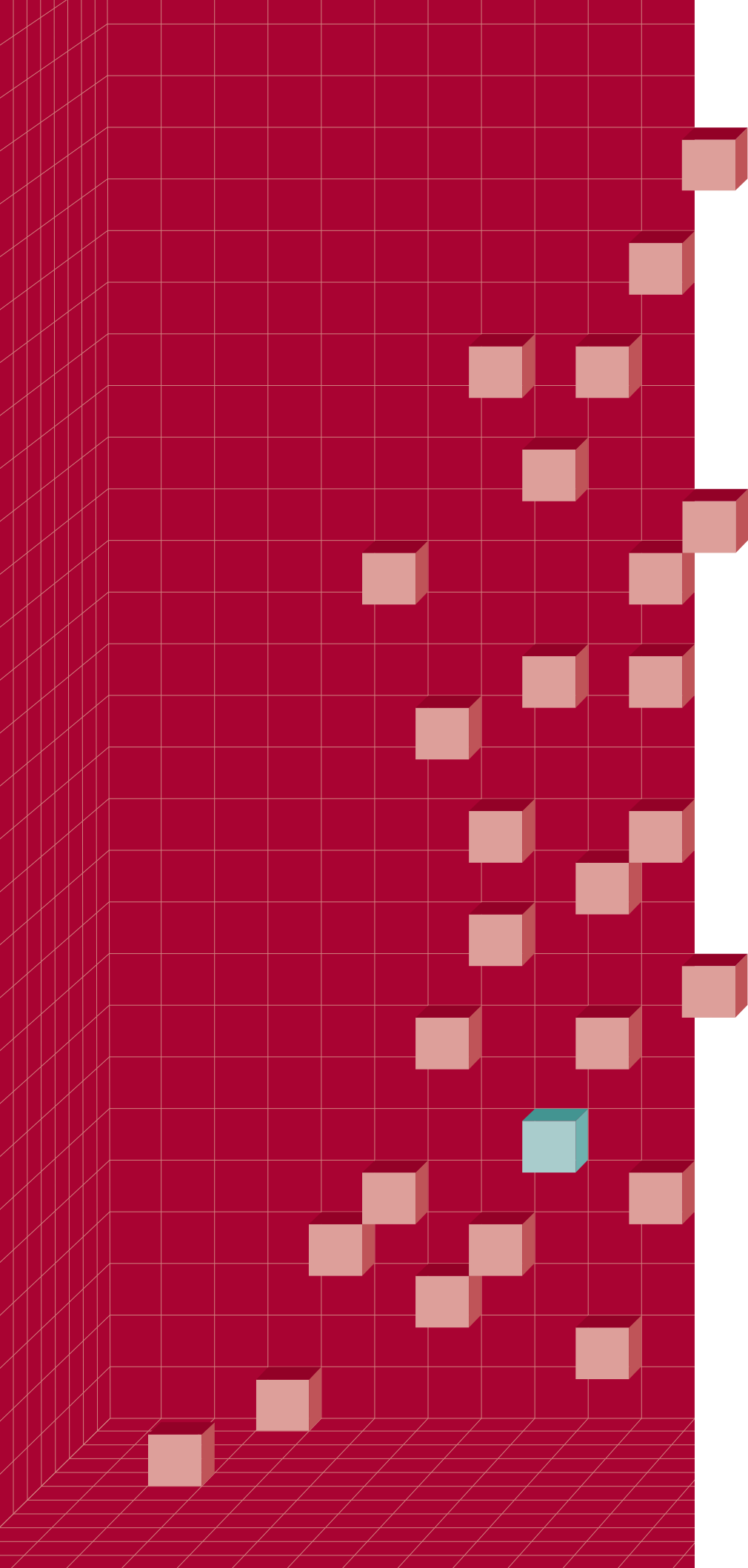


# productivity report 2021



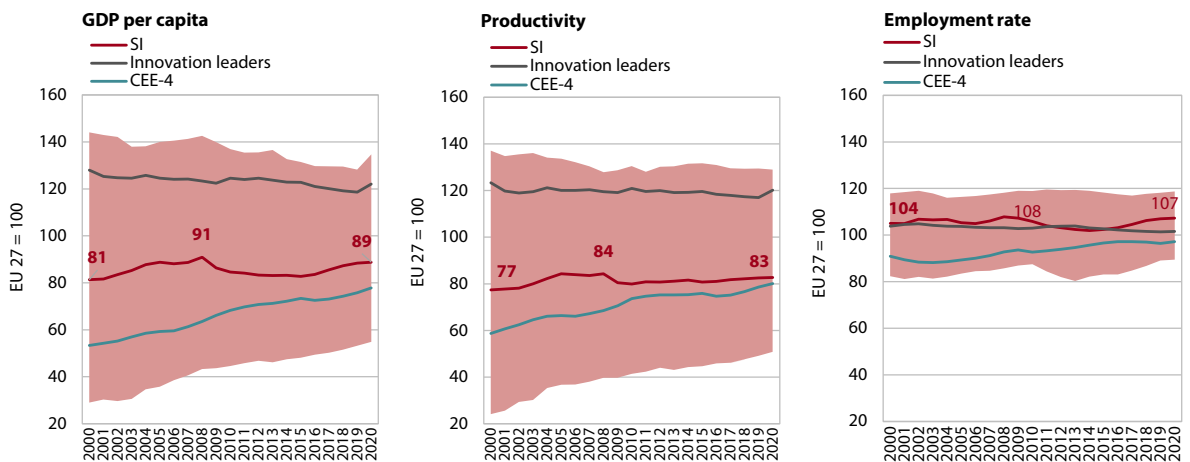
# Key messages and guidelines

## WHAT: Current situation and trends ...

### ... in Slovenia's productivity and competitiveness

The decade before the COVID-19 epidemic was characterised by faltering productivity growth, and after a sharp decline in 2020, it again exceeded pre-epidemic levels in 2021. In Slovenia, the average annual labour productivity growth (measured as GDP per person employed) slowed from 3% in 2000–2008 to 0.6% in 2009–2019 (or to 1.4% in times of buoyant economic growth between 2014 and 2019). The outbreak of the COVID-19 epidemic led to a sudden decline in economic activity, especially in the early period, while employment remained at a relatively high level, partly thanks to government measures. This led to a sharp (temporary) decline in the labour productivity index measured as GDP per person employed, which exceeded pre-epidemic levels in 2021. With the deceleration of productivity growth, the pace of convergence with economically more advanced countries has also slowed since 2008. In 2020, Slovenia reached 89% of the EU average in GDP per capita in purchasing power standards. The gap is mainly due to lower productivity, as the employment rate was above the EU average throughout the period analysed.

Figure 1: The deceleration of productivity growth has also halted the closing of the productivity gap with the EU average in the last decade



Source: Eurostat (2022); calculations by IMAD. GDP per capita and productivity (GDP per person employed) are expressed in purchasing power standards. The shadowed field shows the range between the EU Member States with the lowest and the highest indicator values, excluding Luxembourg and Ireland. For the definition of innovation leaders (SE, FI, DK, BE), see Chapter 4.2.1. CEE-4: CZ, HU, PL, SK.

With the exception of ICT services and construction, long-term trends in most business sector activities are relatively favourable, but they should be accelerated to close the productivity gap more quickly. Over the last decade, ICT services have been the main driver of average productivity growth at the EU level, while the growth of these services in Slovenia has been comparatively very modest. The lack of progress towards the EU productivity average is also evident in the construction industry, whose potential in Slovenia declined significantly during the global financial crisis. The manufacturing sector increased its productivity relatively quickly, partly due to increased robotisation and strong exposure to international competition. In this area, Slovenia was relatively successful in narrowing the

productivity gap with the EU average and the innovation leaders, especially in high-technology manufacturing industries, but also in industry in general, since it achieved faster growth. The same is true for traditional market services (trade, transportation, and accommodation and food service activities) and, with the exception of a slight deterioration in the last two years, for other market services (professional, scientific and technical services and administrative and support service activities).

