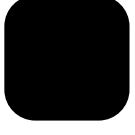
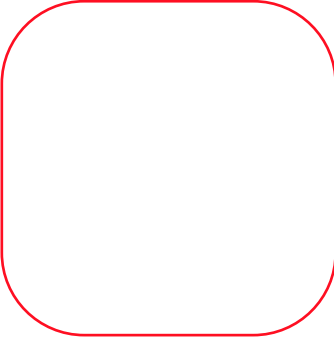
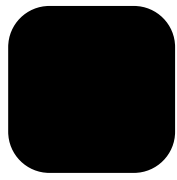
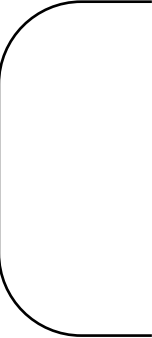
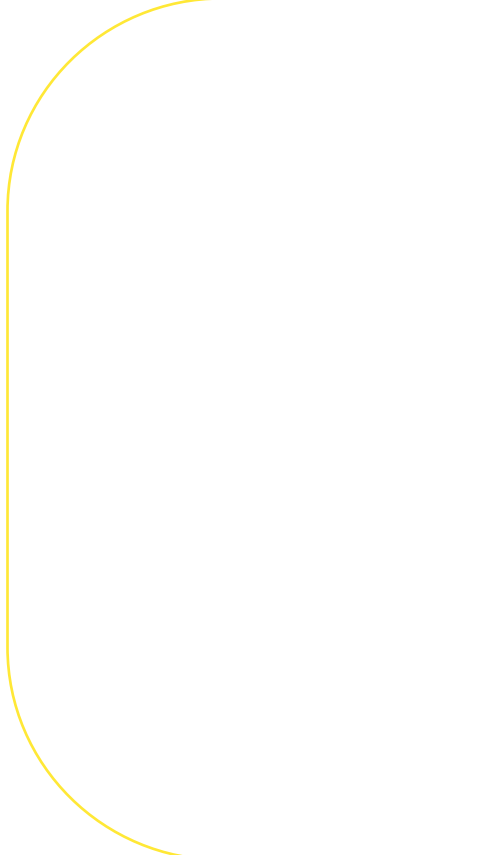


National Productivity Board



Annual report



2020

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The National Productivity Council is an independent institution responsible for monitoring productivity and competitiveness. It has been operational since May 2019 and brings together federal and regional experts. It was set up at the invitation of the Council of the European Union in order to understand the reasons for the decline in productivity growth in recent decades and to identify possible solutions.

Executive summary

This report was closed on 21 October 2020. As such, neither the start of the second wave of the COVID-19 virus nor the new health and economic policies that followed were taken into account.

The COVID-19 crisis is first and foremost a health crisis, but the pandemic and the measures designed to counter the spread of the virus are also having an unprecedented impact on the economy. This poses significant policy challenges in the short term. However, it is also crucial to ensure that, in the longer term, the already weakened productivity growth does not deteriorate further. Indeed, productivity growth is the main motor of economic growth, which in turn determines the evolution of the standard of living but also for the policy leeway. Furthermore, the financial sustainability of the public finances and social security is largely influenced by the level of economic growth.

As can be seen from the analysis in point 2.1, productivity growth in Belgium had been slowing down for some time, but this trend was exacerbated by the 2008-2009 financial and economic crisis. The slowdown in productivity growth occurred in all major groups of activities, but was most pronounced in the manufacturing sector, where the best-performing industries in particular experienced a sharp slowdown. This is in contrast to the slowdown in productivity growth in market services, which is primarily accounted for by a further decline in productivity growth in the least productive industries.

The impact of the COVID-19 crisis on productivity growth is still difficult to quantify. As such, point 2.2 provides an overview of the various channels through which the crisis may have an impact on productivity growth. The starting point in this regard is the growth accounting model, whereby will be looked successively into the possible effects of the crisis on the composition of labour (e.g. possible hysteresis effects in the case of long-term unemployment, possible effects on education outcomes and training), capital deepening (possible effects on public and private investment, on the nature of investment and on FDI) and into the total factor productivity (possible effects on digitalisation, research and innovation, business dynamics, competition, the organisation of value chains and globalisation).

This listing of transmission channels provides an overview of the potential risks that need to be managed, but also of the opportunities to tackle the persistent weak productivity growth. Taking this analysis into account, the members of the NPB identified in point 3 a number of strategic strands on which future government interventions have to be based. The starting point for this exercise was the recommendations issued each year by the European Council to Belgium in the context of the European Semester. An important motivation for this is the precondition of the European Commission to align with these recommendations in order to receive European support under the European Recovery and Resilience Facility (RRF). For the first time, the Commission may turn to the financial markets to raise the necessary funds to support the economic recovery of the Member States. To call on this aid, Member States must submit a national recovery and resilience plan in line with the objectives of the new European strategy, Next Generation EU. The European Commission also envisages in the implementation of RRF a role for the National Productivity Boards, and this report aims to respond to this.

As was clear from the previous report, there are various factors that have an impact on productivity growth, all of which merit due attention. However, in the current context, the members of the NPB are demanding priority attention, both federal and regional, for the following four strands:

More focus on STEM and lifelong learning The COVID-19 crisis is having a major impact on the labour market. Unemployment has already risen and is expected to rise further in the near future. Moreover, the existing mismatch in skills risks becoming even wider because low-skilled people are hit the hardest, while the digital transition - with rapidly changing needs in terms of qualifications - may be accelerated due to the crisis. Especially when taking into account the ageing population, and thus the declining proportion of the working-age population, it is crucial that measures be taken to ensure that as few talents as possible are lost. In the first instance, this requires that today's generation of young people is adequately prepared for tomorrow's labour market. But bolstering lifelong learning is also crucial to facilitate the transition from obsolete jobs, unemployment or inactivity to the emerging professions.

Importance of green and digital investments, both public and private Already before the COVID-19 crisis, a number of structural evolutions (in particular, the dynamics of an ageing population and health care) threatened the long-term viability of public finances. These problems have not disappeared because of the current crisis. Furthermore, Belgium has high levels of public debt, which are rising sharply as a result of the crisis. Without a

public debt trajectory which remains credible for the financial markets, the Belgian government runs the risk of an increase in her interest rates. Therefore, there is a need for a plan to bring the public finances into structural balance as soon as the economic situation allows. However, contrary to what has happened in recent years, this strategy must not be at the expense of public investment, which is already much lower in Belgium than that in our main European partners.

In choosing investments, it is important to focus on the areas which are essential to support the productivity growth. Additionally, these investments must fall within a long-term digital and green transition. The latter aspect is not only relevant because of the direct impact of the environment on the well-being of the population and the opportunities such a transition offers for economic growth, but the green transition is also necessary to improve the risk management. Environmental disasters such as climate change and loss of biodiversity can have serious social and economic consequences. Without being exhaustive, there is a need for additional public and private investment in the areas of energy efficiency, sustainable transport, protection against climate risks, and digital infrastructure.

Investments in research and innovation will also be important to make the green and digital transition possible. That is why it is important to maintain investment in R&D, while at the same time increasing the efficiency of public R&D expenditures. More generally, on the basis of spending reviews and policy evaluations, ways to promote the efficiency of existing spending at all levels of government need to be considered.

More intense focus on digitalisation The COVID-19 crisis has given an extra stimulus to the digitalisation process. The use of digital technologies is a strong driver of productivity growth. Moreover, further digitalisation can also contribute to solutions for a number of complex challenges facing society (e.g. healthcare challenges, achieving the goal of carbon neutrality by 2050, the transition to renewable energy generation, etc.). It is therefore important to take advantage of this momentum to further support and accelerate the digital transition by encouraging all economic actors to invest in the use of these technologies. This calls for a focus on skills, organisational innovation and management capacities, a fast, secure and reliable broadband infrastructure, a digital culture (including among SMEs and government) and regulation that is sufficiently in line with the digital economy. In all this, sufficient attention must also be paid to the potentially negative consequences of digital technologies (e.g. security and privacy challenges) and the aim must be to strive towards a just transition.

Importance of business dynamics. Sufficient business dynamics are a crucial determinant of productivity growth. Even before the crisis, business dynamics were already declining in many developed countries and the current crisis may exacerbate this phenomenon. As such, it is important to ensure favourable conditions and incentives for young innovative start-ups and for the upscaling of these start-ups. A significant element in this regard is a further reduction of the administrative burden and, more generally, an improvement in the quality of regulation, which ensures the proper functioning of the market, among other things. Besides stimulating the start-up and continued growth of businesses, it is also important that exit barriers for unviable businesses are removed as much as possible. Among other things, this implies avoiding situations where the government continues to support structurally unviable businesses in periods of rising unemployment. Indeed, such a policy is tantamount to an implicit tax on healthy businesses.

Introduction

The COVID-19 virus has caused a health crisis in the first place, but the pandemic and the measures designed to counter the spread of the virus also have an unprecedented impact on the economy. On the supply side, some activities have been stopped for many months; disruptions in (international) value chains have caused supply problems; cost-increasing measures have had to be taken in order to enforce social distancing; investments have been postponed or scaled back; and disruptions in the supply of labour have been due to illness or quarantine of employees, or the presence of school children while working from home. On the demand side, fears of infection, the closure of shops, increased uncertainty and lower incomes and income expectations have led to lower consumption and investment demand both domestically and abroad. In the first half of 2020, these effects already led to an 8% drop in economic activity compared to the same period last year.

As the health situation improves, the economy will pick up again. However, the nature and extent of the shock makes it likely that the economy will experience significant structural shifts which will be accompanied by business closures and job losses. If the human and physical capital, which will become available, cannot be accordingly reallocated to new activities, the capital stock (human and physical) will be irreparably damaged, with the result that the economic contraction that will occur in 2020 will not be fully offset in the subsequent years. This is what the FPB and the NBB envisage in their forecasts from June 2020. Although consumption and investment will recover by mid-2022, private sector value added will remain 4 percentage points below the level that would have reached if there had been no pandemic. The global nature of the economic crisis is an element that weighs on the prospects for recovery.

For the purpose of making these projections, it was assumed that the economy would gradually return to growth and that the long-term growth would therefore not be affected. However, the shock also creates a number of risks in this area. Point 2.2 provides an overview of the various channels through which the crisis may have an impact on productivity growth. Due to the major uncertainty, it is currently impossible to estimate the extent of these consequences, but the list is nonetheless useful from a policy perspective. It provides an overview of the potential risks that need to be managed, as well as the opportunities to tackle the weak potential growth.

Taking these elements into account, a number of strategic strands are identified in point 3, on which policy must be focused as a matter of priority. The starting point for this exercise is the country specific recommendations addressed by the European Council to Belgium in the context of the European Semester. An important motivation for this is that the obligation to align with these recommendations in order to receive European support under the European Recovery and Resilience Facility (RRF). For the first time, the Commission may turn to the financial markets to raise the necessary funds to support the recovery of the Member States. To draw from this aid, Member States must submit a national recovery and resilience plan in line with the objectives of the new European strategy, Next Generation EU. The European Commission guidelines for the implementation of the RRF requests the National Productivity Boards to play a role in all this, and this report aims to respond to this request.

But first, point 1 reaffirms the importance of productivity growth and point 2.1 presents the state of play regarding the productivity evolution prior to the crisis, on the basis of revised national accounts recent release, whereby the sectoral dimension is taken into account in the analysis of the productivity evolution.

1 Importance of productivity growth

A country's economic growth is determined by two factors: an increase in the volume of labour (number of hours worked per inhabitant) and productivity growth. The first can be achieved by increasing the share of the population of working age (e.g. by raising the retirement age), by increasing the share of the population of working age at work, and by increasing the number of hours worked per worker. However, these approaches all have limits in terms of physical capability. The only way in which a country's economy can continue to grow is by increasing the productivity of the factors of production - i.e. the value added created per unit of labour and per unit of capital.

Economic growth is important for several reasons. For instance, growth determines the progression of our standard of living. Indeed, GDP per capita determines the income per capita that can be distributed among workers and investors. Moreover, economic growth is equally relevant for financing social security and therefore for the income of the sick, disabled, unemployed and retired.

In addition, strong economic growth enhances the various policy choices available to the government. It leads to an increase in tax revenues and a decrease in social expenditure, which creates room for additional expenditure on health care, education, investments in infrastructure, etc., and/or to reduce the tax burden. Sufficient growth is also a prerequisite for budgetary policy so that governments could respond to future recessions and asymmetric shocks. A temporary deterioration in the budgetary situation is only financially sustainable if sufficient tax revenue (and thus sufficient growth) can be guaranteed in the long term.

Stimulating productivity growth is therefore necessary but cannot be seen in isolation from other policy objectives. For example, the current crisis demonstrates the importance of risk management. The risks to our economy/society are not limited to pandemics, but also include environmental, political, financial and technological risks. Having control of these risks requires a policy that both minimises the risk of future shocks and limits their consequences if such shocks occur.

A focus on the sustainability and inclusiveness of growth is therefore not only crucial as values in themselves, but also in the context of risk management. For example, economic growth should not be based on excessive internal and external debt levels, as this would increase the risk of financial shocks and limit the possibility of absorbing other shocks. Growth also needs to be environmentally sustainable. Uncontrolled, global environmental disasters such as climate change and loss of biodiversity can have serious social and economic consequences. But sufficient attention also needs to be paid to the inclusiveness of growth. Especially in a context of major economic transformations - due to the crisis, but also to ensure that the transition is made to an economy characterised by zero net greenhouse gas emissions in 2050¹ and decoupling economic growth from resource use - there are many social challenges that need to be addressed, not only from an ethical perspective, but also with a view to ensuring political and social stability.

Finally, the crisis we are currently faced with raises the question for some groups whether the market economy should not be scaled back in favour of more government. The answer to this question requires a discussion that goes much further than productivity, but in general it can be said that both the market and government are important and need each other. It is true that without the government - which, in our socio-economic model, provides education, health care, infrastructure, regulation, etc. - a market economy would be difficult to establish. But the government can only provide public goods and services if there is also a strong market sector, which still provides the financing base for public services and infrastructure. Given the vital interdependence between the two, the strength of the market sector also depends on the efficiency (productivity) of the non-market sectors. The latter aspect is currently not accurately reflected in the national accounts (Box 2 in point 2.1). Different indicators are therefore necessary in order to monitor this.

2 Potential impact of the COVID-19 crisis on productivity

2.1 A description of the starting position

Foreword

2019 was a unique year for the national accounts, as it was the year of the benchmark revision of the series.

Box 1. The benchmark revision of the national accounts

The publication by the National Accounts Institute (2019) states: "Benchmark revisions are more important than ordinary, routine revisions. They enable new data sources and methods to be incorporated into the compilation

¹ In order to achieve climate neutrality in 2050, the EC announced its intention to increase the reduction targets for greenhouse gases from 40% to 55% by 2030 (policy statement by Ursula Von der Leyen, 16 September 2020).

estimates used for establishing the national accounts. Their inclusion generally helps maintain the **quality** of the statistics produced, and even improve it. Benchmark revisions also provide an opportunity to reinforce the **relevance** of statistics by including new economic developments. For instance, this latest revision has made it possible to get a better measure of internet sales, to introduce an estimate of electricity production by households and to develop an accounting method for green certificates. Moreover, another guiding principle of this revision has been to improve **consistency** between the national accounts and other macroeconomic statistics, notably balance of payments data".

The main changes concern the measurement of the activity of corporate directors, insurance companies and pension funds, health care and social services. Residential services, research and development and the test market/non-market were also thoroughly revised. New activities not yet measured in national accounts were also included. These were primarily electricity generation by households, online purchases with non-residents and reinvested profits on foreign indirect investment. For a more detailed description of this benchmark review, see <https://www.nbb.be/en/statistics/nationalregional-accounts/benchmark-revision-national-accounts-october-2019>.

Readers familiar with the aggregates of the national accounts will quickly understand that this revision has changed the value added data, in nominal terms and in volume terms, and less so the employment data. Productivity developments were reviewed, especially at industry level. A comparison of the evolution of the productivity of industries for the period 2000-2017 between the national accounts published in October 2018 and those published in October 2019 can be found in appendix 1.

The data sets from 1995 to 2015 are now frozen. However, the years 2016, 2017 and 2018 may still be subject to ordinary reviews in the future releases of the annual accounts. The recent trends should therefore be interpreted with caution.

General slowdown in productivity growth

Over the period 2000-2018, the growth rate in labour productivity of the Belgian economy, although higher than that of the euro area, was lower than that of the main neighbouring countries (Table 1).

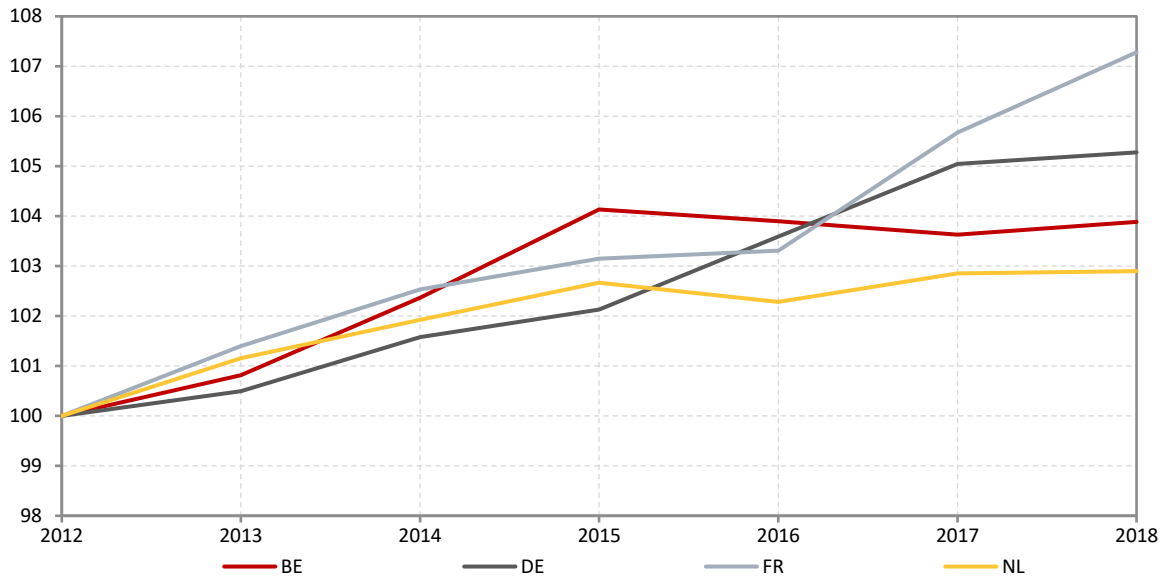
Table 1: Average annual growth rate of labour productivity per hour, total economy

<i>In %</i>	2000-2018	2000-2007	2012-2018
European Union	1.2	1.6	1.0
euro zone	0.6	0.7	0.6
Belgium	0.8	1.3	0.6
Germany	1.0	1.6	0.9
France	1.0	1.3	1.2
Italy	0.1	0.1	0.3
Netherlands	0.8	1.4	0.5
Finland	0.9	2.1	0.8
UK	1.0	2.1	0.5

Source: Eurostat, National Accounts, October 2020.

During the recent period 2012-2018, the average annual growth rate of Belgian productivity continued to decline. It was slightly higher than that of the Netherlands, but clearly lower than that of France, Germany and Finland. Since 2015, however, Belgian productivity growth has been particularly weak (Graph 1).

Graph 1: Evolution of labour productivity
Index, 2012=100



Source: Eurostat, National Accounts, October 2020.

