



# COMPETITIVENESS PROGRAMME IN 330 POINTS



2019

*'To see what everybody else has seen and to think what nobody else has thought.'*

*Albert Szent-Györgyi*



# **COMPETITIVENESS PROGRAMME IN 330 POINTS**

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*In addition to its primary mandate for the achievement and maintenance of price stability, the Magyar Nemzeti Bank (MNB) is required by law to use the instruments at its disposal to support the economic policy of the Government, including the strengthening of competitiveness, a prerequisite for convergence. In 2015, the Hungarian Government requested the MNB to use its central bank expertise to support Hungary's sustainable convergence by improving the competitiveness of the country.*

*The Competitiveness Programme was designed to support the sustainable convergence of the Hungarian economy by full and sustainable utilization of the growth potential in the country's resources. The detailed recommendations put forward as part of the programme address, inter alia, productivity, the quantity and quality of human resources, technological progress, the regulatory environment, entrepreneurial attitude and financing opportunities. In 2016, the Magyar Nemzeti Bank published the book entitled 'Competitiveness and Growth' to analyse the changes in Hungary's competitiveness and explore options for moving forward. The Central Bank released its Competitiveness Report in 2017 in accordance with the principles and proposals laid down in the book, then its working paper '180 Steps for the Sustainable Convergence of the Hungarian Economy' in 2018. The Competitiveness Programme is an organic continuation of that work, presenting in detail the recommendations for measures the implementation of which could make substantial contributions to Hungary's successful catching up.*

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# Introduction

**In addition to fulfil its primary mandate of achieving and maintaining price stability, the Magyar Nemzeti Bank (MNB) is required by law to use the instruments at its disposal to support the economic policy of the Government, including the strengthening of competitiveness, a prerequisite for convergence.** In 2015, the Hungarian Government requested the MNB to use its central bank expertise to support Hungary's sustainable convergence by improving the country's competitiveness.

**The Competitiveness Programme was designed to support the sustainable convergence of the Hungarian economy.** Within that framework, the MNB has proposed 330 recommendations in 12 areas with a view to support the growth potential of the economy. The proposed programme is the outcome of analysis conducted since 2015 and was preceded by a 180-points set of recommendations, released in the summer of 2018. The Competitiveness Programme puts forward recommendations in addition to the 180 points and also elaborates them all.

**The turnaround in competitiveness was made possible by the economic policy reforms after 2010, as the Hungarian economic model has provided both macro-financial balance and dynamic economic growth.** 2010 marks the beginning of successful fiscal and economic stabilisation, followed by a turnaround in monetary policy from 2013 onwards. This re-established the long-missing coordination between the two main branches of economic policy, creating an economic model of macro-financial balance accompanied by real growth, in which ensuring full employment is a core element. As a result of the successful reforms, 9 years after Hungary's accession, the excessive deficit procedure of the European Union was abrogated, its public debt-to-GDP ratio embarked on a sustained downward path, a credit crunch was avoided thanks to the central bank's revival of SME lending, foreign currency loans were completely phased out from households' balance sheets and the external vulnerability of the national economy was significantly reduced by strengthening domestic sources of financing.

**The Hungarian economy is on track for convergence, but staying on this path requires an annual growth surplus that is at least 2 percentage points higher than in the developed countries over the long run.** Growth-friendly economic policy reforms came to fruition in 2013 and led to a turnaround in growth, as a result of which, in 2017–2018, on average the Hungarian economy grew at a rate 2 percentage points higher than the EU average, which also indicates the beginning of a turnaround in convergence. However, sustainable economic convergence requires that the growth rate of the Hungarian economy remain steadily above 4 percent. The lessons learned from economic history are that – in the case of the faster growing economies – the economic growth surplus compared to the advanced regions usually runs out before they catch up with the advanced economies. In the economic literature, this phenomenon is referred to as the middle-income trap. For Hungary, the key challenge in the convergence process is to escape the middle-income trap, which hardly a dozen countries have been able to accomplish over the past hundred years. Most of these countries are found in the Far East, such as South Korea, Hong Kong and Singapore. In Europe, only Austria, Finland and Ireland accomplished this in the past more than one half a century.

**Escaping the middle-income trap requires an objective, comprehensive assessment of the situation, an understanding of the lessons that can be learned from international practices and the formulation of recommendations with Hungary's specific circumstances in mind.** In this vein, the MNB has pursued its work on competitiveness since 2015. In 2016, it published the book *Competitiveness and Growth*, which – in addition to discussing the theory of economic convergence and the history of successfully converging countries – also provided an assessment of Hungary's situation in terms of competitiveness, including 50 recommendations for improvement. This was followed by a more in-depth assessment of the situation in 2017 in Hungary's first *Competitiveness Report* by the MNB, which offered a comprehensive diagnosis of Hungary's competitiveness compared to roughly 110 indicators, more than 90 per cent of which are objective ones. As a follow-up to the assessment of the situation, recommendations were formulated in July 2018 under the title *180 Steps for the Sustainable Convergence of the Hungarian Economy*. The 2018 *Growth Report* provided definitions and detailed explanations of the macroeconomic conditions which Hungary needs to fulfil in order to approach Austria's level of development by 2030. The 330 recommendations of the *Competitiveness Programme* were proposed in 12 areas based on the above assumptions.

**Figure 1**  
Milestones in the competitiveness work in the MNB



Source: MNB.

