

Dualities in the Hungarian Economy – Growth and Prosperity in the 21st Century*

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The decade of the 2010s can be considered the most successful period in Hungary's economic history of the last century, due to the reforms implemented at the beginning of the period. The positive performance was mainly based on quantitative indicators, while qualitative indicators showed a lag as reforms gradually slowed down. Our analysis highlights the dualities in the Hungarian economy that are reflected in the quantitative and qualitative indicators, drawing attention to the need for a complete turnaround in competitiveness to achieve sustainable convergence.

1. Introduction

The decade of the 2010s can be considered the most successful period in Hungary's economic history of the last century, as the reforms that were implemented put the country on a path of balanced convergence. The timing of competitiveness reforms and measures also played a key role, as more than 80 per cent of the reforms were implemented in the first third of the decade. The reforms and targeted measures led to a fiscal turnaround from 2010 and a monetary and growth turnaround from 2013. A number of economic indicators improved, supporting Hungary's competitiveness and rising prosperity. However, the positive quantitative performance is only the surface, as qualitative shortcomings can be identified in several areas of the economy, in deeper dimensions, due to a gradual slowdown in the introduction of measures in an effort to further improve competitiveness from the second half of the decade. In the light of today's major global challenges (e.g. digitalisation, green transition) and the historic scale of recent crises, the need to improve the qualitative factors that contribute to competitiveness and prosperity has become particularly important. A shift towards a knowledge and technology-intensive growth model is needed, for which past achievements and progress in quantitative indicators provide a good basis, but further efforts are necessary. In our analysis, we illustrate the dualities that can be identified in the economy through quantitative-qualitative indicator pairs, drawing attention to the potential for growth, in particular in qualitative factors. A complete competitiveness turnaround is needed to eliminate

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the economic dualities, which will ensure sustainable convergence and rising prosperity in the long term. A full competitiveness turnaround can also help avoid the middle-income trap (*Baksay – Nagy 2022*).

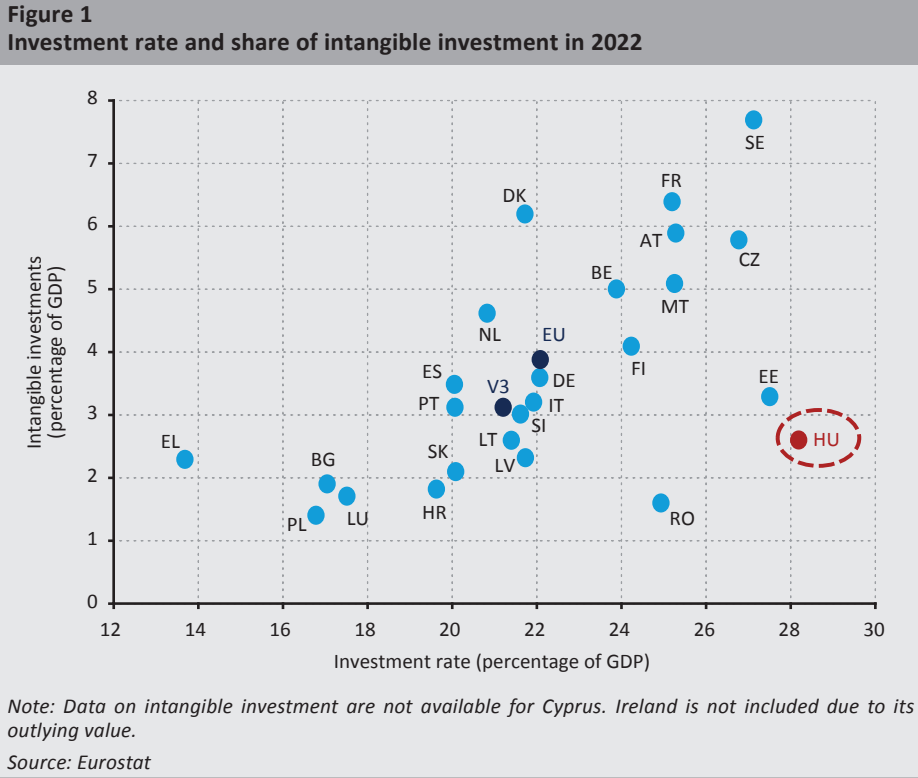
2. Dualities in the real economy

Increasing prosperity is more than economic growth, but without balanced growth and a strong economy, neither increasing prosperity nor ensuring its sustainability can be achieved. In Hungary, the macroeconomic conditions for a competitiveness turnaround were successfully established in the 2010s, and the Hungarian economy embarked on a path of balanced growth and convergence, as evidenced by improvements in a number of quantitative indicators. On the qualitative side, however, there is significant room for growth in value creation, efficiency and innovation that could be leveraged to support sustainable economic convergence.

