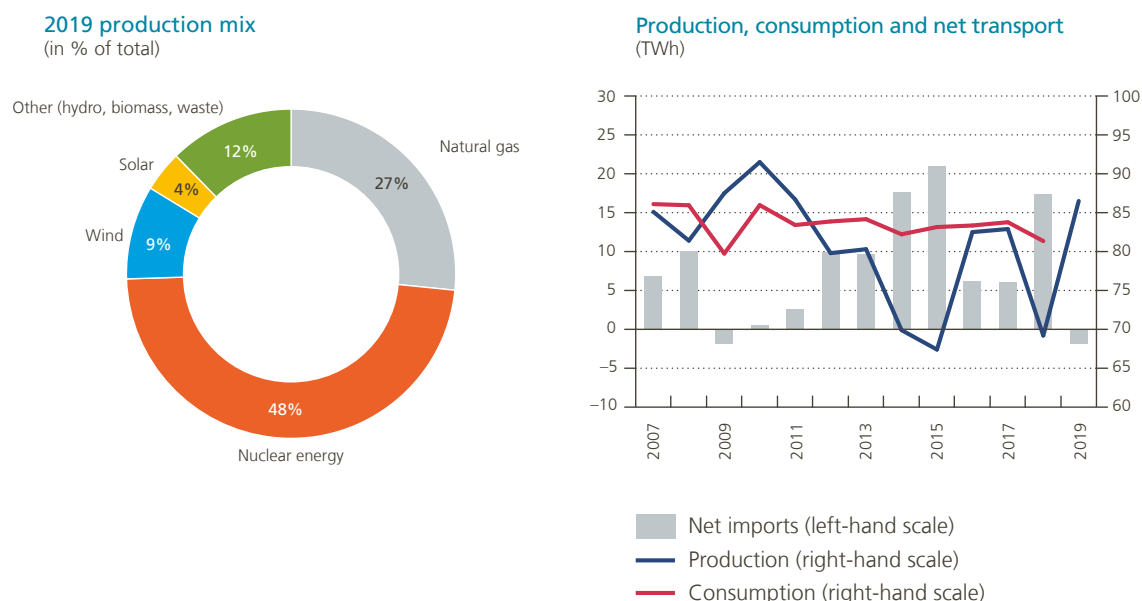
Even if an adequate renewable generation capacity is built, its availability will depend on the weather, without any guarantee of an uninterrupted energy supply. Intermittent flows require a standby presence of flexible capacity,

### *Changing the energy system while retaining constant and affordable supply*

which can take over generation when other sources are inadequate and maintain a balance between production and consumption. Unless the decision to close down nuclear energy is reversed, it will therefore be necessary to install and/or keep operational production, storage and demand management capacity. That is why, in April 2019, the Belgian government approved the Law on the organisation of the electricity market putting in place a capacity remuneration mechanism. Selected by tender under this mechanism, capacity suppliers are paid to make capacity available. In the absence of mature technical solutions for the capture, use and sequestration of carbon, guaranteeing security of supply by installing additional capacity – particularly in the shape of gas-fired plants – will make it harder to meet greenhouse gas emission targets.

Chart 92

# A zero-carbon electricity system requires a major adjustment



Sources: Elia, FEBEG.

A final way to offset energy shortages – temporary or otherwise – is to import electricity. Belgium’s central position in Western Europe and good connections between the networks of the various European countries can help it to benefit from the development of a wide European power grid. In practice, Belgium has for years been a structural importer of electricity to meet a proportion of its electricity requirements. In fact, the country has been a net importer since 2000, with imports accounting for about 10 % of Belgian consumption on average. In 2014, 2015 and 2018, this figure was even higher – between 20 % and 25 %, because the domestic nuclear power plants were unavailable. If it fails to put in place enough (renewable) capacity to meet future electricity demand, Belgium will inevitably have to import more electricity. The development of the various networks and optimisation of connections between them based on the needs and requirements of the power grid encourage cross-border electricity traffic, and, by joining forces, countries reduce the risks related to the intermittent nature of renewable energy sources. In other words, international cooperation is crucial. That said, being structurally more dependent on imports has its own risks. If domestic production

is not enough to meet demand – in the event of unexpected electricity production or transport interruptions, or due to spikes in consumption – purchase prices on the European electricity market can shoot up on scarcity. And even if other – neighbouring – countries have plenty of power to spare, systematic and extensive use of interconnection capacity may mean that additional imports prove impossible at critical moments, potentially disrupting energy distribution. Generally speaking, resorting to imported electricity increases dependence on infrastructure in neighbouring countries, whose availability is not always guaranteed, which could jeopardise Belgium’s electricity supply.

It is therefore advisable to avoid the perception among domestic and foreign investors that security of supply is inadequately assured in this country, and it is essential for its reputation and attractiveness that the quality of the electricity supply is guaranteed. According to the World Economic Forum, Belgium’s power grid is seen as highly reliable for its high voltage stability and few power outages, which in 2019 put it in 12th place in a league table of 141 countries – a perception that has, however, steadily deteriorated in the past few years.

## 6.4 Human capital: building the future through quantitative and qualitative improvement of labour supply

Digital transformation, population ageing and climate change are radically transforming the economy, holding out fresh opportunities for growth but at the same time presenting new challenges for labour as a factor of production.

Human capital is the bedrock for the success of any such change. If the economy is to adapt and change, it is of prime importance that the labour force is given the opportunity to acquire the requisite skills and subsequently use these skills efficiently. Initial educational attainment and permanent education serve as essential leverage, but other aspects also play a part, such as smooth transitions in the labour market and the size of the economically active population.

The population might better adapt to the changing nature of work if the labour market and the education system were to function better. At a higher level, a quantitative and qualitative improvement in the labour supply benefits production capacity and makes the economy more resilient. Provided it comes with decent employment conditions and pay, having a job means a smaller risk of poverty, more social inclusion and a source of income.

### **Changes in the labour market drive changes in job content and skills required of the labour force**

The digitalisation of manufacturing processes is not without its consequences for the labour market. For one thing, there is the substitution effect – some tasks are completely taken over by machines. For another, it has complementary effects, when machines aid humans in doing their jobs. This process has led to concerns over negative effects on employment. Granted, total job numbers have surged in the past five years, but the continuation of this trend is not at all assured. Net job losses are no inevitable phenomenon, but this is a risk the labour force and companies should prepare for.

Wider use of digital techniques has caused polarised employment: the proportion of highly-skilled and, to a lesser degree, low-skilled jobs in total employment has risen, while the medium-skilled have seen their proportion shrink. That said, in 2018, around 40 % of jobs still qualified as medium-skilled, compared with 10 % at the low-skilled end.