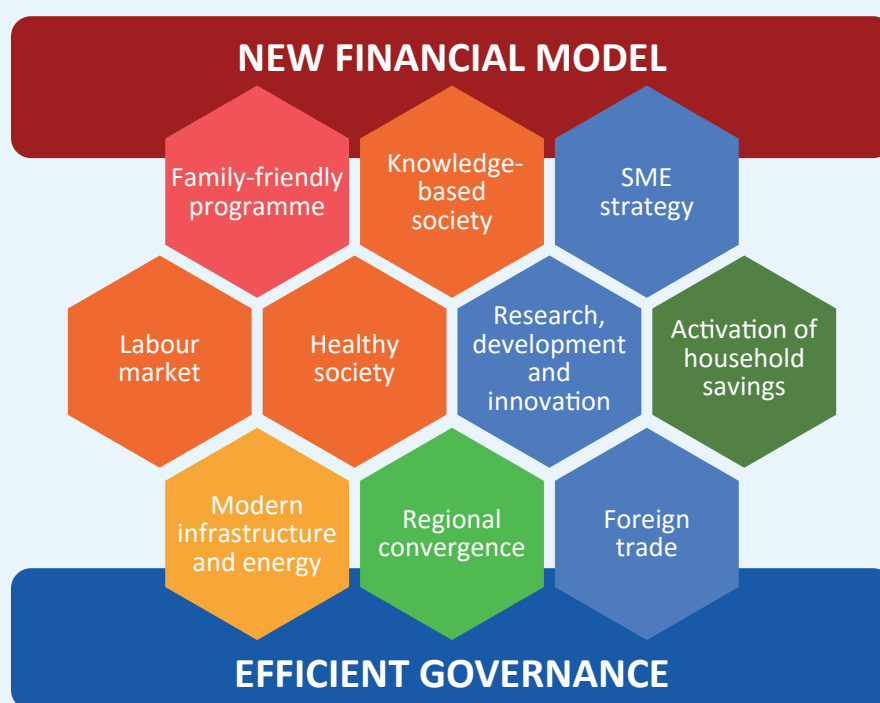
The MNB defines competitiveness as economic conditions conducive to sustainable convergence, i.e. the aggregate level of all factors underlying long-term development. In the MNB's approach, a national economy is competitive if it utilises its available resources optimally to attain the highest possible, but at the same time sustainable level of welfare. Apart from macro-financial balance and the stability of the real economy, the competitive functioning of the economy requires a corporate ecosystem based on innovation and renewal, good institutions and effective regulation, quality education and health care, modern infrastructure and financial resources available in a healthy structure. A smoothly-functioning, predictable business environment needs to be established, and incentives need to be provided for investments and innovation, which, through the appreciation of skilled labour, may lead to increased productivity and long-term economic and social convergence. Nevertheless, successfully converging economies are rather heterogeneous in terms of their culture, size, economic structure, resources and geographic location. As there is no general, precise definition of competitiveness which is accepted, there is no single and universal recipe for successful economic convergence. It is best for every country to follow its own unique way, which may be subject to dynamic changes in space and time. Appropriate competitiveness reforms have multiplier effects that point beyond the reforms themselves, triggering a range of positive developments throughout the national economy with multiple levels of feedback. This enables the release of previously inactive resources with the greatest possible degree of efficiency.



## SUMMARY

The MNB's 2019 Competitiveness Programme provides a detailed description of 330 competitiveness recommendations in 12 areas, the implementation of which may strongly facilitate the achievement of a turnaround in competitiveness and Hungary's successful convergence. Systematic, logical implementation of the competitiveness reform programme may be sufficient to raise Hungary's level of development to 80 to 90 per cent of Austria's level by 2030. The 12 areas of the programme cover all relevant factors of competitiveness from quantitative and qualitative indicators of physical and human capital to matters concerning institutions and the structure of the economy. As the key areas of competitiveness are interlinked at several points, the implementation of reforms may generate positive feedback. With regard to the fact that they have the greatest ability to influence all of the themes, two areas of the model should be noted specifically: the renewal of the financial model and the improved efficiency of governance. Development in these areas may have particularly strong multiplier effects in the rest of the areas (Figure 2).

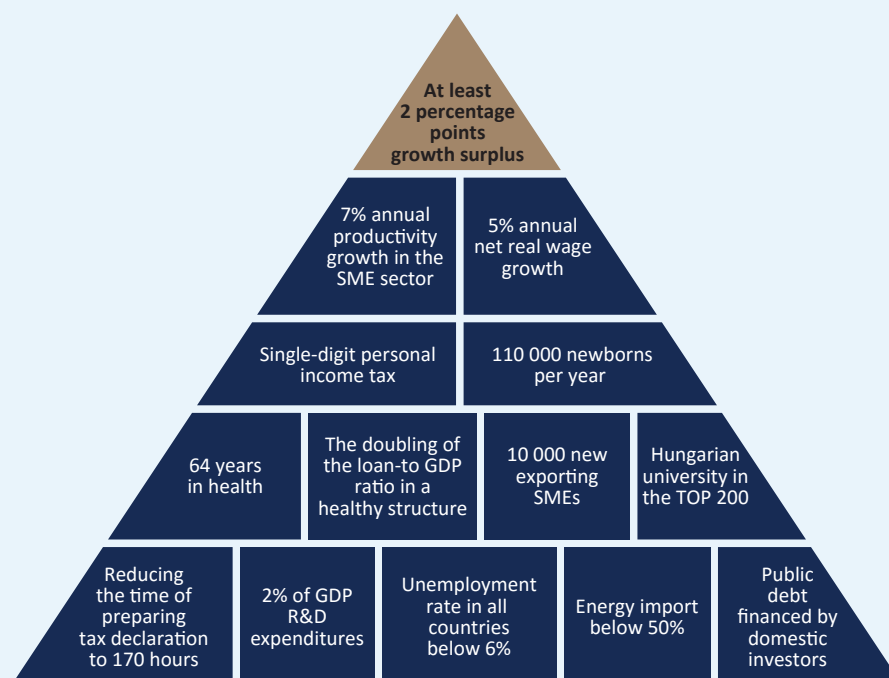
**Figure 2**  
Key areas of the MNB Competitiveness Programme



Source: MNB.