As a result of fiscal and economic stabilisation after 2010, domestic economic growth has consistently exceeded the EU average since 2013, and thus in terms of GDP per capita, the key indicator of economic development, Hungary has been on a trend to catch up with the EU average over the past decade. Hungary's economic development has risen from 66.1 per cent of the EU average in 2010 (at current prices) to 76.3 per cent in 2022. However, gross national income (GNI) – the actual disposable income of domestic agents – continues to lag behind GDP (*MNB 2023a*). The gap between GNI and GDP was close to 5 per cent of GDP in 2010, decreasing with minor fluctuations to 3.9 per cent in 2022. Thus, the disposable income of the domestic sectors continues to lag behind the income generated in Hungary, mainly as a consequence of the negative capital income balance.

Investment, which underpins production and long-term growth capacity, has expanded significantly in recent years. While the investment-to-GDP ratio was around 20 per cent in the early 2010s, it has been consistently above 25 per cent in recent years, and in 2022 the Hungarian indicator was the highest in the European Union at 28.2 per cent. However, the situation is nuanced by the fact that from 2019 onwards, the rise in the investment rate was mainly driven by a rapid increase in investment prices. Recent economic analyses show that the quality and structure of investment is as important as the quantity, but Hungary's position is unfavourable by EU standards (*Baksay et al. 2022*). The ratio of intangible investment to GDP, which is essential for the digital and technology-driven transition, was only 2.6 per cent in 2022, placing Hungary in the bottom third of the EU ranking. The average for the Visegrad peers was 3.1 per cent, the EU average was 3.9 per cent, while Austria's was 5.9 per cent in 2022 (*Figure 1*). The low level of intellectual capital investment in Hungary compared to developed countries is linked to Hungary's low productivity level also by international standards, and accordingly, looking ahead,

it is essential to increase intellectual capital investment and achieve knowledge-intensive growth (Csath 2023).



In terms of Hungary’s economic development, it is positive that Hungary is one of the most open economies in the EU, with exports as a share of GDP at 90 per cent in 2022. The Hungarian indicator is substantially above the EU and V3 averages (56 and 43 per cent, respectively). At the same time, the import content of exported goods is high, which is accompanied by a domestic value added content of only 52 per cent based on data from 2020, the 4th lowest in the EU. The Hungarian ratio is 13 percentage points below the average for the EU and other Visegrad countries (65 per cent). Increasing domestic value added content is key to inclusive economic growth. In addition, increasing the domestic value added ratio reduces the risk of falling into a growth trap and strengthens the competitiveness of the economy (Csath 2022).

Hungarian industrial output growth has been the 5th highest in the EU since 2010, helped by high investment rates and FDI inflows over the past decade. In 2022, the output of domestic industry was more than 50 per cent above the 2010 level, while the EU average was 16 per cent. However, as industrial output increased, its energy

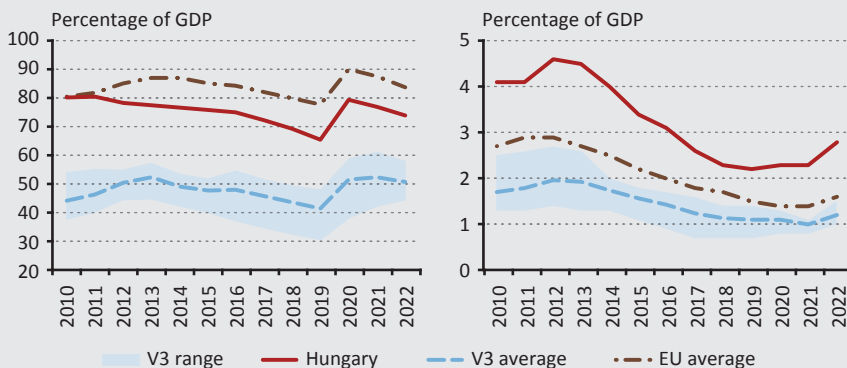
intensity increased by 9 per cent, whereas energy intensity decreased in the vast majority of EU countries. Boosting the energy efficiency of industry would support sustainability while increasing production.