The observed slowdown in productivity growth in Belgium over the period 2012-2018 compared to the period 2000-2007, is a common phenomenon in the three major neighbouring countries, although the slowdown is much less pronounced in France than in the other countries. The slowdown is also observed in Belgium for all three main groups of activities, namely manufacturing, market services and non-market services² (Table 2). However, manufacturing shows the strongest slowdown in productivity growth, even though the growth rate remains higher than for market services.

² Manufacturing corresponds to code C of the national accounts nomenclature, market services comprise codes G to N and non-market services O to U.

Table 2: Average annual growth rate of labour productivity per hour*In %*

	Belgium	Germany	France	Netherlands
2000-2018				
Total economy	0.8	1.0	1.0	0.8
Manufacturing	2.1	2.0	2.6	2.6
Market services	0.9	0.8	0.8	0.9
Non-market services	-0.1	0.2	0.8	0.0
2000-2007				
Total economy	1.3	1.6	1.3	1.4
Manufacturing	3.4	3.6	3.6	4.1
Market services	1.3	1.5	1.0	1.4
Non-market services	0.0	-0.2	0.8	-0.2
2012-2018				
Total economy	0.6	0.9	1.2	0.5
Manufacturing	1.8	1.6	2.0	2.2
Market services	0.9	0.7	1.0	0.3
Non-market services	-0.2	0.4	0.8	-0.1

Note: Manufacturing corresponds to heading C, market services cover headings G to N and non-market services cover headings O to U of NACE Rev. 2.

Source: Eurostat, National Accounts, October 2020.

Decrease in the contribution of the main groups of activities, in particular of manufacturing

The impact of the evolution of the productivity of the main activities on the evolution of the productivity of the economy as a whole depends on the structure of the economy and its evolution over time. The European economies have several elements in common: services, both market and non-market, are gaining in importance, manufacturing is becoming less important. Nonetheless, these developments are evolving faster in some countries than in others. For example, manufacturing, both in terms of value added and hours worked, remains relatively important in Germany, where its share has only decreased very slightly over the period under review, while it is declining sharply in Finland, France, the United Kingdom and Belgium (Table 3).

Table 3: Share in nominal value added and in hours worked of the total economy*In %*

	Manufacturing				Market services				Non-market services			
	Value added		Employment		Value added		Employment		Value added		Employment	
	2000	2018	2000	2018	2000	2018	2000	2018	2000	2018	2000	2018
EU	18.7	16.0	18.1	14.4	49.3	51.8	39.4	44.9	20.7	22.0	24.1	26.8
euro zone	19.6	16.9	17.8	13.7	48.4	51.1	41.2	46.1	21.2	22.3	25.9	27.9
BE	19.7	13.6	16.3	10.6	48.9	54.7	45.8	49.3	21.8	23.5	28.5	30.5
DE	22.8	22.7	20.1	18.1	46.7	46.5	40.3	42.6	21.4	22.1	27.2	29.7
FR	16.1	11.1	13.7	9.5	50.3	53.8	41.6	47.2	23.6	25.1	30.8	31.2
IT	19.6	16.8	20.2	15.8	50.2	53.3	41.5	46.1	19.8	20.7	23.8	24.7
NL	14.9	12.4	12.9	9.5	53.3	55.0	50.0	52.0	20.0	23.2	24.1	27.9
FI	27.6	17.5	18.4	12.6	39.8	45.9	36.1	39.5	20.7	22.9	28.5	32.1
UK	15.0	9.9	15.1	8.9	54.7	57.9	48.6	52.1	18.6	21.7	24.9	27.5

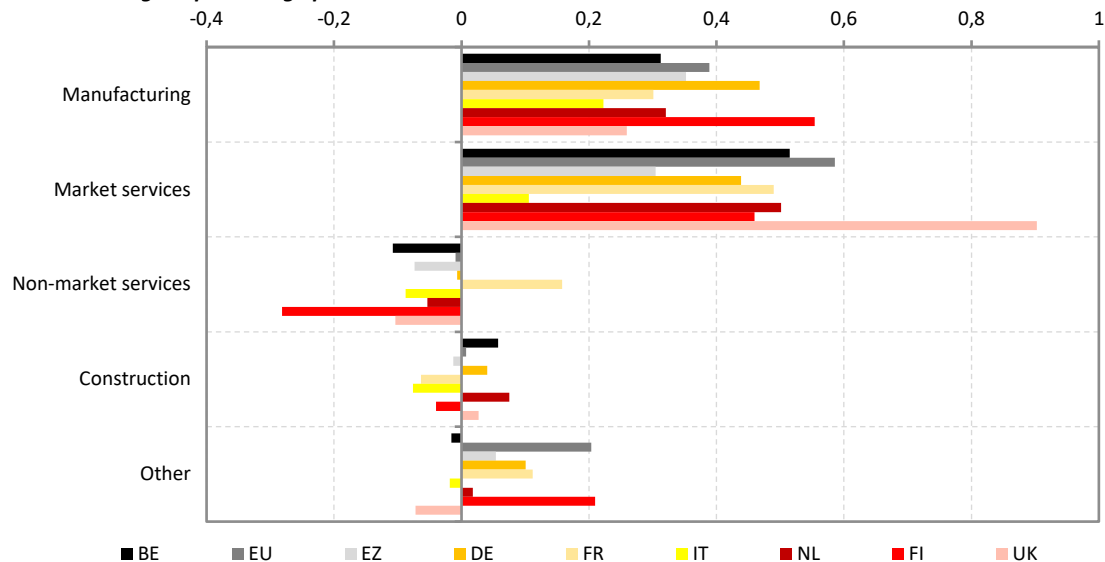
Note: Manufacturing corresponds to heading C, market services cover headings G to N and non-market services cover headings O to U of NACE Rev. 2.

Source: Eurostat, National Accounts, October 2020.

Taken together, these developments in productivity and the shares in the economy of the various activities contribute to the productivity growth of the total economy, which varies considerably from one country to another. The contribution to economic productivity growth of the main categories, illustrated in graph 2, shows

that in Belgium, like in the other investigated countries, productivity growth mainly relies on two categories of activities: manufacturing and market services. In general, market services make an important contribution because their economic weight is significant, while the contribution of manufacturing is important because productivity growth is higher than in the rest of the economy. This graph also highlights the specialisation of countries in certain activities. For example, the contribution of market services is particularly high in the United Kingdom, while the contribution of manufacturing stands out for Finland and Germany. In Belgium, as in France and the Netherlands, the contribution of market services is higher than that of manufacturing (0.5 percentage points for market services compared to 0.3 percentage points for manufacturing in each of the countries listed).

Graph 2: Sectoral contribution to productivity growth: Belgium and other EU countries, 2000-2018
Annual average in percentage points



Note: Manufacturing corresponds to heading C, market services cover headings G to N and non-market services cover headings O to U, construction covers heading F and Other covers headings A, B, D and E of NACE Rev. 2.

Source: Eurostat, National Accounts, January 2020.

The contribution of the construction sector depends on the scale of the real estate crisis that has affected the country. This contribution was slightly positive in Belgium, Germany and the Netherlands, countries that were no or less affected by the bursting of the housing bubble, while the contribution was negative in Italy, France and, to a lesser extent, Finland.

With the exception of France, the contribution of non-market services is negative. However, it should be noted that for most of these activities, labour productivity is not an indicator of efficiency or effectiveness. The system of national accounts³ which has to include the activities of non-market producers, i.e. producers who supply most or all of their production to others, either free of charge or at economically insignificant prices, faces a problem to measure this production in volume terms (Box 2). For this reason, the non-market sector analysis will not be extended further. Nevertheless, the efficiency and effectiveness of these activities are crucial for the functioning of the economy and receive increasing attention in productivity analyses.

Box 2. The problem of estimating the volume of value added in national accounts - two examples: health and education services

Introducing a global system of price and volume indices covering all professions and all sources of goods and services encounters a specific problem when it comes to measuring the production of non-market services in volume terms. Non-market services differ from market services in that they are not sold at market prices. It is

³ An accounting framework that allows the overall economy to be described systematically and in detail from three angles (production, income and expenditure).

therefore not possible to determine a deflator in line with the market for these services. The volume estimation is therefore done on the basis of a volume indicator.

In the national accounts of Belgium, the value added of health services is estimated on the basis of administrative data, such as hospital accounts. However, the "human healthcare" sector is also characterised by a certain level of government intervention (indirectly, as the government provides reimbursements), which often means that a market price is not available for this type of service. According to the recommendations of Eurostat in the 'Handbook on price and volume measures in national accounts', direct volume indices are the preferred method in this case. In Belgium, these volume indicators are based on the number of services provided per type of service. The handbook also contains an explicit restriction on making additional explicit quality adjustments in this volume estimate. This is due to the lack of consensus at European level on the methodology that should be used. This may result in some quality adjustments being reflected in the deflator and not in the volume estimate.

A similar reasoning also applies to education services. In Belgium, this type of service is primarily produced by the government. Consequently, according to the ESA 2010 definitions, the production of non-market education services is equal to the sum of its costs. In order to estimate volume, a direct volume indicator is estimated, based on the number of pupils. The deflator is therefore also a derived estimate between value in volume for this sector. Here too, there is the problem of measuring quality adjustments.

In terms of dynamics, for all countries except Italy, the contribution of both manufacturing and market services to overall productivity growth declined over the period 2012-2018 compared to the pre-crisis period, 2000-2007 (Table 4), but this decline was particularly pronounced in Belgium, as well as in France and Finland.

**Table 4: Contribution to the average annual growth rate of labour productivity per hour of the total economy
In percentage point**

	Manufacturing		Market services		Non-market services		Construction		Other	
	2000-2007	2012-2018	2000-2007	2012-2018	2000-2007	2012-2018	2000-2007	2012-2018	2000-2007	2012-2018
EU	0.6	0.3	0.9	0.5	0.0	-0.1	-0.1	0.1	0.3	0.1
euro zone	0.5	0.4	0.4	0.3	-0.1	-0.1	-0.1	0.0	0.1	0.0
BE	0.6	0.2	0.7	0.5	-0.1	-0.1	0.1	0.1	0.0	-0.1
DE	0.8	0.4	0.8	0.4	-0.1	0.0	0.1	0.0	0.1	0.1
FR	0.5	0.2	0.6	0.6	0.2	0.2	-0.1	0.1	0.2	0.1
IT	0.2	0.3	0.1	0.2	0.0	-0.2	-0.2	0.0	-0.1	-0.1
NL	0.5	0.3	0.8	0.3	-0.1	0.0	0.1	0.2	0.1	-0.2
FI	1.6	0.6	0.7	0.2	-0.3	-0.2	-0.1	-0.1	0.2	0.3
UK	0.6	0.0	1.7	0.5	-0.1	-0.2	0.0	0.0	0.0	0.0

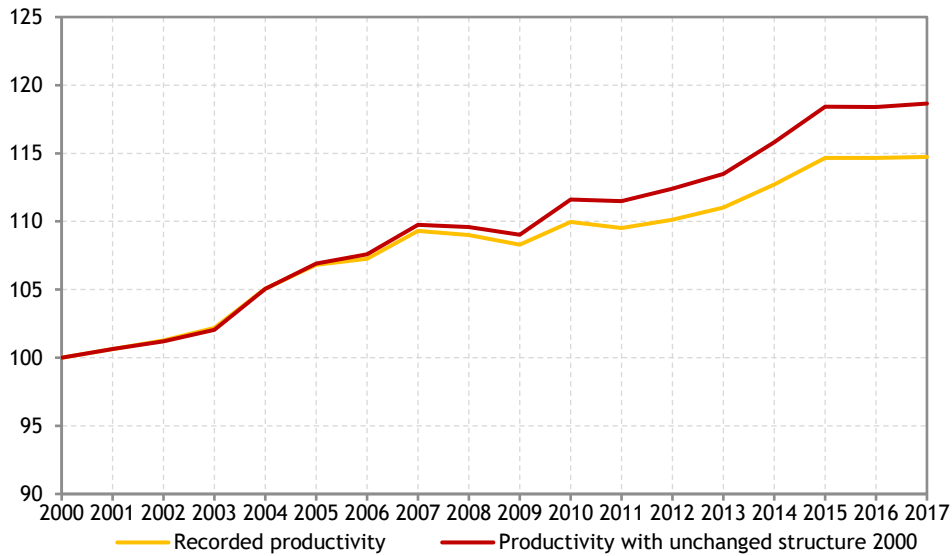
Note: Manufacturing corresponds to heading C, market services cover headings G to N and non-market services cover headings O to U, construction covers heading F and Other covers headings A, B, D and E of NACE Rev. 2.

Source: Eurostat, National Accounts, October 2020.

Weaker productivity growth in services compared to manufacturing, coupled with the growing importance of services in the economy, may partly explain the slowdown in productivity growth for the whole economy. If the structure of the sectors in the economy had remained unchanged⁴, the cumulated productivity growth of the Belgian economy would have been 3.2 percentage points higher than the growth actually recorded over the period 2000-2017 (19.3% instead of 16.1%). The structural effect is somewhat stronger in Belgium compared to the three neighbouring countries (Netherlands 3.3 pp., Germany 2.6 pp. and France 2.3 pp.). As illustrated in the graph, the change in the structure of the economy visibly weighs on the evolution of productivity, especially since the crisis. But the evolution of the structure of the economy alone cannot explain the slowdown in aggregate productivity. This also needs to be analysed within industries.

⁴ The share of each industry in hours worked and value added, as recorded in 2000, remained constant throughout the period under review.

Graph 3: Evolution of recorded productivity and productivity with the economic structure unchanged
Index, 2000=100



Source: Eurostat, National Accounts, January 2020, FPB's own calculations.

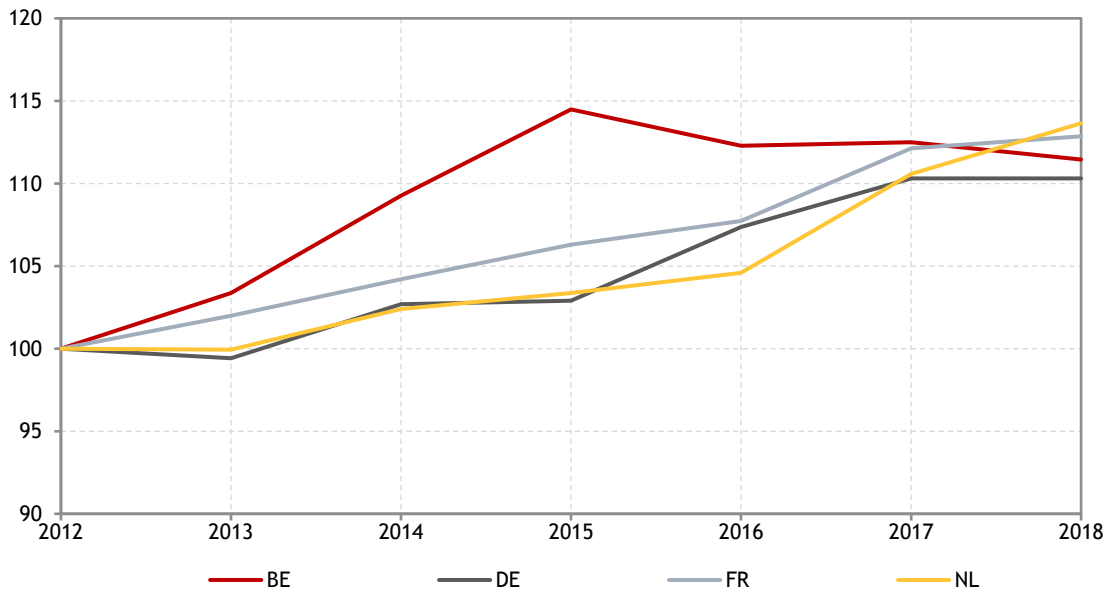
To better understand the origin of the slowdown in productivity growth, it is interesting to look in more details at the evolution of productivity in manufacturing and market services. This analysis is carried out at the A38 level of the national accounts nomenclature, which is the most detailed level for which data on hours worked are available in Belgium. The analysis is primarily carried out in comparison with the three major neighbouring countries.

Manufacturing

As is the case in most developed economies, the weight of manufacturing industry in the Belgian economy continues to decline. The share of manufacturing in total value added in Belgium fell from 20% in 2000 to 14% in 2018. In terms of hours worked, the same phenomenon can be observed: the share of hours worked in manufacturing in total hours worked in Belgium fell from 16% in 2000 to 11% in 2018. Nonetheless, the importance of manufacturing in Belgium remains larger than in the Netherlands and France, both in terms of share in value added and in terms of share in the volume of labour (Table 3).

In terms of the dynamics of productivity of the whole economy, the decline in the relative importance of manufacturing is generally offset by higher productivity growth than in the rest of the economy. However, from 2015 onwards, the productivity growth of Belgian manufacturing has been negative. Similar slowdowns have not been observed in neighbouring countries (Graph 4). For the whole period 2012-2018, manufacturing productivity growth remained positive, but with an average annual growth rate of 1.8%, it is clearly slowing down, as is the case in Germany with 1.6%, in France with 2.0% and in the Netherlands with 2.2%.

Graph 4: Evolution of labour productivity in manufacturing
Index, 2012=100



Source: Eurostat, National Accounts, October 2020.

At the A38 level of the nomenclature of the national accounts, the manufacturing sector is divided into 13 industries. The four main industries in 2018, in terms of nominal value added, which together accounted for more than half of manufacturing value added, were the chemicals industry (16.4%), the food industry (15.2%), the pharmaceuticals industry (14.6%) and metallurgy (12.5%). The level of concentration of the activities in terms of value added was close to that of Germany (57.8%) and the Netherlands (57.9%), and higher than that of France (56.9%)⁵. In terms of labour volume, the four main industries were the food industry (19.1%), metallurgy (15.6%), rubber and plastics (10.2%) and other manufacturing (9.4%). These four industries represent more than half of the labour volume of the Belgian manufacturing industry. The level of concentration of the activities in terms of labour volume is higher in the three neighbouring countries, with 56.1% for Germany, 63.9% for France and 64.1% for the Netherlands⁶.

The comparison of the productivity performances before the crisis of 2008, over the period 2000-2007, with those after the crisis, over the period 2012-2018, identifies three manufacturing industries (Table 5) that show a decline in productivity during the recent period, and six industries, including pharmaceuticals, food and rubber and plastics, showing a marked slowdown in productivity growth. Conversely, the chemicals, metallurgy, motor vehicle and other manufacturing industries have experienced accelerating productivity growth. These four industries are also the only ones to experience an acceleration in the growth of value added in volume between the two periods.

⁵ The most important industries in Germany are: manufacturing of motor vehicles, manufacturing of machinery and equipment, metallurgy and the chemicals industry. The same industries can be found in the Netherlands, but the food industry replaces the manufacturing of motor vehicles. The main sectors in France are the food industry, manufacturing of motor vehicles, other manufacturing industries and metallurgy.

⁶ In Germany, the most important industries in terms of labour volume are the same as those in terms of value added, with the exception of the chemicals industry, which is replaced by the food industry. The food industry, other manufacturing industries and metallurgy are in the top 4 in France and the Netherlands. In France, this list is supplemented by the rubber and plastics industry, and in the Netherlands by manufacturing of machinery and equipment.