The Competitiveness Programme is part of the work that the MNB has been pursuing for years and is closely related to earlier publications on competitiveness. In formulating the recommendations, the MNB took into account the objectives set in its 2018 Growth Report (see Figure 3 for a summary). The most important objective is to achieve an annual growth surplus of at least 2 percentage points over the reference countries, which is necessary for convergence. This may be facilitated by increased productivity, which may give rise to dynamic real wage growth, potentially exceeding 5 per cent in annual terms. The increase in productivity is driven by improvements in the efficiency and export capacity of small and medium-sized enterprises, reduced state bureaucracy and developments in corporate financing. The activation of household savings may contribute to financing both the corporate and the public sector. As economic convergence requires population growth, the objectives include a change in demographic trends, an increased healthy life expectancy and an improved level of educational attainment, which may also be supported by a reduction in the personal income tax in recognition of the higher wages payable on higher educational attainment.

**Figure 3**  
Main objectives of the proposed Competitiveness Programme



Source: MNB.

## NEW FINANCIAL MODEL

The efficient allocation of capital is a prerequisite for sustainable economic growth. Renewal of the financial system supports convergence through a prudent increase in lending, by strengthening alternative forms of financing and by promoting digital solutions. Balanced economic growth requires that economic agents have access to finance that does not threaten financial stability and is appropriately priced and available. The recommendations put forward in the chapter on the new financial model contribute to ensuring that credit is more widely accessible in a way that better supports economic growth and to improving the operational efficiency of financial institutions. Some of the measures are designed to support the ability of companies to benefit from competitive terms of access to required financing for their development, whichever stage of their lifecycle they are at. In addition to bank loans, more room should also be given to alternative forms of financing, e.g. many companies may find breakthrough opportunities in the capital market. Further measures are considered to support the financial sector's adoption of digital solutions on a wide scale, improving cost efficiency, as well as promoting access to cheaper, higher-quality services.

## ACTIVATION OF HOUSEHOLD SAVINGS

Hungary's external vulnerability has decreased significantly in recent years, primarily due to the ability to rely on internal (forint) financing rather than external (foreign currency) financing. The additional financing required may be provided by virtue of a high savings rate and households' steadily increasing demand for government securities and capital market investment. Hungary's external vulnerability decreased as households' holdings of retail government securities increased dynamically; nevertheless, cash holdings remain high even by international standards and the level of investment in the domestic equity market is low, suggesting that there is still room to activate savings. The recommendations put forward in the field of activating household savings seek to encourage households to increase the use of their recent savings on purchases of retail government securities and to allow domestic investors to take on a more prominent role in the capital market. Among other measures, achieving that objective may be facilitated by transforming the product portfolio of retail government securities, increased financial incentives, or the application of technological innovations and convenience functions. In the stock exchange, the activity of domestic investors may be positively influenced by tax exemption on stock dividends and incentives for employee stock ownership plans, and by strengthening domestic institutional investors.

## SME STRATEGY

**The SME strategy proposed by the MNB focuses on boosting productivity, which may be achieved by increasing investments and economies of scale and by strengthening innovation capacities, and may provide a basis for wage growth at a similar rate.** SMEs comprise the vast majority of Hungarian enterprises, providing 70 per cent of total employment and producing about one half of the total value added. However, as their labour productivity is a mere one third of large enterprises, the more efficient utilisation of capital and labour to create economies of scale is the most important task in the SME sector in order to leverage growth potentials. Compared to other countries, micro and small enterprises represent an excessive share of the Hungarian SME sector, leading to a productivity loss due to inadequate exploitation of the economies of scale. An increase in the share of medium-sized enterprises, accompanied by a decrease in that of the smallest, would in itself considerably increase the competitiveness of the sector. Additionally, it is important to provide support for consolidating the market so that no resources are committed to inactive businesses. Such a size consolidation may be facilitated by appropriate regulation of acquisitions and mergers. An increase in investment activity can be supported by the deductibility of investments from the local business tax base, accompanied by the possibility of immediate recognition in the corporate income tax base. Assistance should also be provided for the development efforts of the smallest businesses, for which the MNB recommends an assistance scheme with eligibility conditional on wage increases. Another reason for the low productivity of the Hungarian SME sector is that only one in every five SMEs innovates. In addition to the creation of non-profit consulting centres, the establishment of an innovative entrepreneurial ecosystem would be facilitated by the deductibility of education expenses from the corporate income tax base. ICT developments in SMEs could benefit from the newly established János Neumann Fund.

## FOREIGN TRADE

**Hungary is highly active in foreign trade, but the share of domestic value added in exports is moderate and there also appears to be significant room to increase the number of exporting SMEs.** Hungarian products which are competitive in external markets are excessively dependent on the input of imported goods, and exports are concentrated in a relatively limited group of companies. Hungary's very open foreign trade is essentially attributable to the large enterprise segment, with the SME sector providing only approximately 20 per cent of the total volume of Hungary's foreign trade. Recommended objectives include increasing the number of exporting SMEs from the current 32,000 by an additional 10,000 and increasing the share of value added in exports from its current level of approximately 50 per cent. An increase in the number of exporting SMEs may be driven by strengthening the export of services more extensively and by more thoroughly exploiting the geostrategic benefits offered by China's One Belt One Road initiative. The increase in the domestic value added in exports would be supported by focusing investment support on knowledge-intensive manufacturing sectors that are well embedded domestically and by increasing the share of Hungarian suppliers.