**In the case of the COVID-19 epidemic, the impact of the crisis on export competitiveness has so far been less severe than in the previous crisis, but there are signs of pressure on competitiveness building up in 2021.** Although unit labour costs statistically increased significantly in 2020 and 2021, we estimate that the actual cost pressure faced by firms remained at the (relatively high) pre-epidemic level thanks to government measures. At the same time, cost pressures started to build up in 2021 due to the sharp increase in prices of metals and other commodities and energy on global markets. As a result, industrial producer prices rose by an average of almost one-tenth in manufacturing and 25% in the manufacture of metals and fabricated metal products in September 2021 compared with December 2020. Despite a sharp decline in the initial phase of the COVID-19 pandemic, Slovenia's export market share in the world goods market increased slightly on average in 2020, while its most important export groups of *services* (travel and transportation) were severely affected by the COVID-19 crisis.

### ... in productivity and business performance

**Enterprises with high productivity growth are more profitable, their profitability increases faster, they invest more, they have 23% higher wages on average and increase their wages twice faster than other companies, and they are above-average employers.** Of the 5% fastest growing enterprises in terms of productivity in 2014–2019, 99% come from the SMEs group, of which 43% are micro, 49% are small and 7% are medium-sized enterprises, with smaller enterprises also recording higher productivity growth. These enterprises are active in all sectors, suggesting that company-level (rather than sector-level) factors play an important role, although the share of such companies in the high-technology sector appears relatively low at 9%. Successful companies with high productivity growth can be found in all market, often niche segments, from high-technology to service and manufacturing activities that produce final and intermediate products. More than half of the fastest growing 25% of large enterprises are in manufacturing, but this group lacks export-oriented, knowledge-intensive large service enterprises. Successful large enterprises are both domestic- and foreign-owned, more focused on final products and more profitable from an economic perspective, but at the same time they have lower capital investments than the most successful 5% of companies.

**In 2020, despite the outbreak of the COVID-19 epidemic, the financial situation of companies was relatively favourable thanks to government measures (low indebtedness and high liquidity despite a sharp decline in profitability), but the situation has deteriorated significantly in service activities, which were most severely hit by the epidemic.** Given the stable situation in the banking system, most debt indicators decreased in 2020. Both total and financial debt remained below 2007 levels and bank debt even below 2005 levels. The ability of companies to repay their debts improved according to most indicators and recorded the most favourable figures in the entire period analysed (i.e. since 2006). Over-indebtedness rose slightly in 2020 for the first time since 2009 but remained near its lowest level. According to all indicators, the liquidity of the corporate sector also improved in

2020, reaching the most favourable levels in the entire period analysed. However, profitability indicators deteriorated significantly as a result of the crisis. The financial situation also deteriorated, especially in some market service activities, which were shut down, at least for some time, as part of the measures to prevent the spread of the virus (e.g. accommodation and food service activities, administrative and support service activities, and creative, arts and entertainment activities).