Table 5: Average annual growth rate of value added in volume, hours worked and productivity per hour in the Belgian manufacturing industry

In %

	Value added			Hours worked			Productivity		
	00-18	00-07	12-18	00-18	00-07	12-18	00-18	00-07	12-18
Manufacturing	0.6	1.8	1.1	-1.5	-1.5	-0.7	2.1	3.4	1.8
Food industry	1.5	2.3	1.2	-0.2	-0.4	0.5	1.7	2.8	0.7
Textile industry	-4.0	-0.9	-2.1	-5.0	-4.9	-2.1	1.0	4.3	-0.1
Wood and paper industry	-0.1	2.8	-1.7	-1.8	-1.7	-1.6	1.7	4.5	0.0
Petroleum refineries	1.7	10.2	-0.1	-0.1	-0.1	0.9	1.8	10.3	-1.0
Chemicals industry	0.2	-1.9	2.2	-1.5	-2.1	-0.8	1.7	0.2	3.0
Pharmaceuticals industry	6.3	9.5	5.7	2.0	2.7	2.8	4.2	6.6	2.9
Rubber and plastics industry	1.3	3.0	0.9	-0.9	-0.9	-0.6	2.2	4.0	1.5
Metallurgy	-0.6	1.4	-0.1	-2.0	-0.5	-2.3	1.4	2.0	2.2
Manufacturing of electronic products	1.0	5.5	2.3	-4.1	-4.9	-0.1	5.4	11.0	2.4
Manufacturing of electrical appliances	-3.9	-2.4	-5.8	-3.1	-4.1	-3.2	-0.8	1.8	-2.7
Manufacturing of machinery and equipment	-0.6	2.9	-1.6	-1.4	-0.1	-2.1	0.8	3.0	0.5
Manufacturing of motor vehicles	-2.4	-2.1	0.3	-3.5	-3.1	-2.2	1.2	1.0	2.5
Other manufacturing industry	1.5	-2.4	2.4	0.9	-1.4	1.7	0.6	-1.0	0.7

Source: Eurostat, National Accounts, October 2020.

The evolution of the labour volume in the whole manufacturing continued to decline over the period 2012-2018, but less markedly than over the period 2000-2007. Whereas in the period before the crisis only the pharmaceuticals industry saw an increase in hours worked, in the period after the crisis this was also the case for other manufacturing industries, petroleum refineries and the food industry.

The productivity performances dispersion decreased in Belgium over the period 2012-2018 compared to the period 2000-2007 as a result of a sharp decline among the best performers and the increase in the number of industries with declining productivity. On the other hand, the dispersion increased in Germany and France.

Compared to the three neighbouring countries, during the period after the 2008 crisis, there were five industries with the lowest performance in terms of productivity (food industry, textile industry, wood and paper industry, petroleum refineries and manufacturing of electrical appliances and equipment) and only one industry (other manufacturing) recorded the best performance, while four industries dominated the comparison during the period 2000-2007.

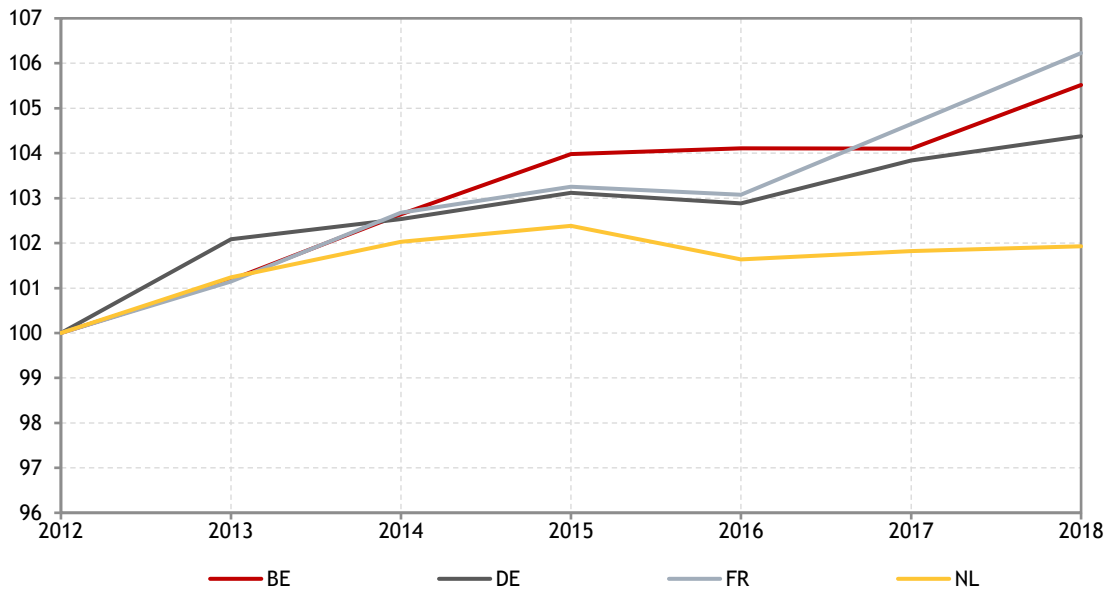
In conclusion, the pronounced slowdown in the productivity growth of the Belgian manufacturing can primarily be explained by the slowdown in the productivity of the industries that performed best in this domain before the economic and financial crisis of 2008.

Market services

As observed in most developed economies, the tertiarization of the Belgian economy continued at a sustained pace. In 2018, market services created more than half of the Belgian value added, accounting for almost half of the hours worked. The share of market services in the Belgian economy is higher than in the German and French economies but remains lower than in the Netherlands (Table 3).

In terms of the dynamics of the productivity of the whole economy, market services generally show lower productivity levels and gains than manufacturing: certain market services require personal contacts that offer fewer possibilities for automation and economies of scale, activities are also less standardised and some services are more subject to national regulations, with the result that some face barriers to competition. As in manufacturing, the financial crisis of 2008 was followed by a slowdown in productivity growth. The average annual productivity growth rate over the period 2012-2018 fell to 0.9%, from 1.3% over the period 2000-2007 (Table 2).

Graph 5: Evolution of hourly labour productivity of market services
Index, 2012=100



Source: Eurostat, National Accounts, October 2020.

At the A38 level of the nomenclature of the national accounts, market services is divided into 12 industries. In 2018, the four main industries, in terms of nominal value added, accounted for almost 67% of the market services value added: trade (21.3%), legal and accounting services (16.8%), real estate activities (16.7%) and financial and insurance activities (11.9%). The concentration in the four industries is slightly higher in Belgium than in each of the three neighbouring countries (64.9% in Germany, 64.1% in France and 63.6% in the Netherlands)⁷. In terms of hours worked, the concentration in the four main industries is relatively high in Belgium: 79% compared with 74% in the Netherlands, 71% in Germany and only 68% in France. In terms of labour volume, the four main industries are legal and accounting activities (25.7%), trade (24.9%), administrative services (17.3%) and transport and storage (10.7%). These four industries are also the most important in neighbouring countries, but trade systematically occupies the first place, and administrative services are second. The peculiarity of Belgium lies in the fact that corporate directors are obliged to adopt the status of self-employed person and are included in the national accounts in the industry 70, which is a component of legal and accounting activities, thereby increasing the relative importance of this industry in terms of employment.

The comparison of Table 6 with Table 5 shows that the performances in terms of productivity of the market services are more heterogeneous than the performance of the manufacturing. Over the recent period, 2012-2018, four service industries experienced falls in productivity (hospitality, publishing, film and video, real estate activities and advertising and technical services). By comparing the periods before and after the 2008 crisis, an acceleration in productivity growth is noticed in four industries, including telecommunications, legal and accounting activities, and administrative services. The dispersion of performances of the Belgian market services increase over the recent period compared to the period before the 2008 crisis, driven by an improvement among the best performers. This increased dispersion is not seen in any of the three neighbouring countries.

⁷ The four main industries in France, Germany and the Netherlands are the same: real estate services, trade, administrative services and legal and accounting services, but the order is somewhat different in the Netherlands, where trade is in first place.

Table 6: Average annual growth rate of value added in volume, hours worked and productivity per hour in the Belgian market services

In %

	Value added			Hours worked			Productivity		
	00-18	00-07	12-18	00-18	00-07	12-18	00-18	00-07	12-18
Market services	2.2	2.9	2.0	1.3	1.6	1.1	0.9	1.3	0.9
Trade	1.4	3.5	0.3	-0.1	0.5	-0.4	1.4	2.9	0.7
Transport and storage	0.8	0.7	0.7	-0.3	-0.7	0.3	1.1	1.4	0.4
Accommodation and food service activities	0.7	2.0	1.2	0.9	0.3	1.6	-0.2	1.7	-0.4
Publishing, film and video	0.5	0.5	-0.6	0.0	0.7	0.3	0.5	-0.2	-1.0
Telecommunications	6.2	5.9	6.3	-1.3	-0.9	-2.9	7.7	6.9	9.5
IT services	5.2	5.3	4.8	4.4	3.8	4.8	0.7	1.5	0.0
Financial and insurance activities	-0.2	1.0	-1.1	-1.3	-1.4	-1.5	1.2	2.5	0.5
Real estate activities	2.7	2.1	2.0	2.6	2.6	3.2	0.0	-0.5	-1.1
Legal and accounting services	3.7	4.8	3.7	3.0	4.1	1.2	0.7	0.7	2.5
Scientific R&D	6.6	5.8	12.6	2.9	3.5	4.5	3.7	2.3	7.8
Advertising and technical services	2.0	4.4	2.8	2.2	1.5	3.0	-0.2	2.8	-0.2
Administrative and support services	3.2	3.2	5.8	3.5	4.5	3.7	-0.3	-1.2	2.0

Source: Eurostat, National Accounts, January 2020.

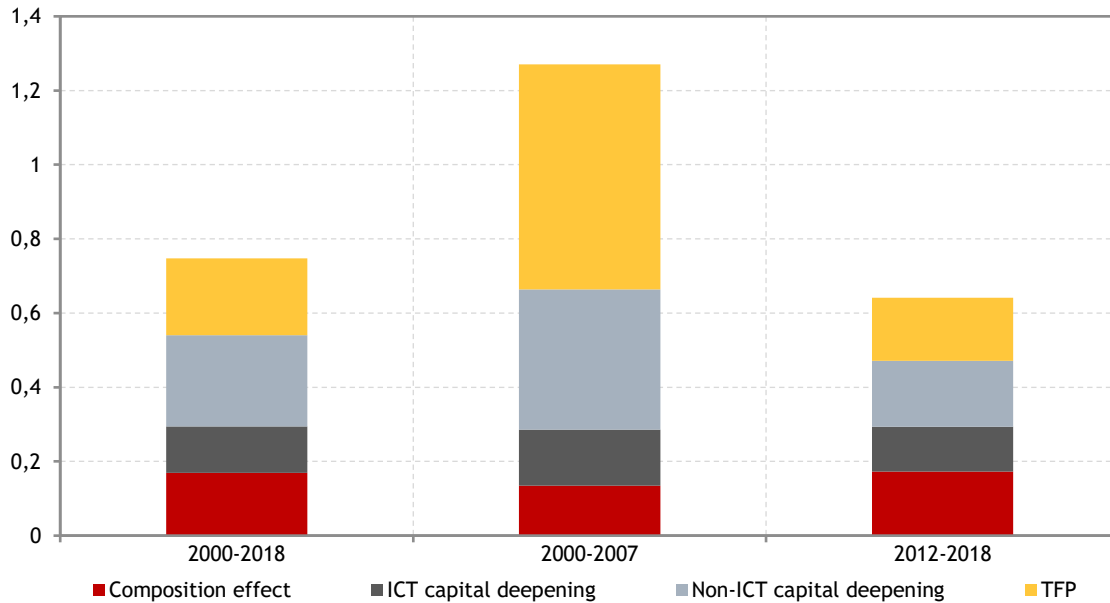
Compared to the three neighbouring countries, between 2012 and 2018, five sectors, including trade, financial and insurance activities and IT services, show the weakest productivity growth, and five other sectors (telecommunications, transport and storage, legal and accounting services, scientific R&D and administrative and support services) show the strongest productivity growth, while there were only two (hospitality and scientific R&D) for the period before the crisis.

In conclusion, the slowdown in productivity growth in market services can primarily be explained by the slowdown in productivity in industries that already had weak performance in this area before the 2008 economic and financial crisis.

Breakdown of productivity growth: decline in contributions of capital and technical progress after the 2008 crisis

As explained in the 2019 annual report, productivity growth is influenced by three elements: the composition of the labour force, the capital deepening of the production process and innovation in the broad sense measured by total factor productivity (TFP).

Compared to the previous report, which was based on OECD data, the following graph, based on EUKLEMS data, disentangles the effect of the composition of the workforce from TFP. Over the period 2000-2018, labour productivity growth is mainly explained by the contribution of capital deepening, i.e. the increase in capital per hour worked and, more specifically, of capital not related to ICT (buildings, equipment, and infrastructure). Improvements in total factor productivity as well as improvements in the combination of labour force characteristics contributed to a more limited extent to labour productivity growth.

Graph 6: Contribution to total productivity growth*In %*

Source: EUKLEMS database, June 2020 release; FPB.

Over the period 2000-2007, the contribution of TFP was slightly higher than that of the capital deepening. Following the economic and financial crisis of 2008, the contributions of TFP and non-ICT capital sharply decreased. The contribution of ICT capital also decreased, but to a more limited extent. The contribution of the improvement in workers' qualifications was not affected by the crisis, and even increased.

Conclusion

The main findings of this section devoted to the sector analysis of productivity growth are as follows:

- General slowdown in productivity growth, already observable before the 2008 economic and financial crisis, but amplified by the latter, particularly in Belgium.
- Slowdown in Belgium for all three main groups of activities, manufacturing, market services and non-market services, but particularly pronounced for manufacturing.
- In Belgium, as in France and the Netherlands, the contribution of market services to the overall productivity growth is larger than the contribution of manufacturing.
- In Belgium, a marked slowdown in productivity growth in the manufacturing is primarily explained by the slowdown in productivity growth in the best performing industries (electronics manufacturing, petroleum refineries, pharmaceuticals industry).
- In Belgium, the slowdown in productivity growth in market services is primarily explained by the slowdown among the services with already weak performances (real estate activities, publishing, film and video, hotels and restaurants, advertising and technical services).
- Slowdown in Belgian productivity growth following the economic and financial crisis of 2008, is explained by the decline in the contribution of total factor productivity and of non-ICT capital deepening.

2.2 Impact of the COVID-19 crisis on productivity growth

In 2020, the pandemic with which we are confronted and the measures taken to halt the spread of the virus will cause the deepest recession since the Second World War. The FPB⁸ and the NBB⁹ expect GDP to fall by 7% and 9% respectively. As the health situation improves, the economy will also pick up again. Nonetheless, the economy will have suffered irreparable damage in the meantime. Although the government measures have been able to maintain a large part of the capacity of the economy, business closures and job losses in the sectors most severely affected by the lockdown will be inevitable. In their June forecasts, the FPB¹⁰ and the NBB predict that, despite a recovery in consumption and investment in mid-2022, the value added of the private sector will remain about 4 percentage points lower compared to the scenario in which there was no pandemic. As such, the economic contraction of 2020 will no longer be fully offset in the following years, and the level of potential output is also lower than it would have been, had there been no crisis.

These projections are based on the assumption that long-term output growth will not be affected by the crisis. It will only become clear further down the line whether this assumption was correct. This was not the case, for example, after the 2008-09 financial and economic crisis, when productivity growth slowed down sharply, as shown in the previous point. Due to the major uncertainty, it is impossible to estimate at present the extent of the impact of the crisis on productivity growth. Nonetheless, an attempt is made below to identify the possible consequences on productivity growth. The focus in this regard is primarily on the longer-term consequences.

The starting point for this exercise is the growth accounting model, which looks in succession at the possible consequences of the crisis on the composition of labour, on capital deepening and on TFP (graph 5). The list is not exhaustive and, as already indicated, the precise extent of many of the consequences will only become clear in the coming months, but the exercise gives an idea of the potential risks and opportunities for productivity development and therefore provides a framework for reflection on the policy measures needed to ensure long-term productivity growth (point 3).

2.2.1 Impact of the crisis on the composition of labour

As stated in point 2.1, the contribution of the composition of labour to productivity growth following the 2008-09 financial and economic crisis was positive and remained relatively constant, but the current crisis may change this picture.

In the short term, the impact of the crisis on the composition of labour is relatively limited. On the one hand, a significant proportion of workers have been able to remain in employment via teleworking - since April, around one third of private sector employees have been working full-time or part-time via teleworking¹¹. The impact of teleworking on productivity is not unequivocal (see below), but it did gradually familiarise workers with a number of digital applications such as online meetings, workshops, webinars, etc., which may have had a positive effect on their ICT skills. In addition, in the short term, a significant proportion of workers fell into temporary unemployment status, which did not change employment figures as traditionally measured. In the first half of April, this concerned more than 30% of private sector workers, albeit highly concentrated in a number of sectors such as hospitality, events and leisure and retail (non-food)¹². This measure ensured that the productive potential was maintained in the short term. Indeed, (i) through this system, the employer avoids redundancy costs and the costs of hiring new employees once production can be resumed, and (ii) the company-specific skills of employees are not lost during the period of lower activity. In the same vein, self-employed workers who had to stop or drastically scale back their activities could count on financial support (the bridging right) in order to maintain their productive potential in the short term and ensure a rapid resumption thereafter. Nonetheless, in

⁸ Economic Budget 2021, September 2020.

⁹ 'Economic projections for Belgium - Spring 2020', NBB, Economic Review, June 2020.

¹⁰ Economic Outlook 2020-2025, June 2020.

¹¹ This share remained relatively constant, but there was a significant shift from full-time to part-time teleworking (ERMG, 7 October 2020).

¹² From May, we see a systematic fall of this share, to 6% in August. In September, the share remained at 6% (ERMG, 7 October 2020).

the short term, given the sharp fall in value added, these measures led to a sharp fall in labour productivity per worker (this is much less the case when looking at productivity per hour worked).

But what could we expect in the longer term? The temporary government support measures will not prevent certain companies going under, nor the loss of jobs. There is major uncertainty and the figures are contingent on the expected developments at the time the forecasts are made, but the estimated impact on employment is significant¹³. If temporary unemployment is a good predictor of future unemployment, we can assume that low-skilled persons will be over-represented, as they constitute a large share of employment in some of the activities most affected by the crisis (e.g. hospitality or non-food retail trade). Even if this may lead to an increase in the average skills level of workers, which would have a positive impact on productivity growth (composition effect), this is of course not good for potential output and for other social objectives (such as inclusiveness). It is therefore important that people who become unemployed are able to return to work as quickly as possible, which is not self-evident given that the profiles from the most affected sectors (e.g. hospitality, events, etc.) do not simply match those demanded by the growing sectors (e.g. ICT and healthcare).

If unemployment becomes long-term, it can have lasting effects on the skills of the workers in question (hysteresis). Firstly, during a period of unemployment, individuals usually accumulate fewer skills than when they are working. But there is also the risk that the unemployed person starts to lose his attained skills, because he cannot use them. Moreover, other psychological effects may also be possible. In some cases, unemployed people also label themselves as less competent, thereby limiting themselves and their opportunities on the labour market (see Vansteenkiste et al., 2020). The impact of these effects is substantial. Various studies have shown that the income of workers who lose their jobs is significantly lower for many years later, compared to a situation without job loss (see e.g. Eliasson and Storrie, 2006; Arulampalam et al. 2003, Tumino 2015). The fact that low-skilled people are harder hit by this crisis may increase the risk of hysteresis as this group is unemployed for a longer period of time.

The longer-term impact of the current crisis will also be determined by the impact on education and training. During the lockdown, large volumes of training (of the employed, but also of the unemployed) were cancelled or, where possible, replaced by remote training, although this is of course not always straightforward for all types of training. At the moment, social distancing requirements are still having an impact on the organisation of various training activities. On the other hand, specific actions have also been developed in response to the crisis, such as the offering of free online courses by various public and private organisations. Moreover, the current crisis may lead to a lasting positive evolution in the field of e-learning, which may have a positive impact if, for example, it allows more people to follow a training course, or if it allows more tailor-made training courses to be offered.