## LABOUR MARKET

**Regarding the Hungarian labour market, it is particularly important that labour reserves are exploited more efficiently, wages are increased sustainably, accompanied by personal income tax cuts, and that lifelong learning and further training be strengthened.** Although Hungary has come close to full employment as a result of its successful economic policy, there is still unexploited labour market potential in case of the inactive, Hungarians living abroad and employees in lower value-added jobs (e.g. public employment). The Hungarian average wage has also increased significantly since the turnaround in growth, but the level of the average wage remains considerably below that of the EU, and over the longer term that gap may be reduced by continued wage convergence accompanied by an increase in productivity. A sustainable increase in wages requires additional reductions in the labour tax burden, in particular a cut in the personal income tax to 9 per cent. The activity of more vulnerable groups in the labour market may primarily be increased through the instruments of the tax regime, in which a prominent role may be played by the extension of the Job Protection Action Plan. Additionally, the employment of groups that have looser ties with the labour market may also be supported by the promotion of atypical forms of employment. Incentives for Hungarians living abroad to return home may be provided through wage increases in high-demand professions and foreign recruitment. In order to ensure the continuing development of the labour force, efforts should be made to improve the institutions of adult education and training.

## REGIONAL CONVERGENCE

**In Hungary, significant territorial differences can be identified in terms of the level of economic development and economic activity.** The territorial effect of economic developments is twofold: the economy is characterised by the concentration of businesses and labour, which will produce a productivity surplus in the short term, but over the longer term it will intensify the economic and social differences between regions. As a result, in more developed regions of Hungary (Western Transdanubia and Central Hungary) utilisation of labour capacities has virtually been maximised due to the strong demand for labour, whereas the eastern part of the country is characterised by high labour supply and low demand. In parallel with the regional inequalities in the labour market, the level of development in Western Transdanubia and Central Hungary is above the average, while the eastern and south-western parts of the country fall considerably short of the national average. In order to reduce regional inequalities, the MNB has formulated the objective of reducing the unemployment rate below 6 per cent in every county. The target for the unemployment rate may be achieved by encouraging the mobility of labour, which may also extend to support for commuting and housing. As regards the level of development, convergence in particular requires intensive support for economic centres outside Budapest and for development efforts that rely on local resources.

## FAMILY-FRIENDLY PROGRAMME

**Similarly to the underlying demographic developments in other European countries, trends in Hungary are also characterised by a steady decline and ageing of the population.** It is a positive sign, nevertheless, that Hungary's fertility rate has been on the rise in recent years, although it remains well below 2.1, the rate required for the natural reproduction of society. Measures on family policy that have been implemented in the past period and those announced in February 2019 provide considerable support for starting and expanding families. However, given the importance of the issue, the development of family support measures is unlikely to be considered complete for long and, with that in mind, we have formulated additional recommendations which, together with the ongoing programmes, may contribute to the achievement of the desired demographic turnaround. Consideration must be given to the fact that the birth of the first, second and third children may be encouraged by different incentives, respectively. Our recommendations aiming to achieve the demographic turnaround include specific elements in the family support benefits, the family tax system, the children's day care system, measures to increase women's participation in the labour market, as well as the families' first homes and the pension system. Among these, we attach particular importance to supporting mothers' re-entry to the labour market, which would primarily be facilitated by the promotion of atypical forms of employment and a significant increase in lower nursery capacities. However, as the benefits of a demographic turnaround starting today would only be felt on the pension system over a horizon of several decades, the present demographic challenge could be mitigated by a supplementary pension system seeking to achieve the widest possible coverage. On those grounds, we are recommending membership based on subjective right (i.e. by default) in the existing voluntary system, or in the new welfare funds that could be suitable for health and supplementary pension purposes, and could also effectively serve other purposes (such as houses, parenting, elderly care) in arrangements and where individual contributions would be supplemented by employer and public transfers. As a further incentive for the demographic turnaround, parenting would be taken into account in the pension formula, which would strengthen both the sustainability and the equity of the pension system.

## HEALTHY SOCIETY

**Similarly to other countries across the region, the health status of the Hungarian population falls short of the level of Western Europe, creating major inefficiency and productivity and growth gaps for the economy.** In this chapter, we do not attempt to propose a comprehensive health care reform, as that would go beyond the scope of this publication. The greatest contribution to the sustainability of the health care system and to increasing the healthy life expectancy could be made by increasing the health awareness of the population and by placing much more emphasis on prevention than at present. We attach particular importance to ensuring that – in addition to the prevention of diseases and striving for a healthy lifestyle – diseases should be detected at the earliest possible stage by regular health checks and screenings, as well as by a strengthened general practitioner system. Individual actors of the healthcare system are currently striving for cost-effectiveness separately, which, however, will produce inadequate overall outputs. The public healthcare system has

spare efficiency capacities in a number of areas (such as the utilisation of beds and outpatient treatment), the utilisation of which could be facilitated by reinforced professional and financial controls. Furthermore, considerably more private financing would be needed in expenditures, possibly via compulsory institutionalised channels (such as health funds and private health insurance). A major increase in the importance of the system of health funds and supplementary private health insurance would substantially increase the effectiveness of the individual's out-of-pocket expenditures that are currently being made. Consequently, we are recommending membership based on subjective right in health funds (or the welfare funds proposed above) in arrangements where individual contributions would be supplemented by employer and public transfers.

## KNOWLEDGE-BASED SOCIETY

**One of the main challenges for the education system is to prepare the young for a future state of the labour market that is increasingly difficult to predict because of the accelerating development.** The challenges of modern times can only be met by means of continued self-development and lifelong learning. In the future, in addition to providing the necessary encyclopaedic knowledge, the education system should focus on the acquisition of adequate basic skills (including in particular IT skills and foreign languages) and financial literacy, while students should be vested with the ambition and ability of continuous learning. It is also important that the education system should be more effective in reducing the inequalities between students that come from differing social and economic backgrounds, and in reducing the level of early school leaving, which is high by regional standards. Hungary should also increase the share of tertiary graduates, particularly in science, which could primarily be facilitated by means of improved international opinion on Hungarian tertiary education institutions, higher expenditures and lower drop-out rates.