**The solvency of Slovenian companies did not deteriorate in 2020 and 2021, but there is a risk that the number of insolvent business entities will increase after all the measures to mitigate the impact of the epidemic expire and that the share of the most problematic over-indebted and zombie companies will rise.** Numerous government intervention measures to mitigate the impact of the epidemic in 2020 and 2021, financial stability, and good business results of all business entities in the years before the epidemic are the reasons why the solvency of Slovenian companies did not deteriorate in 2020 and 2021. But the scale of the shock caused by the COVID-19 crisis and the experience of the past global financial crisis that the effects on business indicators tend to show with a lag indicate that there is a risk that, after all the measures taken to mitigate the economic consequences of the epidemic expire, the number of insolvent business entities will increase, especially in severely affected sectors. Already in 2020, the share of companies at risk of insolvency (i.e. the most problematic over-indebted companies and zombie enterprises) increased. In 2020, such enterprises accounted for 21% (17.8% in 2019) of all companies, generated 1.7% (1.3%) of the value added of all companies and employed 6.4% of all employed persons (5.7%), which is more than during the period of economic growth (2014–2019), but at the same time much less than during the global financial crisis (2008–2013). The over-indebtedness of these enterprises accounted for 47.8% of total over-indebtedness and their bank debt for 6.9% of total corporate bank debt, while their productivity in 2008–2020 was three-quarters below the level of the business sector as a whole. Despite the relatively lower long-term growth and development potential of the most problematic over-indebted and zombie enterprises, in the case of appropriate economic policy measures, especially the restructuring of over-indebted enterprises, their productive resources can contribute to growth and are not necessarily permanently lost.

## WHY: Key factors of productivity growth ...

### ... in terms of investment

**The low level of investment was a key factor in the decline in trend productivity growth even before the COVID-19 epidemic.** The share of investment in GDP was 19% in 2020, the sixth lowest in the EU, which has been an important reason for the decline in trend productivity growth since the global financial crisis. Slovenia is one of the countries with the lowest share of investment in construction, especially in housing. On the other hand, (tangible) investment in machinery and equipment in Slovenia is relatively high from a productivity point of view, while (intangible) investment in intellectual property products is low. As far as the investor sector is concerned, household and business investment in Slovenia are lower than government investment. Overall investment will have to increase not only to ensure productivity growth, but also in view of the large investment needs related to future challenges, especially the green transition. With the outbreak of the COVID-19 pandemic, investments – particularly from the business sector – initially fell sharply again, then gradually recovered later in 2020 and exceeded pre-epidemic levels in early 2021. However, they still fall short of the level forecast before the COVID-19 crisis.

**In terms of productivity, in addition to investment in human resources and softer forms of intangible capital, cumulative investment in research and development, ICT, and other machinery and equipment is crucial. Here, Slovenia was among the top performers in the EU before 2009 but has ranked only around the EU average since 2014.** From a productivity perspective, however, Slovenia's lag in investment in intellectual property products is key: the gap with the innovation leaders in R&D is one percentage point of GDP per year and corresponds to the gap in investment in ICT. Productivity growth is also significantly influenced by investments in other machinery and equipment, which are also important and necessary for smart transformation and digitalisation. The analysis of cumulative investments in all three types of investments shows that (i) until the outbreak of the global financial crisis in 2009, Slovenia spent 2 p.p. of GDP more than the EU average on the investments mentioned above (ranked 5th); (ii) between 2009 and 2013, it reduced its investment advantage over the EU to 0.9 p.p. of GDP, ranking 7th in the EU; (iii) since the rebound in economic growth in 2014, Slovenia's investment for these purposes has been around the EU average (ranked 12th). Slovenia also lags behind in the no-less-important investments in human resources<sup>1</sup> and has regressed from being one of the top investors in softer forms of intangible capital to an average investor, though this cannot be quantified uniformly for methodological reasons.

**These findings are supported by the dynamics of public investment in smart, digital-innovation transformation, on which Slovenia spends 0.5 p.p. of GDP less than the EU average and 2 p.p. of GDP less than the five leading countries, with the gap widening over time.** In 2017–2019, Slovenia ranked 19th in the EU, with a share of government expenditure for these purposes of 1.7% of GDP. The share of this public expenditure in GDP has decreased over the last 20 years, while it has increased in most other countries. Having been an average investor in smart transformation in terms of public funds in 2001–2003 in the EU, 20 years later Slovenia lags behind and invests 0.5 p.p. of GDP less than the EU average and 2 p.p. of GDP less than the top five countries, the gap being unrelated to the size of the public sector, as the same dynamics in the share of smart investment can be observed when comparing to all public expenditure. General government expenditure on smart transformation as a share of GDP is characterised by pronounced cyclicity related to EU funds, while expenditure from integral funds has been stagnating in the last decade and even declining as a share of the 2018–2020 budget.