Low-skilled jobs are safeguarded because of people-based services or local services, while some are created as a result of digital technology. The sharing economy is likely to grow further but it currently represents only a tiny share of the total.

Offering tremendous flexibility, it provides fertile ground for side jobs. Some in the labour force might actually prefer this set-up, causing total employment levels to rise, but these jobs may also create a greater degree of vulnerability, particularly if they substitute regular employment entitling them to better social security cover.

This polarisation may lead to crowding-out effects, with medium-educated employees taking on lower-skilled jobs if they lose their own jobs, weakening the position of the low-educated in the labour market (people with a lower secondary education certificate at most) even further. Their unemployment rate remains high, at 13.2 % in 2018, compared with 6 % for the medium-educated and 3.5 % for the highly-educated. In the 20-64 age group, those in work that have no more than a lower secondary education certificate account for an increasingly smaller percentage of the corresponding population – currently standing at 45.6 %. And when they do have jobs, these are more often more uncertain and worse-paid jobs than for other groups, or part-time jobs that see them working fewer hours than they would actually like to.

It is crucially important, then, that these people – as well as others with different profiles – get support to acquire the skills they need, as careers are lasting longer and undergoing rapid transformations.

### **Skills system needs improving**

Drawing on a series of 15 indicators, the European Skills Index (ESI), developed by the EU's European Centre for the Development of Vocational Training (Cedefop), highlights which factors need to be combined to improve a country's skills system.

The ESI builds on three pillars, each of which measures an aspect of the education and skills-matching systems. The skills development pillar represents training and education activities: its indicators are the pre-primary pupil-to-teacher ratio; the proportion of the population that has an upper secondary qualification and above; average PISA scores for reading, maths

and science; recent training; the number of students in vocational education and training (VET); and the proportion of people with high-level computer skills. Skills activation concerns the transition from education to employment and includes aspects such as the percentage of early leavers from training; recent graduates in employment; and the activity rate for adults (25-54 years) and young people (20-24 years). Skills matching is all about the successful utilisation of labour potential and measures long-term unemployment; the number of people working on an involuntary part-time basis; the overqualification rate; the proportion of low-wage earners (employees earning two-thirds or less of the national median gross hourly earnings); and, lastly, the extent to which employees' educational attainment levels match their jobs.

The overall score reflects how a country is performing on the various components that make up the ESI. Index scores range from 0 to 100; the higher the score, the better the result, and the difference between the score a country achieves and 100 points indicates the margin for potential improvement. Belgium's overall score suggests that it is doing relatively badly, which is attributable to various sub-dimensions, but particularly to the gaps in skills activation. Going by the three ESI pillars, various areas may be highlighted.

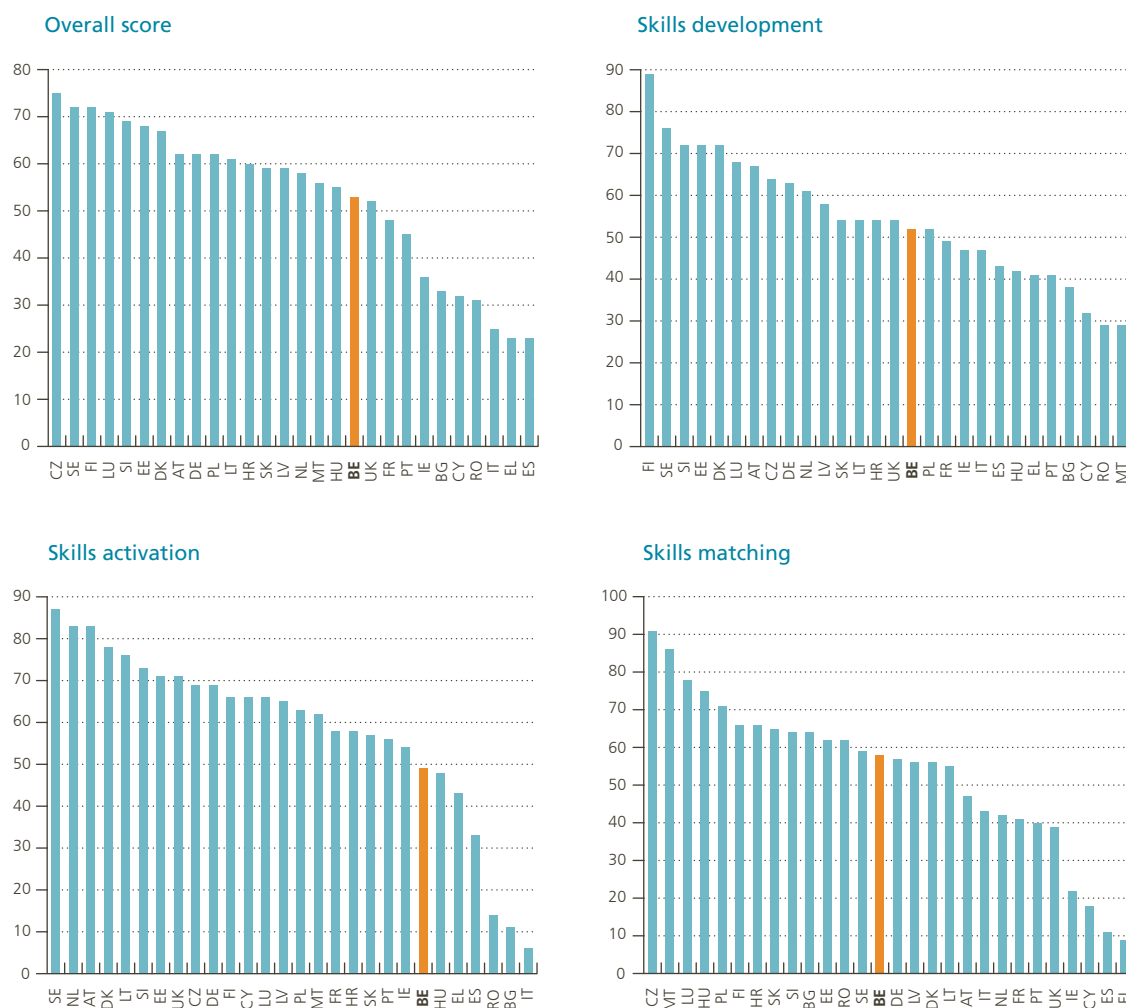
### **Initial education and lifelong learning are essential aspects of skills development**

How well an education system does is often measured using the OECD's PISA programme, the latest results of which were released in December 2019. On reading, the key subject tested in this latest edition, Flanders still clocks up a score ahead of the OECD average (502 compared with 487), whereas the French Community lagged a little behind at 481. Flanders is also still doing a lot better than the OECD average on maths and science. French-speaking students improved their maths scores slightly and these are now higher than the average among OECD countries. Their science performance is a bit below the average in the other OECD countries and remained stable relative to previous cycles. That said, the Flemish average has been persistently and significantly falling on all three subjects, since PISA scores began. For reading, a skill that

Chart 93

## European Skills Index

(scores from 0 to 100, 2018)



Source: Cedefop.

has been tested since PISA was first launched in 2000, the decline is now as much as 30 points. Coming from much lower levels than the Flemish Community in 2000, the French Community started moving down in 2012 and has since lost ground by 16 points.