Similar effects are at play in education. During the lockdown, schools were closed for a number of weeks, and when they subsequently reopened, this was not full time in many cases. Until there is a vaccine, there may still be (isolated) interruptions in the future. The closure of schools was partly absorbed by distance learning. The effects of this are still uncertain and will depend on the extent to which the missed education can be caught up, but past studies have shown that even a relatively short interruption of education can potentially have a major impact (see e.g. Burgess, 2020; Carlson et al., 2005; Lavy, 2015). A first study by the KULeuven on the effect of the COVID-19 crisis and the closure of schools in Flanders already points to significant educational losses, up to the equivalent of what a pupil typically learns in half a school year¹⁴ (De Witte et al., 2020).

Vocational and technical education were hit particularly hard by the crisis. These students are taught via practical lessons which cannot be replaced by theoretical courses. The same applies to practical higher education. In some cases, the practical training was simulated remotely, but the learning experience is more limited in such cases (Schleicher, 2020). Due to social distancing requirements and the closure of businesses, work-based learning (an

¹³ For example, in its June forecasts, the NBB assumes that around 160,000 jobs will be lost by the end of 2020/early 2021. In their Economic Budget for September, the FPB and the NAI anticipate a fall in domestic employment of 128,000 persons by mid-2021.

¹⁴ For this research, the validated test scores for the sixth year of Catholic Education were used. Given that the sixth year is precisely the group of pupils that was allowed to return to school first (part-time), are already at the end of their primary education, and since the participating schools in IDP (interdiocesan tests) have a slightly more privileged pupil population than the Flemish average, it can be assumed that this is a conservative estimate of the actual learning losses for all Flemish pupils and schools (De Witte et al., 2020).

important component of dual learning) also came to a standstill for some time, significantly affecting the most vulnerable apprentices. Furthermore, there is a risk that the financially difficult situation in which many companies find themselves will make apprenticeship companies less inclined to invest in traineeships/apprenticeships in the long run (Montacue, 2020).

Besides a negative impact on average learning performance, the risk of greater inequality between pupils is also increasing. With distance learning, the quality of the learning environment at home (e.g. access to a computer, Internet connection, quiet environment to work in, etc.) and the ability of parents to help, become more important, which is particularly detrimental to children from socially weaker families. Moreover, these families are also more exposed to other challenges that have an indirect impact on school performance, such as increasing poverty and food insecurity. Indeed, the KULeuven study mentioned above shows a substantial increase in educational inequalities, which rises as the school has more pupils from disadvantaged socio-economic groups¹⁵ (De Witte et al., 2020). This can have a negative impact on social mobility (Montacue, 2020) which is not only undesirable from a moral perspective, but is also economically detrimental. In this way, many talents will be lost, which ultimately undermines productivity growth and economic growth (OECD, 2018). Moreover, it is increasingly recognised that too high economic inequality is accompanied by a growing distrust of fellow citizens and politicians (see e.g. Piketty, 2014, Ostry et al., 2014), which is not only problematic for democracy, but also has economic repercussions.

Conversely, a number of positive effects of the crisis on education can also be expected. Firstly, this exceptional situation creates an opportunity to integrate digital tools more and more effectively into the educational process. In Belgium, before the COVID-19 crisis, the use of digital tools was relatively low: in 2018, less than 30% of lower secondary school teachers used ICT technologies frequently or always for projects or class work, compared to 53% on average in the OECD and 90% in Denmark (Schleicher, 2020). The crisis prompted teachers and pupils to adapt quickly and use ICT. The competent authorities offered support in this regard (e.g. the Happi platform of the French-speaking community; the portal on distance learning in Flanders). Sensible use of distance learning in the future may increase the efficiency of education and also substantially increase the educational opportunities of students outside the school gate.

2.2.2 Impact of the crisis on quantity and type of capital per hour worked

The financial and economic crisis of 2008-09 clearly had a negative impact on the contribution of capital - especially non-ICT capital - to productivity growth and the slowdown in capital deepening persisted after the crisis period, which is observable in the period 2012-2018 (point 2.1). The current crisis could further reinforce this trend.

Impact on private investment

We currently see a strong negative impact of the COVID-19 crisis on business investment. Survey data from the ERMG (7 October 2020) show that companies with investment plans expect an unweighted average reduction in their investments of 20% in 2020 and 2021 compared to what was planned before the corona crisis, which will put pressure on future production capacity. However, there are significant differences between the sectors.

One significant cause of the falling investments is the major uncertainty regarding the future. Indeed, research carried out by the European Investment Bank (EIB) in the wake of the financial and economic crisis of 2008 shows that higher uncertainty reduces investment as companies postpone and rescale their plans (wait-and-see). The more irreversible the investment, the stronger this effect. Their research also shows that increased flexibility (labour and capital) waters down the wait-and-see attitude of companies. Very large companies and companies with a large share of intangibles also tend to react less negatively to uncertainty (Revoltella, 2020).

The effect of uncertainty is even stronger during recessions: lower cash flows reinforce the negative impact (Revoltella, 2020). The lockdown already had a negative effect on the cash flows of various companies: in many sectors, earnings fell sharply or even dropped completely, while fixed costs continued to be incurred. As the restrictive measures were lifted, the situation improved, but the slow and incomplete recovery of earnings came to a halt in September and no major improvement is expected before 2021 (ERMG, 7 October 2020). Weak

¹⁵ Educational loss and inequality also rise as the school is located in a more urbanised area and had lower test scores in the fourth year.

demand is still the main reason for the loss of earnings in September, on top of social distancing, supply problems and obligatory closures. Various sectors also need to take account of weak demand in the medium term. Not only domestic demand, but also international trade - which is crucial for an open economy such as Belgium's - is likely to remain weak for some time to come (see below). The other problems may also persist. For example, it is possible that company costs will continue to be higher for quite some time (perhaps even permanently), e.g. due to adaptations necessary for safe working; the hiring of security staff; a possible transition from a just-in-time to a just-in-case policy, etc. The economic outlook by the FPB and the NBB foresees a significant negative impact of the crisis on the gross operating surplus of businesses, which affects their internal financing capacity for investments.

Besides the impact on internal financing possibilities, the crisis may also have a negative impact on the external financing possibilities of businesses. Firstly, there is a link between these two sources of financing: a deterioration in earnings and profitability may be an obstacle for companies to obtain external financing, in particular for SMEs and micro-enterprises (Bańkowska et al., 2020a). But in addition, a protracted crisis could also lead to problems in the financial sector, which in turn would have a negative impact on the financing of business investments and therefore lead to a double dip. For example, the crisis may have an impact on the availability of bank financing, which is still the most important external source of financing for companies in Belgium¹⁶. The moratorium on loans and the guarantee on the new loans were useful measures in this respect. However, if businesses and households eventually run into payment problems and banks therefore face more bad debts, this may have a negative impact on banks' lending. It should be borne in mind, however, that the accumulated capital and liquidity buffers currently appear to be sufficient to absorb credit losses and ensure continued lending to the real economy (NBBa, 2020).

Besides having an impact on the total amount of investments, the crisis is also likely to have an impact on the type of investments made. For example, certain risky investments (e.g. R&D) may be postponed (see below). Given that these investments are important for technological progress - and thus for the evolution of TFP - this would have a negative impact on long-term growth. On the other hand, we can expect that COVID-19 will also accelerate certain investments, such as those in ICT. The lockdown boosted the adoption of ICT, in particular the products that are easy to buy, install and use and do not require physical interaction (e.g. videoconferencing software, digital collaboration tools, online learning tools, etc.) (OECD, 2020a). If this trend continues and other forms of digitalisation also accelerate, this could reinforce productivity growth. Dhyne et al. (2020) find an important return on investments in ICT for individual companies in Belgium: over the period 2002-2013, an additional investment in ICT capital with 1 euro on average resulted in an increase of the value added by 1.38 euro. Compared to other European countries, Belgium scores very well in terms of integrating technology into the activities of companies (3rd place in the EU28) (EC, 2020c), although for the period 2002-2013, Dhyne et al. (2020) found, based on their research, that too little investment is still being made by the that could increase productivity the most (e.g. large companies), an element that the crisis may change. In addition, the literature also highlights the importance of complementary factors such as training, organisational change, the right management skills, etc., in order to exploit the full potential of these technologies (see for example Bresnahan et al., 2002; Bloom et al., 2012; Crespi et al., 2006; Benhamou et al., 2020).

Finally, the crisis may also affect the size and type of foreign direct investment (FDI), which may also have an impact on productivity growth. Multinational enterprises (MNEs) are not only more productive on average (and more R&D intensive) than purely domestic firms (OECD, 2020b), but also create many spillover effects into the rest of the economic fabric (see below). OECD projections in early May showed that, even under the most optimistic scenario, FDI flows are likely to fall by 30% in 2020 compared to 2019. And if the health and economic measures do not generate sufficient results, FDI flows may continue to decline in the medium term, on the one hand due to a decrease in reinvested revenues, but also due to (forced) sales/liquidations of foreign operations (OECD, 2020c). In the longer term, the disruptions brought by the COVID-19 crisis may prompt some MNEs to rethink their value chains, e.g. creating opportunities for reshoring activities to Europe (see below).

¹⁶ According to a survey carried out by the European Investment Bank, bank loans in Belgium account for 66% of external financing for businesses, compared with 56% in the EU (EIB, 2017). Moreover, bank financing already predominates in the EU, especially when compared to the US (Laveren, 2016).

Impact on public investment

Besides the impact on private investment, the crisis may also have a negative impact on public investment. Although the budgets planned for 2020 have not been called into question so far - only their implementation has been postponed - the deterioration in public finances poses a risk to public investment in the future. Nonetheless, these are crucial for boosting productivity growth in the longer term (Dhondt and Heylen, 2009; Everaert et al., 2015) and thus also the best way to ensure the sustainability of public finances.

In theory, despite the sharp increase in the government deficit, the sustainability of public finances is not at risk as long as interest rates on government bonds remain below the sum of real growth and inflation. In such a situation, debt (as % of GDP) will always evolve towards a stable level. Nevertheless, the higher the level of debt and the shorter the maturity structure, the more difficult the situation will become if interest rates start to rise again. If the financial markets were to consider that the public debt of some countries is becoming unsustainable, the government bonds of these countries would be sold en masse, and they would have to pay higher interest rates on their public debt. In this way, the governments of these countries are forced to make additional savings (sometimes for years) and cancel vital investments. At the start of the crisis, the ECB intervened en masse to buy government bonds, more particularly of Member States that were under pressure from the markets¹⁷. However, in addition to its high debt ratio, Belgium has the disadvantage that the structural problems with which its economy has been struggling for decades remain present even after the COVID-19 crisis.

On the positive side, large-scale funding is envisaged at European level to support public investment and reform in the Member States (see point 3). This therefore creates opportunities for public investment.

2.2.3 Impact of the crisis on TFP

Increasing use of ICT

As mentioned above, the health crisis we are confronted with has given a strong boost to the adoption of ICT. Many companies did not anticipate on this, both in terms of digital infrastructure and in terms of management or employee mindset, but have had to resort to digital solutions due to the circumstances, and it seems that this trend will continue (at least in part) after the crisis.

A first notable development is the growth in distance selling. Falk and Hagsten (2015) found that, after checking for sector, annual and country-specific effects, changes in e-sales¹⁸ activities and labour productivity growth are positively related to a significant extent. E-commerce activities not only provide additional channels for companies to create business and enter new markets, but also to create value added. Moreover, they also offer opportunities for achieving economies of scale, especially in the case of cross-border e-commerce. This is all the more important for companies active in a small domestic market.

Before the crisis, Belgian companies scored relatively well on e-commerce (see also EC, 2020d). In 2018, 31% of non-financial companies with at least 10 employees sold via e-commerce versus 20% in the euro zone and 33% of earnings were generated via e-commerce versus 18% in the euro zone. The higher earnings were mainly due to good performance in Electronic Data Interchange (18% of turnover versus 11% in the euro zone) and business to business (B2B) and business to government (B2G) trading via websites (12% of turnover versus 4% in the euro zone). The share of earnings generated by business-to-consumer (B2C) online trading was much lower (only 3%) and was comparable to that for the euro zone¹⁹. The online B2C market was already growing strongly before the crisis - Belgian consumers' online spending increased by 118% between 2014 and 2019 - and the crisis has further boosted this trend. During the first COVID-19 quarter, the online services sector (such as travel and events) came to a complete standstill, but online purchases of products showed spectacular growth. More and more people found their way to e-commerce and those who shopped online also bought more (BeCommerce Market Monitor calculated by GfK, 11/6/2020). This trend is expected to continue in the future. In June, when the measures were relaxed and many stores reopened, a third of those surveyed said they would buy more online in the future (Van

¹⁷ Pandemic Emergency Purchase Programme of €750 billion, <https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html>.

¹⁸ A company is considered to be active in e-sales when it receives orders via a website, EDI-type systems or other means of electronic data transfer (in accordance with the European harmonised ICT usage in enterprise surveys).

¹⁹ If we disregard the turnover generated by B2C sales, but look instead at the share of companies with B2C web sales, Belgium scores better than the euro zone: 22% versus 13% in 2019.

Camp, 2020). In the past, however, various obstacles to the development of e-commerce in Belgium meant that approximately half of the online purchases made by Belgian private individuals were made from suppliers in other EU countries and not from national suppliers. This share was almost double the EU average (NBBb, 2020). It is as yet unclear what influence the COVID-19 crisis will have in this regard.

Another important development in the field of digitalisation is the spectacular rise in teleworking. Since April 2020, approximately one third of private sector employees have been teleworking full-time or part-time. This adaptation is likely to be permanent: around one third of the companies surveyed also anticipate a rise in teleworking in the future (ERMG, 7 October 2020).

The effect of teleworking on productivity is not unequivocal. On the positive side, teleworking can increase the efficiency of workers. This is the case if teleworking provides a better work-life balance, less commuting time, less distraction/more focus during work and/or less absenteeism. Furthermore, teleworking can also improve business performance by facilitating cost reductions (e.g. lower capital costs in terms of office space) and by increasing the pool of employees from which a company can select (the distance to the company becomes less important). Finally, the wider adoption of teleworking can also generate positive spillover effects for society as a whole. For example, it can reduce traffic congestion, reduce emissions and also lower house prices in densely populated areas.

But teleworking also entails risks for the evolution of productivity. For instance, it is also possible that worker efficiency falls as a result of teleworking. Teleworking can, for example, make communication between staff more difficult. Moreover, the lack of personal interactions can also reduce knowledge flows between employees, which can have a negative impact on innovation. Indeed, innovation largely depends on sharing knowledge: *'What each individual knows is less important (...), what counts is collective knowledge'* (Mokyr, 2002). Furthermore, teleworking can also complicate management oversight and exacerbate the *principal-agent* problem.

The ultimate effect of teleworking on productivity is therefore not unequivocal and will depend on various factors. One of these is the intensity of teleworking: the negative effect of the disappearance of human interactions may become stronger when teleworking becomes more intense, while satisfaction may suffer under 'excessive' teleworking. Personal characteristics are also important. Workers differ in their personal preferences and their ability to work independently. The ability to choose whether one teleworks, and to what extent, will therefore be important for achieving productivity gains (Criscuolo et al., 2020). Of course, it is also important that employees have a suitable working environment (ICT equipment, office space, child care, etc.). Finally, working from home also involves a learning process on the part of management. Managers will need to adapt to the opportunities and challenges posed by teleworking. This is in line with the above-mentioned importance of management skills and work organisation to exploit the full potential of ICT capital.

The exceptional circumstances of the crisis (e.g. children at home due to school closures, teleworking 5 days a week, poor ICT infrastructure, etc.) meant that the positive consequences did not always outweigh the negative ones. Indeed, a survey by a Japanese research institute during the lockdown showed a self-reported fall in productivity (Morikawa, 2020). This does not alter the fact that, if properly implemented, teleworking clearly has potential to increase productivity in the long run. Research conducted before the crisis already showed that Belgium was relatively well positioned in terms of the proportion of jobs that could be performed remotely (OECD, 2020d).

Impact on research and innovation

As already stressed in the previous NPB report, innovation is a crucial process for productivity growth. All socio-economic actors can innovate (governments, companies, non-profit organisations, etc.). Moreover, it is a broad concept. For example, e-commerce and teleworking, which were discussed above, are applications of marketing and organisational innovation respectively. In the text below, the scope is limited to the impact of the crisis on the development of new products and processes and on R&D expenditure.

In the short term, there are both positive and negative consequences. For example, there has been a lot of focus on developing new digital products (such as apps to trace infections, to make contactless payments easier, etc.). Universities, public research institutions, pharmaceutical and biotech companies also conducted a lot of R&D -

sometimes in collaboration - in the search for new treatments and a vaccine or other COVID-19 related challenges. On the other hand, due to the lockdown and social distancing requirements, various research projects and mobility programmes were interrupted or postponed; the social distancing measures also limited the familiar advantages of geographical proximity and the regular interaction between innovators, both formal (conferences, institutionalised collaborations) and informal (OECD, 2020c).

In the medium term, the impact is uncertain. Financing constraints and market uncertainty can slow down investment by companies in research and innovation. Past experience shows that the growth of business expenditure on R&D (BERD) often moved in lockstep with GDP growth. For example, on average across all OECD countries, we saw a sharp fall in the growth of this expenditure in times of economic downturn such as during the recession of 2001-02 and the financial and economic crisis of 2008-09 (OECD, 2020c), a phenomenon that definitely occurred in Belgium in 2001-02. Innovation is, of course, broader than R&D, but these falls in business expenditure on R&D are detrimental to the long-term innovation performance of businesses, and thus to productivity growth. This is all the more relevant when, as a result of the fall in R&D expenditure, qualified researchers or other innovation staff also lose their jobs (OECD, 2020c). The effect can however differ between sectors. For example, the digital economy may be an exception to lower investment in research and innovation as demand was less affected there. Businesses will also be more inclined to invest in R&D and innovation if they are certain that specific long-term transformations will take place in their sector (OECD, 2020c).

The government can play an important role in stabilising investment in R&D and innovation during recessions (see e.g. Paunov, 2012), but deteriorating public finances and urgent socio-economic needs are a risk in this respect. They can jeopardise the public funding of R&D. At the same time, the specific nature of the current crisis, with the strong public focus on science and the appreciation for its contribution to resolving the COVID-19 crisis, as well as the renewed and ambitious policy objectives in terms of resilience and sustainable recovery, may also lead to a net increase in public support for (basic) research (OECD, 2020c).

Besides a possible impact on the level of R&D and innovation expenditure, the crisis may also cause a shift between innovation domains. As such, we can expect that innovation in the area of ICT will remain significant even after the COVID-19 crisis. An important reason for this is that the corona crisis has accelerated the adoption of these technologies (e.g. electronic payments; online purchasing, etc.). This has led to a change in mindset among many people with regard to these new technologies, which is likely to further accelerate the adoption of new technologies in the future (Abi Younes et al., 2020) and thus increase the incentives to innovate in this field. Furthermore, broadening the user base also leads to new product requirements and therefore to new opportunities for innovation (OECD, 2020c).

One of the ICT technologies that has grown exponentially in recent years is Artificial Intelligence (AI). Already before the crisis, various studies and surveys at companies estimated that artificial intelligence would have a major impact on their product range and the various production processes in the coming years (Ransbotham, S. et al., 2017). The current crisis may prompt this technology to find its way into new applications, e.g. in the area of production planning, inventory management, demand forecasting, etc. (Abi Younes et al., 2020). Although the EC recently presented a framework to step up its commitment to responsible and ethical AI in the hope of catching up, the US and China are currently the global leaders in AI. The crisis could give the tech titans from the US and China even more power, allowing them to dominate the entire technology and innovation arena in this field.