## RESEARCH, DEVELOPMENT AND INNOVATION

**Strengthening research and development and innovation may facilitate the transition of Hungary's quantity-driven economy to a model based on knowledge and technology.** At present, Hungary's innovation activity falls considerably short of the average of the European Union. This is partly attributable to the structure of the economy, namely the fact that large multinationals tend not to relocate their innovative processes to Hungary, while the innovation activity of domestically owned smaller businesses falls short of not only that of large enterprises, but also competitors of similar sizes across the EU. In 2017, R&D expenditures amounted to 1.35 per cent of GDP, which is 0.7 percentage point below the EU average and 1.8 percentage points below the Austrian figure. Hungary's innovation capacities would be increased if R&D expenditures as a percentage of GDP could be raised above 2 per cent by 2030. Growth in the number of joint projects of enterprises and publicly funded research organisations may help the achievement of that objective. An increase in R&D headcount may be facilitated by the extension of the tax allowance for developers holding PhDs to private-sector researchers holding university degrees, and by increasing the wages of assistant research and development staff. R&D&I activity could be strengthened by reducing patent maintenance fees and by conditionally decreasing the employer's contributions payable by SMEs implementing R&D investments.

## EFFICIENT GOVERNANCE

**The efficient functioning of the state influences the competitiveness of the economy as a whole through a number of channels, for which meaningful support could be provided by reduced bureaucracy and the acceleration of the digital transformation.** As the public administration is expensive to run, it is essential that expenditures are utilised efficiently. Gains in operational effectiveness could be achieved through reduced bureaucracy, the optimisation of workflows and of the headcount of public administration, the elimination of parallelisms and the digital transformation of public administration. While Hungary's developments in e-governance are ongoing, the degree of digitalisation in public services still falls considerably short of other countries in the European Union. One of the major accomplishments in recent years has been the completion of personal income tax returns by the tax authority, covering almost 4 million taxpayers. By contrast, as regards corporate operations the time spent on tax administration is still considered high: in 2018, an average enterprise spent 277 hours on taxation matters compared to the EU average of 172 hours, which indicates that additional measures are needed to reduce that time requirement. In parallel with the reduction of the size of the shadow economy

(e.g. through the extension of online cash registers and the EKÁER system), market distortions are also being reduced, accompanied by increased tax collection efficiency, which generates higher tax revenues for the budget at constant tax rates. A further reduction in tax evasion may be facilitated by phasing out the financial transaction levy in the household segment, extending the use of online cash registers, and continuing to provide support for electronic payment methods.

## MODERN INFRASTRUCTURE AND EFFICIENT ENERGY

**The modernisation of conventional infrastructure and the development of modern infrastructure are both important drivers of competitiveness, in addition to which successful convergence may also be supported by reducing the energy use of the Hungarian economy and strengthening the green economy.** The density of Hungary's railway and road network is adequate, but its quality falls short of the European average in several respects. The development of the railway network may be assisted by increasing the share of electric railway lines, while road transport could be made faster and safer via motorway extensions and by making them suitable for self-driving cars. Although Hungary has a fast and reliable telecommunications infrastructure, efforts are needed to keep pace with modern technologies: new generation telecommunications networks need to spread, while information security needs to be increased. The share of imports in Hungary's energy use is 58 per cent, which could be reduced to below 50 per cent by increasing the share of the production and use of environmentally friendly domestic energy sources, developing domestic energy storage, and indirectly, by increasing energy efficiency. The wider use of environmentally friendly energy sources could also help increase the share of renewable energy sources within the total energy use from 13 per cent to 30 per cent by 2030.



# 1. New financial model

**Main objective: To double the volume of lending as a percentage of GDP in a healthy structure**

**Sustainable economic growth requires the banking system's support through lending, which is particularly true in a country where financing is fundamentally bank-based.** According to the MNB's estimate, the volume of lending to corporates and households as a percentage of GDP is considerably lower than its long-term trend. Closing the negative credit gap created by deleveraging will take years even in conjunction with dynamic growth in lending. In the upturn phase of the credit cycle, the structure of new lending is particularly important for stability. It is important that throughout their lifecycles, companies have access to bank and capital market funding at reasonable terms. In financing companies that carry higher risk from a banking perspective, the volume of lending supported by institutional guarantees has increased significantly, but a part of the current guarantee portfolio does not meet the additionality criterion, i.e. it helps to finance companies with good risk ratings. Despite the turnaround in lending seen in recent years, the emergence of adequately vigorous competition among banks continues to be inhibited by the high level of administrative burdens and expenses associated with the processes of loan refinancing and bank account switching. The high profitability of the past period has apparently covered up a structural weakness of the sector, namely that the Hungarian banking system has the highest operating costs-to-total assets ratio of the countries in the European Union. To a great extent, this is attributable to the limited use of digital channels. For that reason, within development activities an integral role must be occupied by the incorporation of the latest technological advancements so that the banking system can compete with the solutions that are currently offered with FinTech companies arriving from outside the sector. In that regard, the greatest regulatory challenge lies in the identification and prudent adjustment of the legal requirements that hamper financial innovation and of the general barriers to entry.

**The development of capital market funding aims to create an adequately diversified financing environment.** A possible credit crunch could freeze corporate access to funding; additionally, a possible future reduction in EU funds could also create financing constraints. The development of equity funding could contribute to an adequately diversified financing environment. Additionally, there is a strong positive correlation between the level of development of the capital market, welfare and innovation. In order to broaden the capital market successfully, it is essential that stimulus be provided on both the demand and the supply sides, and that a more balanced investor base be created.