### ... in terms of structural changes

**Global changes are reflected in rapid changes in the demand for new knowledge and skills, which is already changing in the short term, but to which Slovenia is not responding adequately.** In some areas that are crucial for strengthening competitiveness, such as ICT, Slovenia not only has relatively low skill levels, but at the same time businesses face one of the largest skill shortages in the EU, indicating a lack of adequate responsiveness. The major changes in needs are moving in the direction of increasing technological skills, including digital and entrepreneurial skills, while social and emotional skills, along with the ability to work with others, quick learning skills, problem-solving skills, critical thinking and creativity, will also come to the fore. At the same time, the unclear picture of specific future needs in Slovenia prevents effective career orientation and sufficient enrolment in programmes that are important for meeting the medium-term needs of the

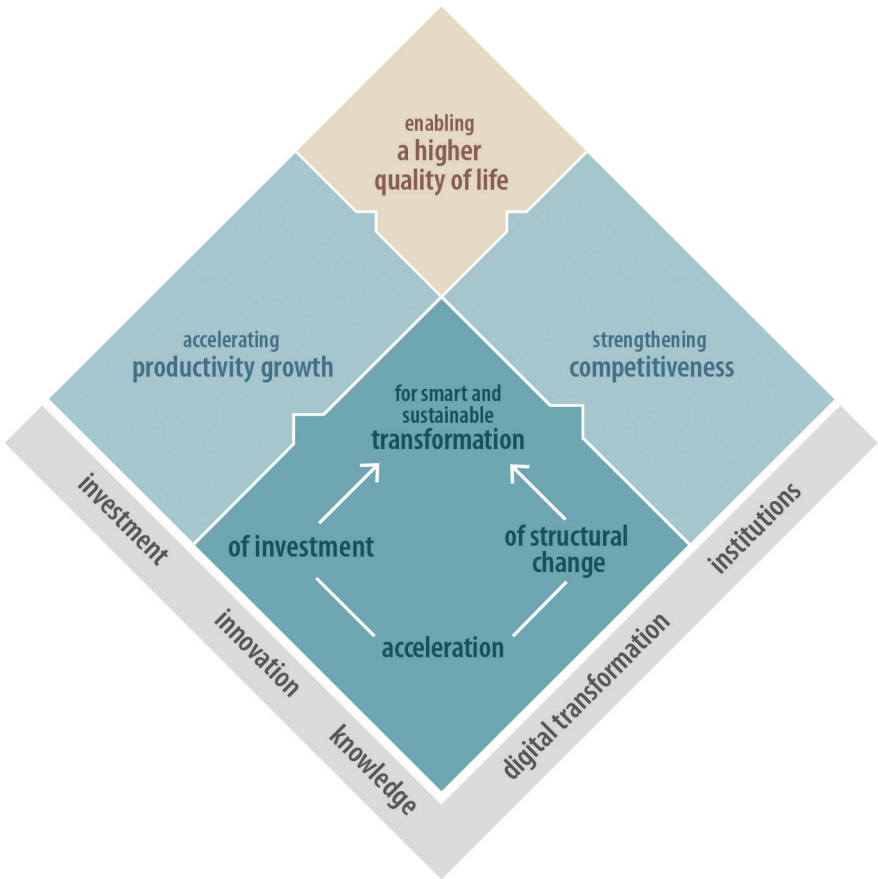
<sup>1</sup> In terms of public spending on formal education, for example, Slovenia's gap with innovation leaders is 1.8 p.p. of GDP.

economy, which leads to young people being encouraged to enrol in educational programmes for occupations for which there will be less demand in the future.