The impact of the crisis on *clean technologies* is more equivocal. The pressure on governments to reduce the costs of businesses and job losses is immense and may jeopardise the green revolution. The relatively low oil price, which is due in part to the crisis, also reduces the financial incentives to invest and innovate in clean energy. This poses significant risks, not only for the emergence of a climate crisis in the future, but also for long-term productivity development. Indeed, investments in obsolete technologies risk having to be depreciated in the relatively short term. It is already encouraging that at European level the pre-crisis climate ambitions have been maintained and even reinforced, and that the European recovery plan from the end of July 2020 is also included in the strategy of the European Green Deal.

Finally, the crisis may also have a lasting impact on the way research and innovation are conducted. The need to find quick solutions to the health crisis has resulted in an unprecedented number of open science initiatives (e.g. data sharing initiatives, online collaboration platforms, etc.) (OECD, 2020c). Another major change relates

to the use of AI tools and technologies for research (e.g. in the development of medicines and vaccines) and the use of digital (communication) technologies for collaboration, knowledge exchange and training (OECD, 2020c). Even though not all experiments were equally successful, some of them may eventually increase the efficiency of the research process.

Impact on business dynamics

An important process for productivity growth is the start-up and upscaling of new businesses. Young firms appear to be crucial for productivity growth (see e.g. Bartselsman and Doms, 2000; Foster et al., 2001; Sleuwaegen, 2016). In addition, they also contribute disproportionately to net employment growth (see e.g. Criscuolo et al., 2014 and for Belgium Dumont et Kegels, 2016).

In the recent years, we have seen a decline in business dynamics in most developed countries, a phenomenon that primarily occurs in digitally intensive sectors (see e.g. Calvino et al., 2019). A decline in business dynamics has also been observable in Belgium since the early 2000s. Following a decline in the start-up ratio in the 1990s, Belgium has had a declining share of young companies with high growth since the turn of the millennium (Bijns and Konings, 2018). The fact that this trend can be observed in several countries, including countries with a high initial level of business dynamics and a less rigid institutional environment such as, e.g., the US, suggests that global trends rather than country-specific changes are determining this evolution, but further research is needed into the precise causes.

The decline in business dynamics may be exacerbated by the current crisis. Firstly, start-ups (young businesses) are hit hard. Nonetheless, a number of young companies managed to respond quickly and flexibly to the pandemic and played a crucial role in the search for answers to the challenges posed by the crisis (e.g. the launch of digital health services, solutions to facilitate teleworking or online learning, etc.). But the majority of existing start-ups are more vulnerable than established companies. Their activities are often more risky than those of the average SME, they face limitations in accessing traditional finance and they still have an incipient relationship with customers and suppliers (Calvino et al., 2020).

Yet, the start-up ratio, which was already low in Belgium before the crisis, may fall even further. Crisis periods are generally accompanied by a fall in company registrations (Calvino et al., 2020). This was also the case for Belgium during the recession of 2008-09 when there was clearly lower entry of new companies (Dumont and Kegels, 2016). This is problematic given that a lower number of new companies, even if only in a certain year, clearly has longer-term consequences (*missing generation effect*). Even though many of these companies might not have survived in any case, some would have been able to grow (strongly) and create jobs in the long run. In this way, a lower entry ratio will have a negative impact on the future employment and output. Simulations based on the OECD DynEmp database show that a 20% drop in the number of new firms leads to a loss of 0.7% of aggregate employment 3 years after the shock, and of 0.5% still 14 years after the shock (Calvino et al., 2020). Specifically for Belgium, Karimov and Konings (2020) calculated that the current crisis could cause an employment gap of 8,000 jobs in Belgium within 10 years, compared to a scenario in which there is no drop in the number of start-ups, primarily due to the missing generation of start-ups having long-term consequences.

At the same time, it should be borne in mind that many successful innovative start-ups or companies have emerged in times of crisis. Examples include Dropbox, Uber, Airbnb, WhatsApp, Pinterest... all of which were founded during or just after the 2008-09 financial and economic crisis. This shows that in times of crisis, there are also opportunities for entrepreneurship; start-ups can help to overcome the constraints created by challenging health or economic conditions, and respond to changed preferences and needs of consumers and society (Calvino et al., 2020).

A first analysis of the start-up of new companies in Belgium shows a strong negative impact in April and May, but in June and July of this year the start-up rate was again as high as in 2019 and higher than the average for 2015-2018. This can clearly be explained in part by a catch-up after the sharp fall in April and May, and it remains to be seen how the figures will evolve, but it is already a hopeful sign (Dumont, 2020).

Besides the entry of new companies, the exit of unproductive companies is equally important for productivity development. The crisis may accelerate this process. In the first phase, we did not see many bankruptcies due

to government support measures²⁰ and the temporary moratorium protects companies struck by the COVID-19 crisis. However, there is a real risk that the liquidity problems of companies will ultimately result in solvency problems, which may lead to a large rise in the number of bankruptcies in the following phase. Even companies that were healthy and profitable before the crisis will also be affected. When these companies are closed down, a big part of intangible capital (organisational capital) is largely or completely lost (see e.g. Lev et al., 2003), which is detrimental to productivity development. On the other hand, the industries that were/are hardest hit by the crisis often also have low levels of productivity and low productivity growth. This facilitates a reallocation of labour and capital to more profitable, productive companies/activities, which in turn is positive for productivity development.

It is crucial for productivity growth that zombie firms - i.e. those that survive without being profitable in the long term - also exit sufficiently quickly. As indicated in the previous NPB report, Belgium is characterised by a high proportion of zombie firms. They account for around 10% of all businesses, which is very high compared to other European countries (e.g. 3% in France). Not all of these companies are inefficient, but most of them show weak TFP (growth) (De Mulder and Godefroid, 2018). These companies also exert a congestion effect: weaker growth is observed in healthy companies where the share of lending to zombie firms is higher (De Jonghe, O. et al.).

There is a danger that zombie firms will remain a problem after the COVID-19 crisis. For instance, low interest rates allow unprofitable companies to survive (see e.g. Erken et al., 2020). However, government support policies can also make the creative destruction process less effective (i.e. by keeping alive companies that were already unprofitable before the COVID-19 outbreak), which would be detrimental to productivity growth.

Impact on competition

The COVID-19 crisis can affect the market structure in various ways. For example, the increased number of bankruptcies due to the crisis may result in higher levels of concentration (OECD, 2020f). Fewer companies means less competition, more market power for some sellers and some buyers, and more risk of price coordination between them (Bear, 2020). Moreover, the large players may emerge stronger from the crisis at the expense of the smaller players, which may pose additional challenges in terms of competition (OECD, 2020a).

Furthermore, the crisis may also encourage mergers and acquisitions (M&A) - including companies wishing to improve their position by merging with healthier competitors - which will also encourage concentration. In certain sectors, it will be argued that the weakness of one or more companies requires consolidation and rapid approval. In non-concentrated markets, this may be the right solution, but in markets with only a limited number of players, this will have a negative impact on innovation, quality and price over time (Bear, 2020). Sufficient oversight is necessary - even in urgent and critical cases such as the acquisition of a company that might go bankrupt - to avoid lasting damage to market structures (OECD, 2020f).

The crisis also led to increased cooperation between competitors, such as joint research projects and the joint production/distribution of essential goods. These arrangements were/are necessary to meet certain challenges, but should not last longer than necessary. In addition, competition authorities should ensure that such cooperation does not lead to reduced competition e.g. through price fixing (OECD, 2020f). The urge to form cartels is typically stronger in a context of falling prices, due to lower demand (Bear, 2020).

The relative position of the large - primarily American and Chinese - tech platforms was also further strengthened by the crisis. Even before the crisis, these platform companies had become very powerful in the value chain; due to economies of scale and network effects, they face little in the way of competition. A further strengthening of their position not only poses a risk to productivity development, but can also reduce Europe's ability to steer the developments in this area - including ethical aspects.

Finally, as mentioned above, State aid may also distort competition. In order to mitigate the economic impact of the COVID-19 pandemic and to keep the economy functioning, the EC relaxed State aid rules. There is a risk that if this State aid is not properly designed (clear, transparent, competitive, neutral), it could distort the level-playing field between companies receiving state aid and those who do not (OECD, 2020f). There is then a risk

²⁰ This relates not only to direct and fiscal support, but also the possibility of deferred payment for stable businesses and the self-employed and the guarantee scheme for new loans which meet certain conditions.

that goods and services will no longer be produced by the actors who can do it most efficiently, with negative consequences for productivity.

This distorting effect occurs not only between companies, but also between countries. There is a major difference in the budgetary leeway of countries to additionally stimulate the economy, not only within Europe (e.g. DE, FR and NL versus IT and ES), but also internationally (the US and China versus Europe). Even though there are, certainly for a small, open economy such as Belgium's, positive spillovers from a well-functioning global economy, the differences in state aid between countries can still distort competition among countries.

Impact on value chains and globalisation

Belgium benefits significantly from its integration into the world economy. As already emphasised in last year's report, this goes beyond the import and export of final goods. For example, being part of global value chains also brings various benefits: greater efficiency in the allocation of resources, wider variety and better quality or cheaper intermediate inputs, and improved technology transfer along the value chain (CompNet, 2020). Foreign direct investment (FDI) also has an important impact on productivity growth. Indeed, multinationals are on average more productive (and more R&D intensive) than purely domestic firms (OECD, 2020b). They also have typical positive spillover effects on the rest of the economic fabric: they stimulate technological innovations (through increased competition, but also through spillovers of know-how and knowledge); they contribute to the formation of human capital (inter alia, through the mobility of workers and management); they facilitate integration into international trade, etc. Moreover, analyses based on previous crises have shown that foreign subsidiaries (including SMEs) often show greater resilience during crises thanks to their links with and access to the financial resources of their parent company (e.g. Alfaro and Chen, 2012).

The crisis, and in particular the lockdown, had a strong negative impact on world trade and foreign direct investment and this effect may become structural. As indicated in point 2.2.2, liquidity and solvency problems may encourage companies to phase out some of their foreign operations (Borga et al, 2020). In addition, the current crisis for companies also highlighted various risks of globalisation. Concerns about potential vulnerabilities of global value chains are nothing new, but companies are now experiencing abrupt disruptions in their supply chains, which may prompt them to (eventually) overhaul their internationalisation strategy, with possible cost increases as a result. Moreover, such a process could be encouraged by regulators and financial intermediaries who are likely to incorporate pandemic shocks into their risk assessments and stress tests in the future (cf. Baldwin et al., 2020).

In concrete terms, companies may decide to diversify their supply network more or to shorten their supply chains. Industry 4.0 technologies such as robots, 3D printing, smart companies, etc., can also encourage companies to reshore some of their activities. Nonetheless, the phenomenon of reshoring has remained relatively limited to date (OECD, 2020b). The link with automation is not unequivocal either. Over the period 2011-2016, countries specialised in innovative tasks within global value chains experienced higher automation, but at the same time their participation in global value chains decreased less than in other countries. Moreover, new developments - such as the entry of other low-cost countries into global value chains or the arrival of new emerging markets with growing consumer demand - could slow down the trend of automation and reshoring (Seric and Winkler, 2020).

Another question is how countries will react. Even before the COVID-19 pandemic, we saw a protectionist reflex (cf. the trade war between the US and China, Brexit, etc.) and there is a real risk that the current pandemic will reinforce the existing trend towards less multilateralism. The crisis has clearly exposed a number of dependencies and weaknesses that have significantly increased demands to no longer be dependent on foreign countries for the production of certain goods/services. In the same vein, the crisis has increased attention to the potential loss of control over decision-making in certain key sectors. There is a concern that the COVID-19 crisis is making European companies that are healthy but in a financially weaker position easy prey for foreign (Chinese, US ...) buyers, with the risk that know-how and other capacity in critical sectors will be siphoned off abroad (SERV, 2020).

The challenges outlined above are genuine and need to be addressed in order to build strong, resilient value chains. At European level, efforts are already being made to develop more strategic autonomy (e.g. through investment in supercomputers, the hydrogen strategy, etc.). However, to the extent that the measures taken

also increase the cost of production (e.g. by smaller economies of scale, lower knowledge spillovers, lower competitive pressure, etc.), this will be at the expense of future productivity growth. In short, we need to respond to the challenges with which we have been confronted during the current crisis, but it is important to reflect carefully about the design of the solutions, so that the negative consequences (including on productivity growth) are minimised as much as possible and no new problems are created. In the near future the mass production of a COVID-19 vaccine will require a significant international effort and cooperation in international production networks. Openness and global cooperation (multilateralism) will therefore remain crucial in the future, but it is important that everyone adheres to the same rules. A global level-playing field must be central to the European approach to international cooperation.

3 Appropriate policies for productivity growth

In point 2.2, we gave an overview of both the risks and opportunities of the COVID-19 crisis for productivity growth. From a policy perspective, it is important to manage these risks and maximize the opportunities, taking into account the important structural challenges that already existed before the COVID-19 crisis. This is the focus of this chapter.

The starting point for this exercise is the annual country specific recommendations (CSRs) issued by the European Council to each Member State in the context of the European Semester, and whose implementation is monitored by the EC in the country report. An important motivation in this regard is that one of the missions of the NPB is to evaluate the EU's recommendations in the area of productivity. The exercise can also be interesting in the context of the European Recovery and Resilience Facility (RRF²¹), where member states can call on grants and loans to finance all or part of a national plan for recovery and resilience, approved by the other Member States and the EC. The European facility foresees that this national plan for recovery and resilience responds to the recommendations of recent years and in particular, the 2019 and 2020 recommendations.

Starting from these European CSRs listed in point 3.1 and taking into account the analysis made in point 2.2, the Board proposes in point 3.2 a number of areas which it believes should be focused on as a matter of priority.

3.1 Possible measures to increase productivity growth: European Council's recommendations

Since 2011, the European Council has issued country-specific recommendations in the context of the European Semester, with a view to enhancing economic growth and employment. More attention has recently been given to additional aspects of the development of EU countries: the ecological and digital transition and social and territorial cohesion.

In the context of the European Semester 2020, the Council of the European Union recommends that Belgium undertakes the following action:

1. In line with the general escape clause, take all necessary measures to effectively address the pandemic, boost the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment Reinforce the overall resilience of the health system and ensure the supply of critical medical products.
2. Mitigate the employment and social impact of the crisis, notably by promoting effective active labour market measures and fostering skills development.
3. Ensure effective implementation of the measures to provide liquidity to assist small and medium-sized enterprises and the self-employed and improve the business environment. Front-load mature public investment projects and promote private investment to foster the economic recovery. Focus

²¹ In May 2020, a proposal for a Recovery and Resilience Facility (RRF) was launched as part of the European Recovery Plan (Next Generation EU). Legislation for this new facility is still under negotiation and will not be decided until January 2021.

investment on the green and digital transition, in particular on infrastructure for sustainable transport, clean and efficient production and use of energy, digital infrastructure, such as 5G and Gigabit Networks, and research and innovation.

Encouraging the development of skills, both public and private investments and innovation, and improving the business environment are four themes that have been included in the recommendations addressed to Belgium almost every year since 2011. In previous years, these four themes were supplemented by improving the conditions of competition in certain sectors (retail trade, energy, network industry, regulated professions). All these recommendations are intended to create favourable economic conditions for productivity growth.

Every year, the Commission monitors the implementation of these recommendations in the country report. For this, it relies on a database, CeSar, which monitors the implementation of CSRs divided in subgroups. The five themes and the relevant sub-groups, as well as their implementation according to the Commission's assessment, are described below. A detailed table is also available in appendix 2.

Developing skills

The acquisition of skills, the development of knowledge related to new technologies or research activities, increase the productivity of the workforce. The Commission recognises that efforts have been made to make scientific studies more attractive, to increase participation in lifelong learning, to develop the provision of online training, to improve schools' digital facilities and to develop learning methods adapted to the new tools. Nevertheless, it underlines the persistence of shortages of labour with specific skills, of low participation in life-long training and of lack of coordination of the policies implemented by the different Belgian entities. There is therefore still room for improvement in all aspects of this theme.

Ramping up public investment

Following the financial and economic crisis of 2008, the European Union launched the Investment Plan for Europe to boost public and private investment in the Member States. Indeed, in function of the initial circumstances, an increase in public investment could yield a double dividend: strengthen growth in the short term by increasing aggregate demand, and increase growth in the long term thanks to its effect on aggregate supply. Public investment can improve the TFP of private companies by reducing their production costs and by increasing the accumulation of available knowledge in the economy. This positive effect can in turn encourage investment by these companies. Empirical studies have shown that not all categories of public investment have the same positive impact on private sector productivity and that public investment in infrastructure had the highest positive impact (Bom and Ligthart 2014).

Since 2016, the Commission has issued an annual recommendation to Belgium on strengthening public investment, particularly in infrastructure, and more specifically in rail transport. While welcoming the announcement of a national pact for strategic investment in 2017 and the efforts of the regions to improve public transport and soft mobility, the Commission stresses the need to improve coordination between the different authorities and to rationalise public spending (via a public spending review) in order to avoid an excessive increase in the public deficit.

Supporting innovation

Innovation provides productivity gains by increasing TFP. Promoting innovation requires encouraging R&D efforts, digitalisation and accumulation of capital based on knowledge.

The Commission acknowledges that the R&D intensity of Belgian private firms is relatively high but points out that it is highly concentrated in specific activities and specific firms. It also notes low R&D intensity in the public sector and calls for a monitoring of the effectiveness of different types of public R&D support. In addition, the Commission considers the system of R&D governance in Belgium to be rather complicated, with the different levels of government involved. It welcomes the efforts made by the Regions to support the development of artificial intelligence, but calls for cooperation between the federal government and the Regions and Communities to roll out 5G, so as not to run the risk of being left behind in this area.

Improving the business climate

A favourable environment to start businesses can increase the dynamism of the economic system. Destructive creation, in which resources are reallocated from declining activities to emerging activities, contributes to productivity gains.

The Commission appreciates the efforts made in recent years to reduce the administrative burden weighing on businesses and the self-employed, in particular through digitalisation of procedures and reduction of administrative delays. However, improvements are recommended in the area of taxation, which is still complex for financial investments, and in the area of property registration, which is still expensive and lengthy. The digitalisation of the judiciary system still requires additional measures. The coordination of climate, energy, digitalisation and transport policies remains a problem. Impact analyses are not taken into account when drawing up policies. The payment terms of the Belgian State to enterprises have deteriorated and are a handicap for their business climate.

Increasing competition in certain activities

According to economic theory, the presence of market failures might be explained by different elements: a situation of monopoly or high concentration as in the network sectors (transport, energy or communication, for example) or the presence of positive (creation of knowledge) or negative externalities (pollution). The intervention of the public authorities is then required to ensure the collective well-being. This intervention can take various forms, such as creating sectoral regulators to prevent abuse of a dominant position, or the regulation of professions to guarantee the quality of services to the public. But by restricting competition, regulations can hamper productivity growth. On the one hand by limiting the competitive pressure on incumbents, they have less incentives to invest and innovate. On the other hand, downstream enterprises also have less incentives to innovate as the innovation rent can be captured by upstream firms (Cette, Lopez and Mairesse (2014, 2017), Bourlès, Cette, Lopez, Mairesse and Nicoletti (2013)). Moreover, regulations may limit the allocative efficiency as resources are stuck in inefficient companies protected from exit by regulation, while potentially more efficient new entrants are not able to enter the market (Canton, Ciriaci and Solera (2014), ElFayoumi, Ndoye, Nadeem and Auclair (2018)).

Since 2012, the Commission has put forward several activities where it believes greater competition would benefit the Belgian economy: the retail sector and the network industries which cover energy, telecommunications, postal services and transport (railways and airports). Over the years and following decisions taken by the Belgian authorities, the list of activities mentioned by the Commission has become shorter. In 2019, the Commission recommended reducing barriers to competition in services, especially in retail, telecommunications, and professional services. It also highlighted the fact that the main services responsible for the application of regulation and market or competition monitoring continued to suffer from a lack of staff and resources.