**In the new credit cycle following the turnaround in lending, incentives should be provided for increased lending to both households and corporates (primarily SMEs), while increasing banks' willingness to lend is also desirable, but without compromising financial stability.** It is important that higher indebtedness is a result of an increase in the number households borrowing rather than of a concentration of a debt, while in structural terms the aim is to increase the share of loans with long interest periods. In corporate lending, an increase in the functional efficiency of the current system of guarantees requires that a greater share of the portfolio meet the additionality criterion, which could potentially be accomplished, among other things, through "reverse" suretyship, the targeted lifting of knock-out (KO) criteria, and the redesign of banking processes related to greater risk taking. Structural consistency in retail lending may be ensured by further increasing the share of Certified Consumer-Friendly Housing Loans, and by adjusting the volume of outstanding debt to that effect. Competition among banks may be intensified by facilitating loan refinancing, simplifying bank account switching and increasing the mobility of borrowers. Enabling the mandatory sharing of positive credit histories, enabling the transmission of customer data and enabling the continuous querying of credit histories on file with the Central Credit Information System (KHR) could support easier and more cost-effective customer identification and risk assessment, which might reduce spreads for customers. The process of lending could be substantially accelerated and simplified by the adoption of regional best practices such as simplifying the criteria for electronic contracting and signatures, enabling credit institutions to query income statements electronically and creating a central appraiser database, whereby the share of loans sold via electronic channels would also increase compared to conventional branch sales. The simultaneous achievement of branch network rationalisation for improved cost-effectiveness and better access to products may primarily be supported by the use of digital channels on a wider scale. The development of electronic payment methods and mobile

payment applications will improve customer experience for consumers, while at the level of society it will generate cost savings and promote the reduction of the shadow economy. Close cooperation between the regulator and innovators entering the market with new services and solutions may be best facilitated through the Innovation Hub, while preliminary operating licences and exemptions from a wide range of regulatory provisions may be granted through the legislative regulation of the Regulatory Sandbox. Additionally, barriers to entry into the payments market may be significantly reduced by the instant payments infrastructure becoming available from mid-2019, and by changes in the European and Hungarian regulatory framework for payments.

**In order to increase market capitalisation, which is currently low even by regional standards, consideration might be given to listing state-owned enterprises as part of a stock ownership plan for small investors, and to encouraging the listing of banks.** In turn, the launch of recapitalisation schemes with participation from public institutions could give domestic enterprises, particularly SMEs, access to more equity funding.



## 1.1. IMPROVE THE EFFICIENCY OF THE GUARANTEE SCHEME

- (1) Develop a “reverse” suretyship procedure
- (2) Ease exclusion (“KO”) criteria in a targeted manner
- (3) Seek ‘banks’ commitment to increase credit portfolios that qualify as additional
- (4) Offer more flexible guarantee rates (70 to 90 per cent)
- (5) Redesign bank processes related to higher risk taking
- (6) Make concerted marketing efforts to promote institutional guarantees

### Assessment of the situation

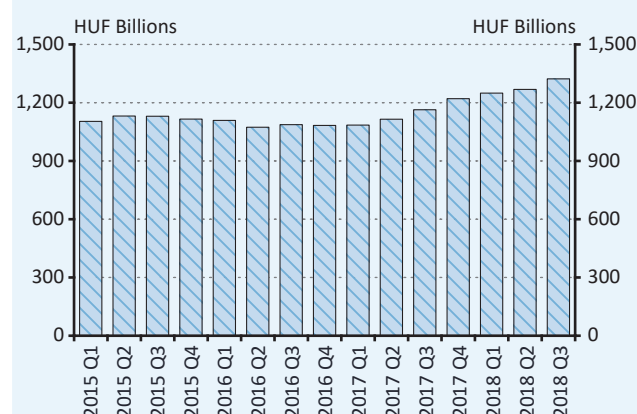
The guarantee scheme, also known as institutional suretyship, plays a major role in assisting micro, small and medium-sized enterprises (SMEs) to access credit. By assuming liability for customer default to the extent of the guarantee provided, guarantee organisations contribute to the reduction of credit institutions’ risk exposure. Ideally, the scheme facilitates the financing of those clients and transactions, which would have no or only limited access to the required funds without an institutional guarantee, and thus the transactions carried out under the scheme meet the additionality criterion.

In recent years, guarantee organisations have taken several measures to encourage the use of guarantees (reduced charges, swifter approval procedure, electronic administrative services), which have been accompanied by **significant growth in the volume of guarantees**. However, experience shows that **part of the guarantee portfolio does not meet the additionality criterion**, as credit institutions tend to also rely on institutional guarantees for transactions that would be carried out anyway. In some of those cases, “double collateral” and reduced capital requirements motivate credit institutions to rely on the suretyship. In other cases, banks rely on the institutional guarantee to exempt customers from providing collateral of their own. This represents moral hazard, since customers become less interested in repaying their loans.

**In order to increase the functional efficiency of the current guarantee scheme, the share of the portfolio that meets the additionality criterion should be increased;** this refers to transactions which would either not be carried out without institutional suretyship, or not in the required amount. **This requires facilitating access to credit for companies that carry higher credit risk, but are nevertheless viable and qualify for a guarantee.** Apart from greater openness in terms of risk, it is also important to address companies which – based on their own judgment or prior negative experience – would not be granted access to the funds needed.

Available survey data suggest that the funding gap between supply and demand is predominantly comprised of the (typically latent) credit needs of micro enterprises. A greater level of additionality in the guarantee portfolio could play a major role in increasing the volume of lending to this segment.

**Figure 1.1**  
Volume of lending to microenterprises



Source: MNB.