3. Dualities in finance

Fiscal, macroeconomic and financial market balance is essential for sustainable growth and prosperity, as is a stable and efficient financial system that provides adequate financing for economic agents. Over the past decade, the macro-financial balance and the financial system in Hungary have both improved significantly, as evidenced by improvements in a number of indicators, mainly quantitative ones. However, there are qualitative factors that represent efficiency gains, and improvements in these could further strengthen sustainability, both for the public and the private sector.

Thanks to the fiscal turnaround from 2010, the public debt ratio declined steadily from 2011 until the coronavirus outbreak, and has been on a downward path since its rise in 2020. The gross debt-to-GDP ratio fell from 79.3 per cent in 2020 to 73.9 per cent in 2022. However, interest expenditure, the real price of debt, has been rising in recent years: while it averaged 2.3 per cent in 2018–2021, it reached 2.8 per cent of GDP in 2022, above the average of the Visegrad peers and the EU (Figure 2). In 2023, gross interest expenditure as a share of GDP is expected to rise further, to 3.8 per cent of GDP, based on the revised 2023 budget estimate.

Figure 2
Evolution of gross public debt (left panel) and gross ESA interest expenditure (right panel) as a share of GDP



Note: The EU average is a weighted arithmetic average. The ESA (European System of Accounts), otherwise known as the accrual methodology, focuses on economic events, as opposed to the cash flow methodology. By ESA interest expenditure we mean the interest obligation arising on the national debt in the given period.

Source: Eurostat

One of the key factors for macro-financial sustainability is household wealth. Household net financial wealth has increased significantly over the past decade: while in 2010 the indicator stood at 70 per cent of GDP, in 2022 it was 105 per cent. Hungarian households have financial wealth well above the average of Visegrad competitors (70 per cent), although the domestic indicator is lower than the EU average (121 per cent). The level and composition of household financial wealth is particularly important in times of crises and shocks, as higher financial wealth – if accumulated across large sections of society and in relatively liquid financial assets – can cushion the impact of crises (*Briglevics – Hegedűs 2023*). However, the positive situation is nuanced by the fact that households have a significant cash position in savings, at 10.3 per cent of GDP based on 2022 data. This makes Hungary the 5th in terms of the highest cash holding rate in the EU ranking, above both the EU and V3 averages (5.9 and 8.7 per cent, respectively). A shift from cash into interest-bearing assets would substantially improve the structure of the economy's financing.

Ensuring stable corporate lending is a key priority for financial deepening and convergence. In recent years, Hungary has seen a significant increase in corporate sector credit growth, above the regional and EU averages, which has been supported by targeted central bank and government lending programmes. Corporate lending remained dynamic during the Covid crisis. In line with international trends, the pace of credit expansion slowed down in 2023 H1, but the Hungarian dynamics remain above the regional and EU averages, with annual growth above 10 per cent (*MNB 2023b*). Despite double-digit growth in recent years, credit penetration remains low. Indeed, the corporate sector credit-to-GDP ratio was 18 per cent in 2022 in Hungary, which is close to the V3 average, but falls far short the EU average of 33.5 per cent, leaving room for prudent credit expansion in the region.

Adequate profitability is equally important for maintaining a strong capital position of the credit institution sector and for implementing efficiency improvements (*MNB 2022*). The profitability of the Hungarian banking system has consistently been at the top of the EU ranking, and in 2022, with an after-tax return on equity of almost 13 per cent, it exceeded the EU average of 10 per cent. However, the cost side of the banking system hides efficiency reserves, as the operating cost-to-assets ratio in Hungary was the highest in the EU, at 2.8 per cent in 2022. This is twice the EU average and represents a constraint on profitability and the pricing of banking products. Deepening financial penetration and the digitalisation of operational processes would help to increase the efficiency of the sector and thus strengthen its growth-supporting role.