3.2 Priorities of the NPB

Taking into account the EC recommendations, the analysis made in point 2.2 and the structural challenges identified in last year's report, the members of the Board identify a number of priority strands for policy action. The focus on these strands requires actions in a wide variety of policy areas for which the European Union, the federal government, the regional authorities and the local authorities all have important tools at their disposal. It is therefore crucial that the policies of the different policy areas and the different policy levels are coordinated so that they can reinforce each other.

Now is the time to propose measures that will boost productivity growth, as the EU has put in place a new instrument to support Member States' recovery and improve the resilience of European economies. In order to benefit from this European funding, each Member State must submit to the Commission a national recovery and resilience plan, which not only needs to promote a strong economic rebound, but also include the EU's strategic objectives in terms of environmental and digital transition and social and territorial cohesion. In practice, this plan must combine reform and public investment. The energy transition of the economy must account for at least 37% of the total amount of the plan, while the digital transition must include at least 20% of that amount.

For Belgium, the amount to be received in the form of financial contributions (without reimbursement) is just over €5 billion, 70% of which is to be mobilised between 2021 and 2022, and the remaining 30% in 2023.

3.2.1 Even more focus on STEM and lifelong learning

The COVID-19 crisis has had a major impact on the labour market. Unemployment has already risen and is expected to rise further in the near future. Moreover, the existing mismatch in skills on the labour market risks becoming even wider. The reason for this is that low-skilled people are hit hardest by the crisis, while the digital transition - with rapidly increasing needs in terms of qualifications - could be accelerated by the crisis. Especially when taking into account the ageing of the population, and thus the declining proportion of the working-age population, it is crucial that measures are taken to ensure that as few talents as possible are lost. Indeed, finding skilled personnel was identified by companies even before the crisis as one of the main problems they were facing (CEC, 2019).

In the first instance, this requires that today's generation of young people are adequately prepared for tomorrow's labour market:

- Taking into account the strong demand for STEM profiles on the labour market and the important productivity effects of STEM jobs, it is crucial to further focus on these pathways. STEM subjects must therefore be adequately represented in the final attainment levels. In addition, continued attention is also needed to make the choice of **STEM disciplines** more attractive, especially for girls who, despite the positive evolution in recent years, are still under-represented in these disciplines. Especially given the digital transformation we are facing, a special focus on **ICT disciplines** is necessary within STEM. The Digital Economy and Society Index (DESI-scores) show that Belgium underperforms in this area (the share of ICT graduates in the total is 1.9% in Belgium versus 3.6% in the EU).
- But more is needed than just STEM. To be prepared for the future, children and young people must not only feel at home in the technological and digital world, but must also learn to deal with change, learn to think critically, learn to cooperate and develop other soft skills. Moreover, a **mindset of lifelong learning** needs to be inculcated from an early age.
- To make the necessary green and digital transition, it is essential that **all students obtain a minimum level of skills**. Currently, there is still a too large group that falls behind²². Consideration should be given to which teaching methods and associated infrastructure are needed to reach this group. Workplace learning, including apprenticeship programmes, can be valuable in this context (CEC, 2016) and can also contribute to a culture of lifelong learning. Because of an early acquaintance with the business world and the reality of work, it becomes clear from an early age that learning in the workplace is a matter of course, and the learning culture is also enhanced in the companies that participate in this system of alternating education (De Raeve et al. 2019).
- Finally, **distance learning (in combination with face-to-face learning)** also has considerable potential. This is especially the case in higher education, where the distance learning method was already more common, but the potential of combining digital and school education should also be explored at other levels of education. It may be an effective tool both for pedagogical differentiation and in the fight against school dropout. An important consideration in this regard is that all the preconditions are met, both in terms of infrastructure and digital learning resources, and in terms of teacher skills. It will also be important to ensure that distance learning does not further exacerbate existing inequalities in access and quality of learning. For example, as many as 1 in 8 of 15-year-olds have no place where they can quietly work on assignments given by the teacher. Schools will therefore also have to provide 'emergency childcare' for this group of pupils on days when distance learning is organised (De Witte, 2020).

Besides making initial training future-proof, especially in a context of tight labour market conditions and rapid technological transitions, **strengthening lifelong learning** is also crucial. This must facilitate the transition from obsolete jobs, unemployment or inactivity to emerging occupations.

²² In Belgium, around one in five 15 year-olds underachieves in scientific literacy (20%), reading literacy (21.3%) and mathematical literacy (19.7%) (EC, 2019).

However, we see that participation in continuous education is relatively low in Belgium. Moreover, there is a strong Matthew effect, with higher educated people participating more in continuous education than those with a low level of education, or those leaving education without a diploma. This is problematic, as it is precisely these groups that are most vulnerable on the labour market if they do not retrain in time. It is important to gain a better insight into the reasons for this, but according to figures from the Adult Education Survey, an important explanation is that the over-55s, together with the low-skilled, experience little need for training themselves²³ (Van Langenhove et al., 2020). Employees who do attend training do so to a significant extent, to perform better in their current job. Employers also mainly provide training focused on technical, practical and job-specific skills needed for the current job (Economic Advisory Committee, 2020). This is in contrast to the rapidly changing environment and the major shifts that the crisis will entail.

Taking the above elements into account, we can state that promoting lifelong learning requires a **comprehensive approach, addressing both the supply side and the demand side**. For example, there is a need for a training offering which is sufficiently adapted to the economic developments; there is also a need for more training in order to increase intersectoral mobility; it is a challenge to ensure that all target groups participate in lifelong learning, taking into account the specific barriers for the different target groups; and specific attention is needed to the training needs of smaller businesses which, on average, invest less in training. Given the importance of lifelong learning not only for productivity growth, but also for the inclusiveness of growth, the NPB calls for these policy questions to be examined by the Higher Employment Council.

In general, it will be important for **all actors (employees, employers and training providers) to assume their responsibilities**. The **government** must provide a framework that encourages investment in trainings.

3.2.2 Importance of investments in the green and digital transition, both public and private

Before the start of the COVID-19 crisis, a number of structural evolutions (in particular, the dynamics of an ageing population and health care) threatened the long-term viability of public finances. These problems have not gone away because of the current crisis: the Study Committee on Ageing calculated that, if policy remains unchanged, social expenditure will increase from 24.8 % to 29.8 % of GDP between now and 2040. Furthermore, Belgium has high levels of public debt, which are rising sharply as a result of the COVID-19 crisis. In the absence of a public debt trajectory which remains credible for financial markets, Belgium therefore runs the risk of upward pressure on its government bond's interest rates. If this were to happen, it would significantly reduce or even eliminate the scope for policy action, including the financing of social security. There is therefore a **need for a medium-term plan to bring the public finances into structural balance**.

Nonetheless, this plan must **not be at the expense of public investment**. Indeed, Belgium has been under-investing in public infrastructure for many years. General government net investment as a % of GDP has remained almost unchanged since 1990, leaving the general government net capital stock stable and declining as a % of GDP since this period. Belgium also has a low level of public investment as a % of GDP compared to its European neighbours. This is particularly the case for infrastructure investments, which potentially have the greatest positive impact on growth (Biatour et al., 2017).

This is problematic given that the presence of **high-quality hard and soft infrastructure** is not only a prerequisite for the generation of economic activity, but investments will also be needed to respond to the challenges that will confront us in the near future and encumber our capacity to maintain prosperity. Moreover, productive investment in infrastructure has a large multiplier effect, which can boost the productivity growth of our economy as well as job creation and the financing of social security.

Therefore, we need to invest. In addition to direct funding, alternative sources of funding such as public-private partnerships (PPPs) should also be considered. But we also need to look at how to make use of the new support possibilities offered at European level (see above).

²³ Conclusion based on analysis for the Flemish Region.

According to this survey, 'time' appears to be the most important threshold for participation for the group that would like to follow (even more) training. The groups where this is most prominent are adults between 25 and 44 years of age, highly educated people and professionals. Combining training with a family and/or work (search) is therefore often difficult (Van Langenhove and Vansteenkiste, 2020).

In choosing investments, it is important to focus on the areas where we can expect a clear return in terms of productivity and which fall within a long-term digital and green transition. These transitions require significant investment, both public and private. With regard to the latter aspect, the government has an important guiding role to play: it must develop a stable and clear regulatory framework that guides the choices of private actors towards the Green Deal and digital transition.

Without being exhaustive, there is a need for additional investments in the field of **energy efficiency** (both investments in the production of renewable energy and in the more efficient use of energy or the use of sustainable energy), **sustainable transport** (with particular attention to modern, connected and cross-regional systems of transport modes and the missing links that currently exist), **investments that prepare us for climate risks in the future (e.g. water scarcity and flooding) and investments in digital infrastructure**. The latter covers not only investments in fast and reliable 5G and very high capacity networks (such as FTTH networks), but also e.g. investments in a modern digital infrastructure for schools and training centres.

Finally, innovation will also be crucial to accomplish the green and digital transition. It is therefore important to **maintain investment in R&D**, but at the same time there is a need to **increase the efficiency of public R&D resources** (in the broad sense, i.e. public R&D²⁴, support for private R&D, public procurement). This is possible, inter alia, by using these resources in a more future-oriented way and focusing on generating the knowledge and solutions needed for the digital and green transformation - without imposing how this should be done and taking into account the strengths of our country/Europe. Efficient R&D and innovation policies also require greater coordination of policy instruments. For example, due to a lack of research staff, wage subsidies only lead to an increase in the salaries of researchers and not to additional research.

In general, at all levels of government, there is still room **to improve the efficiency of public spending**. **Spending reviews and policy evaluations** that look at the efficiency of **existing spending** in relation to social objectives can free up resources for urgent necessary investments or, with unchanged resources, improve government output. One example is education: a comparison of spending in Belgium with that of other countries with high expenditure appears to indicate that educational outcomes in Belgium should be better²⁵(EC, 2020b).

Besides stimulating domestic investment, **attracting foreign investment remains important**. Indeed, as already mentioned, not only do multinationals have a direct impact on the local economy, they can also indirectly improve access to foreign inputs and goods and services and play an important role in disseminating knowledge and innovations. Given the expected decline in global FDI (point 2.2), an **attractive business environment (including quality infrastructure)** is all the more important to attract foreign investors.

Conversely, it is also crucial that domestic companies can invest abroad. This can increase the efficiency of production and/or facilitate access to new markets, with positive effects on domestic production and employment.

3.2.3 Further focus on digitalisation

Thanks to digitalisation, the negative effects of the COVID-19 crisis were largely mitigated; without digital solutions, the economic and social damage would have been much worse. What is more, the crisis has given an extra stimulus to the digitalisation process. This is a positive development. The use of digital technologies is a strong driver of productivity growth. Moreover, further digitalisation can also contribute to solutions for a number of complex challenges facing society (e.g. care challenges, achieving the goal of climate neutrality by 2050, the transition to renewable energy generation, etc.). It is therefore important to take advantage of this momentum to **further support** and **accelerate** the **digital transition** by encouraging all economic actors to invest

²⁴ As also noted by the EC, R&D carried out by the public sector in Belgium is notably low. This has to do with the design of our R&D landscape. In Belgium, public research is primarily carried out by the higher education sector. Belgium's weak performance in terms of R&D conducted by the public sector is therefore partially corrected when higher education is included.

²⁵ For example, the proportion of 15-year-olds who do not reach the minimum standard of scientific literacy, reading literacy and mathematical literacy is higher than the EU average (12.5% versus 11%). The number of pupils repeating their academic years is among the highest in the EU. And the gap in educational attainment due to socio-economic and migration backgrounds remains very high. (EC, 2020b) Participation rates in higher education are high, but the proportion of students completing their Bachelor's degree within the normal time frame is lower than average (OECD, 2019).

further in the use of digital technologies. The European Council has already committed itself to this by linking part of the financial support for Member States recovery to an acceleration of digital transition (20% of the total amount of national funding for recovery and resilience needs to focus on this).

An important policy consideration is that encouraging investment in digital technologies is not enough. Companies/organisations **also need to have the internal capacity to exploit these new technologies** (see e.g. Bresnahan et al., 2002; Bloom et al., 2012). For example, workers need to have the **right skills** to use these new technologies and incorporate them into the production process. Not only ICT professionals, but also other workers need to have adequate ICT skills. The need for more digitally skilled workers remains a problem, also in Belgium (EC, 2020c). Education and training will be important in this context (point 3.2.1).

Besides ICT skills, right management skills are needed to initiate the **organisational changes** needed to incorporate the new technologies into the operations of the company (Anderton et al., 2020). As indicated above, the digital economy requires a different type of labour organisation, characterised, among other things, by shorter decision-making lines, empowerment of employees and managers, enhanced autonomy and virtual teamwork (see also Economic Advisory Committee, 2020). An interesting element in this regard is that **several countries in northern Europe have had national programmes to modernise work organisation for many years** (Benhamou et al., 2020).

Additionally, a **fast, secure and reliable broadband infrastructure** is necessary (also point 3.2.2). Many new technological developments (mobility, healthcare, industrial applications, etc.) depend on this. Belgium scores well on very high capacity networks²⁶, but on the other hand, it lags behind in the roll-out of very high speed networks (including fibre to the home) and in the roll-out of 5G (EC, 2020c). It is important to rapidly create favourable conditions that allow and encourage the roll-out of such investments. The price of telecommunication services is also a point of attention in Belgium (EC, 2020c).

In general, there is a need for a digital culture. The digital transformation requires a mindset that is aware of the importance and potential of (new) digital technologies. **Companies (including SMEs)** need to become even more **aware** of new developments and their possibilities (e.g. in the field of AI), and translate this into projects. But more efforts also need to be made in **e-governance**. Digital technologies not only have the potential to improve the performance and efficiency of the public sector (see below), but the government also has an important exemplary role by means of digital innovations in public administration, education and healthcare (see below).

Furthermore, it must be ensured that regulation does not hold back digitalisation. This applies not only to new regulation, but it should also be considered whether existing **regulatory frameworks are still sufficiently in line with the digital economy** and whether they prevent experimentation with new ideas, technologies and business models (El-Dardiry, 2019). However, it is important in this regard to also pay **sufficient attention to the potentially negative effects of digital technologies**. For example, there are important challenges in terms of security (e.g. vulnerability to attacks by cyber criminals, espionage, influencing, etc.) and privacy. There are also challenges in the labour market that need to be managed. Digitalisation will not only create many new jobs, but many other jobs will also change fundamentally and in some cases even disappear. Moreover, it is important to ensure that workers' rights are adequately safeguarded in new jobs. All these challenges need to be addressed proactively and require discussion with all stakeholders (both national and international). Indeed, without public trust, there will be no innovation.

Two applications that were given a significant boost by the COVID-19 crisis and that need to be further stimulated:

- **E-commerce**. This is not a new phenomenon, but the current crisis is expected to accelerate the digitalisation of the value chain. If companies do not take action in this area, regardless of the sector in which they operate, it means that value added will drain abroad and opportunities for achieving economies of scale will be missed. B2B online trade should certainly not be overlooked, but special attention is also needed for B2C online trade for which Belgium already scored less well before the crisis. It is important that Belgian companies gain a foothold in this fast-growing market and that the relevant barriers are removed.

²⁶ This was achieved by upgrading to DOCSIS 3.1.

- **Teleworking.** Teleworking also made a strong headway during the crisis. As indicated in point 2.2, the broader use of teleworking in the future clearly has the potential to enhance productivity and also to improve a number of other indicators, such as employee well-being, CO₂ emissions, etc. But there are also risks, including those relating to knowledge exchange, innovation and employee satisfaction. As such, teleworking will only have a positive impact on productivity if various conditions are met, including a **suitable working environment at home** and an **appropriate work organisation. Not only policy makers but also the social partners have an important role** to play in monitoring these prerequisites. Framework agreements on teleworking as part of collective agreements can facilitate the use of teleworking (OECD, 2020e).

3.2.4 Importance of sufficient business dynamics

As indicated above, sufficient business dynamics is also an important determinant of productivity growth. The aim is to increase the number of new businesses and promote their subsequent development. In addition, structurally underperforming companies must also be able to exit the market smoothly. This allows a reallocation of factors of production to more productive activities.

It is therefore important that barriers to the exit of unviable companies are removed as much as possible and that the factors of production that become available can easily be reallocated to productive activities. The reform of the bankruptcy law in 2018 is a step in the right direction in this regard, but the OECD (2020g) points out that there are no special procedures for SMEs that lack sufficient resources to handle complex insolvency proceedings. Other barriers to exit are at the level of the banks, which are often late to acknowledge their loss. The obstacle may also be situated at the political level: there is a temptation to continue supporting structurally unviable businesses in periods of rising unemployment. This should be avoided as much as possible. Indeed, such policies are tantamount to an implicit tax on healthy firms (Anderton et al., 2020) and have negative effects not only on productivity growth (Adalet McGowan et al., 2018; Andrews and Petroulakis, 2019), but also on future employment.

Besides removing the rigidities for the exit of unviable companies, it is important to ensure favourable conditions and incentives for start-ups and innovative firms and to ensure that they are able to scale up sufficiently.

An important element in this regard is a further effort to reduce the administrative burden and, more generally, improve the quality of regulation.

- In the first instance, the administrative burden involved in setting up a business is the main target. Despite recent reforms, a complex permit and licence system still creates administrative burdens for start-ups (OECD, 2020g). Moreover, stringent regulation of various professional services, such as lawyers, architects and real estate agents also weighs on productivity, not only in these services themselves, but also in the other sectors of the economy that consume them (OECD, 2020g).
- The quality of the regulatory framework also has an important impact on start-ups. This is because the fixed costs of regulation weigh more heavily on smaller companies and therefore strengthen the position of established companies to the detriment of potential new entrants. In certain cases, regulations can also prevent new initiatives and experiments because they are not adapted to new social and technological developments. A suitable regulatory framework is of course necessary to meet requirements such as the protection of consumers or workers, the correction of market imperfections, or other objectives such as environmental protection or respect for privacy, but the right balance needs to be struck. Unnecessarily strict barriers inhibit the emergence of new, promising activities. More focus on better regulation as advocated in the opinion of the CEC and the joint declaration of the federal and regional social partners is therefore crucial²⁷.
- It is also important to further develop digital public services in a coordinated way. This can contribute to better service, faster procedures and a smaller administrative burden. Digital-friendly regulations and subsequently the consequent adaption of these regulations, must provide state-of-the-art

²⁷ In concrete terms, these opinions advocate a commitment to better regulation at a high political level; more openness in the regulatory process; ex ante and ex post evaluation of regulation; innovation-friendly and future-proof regulation; coherence and cooperation between levels of government; the important role of advisory and representative consultative bodies and the importance of the Council of State in monitoring the legal and technical quality of regulation.

applications ('only-once', 'no wrong door', 'digital first', automatic assignment of rights, AI, blockchain, etc.). Also, the challenges associated with digitising the judiciary need to be addressed.

Besides reducing administrative burdens, the government also needs to provide the **right incentives** for business start-ups.

- Uncertainty regarding demand is a bigger barrier for young innovative companies than for other companies (Veugelers et al., 2020). A relatively high proportion of growth companies in Belgium indicate that finding customers is an important problem (CEC, 2019). Within the limits imposed by European legislation in this area, the government can play an important role in this regard via public procurement. This concerns not only national governments, but also the European authorities. Given the scale required to develop certain activities, the current fragmentation of European public procurement is a major obstacle to a decisive policy in this area (cf. Veugelers et al., 2012).
- Through R&D support, the government aims to provide incentives for innovation. However, not all forms of support are equally suitable for young companies. For example, young companies active in R&D often do not make enough profit to benefit from corporate tax advantages, whereas these advantages represent a significant budgetary cost in Belgium. The current forms of government support could therefore be adapted to better reach young companies.