**Although the corporate sector is still in a relatively favourable position in terms of digitalisation, it is gradually losing its comparative advantages and, above all, is too slow to respond to the changing nature of innovation, especially in the introduction of new business models and breakthrough and disruptive innovations.** According to Eurostat's Digital Intensity Index, 25% of companies in Slovenia had a high or very high digital intensity index score in 2021. This puts the Slovenian business sector in tenth place in the EU, which is a relatively strong position, but one that is deteriorating due to only average progress compared to the EU overall. In the early stage, the COVID-19 epidemic accelerated computerisation and digitisation, while the pace of adoption of more sophisticated digital projects, including digital transformation, seemed to have slowed. The transition to the fourth industrial revolution is changing the nature of the innovation process, where new business models are becoming increasingly important, including mass customisation and a greater emphasis on breakthrough and disruptive innovation, where Slovenia is facing significant challenges. Indeed, the data show that companies are too slow to change the way they are organised and operate in order to move to more agile and open approaches, that they lag behind in adapting products and services to the customer, and that the proportion of small and medium-sized enterprises that innovate their or are at least familiar with digital business models is low. All this is reflected in the structure of innovations, which are still insufficiently based on breakthrough and, especially, disruptive innovations.

**The functioning of institutions remains a challenge: people's attitudes towards entrepreneurship and digitalisation are becoming more positive, but at the same time, Slovenian society's openness to change, new ideas and globalisation remains relatively low, as is the government's effectiveness in promoting development.** Slovenia's ability to attract new talent is lower than in most economically developed EU Member States and is in the bottom half of EU Member States in this area. Companies have been paying more attention to this area in recent years, but the gap with the innovation leaders remains wide. As regards institutional competitiveness, this has improved since 2013, but international comparisons show that Slovenia lags behind the innovation leaders and that, in particular, the government's effectiveness in supporting the functioning of the business environment and promoting development is relatively low. In 2021, under the influence of coping with the consequences of the COVID-19 epidemic, some indicators of institutional competitiveness worsened, and Slovenia, as in previous years, was ranked below average in 18th place in the EU. People's attitudes towards entrepreneurship and, increasingly, towards digitalisation are positive, but businesses at the same time estimate that Slovenian society is less open to new ideas, changes and different cultural patterns, i.e. less open, agile and flexible. Despite the small size of the domestic market, firms estimate that support for globalisation in Slovenia is lower than among innovation leaders.

HOW TO MOVE FORWARD:  
Through smart and sustainable transformation<sup>2</sup>



Priority government measures

I. Active PROMOTION OF CHANGE:

1. **Raising awareness** of the consequences of global megatrends and pointing out that a proactive and timely response, supported by welfare state measures, can lead to an increase in the quality of life.
2. **Promoting greater openness** to change, which is an increasingly important factor for development in the context of globalisation and, for example, the intense struggle for talent or the green transition.
3. **Managing the transformation** and strengthening safety nets, adapting social security systems to the new realities, striking the right balance between security and flexibility of work, and providing adequate remuneration and access to lifelong learning, all based on close dialogue with social partners and civil society.

<sup>2</sup> "Smart" refers to knowledge-intensive and innovation-based growth. "Sustainable" refers to the transition to a low-carbon and circular economy, including an inclusive and equitable transition. "Transformation" refers not only to the introduction of technological innovations, but also to a changed way of doing business, organising and thinking, including the upgrading of institutions and the introduction of new business models.



## II. Building KNOWLEDGE and skills of the population:

4. **Accelerating education and (re)training** for the skills of the future, including digital skills and introducing the circular economy aspect, and promoting the inclusion of adults in education and training systems so that they are able to successfully meet future challenges, including workers whose jobs will be more exposed to automation and change.
5. **Based on modernised and future-oriented education and training systems**, which must become more flexible in the future. To ensure complementarity of knowledge, interdisciplinary approaches and cross-cutting skills such as entrepreneurship, innovation and creativity are becoming increasingly important. Therefore more attention needs to be paid to both the content and methods of teaching, which should focus more on the skills of the future and be based on a responsive and partnership-based system for predicting future needs.