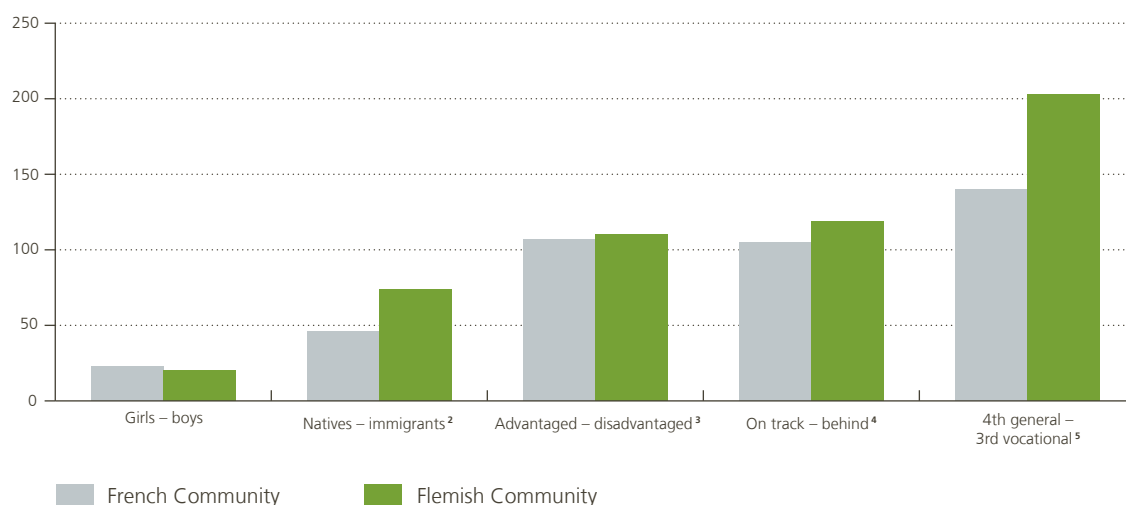
Inclusive growth that guarantees access to employment for as many people as possible requires an education system that is itself inclusive and high-grade. However, all too often, schools are places where inequalities are reproduced, and socio-economic background remains the key explanatory factor for the various dimensions.

To manage the heterogeneity of students, Belgium's education system engages in large-scale grade retention (nearly one in every two 15-year-olds has repeated a year during their time at school in the French Community and one-quarter have done so in the Flemish Community) and students are often reoriented onto another track. The gradation in student pathways is clear: students not behind and on the general pathway record the highest scores in PISA tests, while those who have repeated a year in the general pathway do better than young people on track in vocational training. Students who have both repeated a year and been reoriented towards

Chart 94

### The education system remains unfair

(differences in PISA scores for reading, 2018)<sup>1</sup>



Source: OECD.

- 1 The PISA survey does not have any minimum or maximum scores. Instead, the results are scaled, putting the OECD average at around 500 and the standard deviation at around 100 points. In other words, these scores are relative.
- 2 The difference between students born in Belgium of parents that were born in Belgium and students (irrespective of their place of birth) whose parents were both born abroad.
- 3 The difference between students in the top quartile and those in the bottom quartile of the socio-economic and cultural index calculated by the OECD.
- 4 The difference between students that have never sat the same school year twice and those who have done so at least once.
- 5 The difference between students in general education (including transition stream for the French-speaking Community) who have never sat the same school year twice and those in vocational training (including technical education in the qualification stream for the French-speaking Community) who have done so at least once.

vocational training – these days, students rarely pick vocational as their preferred pathway – are doubly disadvantaged and record the lowest scores.

The OECD has demonstrated that, to ensure better school results, it is not enough to simply raise government spending on education. The results are determined rather by the way in which the resources are deployed.

The Bank has carried out an analysis of how efficient public sector policies are from a macroeconomic perspective<sup>1</sup>, including education systems. To measure the input that goes into education, the exercise factored in both government and private spending, with the output estimated on the basis of a composite index made up of the following indicators: student PISA scores (maths, reading and science) in 2015; the share of the population with a secondary or higher education qualification; linguistic

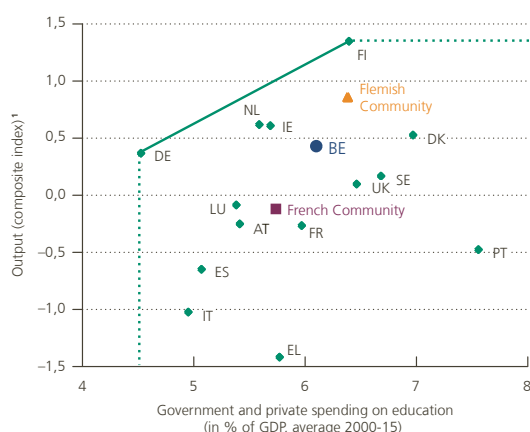
skills; citizens' satisfaction with the education system; the perceived quality of the education system; and the availability of skilled labour. Germany and Finland were the best performers on this analysis. Southern European countries, by contrast, have widely diverging levels of spending but have the weakest results. Belgium is close to the line connecting the efficient countries, taking a middle-of-the-road position: spending and results are below those for Finland but higher than for Germany. It is worth noting that results and spending can vary within one and the same country – Belgium being very much a case in point. As noted earlier, the PISA survey found the scores for maths, reading and science to be higher on average for the Flemish Community than for the French Community.

<sup>1</sup> See Cornille D. et al. (2017), "Public sector efficiency in Belgium", NBB, *Economic Review*, June, pp. 31–41.



Chart 95

### Varying results on efficiency of education



Sources: EC, OECD, WEF, NBB.

1 The indicators refer to 2015 or 2016, except the one for citizens' satisfaction with the education system (2014).

### Reforms to Belgium's education system

The French Community, which has been facing a number of recurring problems with the efficiency and fairness of its school system, has developed a Pact for Excellence, with measures spread across multiple years. The system is changing dramatically: education will start sooner for all children (at five

years of age) and shared (polytechnical and multi-disciplinary) foundation years will be extended, the aim being to achieve the efficiency objective in the shape of improved basic knowledge as well as creativity, entrepreneurial spirit and soft skills. By keeping students together longer and by offering only two streams (transition and qualification), the new approach should address the "cascading system" that leads to segregation. Repeating a year will not be prohibited, but alternative strategies will be offered to encourage differentiation and remedial practice. Examples include granting additional resources to school management to enable them to focus better on their core remit, while collaboration between teachers is encouraged, in addition to training teachers better and continuously.