The availability of **appropriate financing** and its use is crucial both for the start-up and scale-up of innovative companies. An important source of financing in this regard is venture capital. Too much debt financing can be a risky strategy for growth companies, given that future cash flows are unknown and uncertain, and can vary significantly over time, while interest payments and debt servicing follow a fixed schedule and thus have to take place periodically. In addition, traditional intermediaries, such as banks, often lack the knowledge to evaluate risky projects and innovative ideas based on complex technologies, and young companies often lack the internal resources and reputation to convince investors of their quality.

The use of risk capital is low in Belgium and may decline further as a result of the crisis²⁸. The limited financing mix may make companies more vulnerable. Indeed, diversification in sources of external financing is seen as a key element in being resilient to negative financial and real economic shocks (Bankowska et al., 2020).

The particularly low interest rates observed for a number of years have made debt financing even more attractive. However other factors also play a role. There is a lack of ambitious risk-taking entrepreneurship in Belgium, resulting in low demand for risk capital. Moreover, most high-growth companies prefer to finance themselves only through internal resources. This also appears to be partly due to a lack of knowledge and competences within growth companies regarding non-banking financing. But the ecosystem surrounding the provision of risk capital is also too fragmented, too small-scale and insufficiently international (CEC, 2019).

Finally, Belgium must also continue its efforts to stimulate an **entrepreneurial culture**. Previous GEM studies have shown that Belgium scores relatively poorly in this area. That is why it is important to continue working on a positive image of entrepreneurship and to further integrate an 'entrepreneurial mindset' into education from an early age.

²⁸ Historical data on venture capital activity in the US over the period 1976-2017 show that the aggregated volume of deals, the capital invested and the size of the deal all decrease substantially during a recession (Howell et al., 2020). In particular, investments in the early stage react significantly strongly to the business cycle, much more so than investments at a later stage.

Activity report

The Board

Creation of the Board

Following the report “[Completing Europe’s Economic and Monetary Union](#)” prepared by the “five presidents” (22 June 2015), the Council of the European Union adopted a [recommendation](#) on 20 September 2016 encouraging the Member States to create national productivity boards. Creating these boards aims to reinforce competitiveness in the long term so that economies become more resilient and better able to recover quickly from economic shocks. The role of the productivity boards is to analyse competitiveness in the broad sense, enhance the knowledge base and inform the national debate in order to strengthen support for policies and reforms.

In Belgium, the National Productivity Board was officially established on 14 May 2019 in accordance with [the 25 November 2018 act announcing the creation of the National Productivity Board](#) (published in the Belgian Official Gazette 7 December 2018), transposing the European recommendation.

Mission of the Board

The Belgian National Productivity Board is tasked with:

- conducting studies and analyses of how productivity and competitiveness are evolving in Belgium ;
- carrying out analyses of political challenges in the field of productivity and competitiveness ;
- evaluating the consequences of political options in these areas.

In conducting these missions, the National Productivity Board can establish contacts with national productivity boards in other Member States, communicate publicly as required, obtain appropriate access to the information available from public administrations and consult stakeholders.

The National Productivity Board carries out its missions within the framework of the European Semester, including assisting the European Commission in collecting data and helping governments prepare the national reform programme.

The National Productivity Board publishes an annual report.

Composition of the Board

The National Productivity Board is managed by an Office consisting of:

- a president, proposed by the secretariat of the Central Economic Council (CEC) and
- two vice-presidents, one proposed by the National Bank of Belgium (NBB) and one by the Federal Planning Bureau (FPB).

The Office decides the agenda of meetings and the choice of subjects that will be examined by the Board.

The National Productivity Board consists of 12 members, six at federal level and six at regional level:

- Siska Vandecandelaere (CEC)
- Luc Denayer (CEC)
- Catherine Fuss (NBB)
- Tim Hermans (NBB)
- Chantal Kegels (FPB)
- Joost Verlinden (FPB)
- Caroline Ven (Flemish Region)
- Joep Konings (Flemish Region)
- Marcus Dejardin (Walloon Region)
- Bernard Jurion (Walloon Region)
- Astrid Romain (Brussels-Capital Region)
- Luc Hens (Brussels-Capital Region) until June 25, 2020.

FPS Economy provides the secretariat for the Board.
The members of the Board and its secretariat are appointed by the King.

2020 activities

Board meetings

The National Productivity Board met eight times in 2020:

- 23 January 2020 : Discussion of the preparatory note on the 2020 annual report ;
- 14 May 2020 (videoconference) : Discussion on the content of the next report, taking into account the COVID-19 pandemic ;
- 2 June 2020 (videoconference) : Discussion on the structure of the 2020 annual report ;
- 18 June 2020 (videoconference) : Discussion on the content of the 2020 annual report ;
- 17 July 2020 (videoconferentie): Discussion on the textes of the 2020 annual report ;
- 27 Augustus 2020 (videoconferentie): Discussion on the textes of the 2020 annual report ;
- 25 September 2020 (videoconferentie): Discussion on the textes of the 2020 annual report ;
- 21 October 2020 (videoconferentie): Finalizing the 2020 annual report.

External activities

In addition to the meetings of the National Productivity Board, a number of activities were organised by external organisations with participation from members of the Board, including:

- 16 April 2020: National productivity boards conference call – The impact of Covid-19 on productivity (participation of Catherine Fuss, Chantal Kegels and Siska Vandecandelaere) ;
- 4 June 2020: National productivity boards conference call – Follow-up discussion on the impact of Covid-19 (participation of Catherine Fuss, Chantal Kegels and Siska Vandecandelaere) ;
- 19 June 2020: National productivity boards conference call – Follow-up discussion on the impact of Covid-19 (participation of Chantal Kegels, Catherine Fuss and Siska Vandecandelaere) ;
- 30 September 2020: Participation of vice president Chantal Kegels in the OECD expert group to advise the Productivity Board of the Slovak Republic in the framework of the technical assistance for structural reforms proposed by the European Commission.
- 20 October 2020: Royal Society of Political Economy of Belgium conference call - Competitiveness and competition in Belgium (participation of Luc Denayer and Catherine Fuss);
- 6 November 2020 : Meeting of the productivity boards at European level (participation Chantal Kegels) ;
- 9 December : Annual meeting of EPC and European productivity boards ;
- December 2020 : Presentation of the annual report to employers' and employees' representative bodies (Brussels).

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Appendices

Appendix 1. Methodology

The main changes introduced by the benchmark revision of the national accounts that affect the analysis of productivity are listed below.

- The revision of the deflators of production, intermediate consumption and thus value added for a whole range of industries.
- The introduction of new activities, such as electricity generation by households.
- The use of new sources and/or methods for measuring the value added of given industries, such as insurance (industry KK) or the activities of directors of companies (industry MA).
- The revision of R&D activities for certain R&D-intensive industries, such as pharmaceuticals.

The following table shows the cumulated labour productivity growth per hour for the period 2000-2017 according to the national accounts published in October 2018 (for the revision, column OLD) and the national accounts published in October 2020 (column NEW) for the market sectors of the A38 nomenclature.

Table 7: Cumulative labour productivity growth per hour, 2000-2017
Index 2000=100

	2017	OLD	NEW
Total economy		115	114
Agriculture and fishing (A)		111	117
Mining and quarrying (B)		162	168
Manufacturing (C)		167	148
Food Industry (CA)		174	135
Textile industry (CB)		148	120
Wood and paper industry (CC)		160	139
Petroleum refineries (CD)		494	167
Chemicals industry (CE)		123	140
Pharmaceuticals industry (CF)		242	194
Rubber and plastics industry (CG)		149	154
Metallurgy (CH)		164	131
Manufacturing of electronic products (CI)		129	250
Manufacturing of electrical appliances (CJ)		93	91
Manufacturing of machinery and equipment (CK)		123	123
Manufacturing of motor vehicles (CL)		169	129
Other manufacturing industry (CM)		110	111
Electricity, gas and steam (D)		92	118
Collection, purification and distribution of water (E)		67	71
Construction (F)		124	122
Trade (G)		135	127
Transport and storage (H)		113	121
Accommodation and food service activities (I)		95	96
Publishing, film and video (JA)		114	113
Telecommunications (JB)		336	344
IT services (JC)		110	112
Financial and insurance activities (K)		140	119
Real estate activities (L)		86	101
Legal and accounting services (MA)		114	112
Scientific R&D (MB)		131	147
Advertising and technical services (MC)		112	98
Administrative and support service activities (N)		87	94

Source: Eurostat, National Accounts, October 2020.

Appendix 2. Evaluation of the implementation of the Country Specific Recommendations related to productivity based on the CeSar database of the European Commission

Table 8: Country Specific Recommendation related to competence development and implementation

CSR	Year	Label	Implementation
Partially	2019	address skills mismatches	Limited Progress
Partially	2018	increasing the proportion of graduates in science, technology, engineering and mathematics.	Limited Progress
Partially	2016	Move forward with education and vocational training reforms	Substantial Progress
Completely	2015	Improve the functioning of the labour market by reducing financial disincentives to work, increasing labour market access for specific target groups and addressing skills shortages and mismatches	Some Progress
Partially	2014	improving professional mobility and addressing skills shortages and mismatches as well as early school leaving	Some Progress
Partially	2014	and by pursuing coordinated education and training policies addressing the pervasive skills mismatches and regional disparities in early school leaving.	Some Progress
Partially	2013	Simplify and reinforce coherence between employment incentives, activation policies, labour matching, education, lifelong learning and vocational training	Limited Progress
Partially	2012	to strengthen the coherence between education, lifelong learning, vocational training and employment policies	Not Assessed

Source: CeSar, European Commission.

Table 9: Country Specific Recommendation related to public investment and implementation

CSR	Year	Label	Implementation
Partially	2019	and the coordination of fiscal policies by all levels of government to create room for public investment.	No Progress
Partially	2019	Focus investment-related economic policy on sustainable transport, including upgrading rail infrastructure,	Some Progress
Partially	2018	Improve the efficiency and composition of public spending at all levels of government to create room for public investment, notably by carrying out spending reviews.	Limited Progress
Partially	2017	Improve the composition of public spending in order to create room for infrastructure investment, including on transport infrastructure.	Limited Progress
Partially	2016	Address shortfalls in investment in transport infrastructure	Limited Progress

Source: CeSar, European Commission.

Table 10: Country Specific Recommendation related to innovation and implementation

CSR	Year	Label	Implementation
Partially	2019	and research and innovation, in particular in digitalisation, taking into account regional disparities.	Limited Progress
Partially	2017	Foster investment in knowledge-based capital, in particular with measures to increase digital technologies adoption, and innovation diffusion.	Some Progress
Partially	2016	Boost the capacity to innovate, in particular by fostering investment in knowledge-based capital.	Limited Progress
Partially	2014	by promoting innovation through streamlined incentive schemes and reduced administrative barriers;	Some Progress

Source: CeSar, European Commission.

Table 11: Country Specific Recommendation related to business climate and implementation

CSR	Year	Label	Implementation
Partially	2019	Reduce the regulatory and administrative burden to incentivise entrepreneurship	Limited Progress
Partially	2018	Reduce the regulatory and administrative burden to incentivise entrepreneurship and	Some Progress
Partially	2014	by promoting innovation through streamlined incentive schemes and reduced administrative barriers;	Some Progress

Source: CeSar, European Commission.

Table 12: Country Specific Recommendation related to competition and implementation

CSR	Year	Label	Implementation
Partially	2019	and remove barriers to competition in services, particularly telecommunication, retail and professional services.	Limited Progress
Partially	2018	increase competition in services, particularly retail, construction and professional services.	Limited Progress
Gedeeltelijk	2017	Increase competition in professional services markets and retail, and	Limited Progress
Partially	2017	enhance market mechanisms in network industries.	Some Progress
Partially	2016	Increase competition in the business services sector and the retail sector by removing unwarranted operational and establishment restrictions.	Limited Progress
Partially	2014	by strengthening competition in the retail sectors, removing excessive restrictions in services, including professional services and addressing the risk of further increases of energy distribution costs;	Limited Progress
Partially	2013	Present concrete and time-specific structural measures to improve competition in the services sector, by removing barriers in retail and	Limited Progress
Partially	2013	excessive restrictions in professional services and	No Progress
Partially	2013	Continue to improve the functioning of the energy sector by reducing distribution costs and monitoring retail prices,	Some Progress
Partially	2013	strengthen the independence of the regulators in the energy, telecoms and the transport sectors (railway, airport).	Some Progress
Partially	2013	Remove remaining regulatory barriers in the postal sector.	No Progress
Completely	2012	Continue to strengthen competition in the retail sector by lowering barriers and reducing operational restrictions. Introduce measures to strengthen competition in the network industries by revising regulatory barriers and reinforcing the institutional arrangements for effective enforcement of state aid rules.	Limited Progress
Completely	2011	Introduce measures to boost competition in the retail sector, by lowering barriers to entry and reducing operational restrictions; and introduce measures to strengthen competition in the electricity and gas markets by further improving the effectiveness of the sectoral regulatory and competition authorities.	No Assessed

Source: CeSar, European Commission.

Appendix 3. Advice of the Central Economic Council

24 November 2020

1 Saisine

L'article 4 de la loi du 25 novembre 2018 portant création du Conseil National de la Productivité prévoit dans son paragraphe 2 que les études et les rapports de cette institution puissent faire l'objet d'un débat au sein du Conseil central de l'économie, préalablement à leur publication. Si ce dernier souhaite formuler un avis, cet avis sera joint en annexe lors de la publication de l'étude ou du rapport.

Le rapport annuel 2020 sur la productivité a été transmis au Conseil central de l'économie le 21 octobre 2020.

L'avis est approuvé en séance plénière le 24 novembre 2020.

2 Le rapport du Conseil national de la productivité

Le rapport annuel du Conseil National de la Productivité (CNP) a pour objectif de définir l'état de la connaissance sur la productivité et la compétitivité pour permettre d'en apprendre davantage sur les sources de la croissance de la productivité et identifier les causes de son ralentissement.

Cette année, le rapport a été rédigé dans le contexte particulier de la crise sanitaire liée à la Covid-19. Dans la mesure où l'incertitude qui pèse encore sur l'économie rend difficile une estimation de l'évolution de la productivité, le rapport du Conseil national de la productivité de 2020 s'est concentré sur la présentation des canaux de transmission à travers lesquels la crise peut avoir un impact sur la croissance de la productivité. Sur base de cette analyse, le rapport dresse un certain nombre de recommandations et identifie des axes prioritaires à destination des décideurs politiques.

3 Le plan de relance européen

Pour contribuer à réparer les dommages économiques et sociaux causés par la pandémie de coronavirus mais aussi pour donner un coup de fouet à la relance européenne et protéger les emplois, l'Union européenne s'est doté d'un plan de reprise et de résilience.

Le Conseil central de l'économie (CCE), à travers le Rapport Emploi-Compétitivité 2020²⁹ (REC) et le Conseil national de la productivité (CNP), via son récent rapport annuel, soulignent l'opportunité que représente ce plan. Pour y adhérer et bénéficier d'un financement européen, chaque Etat membre doit soumettre à la Commission un plan national de relance et de résilience qui, en plus de favoriser une reprise économique solide, doit aussi intégrer les objectifs stratégiques de l'Union en termes de transition écologique et numérique et de cohésion sociale et territoriale.

Le plan de relance européen prévoit de mobiliser un certain nombre d'instruments, parmi lesquels la Facilité pour la Reprise et la Résilience (FRR). Pour bénéficier d'un soutien européen dans le cadre de ce mécanisme, la Belgique doit tenir compte des recommandations que la Commission européenne lui a adressées en 2019 et en 2020, dans le cadre du Semestre européen.

Le REC 2020 et le rapport annuel du CNP de 2020 entament tous deux un suivi des modalités et des étapes du plan de relance et mettent en avant une série de domaines dans lesquels le CCE, comme le CNP, entendent contribuer. Les deux institutions balisent ainsi les grandes orientations du plan de relance, chacune apportant ses contributions propres.

La FRR prévoit un rôle pour les conseils nationaux de productivité et le rapport du CNP vise à y répondre. Le Rapport Emploi-Compétitivité 2020 prend, lui, appui sur un socle bâti lors des REC précédents, lesquels apportaient déjà des réponses à certaines recommandations de la Commission européenne.

²⁹ CONSEIL CENTRAL DE L'ÉCONOMIE (2020), Rapport Emploi-Compétitivité 2020 : Se projeter dans l'avenir pour dépasser la crise, Octobre 2020

3.1 L'appropriation du plan de relance

Dans sa communication du 17 septembre³⁰, la Commission européenne souligne qu'il est essentiel que les États membres engagent dès que possible un vaste dialogue politique qui associe les partenaires sociaux et toutes les autres parties prenantes dans l'élaboration de leurs plans de relance. Une appropriation nationale sera indispensable pour une mise en œuvre satisfaisante du plan européen et la garantie d'un succès durable au niveau national ainsi qu'une crédibilité au niveau européen.

Un plan de relance implique que des actions soient entreprises dans une grande variété de domaines politiques, dans lesquels l'Union européenne, le gouvernement fédéral, les autorités régionales et les autorités locales auront un rôle à jouer. Le CCE rappelle qu'une telle approche doit se concevoir à travers la coordination des niveaux politiques de notre pays en prenant compte les spécificités socio-économiques de chaque région. Les différents niveaux de pouvoir doivent mieux utiliser les organes de coordination existants et renforcer la transparence de ceux-ci, notamment vis-à-vis des interlocuteurs sociaux.

4 Les concepts de compétitivité et productivité

4.1 La croissance de la productivité, un défi majeur

Les gains de productivité représentent une condition nécessaire de la prospérité de la population et du renforcement de la cohésion sociale. Ils doivent être compatibles avec la soutenabilité environnementale, ce qui implique entre autres de se diriger vers une économie circulaire et une utilisation des ressources qui se stabilise ou diminue. Les gains de productivité sont le fondement d'une amélioration des revenus réels, de baisses des prix relatifs. Grâce à ces derniers, les entreprises peuvent aussi accroître leur rentabilité, laquelle est déterminante pour les investissements futurs.

Pour le CCE, ces différents éléments sont nécessaires pour qu'une augmentation de la productivité puisse donner lieu à une amélioration de la compétitivité.

La croissance de la productivité est aussi une condition nécessaire pour dégager les marges budgétaires permettant d'élargir la palette des choix politiques possibles et ainsi relever les défis tels que le vieillissement de la population, la cohésion sociale et la transition écologique. Si la croissance de la productivité fait structurellement défaut, alors c'est vers les instruments budgétaires qu'il faudra se tourner pour tenter d'assurer la soutenabilité des finances publiques. Le recours à de tels instruments tend à peser sur la croissance, et donc sur la soutenabilité des finances publiques mais également sur la soutenabilité du modèle social et sur la cohésion sociale. La Belgique est confrontée à des défis en ce qui concerne la soutenabilité à moyen et à long termes de ses finances publiques. Les préoccupations au regard du niveau élevé de la dette publique et des passifs importants liés au vieillissement sont aggravées par la détérioration de la situation budgétaire. Les dépenses liées aux soins devraient aussi augmenter sensiblement dans les années à venir. Une dette publique élevée accroît la vulnérabilité des politiques publiques, particulièrement en cas de hausse des taux d'intérêt et des primes de risque.

4.2 Le CNP et le CCE : deux approches complémentaires

Dans le REC 2020, qui reflète l'ensemble des accords conclus entre les membres du CCE en matière d'analyse de politique économique et de compétitivité, les membres du CCE ont identifié des objectifs sociétaux dans lesquels la croissance de la productivité doit s'inscrire : le besoin d'œuvrer à une économie qui procure à ses habitants un haut niveau de vie, une forte inclusion sociale mais aussi qui s'inscrit dans l'objectif européen de neutralité carbone et qui est de plus en plus sobre en ressources, tout en garantissant la soutenabilité financière et budgétaire. Le rapport du CNP, s'il met davantage l'accent sur la croissance de la productivité, souligne le besoin d'une approche élargie qui est en accord avec ces objectifs.