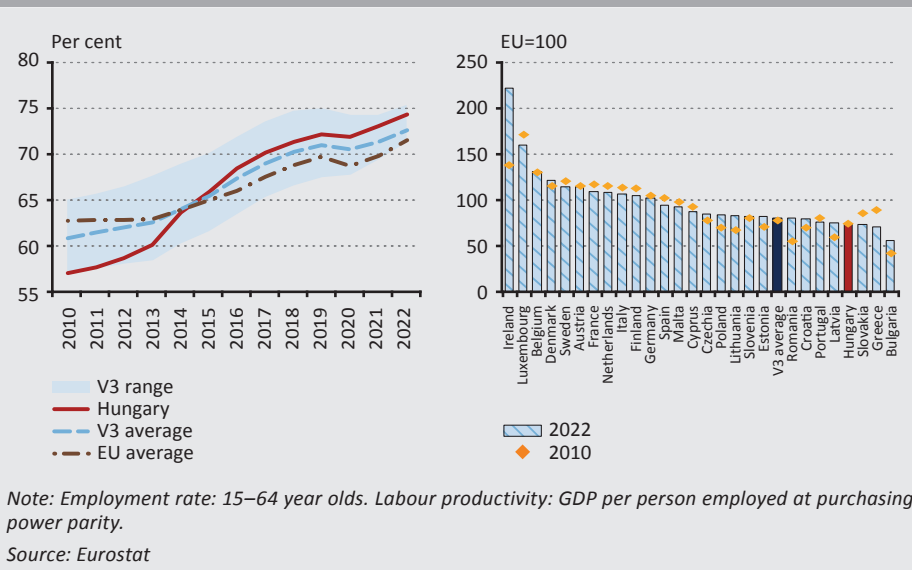
4. Dualities in human capital

The availability of skilled labour is Hungary's most important resource, and a key factor in the transition to an intensive growth model. The quantity of human capital is determined primarily by demographic trends; its quality and productivity are influenced by the effectiveness of the education system, while health conditions have an impact on both the quantitative and qualitative dimensions. The quantity of human capital is increasingly affected by demographic constraints (declining and ageing population), as a result of which the working age population is steadily decreasing. For this reason, it is essential to increase the productivity of the workforce, which will be helped by improving the qualitative factors. In Hungary, progress has been made over the past decade mainly in quantitative indicators of human capital, and a number of qualitative indicators have room for growth, which will become particularly valuable in reaching a path of knowledge- and innovation-driven growth.

The total fertility rate, a key indicator of demographic trends, has risen gradually and substantially over the past decade, from a low of 1.23 in 2011 to 1.52 in 2022, but remains below the 2.1 needed to reproduce the population. At the same time, live births averaged 91,000 per year from 2010 to 2022, still some 20,000 below the target of 110,000. Long-term sustainable economic growth will be difficult to achieve with a declining population (*Sharma 2020*). Thus, a family policy that encourages having children even more effectively is needed to reverse demographic trends.

Many quantitative indicators for the domestic labour market have improved substantially since 2010, and Hungary has approached full employment, supported by a number of measures to increase employment in recent years. The Hungarian employment rate has grown at the 3rd fastest rate in the EU over the last decade, and the coronavirus crisis only temporarily interrupted the upward trend, so that the Hungarian indicator (74.4 per cent in 2022) exceeds both the EU and regional averages. In parallel with the rise in employment, unemployment has also fallen significantly and is currently below 4 per cent. However, despite the favourable headcount figures, Hungarian labour productivity is the 4th lowest in the EU ranking. GDP per person employed increased by 32 per cent between 2010 and 2022, but the Hungarian indicator stagnated as a share of the EU average: 74.3 per cent in 2010 and 73.5 per cent in 2022 compared to the EU average. Productivity developments were also influenced by composition effects (low productivity of new labour market entrants) in the first half of the decade, before growth became more capital intensive from 2017 onwards. The average for the other Visegrad countries was 80.6 per cent of the EU average in 2022. Raising Hungarian labour productivity is also key to wage and prosperity growth (*Figure 3*).

Figure 3
Employment rate (left panel) and labour productivity (right panel)



Nominal average wages have risen significantly since 2010, helped by dynamic economic growth and strong labour demand, as well as targeted wage increases. Nominal average wages grew by an average of almost 8 per cent annually between 2010 and 2022, including an average of around 12 per cent per year since 2017. However, the dynamics of average real wages have diverged from nominal wages and have been slowing down since 2017. Between 2017 and 2022, real wages rose by 6.4 per cent on average. From 2020 onwards, the coronavirus crisis and then the global inflationary wave slowed down real wage growth, which remained positive throughout 2022 (2.5 per cent), but in 2023 H1, real wage growth fell by 8.1 per cent year-on-year, while nominal wages increased by almost 14 per cent.