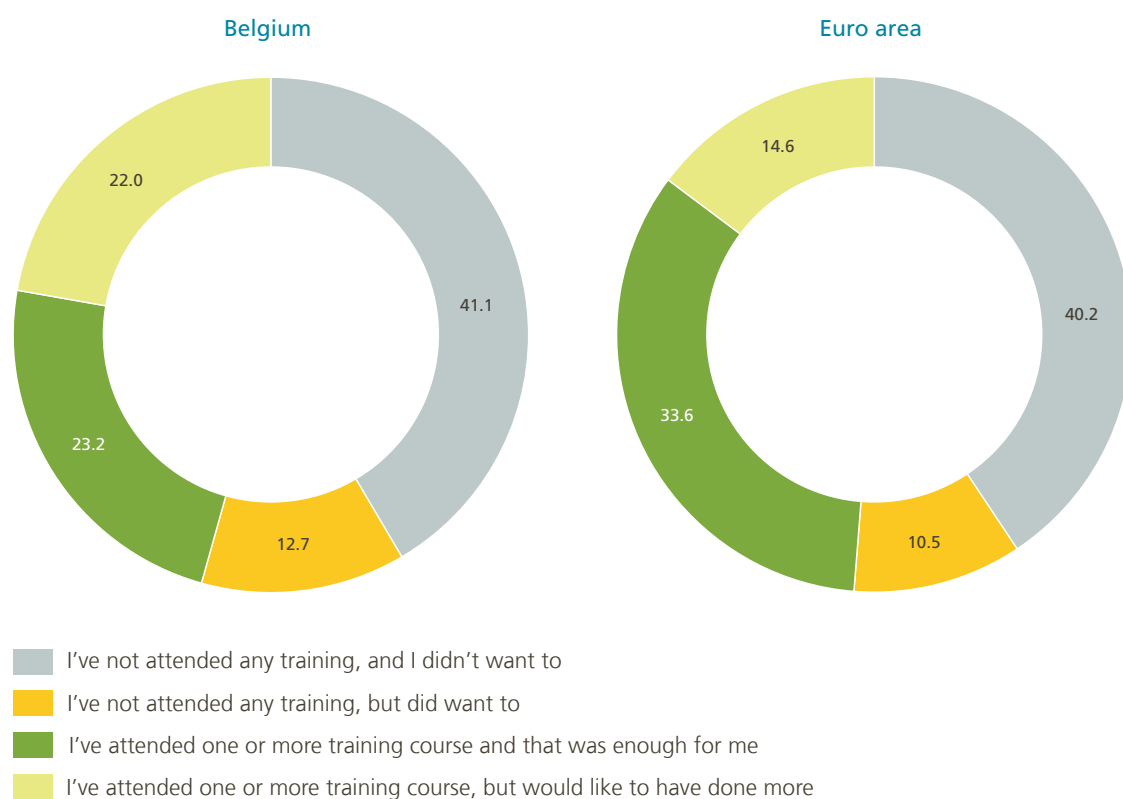
In Flanders, student counselling was overhauled, based on an action plan roughly translating as 'Together against school drop-out' and comprising around 50 actions. With the approval of the dual-learning Decree in Flanders, a fully accredited pathway is now in place, running parallel to full-time secondary education. The new system is intended to encourage students to make a positive choice for technical or vocational secondary education. Meanwhile, the reformed adult education pathway can serve as an alternative pathway to education for young people who drop out of school early. It has a funding system in place that focuses on weaker groups as well as on attaining a secondary education diploma or other



Chart 96

### Continued reticence towards lifelong learning

(in % of 25-64-year-old respondents, in the twelve months prior to the survey, 2016)



Source: EC (AES).

training certificate. The new and simplified set-up of the options in the second and third tiers of secondary education as well as the possibility to create “domain” schools or “campus” schools, are all aimed at improving study and the choice of career orientation. One of the aims of the strategic literacy plan 2017-24 is to significantly boost the numbers of young people leaving secondary education with literacy levels that are adequate to enable them to fully participate in society and keep learning.

### Upgrading skills through lifelong learning

Lifelong learning should ensure that new skills can be acquired, are deepened or are aligned more fully or precisely with new requirements in the labour market. Against the backdrop of rapid technological change, this should ease the transition from declining

jobs to emerging professions. According to the usual European indicator deriving from the labour force survey (LFS), in 2018, 8.5 % of adults in Belgium between the ages of 25 and 64 had taken a formal or informal course or training in the four weeks prior to the survey, unchanged on 2017 and an outcome below the European average (11.1 %).

Focusing on the twelve months prior and providing additional information on the characteristics of educational activities and the reasons for and obstacles to participating in education, the 2016 adult education survey (AES) had totally different figures: 45.2 % of adults had attended training, which was more or less in line with the European average. Among those who had not attended any training (54 %), the biggest chunk claimed not to be willing (41 %) – a percentage comparable to the average for the euro area. In Belgium, a larger proportion of respondents than in the euro area as

a whole indicated they would like to receive (more) training (35 % compared with 25 %).

## Skills activation moving slowly

Skills activation in the ESI is all about the transition to a working life and participation in the labour market (the activity rate). Belgium's poor position on this dimension is chiefly explained by a low activity rate in the 20-24 age group (47.5 % in 2018) and a lower activity rate among the 25-54 age group than in other countries.

Other aspects of skills activation could still do with a lot of improvement. The percentage of early school drop-outs may have fallen but is still around 8.6 % of 18-24-year-olds in Belgium, with major differences between Regions (10.7 % in Brussels, compared with 9.9 % in Wallonia and 7.3 % in Flanders). About half of these early school leavers are not in work.