Dans leur analyse pour comprendre l'impact potentiel de la crise du COVID-19, les deux rapports examinent une série de canaux de transmission. Alors que les analyses effectuées par le CNP portent sur la croissance de la productivité, le CCE examine l'impact de la crise sanitaire sur notre niveau de vie, notre cohésion sociale, nos ambitions environnementales et sur la détérioration des finances publiques. Pour cette raison, les approches

³⁰ COMMISSION EUROPÉENNE, Stratégie annuelle 2021 pour une croissance durable, COM (2020) 575 final, 17 septembre 2020.

des deux institutions apparaissent comme complémentaires plutôt que contradictoires. Cette complémentarité permet de mettre en évidence certaines priorités et d'identifier des domaines dans lesquels les décideurs politiques sont appelés à agir.

5 Analyse de la productivité en Belgique et impact potentiel de la crise du COVID-19

La deuxième partie du rapport du CNP analyse les performances de la Belgique en termes de productivité et propose ensuite une analyse des canaux de transmission de la crise du COVID-19 sur la croissance de la productivité.

La Belgique, comme l'ensemble des économies avancées, a enregistré un ralentissement généralisé de la croissance de la productivité, et ce dès le début des années 2000. Il a cependant été plus prononcé en Belgique que dans l'UE. La croissance de la productivité a été plus vive dans l'industrie manufacturière que dans les services marchands, ce qui, dans un contexte de tertiarisation de l'activité économique, pèse dans une certaine mesure sur la croissance de la productivité agrégée.

5.1 Thématiques d'intérêt pour le CCE

La croissance de la productivité en Belgique ralentit depuis un certain temps mais cette tendance a été exacerbée par la crise économique et financière. Le ralentissement de la croissance de la productivité s'est produit dans tous les grands groupes d'activités, mais il est plus prononcé dans l'industrie manufacturière, où les industries les plus performantes ont connu une forte baisse de la croissance de la productivité. Cela contraste avec le ralentissement de la croissance de la productivité dans les services marchands, qui s'explique principalement par une nouvelle baisse de la croissance de la productivité dans les secteurs les moins productifs. Le CNP pourrait tenter d'éclairer les dynamiques qui ont donné lieu à ces évolutions.

La contribution de l'industrie manufacturière dans la valeur ajoutée diminue fortement en Belgique entre 2000 et 2018 alors qu'elle reste presque inchangée en Allemagne. Le CNP pourrait analyser les raisons derrière cette différence et, dans la mesure où l'industrie manufacturière reste la source majeure de croissance de la productivité, émettre des recommandations pour stabiliser ou augmenter la part de l'industrie manufacturière dans le PIB.

Par rapport aux Pays-Bas, la croissance de la productivité apparaît plus faible dans un certain nombre de secteurs. Une analyse pourrait être menée par le CNP pour éclairer l'écart observé dans le secteur des services. Certaines différences pourraient relever d'effets structurels liés à des périodes-clé comme les mesures du tax shift et de la crise sanitaire.

Il s'agit aussi de vérifier dans quelle mesure le ralentissement de la croissance de la productivité des dernières années peut être imputée à la croissance des services ainsi qu'aux mesures des pouvoirs publics sur le marché du travail, visant à accroître la participation de la main-d'œuvre.

Les membres du CCE soulignent par ailleurs qu'une approche « micro » de la productivité est souhaitable, autant que possible, pour mettre en évidence les dynamiques à l'œuvre derrière les tendances générales de la productivité. Le CCE souhaiterait par exemple que des analyses particulières soient menées pour les secteurs du commerce, des transports ainsi que sur l'impact du commerce électronique et des achats transfrontaliers.

Il serait également intéressant d'observer différents niveaux de désagrégation des données. L'évolution de la productivité pourrait par exemple faire l'objet d'une analyse pour les différentes régions du pays et par branche d'activité.

Concernant les effets liés à la crise du coronavirus, le CNP pourrait explorer, dans la mesure du possible, les effets de la diminution de l'investissement (notamment en R&D) sur la croissance de la productivité, en détaillant cela au niveau sectoriel.

Enfin, le rapport du CNP 2020 met l'accent sur la croissance de la productivité. Le CCE estime qu'une analyse plus poussée pourrait être réalisée par rapport aux niveaux de productivité. En effet, la Belgique pourrait être confrontée à des écarts de croissance de productivité avec ses principaux voisins qui s'expliqueraient par la proximité de la frontière technologique. La "frontière technologique" renvoie à l'utilisation de la meilleure

technologie disponible (dans un certain domaine de production) à travers le monde. Un pays qui se situe en deçà de la frontière peut, par imitation des technologies existantes, accroître rapidement sa productivité. Un pays qui, en revanche, se situe sur la frontière technologie, doit s'employer à la déplacer par le développement d'innovations.

6 Politiques appropriées pour la croissance de la productivité

La troisième partie du rapport du CNP identifie un certain nombre d'axes stratégiques sur lesquels la politique est appelée à se concentrer en priorité pour améliorer la croissance de la productivité dans le contexte actuel. Le point de départ de cet exercice est la liste des recommandations par pays que le Conseil européen formule chaque année dans le cadre du semestre européen.

Pour le CCE, les mesures introduites dans le cadre du plan de relance représentent une opportunité, non seulement parce qu'elles visent une reprise économique solide mais aussi parce qu'elles intègrent les objectifs stratégiques de l'UE en termes de transition écologique, numérique et de cohésion sociale et territoriale. Ces objectifs sont en adéquation avec les objectifs sociétaux communs identifiés par les membres du CCE.

6.1 Education et Formation

L'éducation et la formation sont des éléments essentiels dans le processus d'accumulation de capital humain. Or ce facteur est fondamental pour stimuler la productivité et la capacité d'innovation. L'accès à une éducation de qualité pour tous est un moyen efficace pour renforcer la cohésion sociale, lutter contre la pauvreté et promouvoir l'égalité. Le CCE insiste sur l'importance d'une insertion durable sur le marché du travail et, dans ce cadre, sur l'importance des qualifications et compétences pour la sécurisation des parcours professionnels et la réponse aux besoins de recrutement des entreprises.

La formation est un élément crucial pour renforcer le potentiel de développement économique et il est impératif, aujourd'hui, de promouvoir la formation tout au long de la vie. Des moyens suffisants doivent être dégagés pour permettre à chacun l'accès au marché du travail, aux formations et à l'apprentissage tout au long de la vie sans discrimination fondée sur l'âge, l'origine, le sexe ou le niveau d'instruction ou de qualification. La participation à la formation continue constitue une responsabilité partagée entre les employeurs, individus et pouvoirs publics. Les transitions numérique et environnementale qui s'annoncent sont porteuses d'opportunités et devraient donner lieu à des gains de productivité et des emplois supplémentaires. Toutefois il faut reconnaître qu'elles ne seront pas simples et qu'elles prennent du temps. Parallèlement à l'éducation et à la formation, un filet social solide s'impose donc pour sécuriser les carrières professionnelles des personnes au travail, condition importante de l'accueil que la population réservera aux transitions nécessaires.

6.2 Investissements

Dans l'avis relatif au Pacte national pour les investissements stratégiques, le CCE rappelle que pour profiter au maximum des effets bénéfiques du pacte, celui-ci doit s'intégrer dans une politique économique générale de stimulation de la croissance durable et des investissements privés, de développement de l'emploi et de renforcement du bien-être social. Une hausse des investissements, et en particulier des investissements publics, doit viser à stimuler tant la croissance économique à court terme que la croissance économique potentielle à long terme.

Le CNP comme le CCE soulignent l'importance des investissements nécessaires à l'accélération de la transition vers une économie verte et numérique. Ils identifient quelques domaines clé dans lesquels des investissements publics doivent être planifiés prioritairement : la mobilité, l'énergie, l'infrastructure numérique (y compris l'infrastructure numérique de l'enseignement et de la formation) et la gestion des ressources en eau (pénuries et inondations). Le REC 2020 reconnaît également le besoin en investissements dans les infrastructures de santé, dans le contexte des soins aux personnes âgées.

Pour le CCE, il faut un ambitieux programme d'investissements publics conduit par les autorités fédérales, régionales et locales. Les investissements prévus doivent être réalisés de manière accélérée. Leur mise en œuvre doit faire l'objet d'un suivi. Ces objectifs en matière d'investissements publics pour les 10 prochaines années doivent être revus considérablement à la hausse : de 2,2 % du PIB, ces investissements devraient évoluer vers au moins 4 % du PIB sur 10 ans. Il importe cependant que ces investissements s'inscrivent dans une vision large

qui fixe dans chacun de ces domaines l'orientation globale et assure la cohérence entre les différents niveaux de pouvoir (fédéral, régional, européen).

Les investissements privés doivent eux aussi être encouragés. En effet, la combinaison des investissements publics et privés a un effet multiplicateur plus grand sur l'économie. Les pouvoirs publics ont pour tâche importante d'indiquer la direction à suivre. Pour ce faire, il faut un cadre réglementaire clair, cohérent et stable, garantissant aux investisseurs la sécurité juridique.

Enfin, le CCE annonce qu'il entend mener dans les prochaines mois une réflexion sur une stratégie industrielle intégrant les investissements en R&D, les investissements en matière de rénovation et de mobilité, la transition vers une économie circulaire et la transition numérique.

En ce qui concerne le financement, il est important d'examiner la façon dont les moyens que l'Union européenne met à la disposition de notre pays peuvent être mobilisés. Les membres du CCE rappellent aussi leur demande adressée au gouvernement belge et à la Commission européenne, d'un traitement plus favorable des investissements publics productifs dans le cadre des règles budgétaires européennes. Cela pourrait se faire en déterminant le solde budgétaire à prendre en compte sur la base des amortissements sur investissements publics plutôt que sur la base des dépenses d'investissement, ce qui reviendrait à corriger le solde de financement des administrations publiques à concurrence des investissements nets.

A cet égard, dans le cadre des discussions sur le réexamen de la gouvernance économique européenne, le comité budgétaire européen souhaite une réforme du pacte de stabilité et de croissance pour simplifier les règles budgétaires européennes et encourager l'investissement productif.

6.3 Transformation numérique

L'application de nouvelles technologies numériques est importante non seulement pour la croissance de la productivité mais aussi, à condition que le processus soit inclusif et juste, pour la prise en main d'un certain nombre de défis sociétaux (soins de santé, mobilité et soutenabilité). En effet, ce n'est que de cette façon que tous les acteurs seront disposés à collaborer à la transition numérique, une condition sine qua non du succès de celle-ci.

La numérisation a un impact prononcé sur les compétences et aptitudes recherchées, lesquelles ne correspondent pas toujours à l'offre de travail, ce qui provoque des tensions sur le marché du travail. On a dès lors besoin d'une politique qui mobilise tous les talents et veille à la concordance maximale entre l'offre et la demande de travail. Il sera important dans ce cadre de miser sur un enseignement, des formations et un apprentissage tout au long de la vie axés sur le développement de compétences durables et tournées vers l'avenir.

Le télétravail est une application spécifique des TIC. Il possède un potentiel d'accroissement de la productivité et d'amélioration du bien-être des travailleurs ; il recèle cependant aussi des risques. Un bon encadrement est dès lors nécessaire. Les interlocuteurs sociaux examineront les conditions qui permettent la prépondérance des bénéfiques par rapport aux risques ainsi que la contribution qu'ils peuvent apporter à la mise en place de ces conditions.

Les interlocuteurs sociaux souhaitent aussi examiner quelles innovations organisationnelles et de gestion sont nécessaires pour une transition numérique réussie. L'économie numérique en mutation rapide demande en effet une organisation du travail différente, caractérisée notamment par des lignes de décision courtes, la responsabilisation des travailleurs et des dirigeants ainsi que par une autonomie accrue et un travail d'équipe virtuel. La Belgique n'obtient qu'un score relativement faible dans le domaine de l'innovation organisationnelle, une forme d'innovation qui est encouragée depuis assez longtemps dans les pays scandinaves, et ce souvent en collaboration avec les partenaires sociaux.

L'importance d'une infrastructure numérique rapide, sécurisée et fiable ne peut non plus être ignorée. De nombreux nouveaux développements technologiques dans le domaine de la mobilité, des soins de santé, des applications industrielles... en dépendent en effet. Il s'agit non seulement d'infrastructures matérielles telles que les réseaux 5G et les réseaux à très haute capacité (VHCN) mais aussi d'actifs fixes immatériels comme

les banques de données et la R&D. En outre, la transformation numérique requiert une culture imprégnée de l'importance et du potentiel des technologies numériques.

6.4 Dynamisme entrepreneurial

La congestion du marché engendrée par les entreprises les moins productives peut créer des barrières à l'entrée et limiter les possibilités de croissance d'autres entreprises plus productives.

Une sortie du marché des entreprises « zombies » permet aux facteurs de production de se libérer, ce qui, dans le long terme, favorise la création de nouvelles entreprises ou l'expansion d'entreprises existantes plus productives. De ce fait, il est important d'éliminer autant que possible les barrières à la cessation des entreprises affaiblies et de procéder aux bons choix lors de l'attribution des aides publiques.

Toutefois, la réhabilitation des entreprises en difficulté implique moins de coûts sociaux liés à la perte d'emploi que si seule une sortie était envisagée. Il est dès lors important de faciliter la réorganisation des entreprises zombies qui disposent d'un potentiel de croissance clairement démontré, en particulier par une reprise, et à réaliser les investissements nécessaires pour améliorer leur productivité. Dans la mesure du possible, la relance d'entreprises en difficulté, en particulier quand elles occupent une place importante dans la chaîne de valeur, est donc préférable à leur suppression. Lorsque cela n'est pas possible, l'État a un rôle à jouer dans la protection sociale et la réintégration des travailleurs concernés.

6.5 Transformation du marché du travail

La transition environnementale et les changements technologiques devraient entraîner une transformation qualitative et quantitative du marché du travail. La formation continue est un élément-clé afin de répondre aux besoins des entreprises et aux inquiétudes des travailleurs. Elle offre des opportunités de reconversion professionnelle et contribue ainsi à l'employabilité des individus, ce qui favorise le développement de parcours professionnels sécurisés tout au long de la carrière. Cela apporte une réponse aux difficultés de recrutement des entreprises en bonne santé, qui peuvent également freiner le changement. Par ailleurs, continuer à assurer le filet de sécurité qui existe via l'assurance-chômage pour les travailleurs qui perdraient leur emploi reste important.

L'économie belge est confrontée à un problème structurel d'inadéquation sur le marché du travail. D'un côté, de nombreux postes restent difficiles à pourvoir. De l'autre, des groupes spécifiques de la population continuent d'éprouver des difficultés à être intégrés au marché du travail. Ce phénomène se révèle être en Belgique un frein sérieux à l'activité économique et une menace pour la cohésion sociale. Les transitions qui s'annoncent sont porteuses de nombreuses opportunités en termes d'emploi et de compétitivité mais il faut veiller à ce qu'elles n'aggravent pas les problèmes structurels de l'économie belge. L'intégration des groupes à risque sur le marché du travail constitue une thématique prioritaire pour le CCE et le Conseil national du Travail (CNT).

7 Le CCE invite le CNP à examiner plus en profondeur les problématiques suivantes :

7.1 Chaînes de valeur

La pandémie a mis en évidence nos dépendances aux chaînes de valeur. Il serait intéressant d'effectuer des analyses en profondeur des secteurs les plus touchés et de l'impact que cela a sur la productivité. Mieux comprendre les chaînes de valeur des entreprises belges pourrait déboucher sur des recommandations plus précises pour améliorer la position internationale de ces dernières, en diversifiant par exemple les chaînes de valeurs ou, dans de cas particuliers, en relocalisant certaines parties des chaînes de valeurs dans le marché unique

On pourrait aussi s'interroger sur l'interaction entre résilience et productivité. La crise a montré que certaines opérations visant à accroître les gains de productivité pouvaient donner lieu à une perte en termes de résilience (comme la délocalisation des activités essentielles). À l'inverse, certains investissements visant à accroître la résilience peuvent se faire au détriment de la croissance de la productivité à court terme. Il s'agit d'une réflexion sociétale sur notre indépendance stratégique par rapports à certains biens et services essentiels qui dépasse le cadre d'analyse de l'entreprise individuelle.

7.2 E-commerce

La crise du Covid a accéléré le recours vers l'achat en ligne. Le CNP pourrait se pencher sur les retombées du secteur de l'e-commerce en termes de gains de productivité. Le sujet du développement de l'e-commerce, dans un environnement durable et concurrentiel, est un axe de travail prioritaire du CCE³¹.

7.3 Concurrence

Les questions de concurrence et de concentration constituent une problématique importante qui devrait faire l'objet d'un suivi approfondi eu égard notamment à l'impact négatif sur la concurrence de la concentration du pouvoir de marché ses dernières années aux mains de quelques acteurs, notamment les plateformes en ligne mais aussi certains secteurs de services.

Pour éviter une concurrence déloyale avec des entreprises étrangères soumises à des législations moins contraignantes dans ces domaines, il est aussi souhaitable de promouvoir une gouvernance et des relations commerciales qui garantissent un level playing field pour les entreprises.

Enfin, l'avis de la Commission de la concurrence de 2018³² soulignait le rôle important de l'Autorité belge de la concurrence dans la poursuite des pratiques anticoncurrentielles (p.ex. les cartels et les abus de position dominante) et pour contrôler les principales opérations de concentration et de fusion. En comparaison avec les autres pays européens, les moyens mis à la disposition de l'Autorité sont insuffisants pour remplir correctement ses missions. Le CCE plaide pour un renforcement des moyens de l'Autorité belge de la concurrence, et ce d'autant plus au vu de la nouvelle compétence que celle-ci s'est vu octroyer en juin 2020 concernant les abus de position de dépendance économique (B2B) (loi du 4 avril 2019).

7.4 Innovation

Dans l'avis du CCE sur le rapport du CNP de 2019, le CCE estimait que ce dernier se montrait peu explicite sur la formule qu'il mettait en avant pour promouvoir le développement de l'innovation et sa diffusion, à savoir un « *écosystème caractérisé par une culture entrepreneuriale et d'innovation propice au développement de ces innovations dans lequel les interactions entre pouvoirs publics, entreprises et universités ou centres de recherche jouent un rôle essentiel (triple hélice)* ». Il serait intéressant d'approfondir davantage ce concept, en explicitant notamment le rôle attendu des différents acteurs et les conditions dans lesquels leurs interactions doivent se produire

Concernant les domaines de Recherche et Développement et de la diffusion des connaissances et techniques, le CCE invite le CNP à se pencher sur les questions qui suivent. Quelles sont les causes du manque de valorisation de la R&D en Belgique malgré l'intensité de R&D relativement élevé ? Quel pourrait être le cadre institutionnel propice au développement des innovations garantissant que les facteurs de production se déplacent vers les entreprises les plus productives ? Quelle est l'efficacité et l'additionnalité des instruments fédéraux qui visent à stimuler la R&D ?

Le CCE souhaiterait qu'une attention particulière soit accordée à la manière dont la diffusion peut être stimulée.

³¹ CONSEIL CENTRAL DE L'ÉCONOMIE (2020), Rapport Emploi-Compétitivité 2020 : Se projeter dans l'avenir pour dépasser la crise, Octobre 2020, p.44

³² COMMISSION DE LA CONCURRENCE, AVIS CONCERNANT LA REFORME DU LIVRE IV DU CODE DE DROIT ECONOMIQUE (CCE 2018-1680 DEF MED), 15/06/2018