The quality of education fundamentally determines the quality of human capital and its productivity. International tests measuring the effectiveness of public education show that Hungarian students learn the expected curriculum, but are less able to apply what they learn in real life (MNB 2022). However, some students excel in the Student Olympics: for example, in the last decade, Hungarian students have placed 21st on average in the Student Olympics in Mathematics, compared to an EU average of 46th. At the same time, the proportion of 25–34 year olds with a university degree is one of the lowest in Hungary. The indicator has been almost stagnant since 2012, contrary to the increasing trend in the EU, and stood at 32 per cent in 2022, compared to the V3 average of 38 per cent and the EU’s 42 per cent. To shift to a knowledge- and technology-driven growth model, it is crucial to

ensure the right number of skilled workers with the right skills and knowledge, and their continuous training and development.

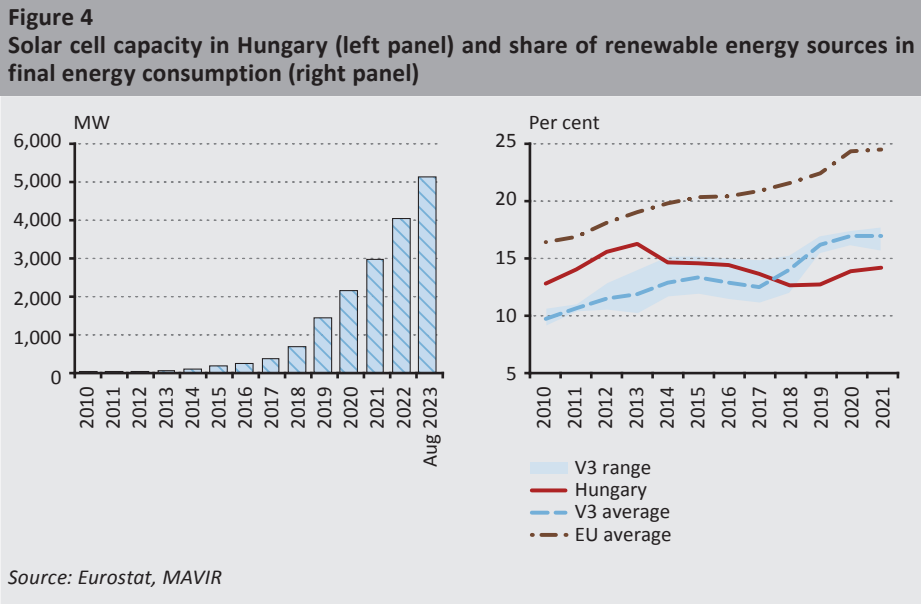
5. Dualities in the green economy

Without environmental sustainability, long-term sustainable growth and increased prosperity cannot be achieved. Today, green and sustainable management is gaining increasing attention, as ensuring the regeneration of resources is the only way to guarantee the prosperity of future generations (*MNB 2021*). Environmental sustainability includes not only the protection of the natural environment, but also efficient energy management, the reduction of emissions from human activities and green financing, among other things. Over the past decade, we have seen several promising developments in Hungary in the field of environmental sustainability, but qualitative progress is still needed in a number of areas to ensure a successful green transition. The MNB is one of the first central banks to support the green transition and has taken meaningful steps to integrate environmental sustainability considerations into the regulatory framework of the banking system, reserve management, monetary policy, collateral management and data disclosure (*Matolcsy 2022*).

One important measure of ecological efficiency, carbon dioxide emissions per unit of output has been on a downward trend in Hungary over the past three decades, as in most EU countries. Since 2010, the indicator has decreased by 30 per cent and is at a more favourable level than the regional and EU averages. As CO₂ emissions have fallen over the past decade, the energy intensity of the economy – a measure that shows the amount of energy required per unit of economic output – has also declined. Hungary's energy intensity (206 kg/thousand euro) is similar to the average of the other Visegrad countries, but still significantly higher than the EU average (117 kg/thousand euro). Lower energy intensity is cheaper for the economy to operate and reduces Hungary's energy dependence, and, while increasing efficiency, provides greener conditions for successful convergence (*MNB 2022*).