### Recommendations

**(1) Develop a “reverse” suretyship procedure:** In contrary to the current practice, in a “reverse” suretyship procedure the client would be rated by the guarantee organisation before its bank credit application. In this new procedure, **the client would first submit its credit need to the guarantee organisation**, which would issue a “promissory note”, if the applicant is qualified for a guarantee. The “promissory note” represents a commitment by the guarantee organisation, as a result of which an SME could have a better chance of gaining access to the desired funds when it applies for credit.

**(2) Ease exclusion (“KO”) criteria in a targeted manner:** If the “KO” criteria applied by credit institutions and guarantee organisations according to which certain

customers are excluded from financing were to be **eased in a targeted manner**, a wider range of viable, creditworthy companies could qualify for a guarantee despite the risk they carry. Although guarantee organisations have taken several steps towards easing conditions in recent years, **an increase in the share of the portfolio that qualifies as additional may require that other exclusion criteria also be eased and certain acceptance criteria applied by banks become more accommodating, within the confines of prudent lending.**

**(3) Seek 'banks' commitment to increase credit portfolios that qualify as additional:** By modifying the agreements between credit institutions and guarantee organisations, **banks may be encouraged to undertake commitments based on pre-defined criteria to increase the share of riskier transactions within the guarantee portfolio.** If the guaranteed credit amount is classified into risk segments based on a probability of default model that is known and applicable to all participants, the (minimum) share of the transactions within the portfolio that satisfy the additionality criterion can be consistently established. In this way, the amount of guarantee available to credit institutions can be tied to this (minimum) share in the future, which could contribute to higher risk-taking.

**(4) Offer more flexible guarantee rates (70 to 90 per cent):**

The introduction of more flexible guarantee rates would enable banks to use guarantees exceeding 80 per cent for their riskier transactions. Banks could differentiate individual guarantee rates in the 70–90 per cent band within each guarantee portfolio, while at the same time the coverage for the portfolio as a whole should not exceed the 80 per cent ceiling set out in the EU requirements. The possibility of relying on institutional suretyship at rates of over 80 per cent could facilitate the financing of riskier transactions.

**(5) Redesign bank processes related to higher risk-taking:**

Redesigning certain banking processes could reduce banks' burdens related to greater risk-taking, which in turn may provide incentives for higher risk appetite. Regarding the guaranteed credit amount, the takeover of debt collection processes by guarantee organisations and the rearrangement of the payment order in favour of banks could contribute to achievement of the desired objective.

**(6) Make concerted marketing efforts to promote institutional guarantees:**

A coordinated marketing campaign promoting institutional guarantees could help both existing clients and potential customers with no loans to have greater confidence in contacting banks with their credit needs.

## 1.2. INCENTIVES FOR ANGEL INVESTMENTS

- (7) Extend the tax benefits for 'business angels' to enterprises that have been running for more than 3 years  
 (8) Facilitate co-investment opportunities through government assistance

### Assessment of the situation

**Startups and enterprises have the strongest need for financing before their growth phase, when their income generation capacity is still at its lowest.** Providing bank financing to such companies carries high risk, and thus they tend to be crowded out from the market of bank credit. The reasons behind such high financing risk are: (i) the absence of a business track record, (ii) high wind-up and bankruptcy rates, and (iii) limited capacity to provide collateral. Funds substituting bank credit may be raised with the participation of persons and entities specialised in providing such finance.

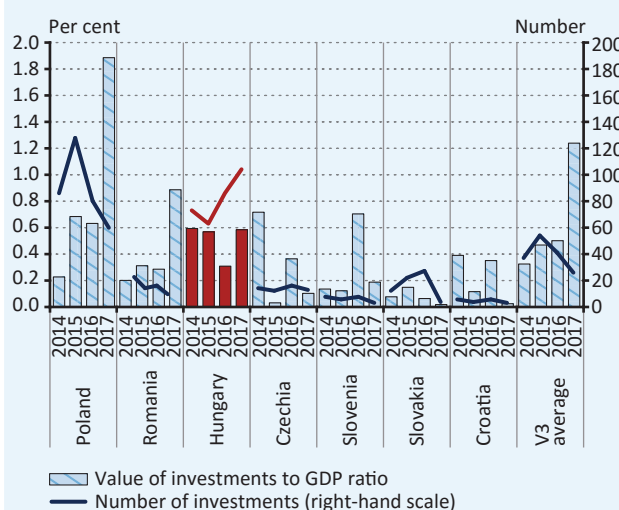
Complementary financing from three investor groups plays a significant role in the life of startups. In the early stage of a company's lifecycle, the development of a product or service and the creation of a prototype are one of the main tasks, which generate considerable costs while at the same time the startup has no revenue. In this initial phase, financing for startups tends to be provided through the founder's contributions and loans from the founder's family and friends. These informal investors are accompanied by **angel investors**, who help the companies by providing both capital and professional expertise, experience and social capital. **Seed capital investors** may also play a role in this phase of a company's lifecycle, who assist in market monitoring, development of the business concept, and providing finance. Seed capital investors may include both private equity and **venture capital investors**. Hungary has seen continuous development in equity investments in recent years, both in terms of value and the number of transactions. This is consistent with the improvements in the country's macroeconomic conditions and prospects.

### Recommendations

**(7) Extend the tax benefits for business angels to enterprises that have been operating for more than 3 years:** Angel investors carry out venture capital investments in early-stage companies and high-growth-potential startups. In 2017, the Government introduced a corporate tax benefit

for business angels, as a major step in supporting the seed phase, which is the most difficult financing period. Whatever the outcome of the investment, the benefit ensures that approximately one quarter of the cost of the participation is recouped in any case, due to the lower tax to be paid. It is recommended to capture the lessons learned so far from the corporate tax benefit granted to angel investors and to reconsider the tax benefits on that basis in order to maintain investor interest in the growth, expansion and maturity phases following the early stage. This requires that eligibility for the benefit not be limited only to investments in innovative companies which have been in business for less than three years, as older companies should also have access to capital. This may call for an increase in the current *de minimis* threshold. For implementation purposes, it is important to consider that benefit should be channelled to companies that are in fact innovative, and therefore its framework should be designed carefully.<sup>1</sup>

**Figure 1.2**  
**Number and value of private equity investments in Hungary (2014–2017)**



Source: [investeurope.eu](http://investeurope.eu), Eurostat.