The transition from unemployment or inactivity is relatively slow. Drawing on the EU Statistics on Income and Living Conditions Survey (EU-SILC), the OECD has calculated transition percentages for the 25-59 age group. Belgium's transition percentage from inactivity

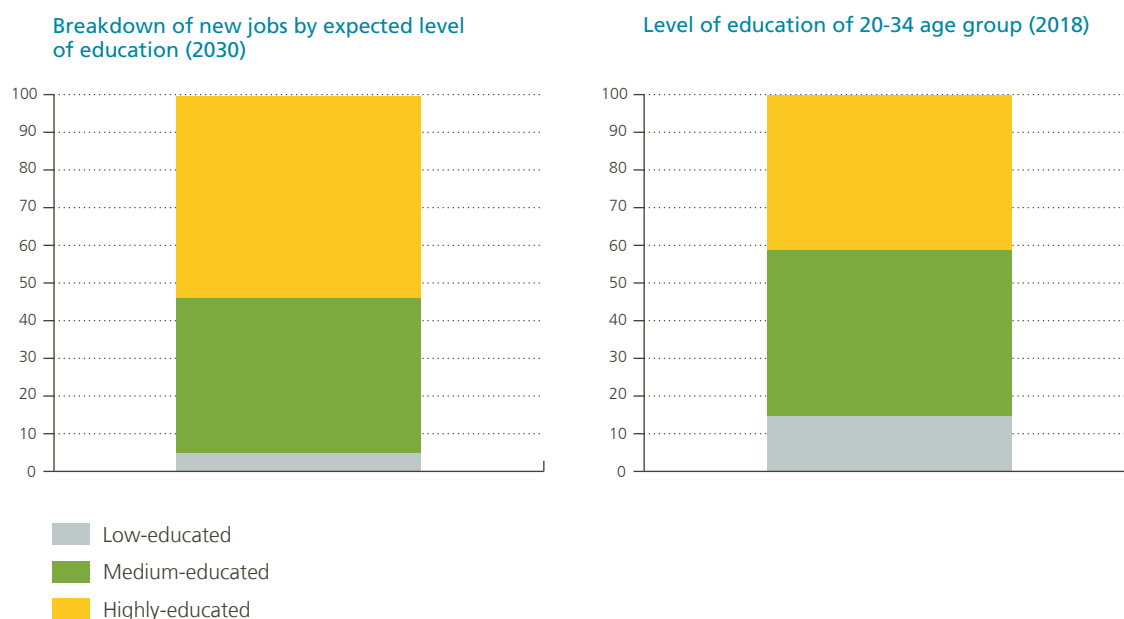
to work is low – an average 12 % in the 2005-15 period, compared with an average 19 % for European countries together. Just as in other countries, it is harder to transition from inactivity to employment than it is to find a job coming from unemployment: the data show a transition percentage from unemployment into work in Belgium of 30 %, compared with an average of 44 % in the EU. There is not just a need for education, but also extensive coaching and financial incentives to bolster the employment rate, particularly for the low-educated.

## Progress needed to make skills match ...

The skills-matching pillar focuses on the extent to which the available skills meet current and future needs. Cedefop predicts that over half of future jobs will require high-level skills. Factors causing the change include sector shifts to more business services and non-market services, leading to a demand for certain types of profession (insurance, law, research and development), but also for numerous jobs in health care. Besides, at present, only the highly-skilled positions run a smaller risk of digitalisation. Looking at the educational levels of newcomers to the labour market

Chart 97

### Labour market mismatches look set to rise



Sources: Cedefop, Eurostat.

(i.e. the 20-34 age group), there are too few higher education graduates relative to the skills expected to be needed.

These mismatches are already evident. On the demand side, they are visible in the vacancy rate – the number of vacancies as a ratio of total potential jobs, filled and unfilled – which averaged 3.5 % in the first three quarters of 2019, a very steep percentage when viewed internationally.

Professions that are under pressure are also very revealing. The public employment services monitor positions for which recruitment problems are greater than average: critical jobs. Ignoring the typical time needed to match labour

supply and demand – selection of candidates, hiring procedures, etc. – other, more structural factors can influence the process. These include inadequate labour supply in both quantitative and qualitative terms, mobility, and proposed employment conditions (wages too low, non-standard working hours, physically demanding work, etc.). The same jobs often end up on the list of critical jobs in all three Regions, albeit to different degrees. That said, there are regional specificities as well: in Flanders, the hardest vacancies to fill are those for cleaners, technical staff and for people working in health care and social support. Wallonia is facing shortages in the technical professions, the construction sector, and transport and logistics, while Brussels is mostly looking for administrative, IT, engineering and management positions. The French Community has real difficulty in finding teachers. In all three Regions, there is a need for digital skills across the board in technical, administrative and IT positions.

With ageing hindering growth in the working-age population, labour market shortages and the need to fill some positions that have been considered critical jobs for many years, the Belgian economy can only continue to develop if, as it has done in the past, it attracts people from abroad through secondment or work permits. Economic immigration by people from third countries – i.e. other than from the Schengen area and the European Economic Area (EEA) – is highly regulated. A type-B work permit, for instance, is linked to employment with a Belgian employer and is limited in duration. Since January 2019, a distinction has been made between

a type-B work permit for a job that does not last longer than 90 days and the combined permit for non-European citizens who wish to live and work in Belgium for longer than 90 days.

### ... to respond to digital transformation

Qualifications and diplomas remain crucially important for employers in Belgium. Incidentally, the country has easily achieved its goal for 2020: in 2018, 48 % of the 30-34 age group had higher education qualifications, a full percentage point more than targeted and over 20 percentage points up since the early 1990s. Brussels has the

highest proportion of graduates (56 %), followed by Flanders (48 %) and Wallonia (43 %).

University is not the only route to a rapid and lasting place in the labour market – the same is true for professional Bachelor's degree holders in some fields and those who complete their secondary education in specific technical or vocational areas.

Because of the digitalisation of the economy, highly-skilled positions will increasingly require training in science, maths, statistics and information and communications technology, as well as in engineering, industry and construction. Despite the large percentage of higher education graduates, in 2018, only 21 % of the current cohort of 30-34-year-old graduates had taken one of these pathways. This is even more true for women: hardly 5 % of female graduates have qualified in one of these areas, whereas more women than men embark on higher education. Aside from the level of education, all jobs will increasingly require technological and digital skills. According to Eurostat data, 61 % of Belgians between 16 and 74 years of age had general digital skills in 2017, either basic or rather more advanced (determined by the computer actions the subject is able to carry out). Although slightly up on the European average (57 %), the percentage clearly lags behind the best-performing countries, namely Luxembourg (85 %), the Netherlands (79 %) and Sweden (77 %). With less than one in three people with more advanced digital skills and a small proportion of ICT graduates (Belgium is one of three European countries at the bottom of this particular