Increasing the importance of renewable energy sources can strengthen the sustainability of a country's energy production and reduce the energy dependence of the economy. Since 2010, solar energy in Hungary has seen a positive trend, with more than 5,000 MW of solar capacity added. However, the share of renewable energy sources in final energy consumption remains low. The Hungarian indicator rose in the first half of the 2010s and then fell. Since 2019, the share of renewable sources has been rising again reaching the national target of 13 per cent by 2020. The 14 per cent share of renewable energy in 2021 is lower than the average for the Visegrad countries and the EU (17 and 24 per cent, respectively) (*Figure 4*). By 2030, the Hungarian state wishes to increase the share of renewable energy to 29

per cent, which is significantly lower than the 42.5 per cent target set by the EU. Looking ahead, the expansion of other renewable (wind, hydro, geothermal) and nuclear energy sources, in addition to solar energy, could contribute to achieving this target.



Agriculture is of key importance not only for food supply, but also for the environment and sustainability. In Hungary, agriculture has a high importance compared to the EU, and accordingly it is worth building on it. The weight of agriculture has averaged 3.6 per cent of GDP over the last 10 years, the 5th highest in the EU ranking and more than double the EU average (1.7 per cent). However, there is considerable scope for increasing the productivity of the food industry, with the Hungarian indicator being the 2nd lowest in the EU ranking. Compared to the EU average, the productivity of the food industry is 36 per cent, which represents a substantial reserve for efficiency and competitiveness.

As water management becomes increasingly important in the future, there is a major duality. Hungary is in a favourable position in terms of total renewable water resources, but is a water scarce country in terms of internal renewable water resources. Hungary's total per capita renewable water resources are the 7th largest in the EU, but its internal renewable water resources are the 2nd lowest. Efficient use of Hungary's water resources would also contribute to increasing agricultural productivity and responsiveness to climate change.

6. Summary

In the 2010s, Hungary achieved results on a scale of economic history that makes it the most successful decade of the last century. Thanks to the targeted reforms and economic turnarounds of the 2010s, both balance and growth were achieved. Strengthening employment and economic growth was essential to achieve this balance, with structural reforms of the tax system and the budget as the main instruments. From 2013, this was supported by the monetary policy turnaround. The coordinated operation of the two main branches of economic policy has resulted in an innovative, growth-friendly economic policy, which created a long-unprecedented unity of macro-financial balance and economic growth after 2013 (*Matalcsy – Palotai 2018*).

The 2010s saw a trend improvement in a number of economic and social indicators, and Hungary also moved closer to the European Union in terms of economic development. However, the improvements were mainly seen in quantitative indicators, while substantial room for growth can still be identified in a number of key qualitative indicators. Hungary's economic growth has consistently outpaced the EU average since 2013, bringing the country close to the EU average in terms of development, but the real disposable income of domestic agents, GNI, remains below GDP, as in other countries in the region. Investment rates have risen significantly in recent years and are at historic highs, but Hungary ranks in the bottom third of the EU ranking in terms of the share of intangible investment, which is essential for the digital and technology-driven transition. One of the most significant successes of the last decade has been the substantial improvement in many quantitative labour market indicators, bringing the country close to full employment, but Hungary's labour productivity remains one of the lowest in the EU. Corporate lending, which is crucial for financial deepening and convergence, has expanded significantly in recent years, but there remains substantial room for prudent credit expansion as a share of GDP. Thanks to the fiscal turnaround in the early 2010s, fiscal indicators have also improved significantly and the public debt ratio is declining again since its temporary rise in the wake of the Covid crisis, but interest expenditure has risen, with further increases likely to follow. There are also promising developments in the area of environmental sustainability, with a reduction in carbon dioxide emissions per unit of output and a decrease in energy intensity. However, the latter remains significantly above the EU average. In addition, there is still considerable room for, inter alia, expanding renewable energy sources.

Looking forward, qualitative improvements and the elimination of the current economic dualities are essential for knowledge- and innovation-driven growth. For sustainable convergence and growing prosperity, it is not enough to improve real

economic factors: a complete competitiveness turnaround is needed. Significant potential for growth can be identified in the areas of value creation, efficiency and innovation, for which continuous improvement in the qualitative indicators of human capital, such as health conditions, knowledge and skills levels, is essential. At the same time, there is also a need to increase the efficiency of businesses and the state, which can be facilitated by the wider use and strengthening of digitalisation and innovation. Furthermore, sustainable growth and increased prosperity cannot be achieved without taking environmental concerns into account, ensuring the efficient use and recycling of resources and the preservation of natural environment.

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