## III. Increasing general government sector INVESTMENT:

6. **In smart and sustainable transformation, including with EU funds:** as Slovenia invests less than other countries, at least in the area of smart transformation, it should increase these key investments in order to increase productivity. The gap under the Recovery and Resilience Plan will not narrow, including due to the low intensity of EU aid, as Slovenia invests on average 0.7 p.p. of GDP less in digitalisation than other Eastern and Southern European countries. This makes it all the more important to increase the share of funds intended for smart transformation in the 2021–2027 cohesion policy and thus move closer to the advanced countries such as Ireland and Finland. Depending also on the strategic orientations of other countries, Slovenia would thus position itself around the EU average in terms of the intensity of investment in digitalisation and smart transformation as a share of GDP.
7. **Ensuring infrastructural conditions**, especially those that have a strong **medium-term impact** on productivity in addition to the short-term impact. This includes in particular (i) digital infrastructure, both in terms of enabling digital accessibility in rural areas and in terms of the growing importance of next generation technologies; (ii) education and R&D infrastructure; and (iii) green infrastructure, including the transition to a low-carbon circular economy, e.g. through measures related to electricity production from renewable sources or the regulation of sustainable mobility infrastructure.

## IV. Further improvement of the BUSINESS and INNOVATION ENVIRONMENT:

8. **Further strengthening the scientific research, innovation and digital ecosystem**, which promotes collaboration and leads to joint investment, risk sharing and more intensive international cooperation, which in turn leads to more innovation, including breakthrough innovations, and faster productivity growth.
9. **Promoting a dynamic business environment that ensures efficient resource allocation.** Future measures should be even more focused on stopping the financing and thus the preservation of zombie companies (so-called unhealthy cores of the economy), which hinders both productivity and economic growth, and on concentrating on healthy cores that are not over-indebted in the long term and have high growth potential.
10. **Improving the effectiveness of government in providing support services and promoting development**, e.g. when it comes to enabling investment, the responsiveness and flexibility of the regulatory framework, a more open and joint action with social partners and experts, and coordination with the government's development-related activities.



## Priority business sector measures

1. **Accelerating investment in human resources, digital transformation and research, development and innovation, and machinery and equipment.** Such investment is not just about investing in traditional modernisation, such as robotic production, but accelerating investment in a mix of key drivers for digital and innovative business transformation, from data and analytics, systems and technologies, to talent and organisational capital, which are key to advanced, smart, data-driven companies, an area that is particularly challenging for SMEs.
2. **Accelerating the introduction of new business models, breakthrough and disruptive innovations, and upgraded business processes and organisation, including domestic and international networking.** Smart transformation means establishing a new, digital mindset, culture and organisation, with accelerated experimentation and a greater emphasis on agile, multidisciplinary and open, collaborative approaches. This is one of crucial dividing lines between successful and unsuccessful businesses, because only companies capable of such transformation can reap the benefits of the fourth industrial revolution through the introduction of new business models, mass customisation, servitisation, extremely rapid innovation, especially breakthrough and disruptive innovation, and rapid response to market changes.
3. **Reducing emission intensity, accelerating the circularity of the economy and developing green skills for new green jobs.** The transition to a low-carbon circular economy is becoming an increasingly important factor in ensuring long-term productivity growth and resilience. Increasing efficiency and the circular use of energy and raw materials are crucial for reducing production costs, which is also linked to the rapid increase in the price of energy and raw materials, which is expected to continue in the future. The green transformation of the economy represents an opportunity to create new jobs through the systematic development of new skills, innovation and sustainable investment in clean technologies.