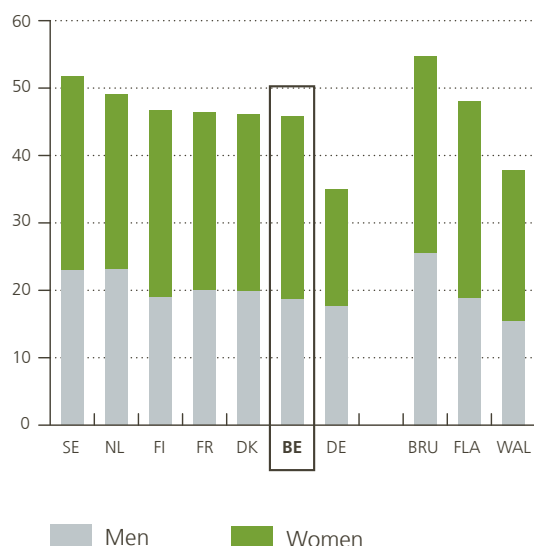
*Reducing the mismatch  
between labour supply and  
demand is a big challenge*

Chart 98

## Higher education graduates – an international comparison

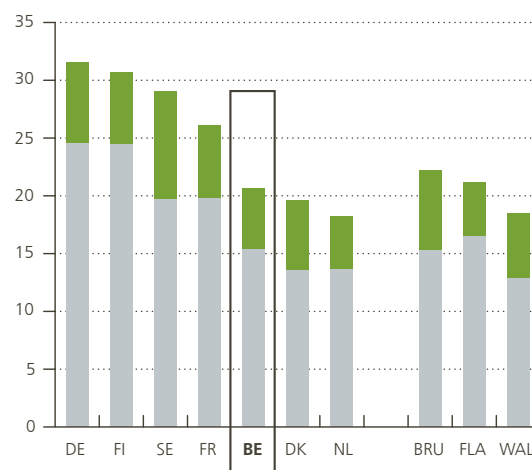
### Graduates, all fields

(in % of the population aged 30-34, 2018)



### Graduates in fields with good job prospects<sup>1</sup>

(in % of higher education graduates aged 30-34, 2018)



Source: Eurostat.

<sup>1</sup> Science, maths, statistics, ICT, engineering, industry and construction.

league table), this shortage is hampering Belgian companies in their ability to leverage the opportunities presented by digital technologies.

Action plans and projects are now underway to boost the number of graduates in the so-called STEM pathways (science, technology, engineering and maths). It is those fields that lead to the professions of the future in an economy that is increasingly knowledge-intensive and shaped by the digital transformation. In the French Community, various initiatives have been translated into political measures. The basic training offered to all students should focus more on STEM subjects and digital skills, and building those skills is at the very heart of the new digital education strategy approved in October 2018, *Stratégie numérique pour l'éducation*, whose aim is to close the digital gap. Flanders, meanwhile, will continue to pursue its 2012-20 STEM action plan, making STEM education and careers more attractive from a gender equality perspective.

*Only one in five graduates took a STEM subject and fewer than one in three has advanced digital skills*

## Working in good conditions is highly conducive to social well-being and health

Engaging in work for which one has the right skills is crucially important to fully participate in society and to avoid poverty traps and social exclusion.

According to the OECD, a higher level of education gives individuals the resources to improve their living and working conditions, to live a healthier lifestyle and to have access to appropriate health care. In Belgium, OECD statistics show that life expectancy at the age of 30 is about six years longer for men with the highest level of education than for less educated men. This gap is around four years for women.

It should be possible to extend and transform careers if certain conditions are met. As well as investment in education and training, this implies that work needs

to be arranged differently, with the emphasis on what is achievable. Factors that can help include being able to organise one's own working time, the option to work part-time, increasing job mobility and adapting the workplace to workers' needs.

The quality of a professional career is determined by a range of factors, including the social environment in which the job is done, i.e. employee relations. For people of working age, employment is one of the key ways to create this social fabric. Interactions with colleagues, management and customers, day-to-day life at the company – these should offer people opportunities to develop as human beings and at the same time to participate in economic activity. Satisfactory social relationship in the workplace help to create a peaceful climate and make working as a team more productive. Of course, motivating elements are also conducive to health and well-being at work; other positive effects outside social interaction are derived from being in control of one's work and having rewarding professional experiences.

Data for Flanders show how important job quality is for extending a working life (Flemish Workability Monitor, 2019). Among employees aged 40 and over and in workable work – which for these purposes means that they do not report any obstacles<sup>1</sup> as to the achievability of the job – nearly 81 % of respondents assumed they would be able to continue to work until

their statutory retirement age. This percentage systematically falls as the number of obstacles increases, to 56 % for people reporting one obstacle, to 36 % for those reporting two, and to 17 % for employees who identify three or more obstacles in their current jobs.

Analyses by Belgium's High Council for Employment show that, all other things being equal, people with a disability have clearly fewer chances to find work than people in good health. In the 2011 *ad-hoc* module of the labour force survey, less than 50 % of people who identified themselves as disabled were professionally active in Belgium, compared with nearly 67 % of people without any long-term health issues. Conversely, unemployed people report being (chronically) ill much more often than people in work.

Education and health together make what the FPB calls "human capital" in the framework of its beyond-GDP indicators – an indispensable aspect of the well-being of future generations. It is one of four capital stocks – the others being social, economic and environmental capital – which together can assure or improve intergenerational equality. This type of yardstick and, more broadly, the beyond-GDP indicators are explained in more detail in box 10.

### *Doing a high-quality job improves well-being*

<sup>1</sup> The obstacles or risk indicators included in the Flemish Workability Monitor include senior management providing support to employees, employment conditions, autonomy, etc.





## Trend in the beyond-GDP indicators

Economic, social and environmental considerations must all come into play in an integrated way if a society is to develop sustainably. The European Commission (EC), the United Nations (UN) and the Organisation for Economic Cooperation and Development (OECD) have all made inclusive and sustainable growth a key political objective and are undertaking various initiatives to encourage such growth. In keeping with this trend, the Belgian National Accounts Institute (NAI) and the Federal Planning Bureau (FPB) have been entrusted by law with the task of drawing up beyond-GDP indicators, on the basis of which society can be looked at from a different perspective than production and measurement of that based on GDP.

Under the Law of 14 March 2014 supplementing the Law of 21 December 1994 containing social and miscellaneous provisions, the FPB has drawn up a list of beyond-GDP indicators that measure quality of life, human development, social progress and environmental sustainability. Since first published in February of 2016, they have been included in the annual NAI/FPB report on beyond-GDP indicators. A summary of the 2020 results follows below.

Conceptually, the report structures the 67 indicators observed around the three dimensions underpinning the definition of sustainable development, making a distinction between the well-being of the country's current generations ("Here and now"), the well-being of future generations ("Later") and the impact of Belgian society on the well-being of residents of other countries ("Elsewhere"). In addition, they are presented in the same way as the United Nations' 17 Sustainable Development Goals (SDGs) embodied in the UN's Programme for Sustainable Development by 2030. The SDGs and their monitoring indicators are increasingly becoming the benchmark framework for measuring society's development in countries that are signatories to the Programme.

Composite indicators have been developed for some of these dimensions. The composite indicator for current well-being "Here and now" ( $W_{HN}$ ) has been updated at the level of Belgium and of various population groups, while new composite indicators have been created for the "Later" dimension.

### ***Current well-being***

The  $W_{HN}$  indicator gauges the trend in current well-being and attempts to capture any changes as accurately as possible. This indicator slumped in the wake of the economic and financial crisis and hit rock bottom in 2011 as it reflected the decline in the general health of the population at the time. It has been on the rise again since 2015 and, a decade on from the onset of the crisis, has reached a level close to that for 2005, although it remains much lower than just before the crisis. Between 2005 and 2018, a series of socio-economic improvements – e.g. a lower unemployment rate, coupled with reduced material deprivations and less dropping out of education – have made up for Belgians' declining average health situations and worsening occupational disability.

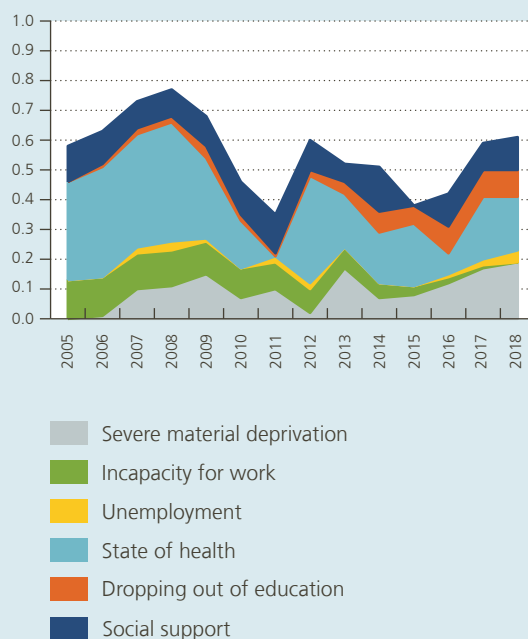
As there is major variation in well-being as reported by the Belgian population, last year's report devised 11 composite indicators for measuring trends in current well-being for women and men, for four age groups and for five income groups. These gauges show that the economic and financial crisis hit men's well-being harder than women's. Meanwhile, there are marked contrasts in well-being among the four age groups analysed (16-24 years, 25-49 years, 50-64 years and over 64): all groups felt the



impact of the crisis, but only for the over-64s have the indicators since improved markedly, clocking in at a significantly higher level in 2018 than in 2005. For the other three groups, the drop in post-crisis well-being has apparently proved more persistent: not until 2018 did their well-being attain the same levels as in 2005. Against the backdrop of an ageing population and given the manifold challenges ahead, this decline in well-being for 16 to 64-year-olds is somewhat concerning, as most workers in Belgium belong to this particular population group.

### Breakdown of well-being indicator "Here and now" (W<sub>HN</sub>)<sup>1</sup>

(scale of 0 to 1)



Source: FPB.

<sup>1</sup> An increase in the indicators flags an improvement in well-being. 0 corresponds to a situation in which the six indicators were simultaneously at their minimum level in the 2005-18 period, whereas 1 corresponds to a situation in which they were all at their maximum level over that same period.

### ***Capital stock must be preserved for the sake of fairness between generations and sustainable development***

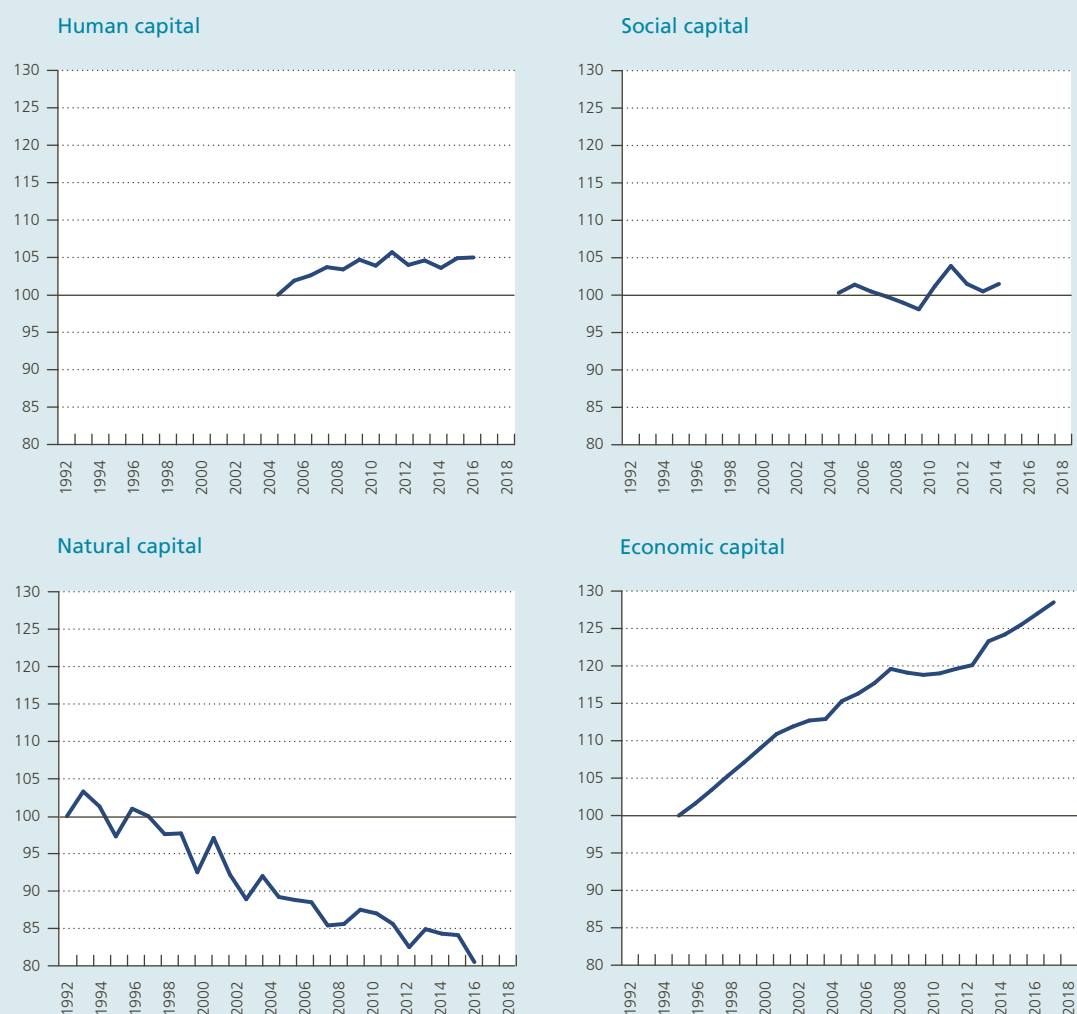
In the 2020 edition of its report, the FPB proposes measuring future well-being (the "Later" dimension) by adopting an approach involving capital stock. As it is not known what future generations will consider well-being and how it should be created, this approach would track the developments of stocks of essential resources to help produce the well-being of those generations. It is assumed that their well-being will depend on the continuing existence of such resources, some of which are crucial to achieve a level of well-being that at least equals that of today's generations.



The term “human capital” covers both health at the individual level and the abilities and skills that contribute to people’s employability and improvement in income from employment, while “social capital” is all about the quality of interpersonal relationships, between individuals as much as in the community. Natural resources (air, water and land) and all living beings (biodiversity) fall into the category of “natural capital”. Lastly, “economic capital” is the sum of a country’s economic assets and comprises production resources, existing infrastructure, intangible assets (knowledge) and financial assets, for households, companies and the public sector.

### Composite capital indicators for future generations

(100 = baseline year<sup>1</sup>)



Source: FPB.

<sup>1</sup> The indicators have been standardised at 100 for the baseline year coinciding with the first year for which all components of the composite indicator are available.



Mostly determined by the indicator for higher education graduates, the “human capital” indicator has been on the rise since 2005. The one for “social capital”, meanwhile, has been relatively stable and does not really show much of a lasting trend at all, while “natural capital” has grown steadily worse since 1992. Of the latter’s sub-components, only the indicator for water quality has improved since 2008. As for air quality, the carbon concentration has kept rising and it is the scale of this that is accounted for in this indicator, as carbon spreads swiftly in the atmosphere. Granted, greenhouse gas emissions in Belgium have gone down, but not by enough to turn the tide of air pollution, while the areas of town and country planning and biodiversity have also got worse. The last and fourth indicator, that of “economic capital”, finally, went up in the 1995-2018 period, even if it dipped somewhat in the post-crisis years. Its upward trend was supported by both the indicator of physical capital stock and the knowledge indicator.

In terms of the sustainability of well-being, the deterioration in Belgians’ current state of health may have a detrimental effect on life expectancy and good health, and consequently also on human capital. The population group most affected are the 16-64-year-olds, which makes this trend all the more concerning, as this is precisely the working-age population. Growing human and economic capital is exactly what has enabled Belgium’s socio-economic development. It is worth noting that the indicator for social capital, which reflects people’s relationships with each other and with institutions, has remained relatively stable over the past few years. Assuming that any development is sustainable if capital stocks are at least maintained at the same levels, the FPB’s analysis suggests that the current development in Belgium is unsustainable in the longer term as measured by the composite capital indicators currently used. Trends in the individual indicators as discussed below present an analysis-enhancing complementary picture.

### ***Trend in the individual indicators***

Out of the 67 beyond-GDP indicators that the FPB reviews, 41 relate to “Here and now”, the dimension that captures changes in people’s well-being in Belgium since 1990. Although most of these SDG-related indicators are not significantly moving in one direction or another, it turns out that:

- education (SDG 4), gender equality (SDG 5) and peace and justice (SDG 16) are developing favourably, i.e. getting closer to their goals;
- trends relating to poverty (SDG 1) are unfavourable;
- the indicators related to health (SDG 3) are a mixed bag: indicators for life expectancy, death due to chronic illness and death due to road accidents are improving and pointing to longer lives, whereas subjective survey-based indicators concerning people’s perception of their state of health are going down, suggesting a deterioration in the general state of health.

A comparison of these indicators with their equivalents at EU level or, if these are not available, with those of Belgium’s three neighbouring countries is largely favourable for Belgium, as 18 out of the 29 indicators that can actually be compared are higher in this country.

The “Later” dimension focuses on the ability of Belgians to maintain and even improve their well-being in the future. It is measured by 34 indicators that are mainly taken from the environmental SDGs concerning food (SDG 2), health (SDG 3), education (SDG 4), water (SDG 6), energy (SDG 7), infrastructure (SDG 9), consumption and production patterns (SDG 12), climate (SDG 13), life below water and on land (SDGs 14 and 15) and resources to implement the “worldwide partnership for sustainable development” (SDG 17). Most of these are evolving towards their goals.



Two notable exceptions are:

- life expectancy and good health (SDG 3), which is not significantly evolving in any direction;
- the wild bird population, one of the few indicators of biological diversity available over a long period (and related to SDG 15), which continues to deviate further from its goal.

A comparison with the rest of Europe reveals that 14 out of the 24 indicators related to “Later” are favourable to Belgium, particularly on social indicators, whereas environmental indicators are not faring very well in Belgium.

Five “Elsewhere” indicators reflect Belgium’s impact on the way other countries are able to develop as well as the well-being of their populations. Indicators gauging the use of natural resources (energy (SDG 7) and commodities (SDG 12)) as well as greenhouse gas emissions (SDG 13) are moving in the right direction, while the indicator measuring official development aid (SDG 17) has been stable but below target.

Only on the use of domestic materials does Belgium do better in a comparison with the EU or its three neighbouring countries.

Of the 67 indicators, 46 can be broken down by population group, more specifically based on gender, income level, level of education or age. Starting from the 2020 edition, 33 indicators will also be broken down by Belgium’s three Regions, provided this proves relevant and data are available. To date, the FPB has yet to analyse these data. As for other breakdowns of the indicators, it emerges that:

- In terms of gender (28 indicators), many differences are smaller though there are still some substantial discrepancies unfavourable to women. In the past few years, the differences have grown on a number of indicators, such as the risk of poverty, the very low work intensity, perceived health, long-term incapacity for work and the sense of safety in public spaces.
- In terms of income level (15 indicators), the situation is more favourable for the higher income groups;
- In terms of level of education (12 indicators), conditions are more favourable for those with a better education, and the gap is widening (particularly in terms of the poverty risk). People with no more than a lower secondary education certificate are at a particular disadvantage. It is worth noting that, since 2016, the gap has been narrowing for the unemployment rate as well as for young people neither in employment nor in education or training;
- In terms of age (14 indicators), age-related differences can be observed (health, incapacity for work, employment or unemployment), with trends often more favourable to the older age groups than for younger people. Exceptions include the risk of poverty for people over 64, which has not improved since 2015.

In accordance with its mission, the FPB will update these indicators every year, taking account of any changes in the state of knowledge and social debates. Depending on the availability of data, the database covers the 1990-2018 period. It can be accessed via [www.indicators.be](http://www.indicators.be).