**(8) Facilitate co-investment opportunities through government assistance:** A co-investment involves a joint

<sup>1</sup> For the regulations in place, see Government Decree No. 331/2017. (XI. 9.) Korm.

investment by the private and public sectors. After a private investor carries out the due diligence of investment opportunities and the analysis of the business plan, it invites a public investor to participate as a co-investor. The terms of investment are agreed between the parties for

each transaction. Joint funds are suitable for risk sharing and mitigation. Compared to the size of a private investor, this arrangement allows investments to be implemented in higher amounts, while also achieving economies of scale.

## 1.3. SUPPORT FOR CREDIT CONVERGENCE

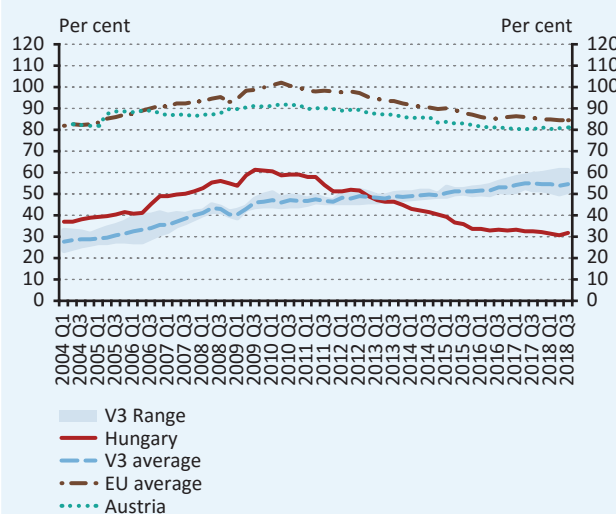
### 1.3.1 Sound lending for sustainable economic growth

- (9) Mitigate interest rate risks for customers
- (10) Strengthen financial awareness

#### Assessment of the situation

**Sustainable economic growth requires the banking system's support through lending**, especially in countries where financing is fundamentally bank-based, including Hungary. Following the onset of the financial and economic crisis in 2008, the volume of lending to corporates and households underwent a contraction that was exceptional even by international standards, accompanied by the banking system's negative contribution to the growth of the real economy through its restricted credit supply.

**Figure 1.3**  
Developments in the volume of lending to the private sector as a percentage of GDP in an international comparison

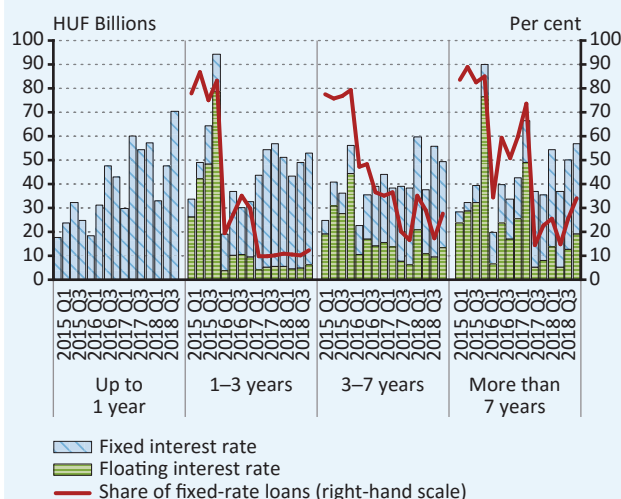


Source: ECB.

In the upturn phase of credit cycles, the structure of new lending is particularly important in terms of stability. The current growth rate of lending to corporates is adequate, but its structure carries maturity and interest rate risks,

particularly in SME financing. Since the Funding for Growth Scheme has been phased out, the share of long-term and fixed-rate loans has dropped and is currently low even by international standards. In the corporate sector, within new lending the share of loans with interest periods of more than one year is several times higher than the Hungarian value in more developed economies (such as the Netherlands, the Czech Republic and Germany).

**Figure 1.4**  
HUF loans to SMEs by interest rate fixation

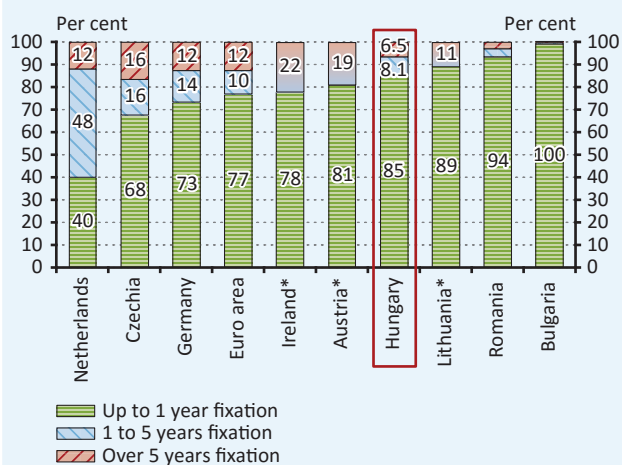


Note: The figure does not show loans with interest rates fixed for up to 1 year given that, similarly to previous and international definitions, they can be classified technically under variable-rate loans.

Source: ECB.

In order to increase the share of loans with interest rates that are predictable over the long term and offer benefits in terms of stability, the MNB launched the Funding for Growth Scheme Fixed at the beginning of 2019 with a budget of HUF 1,000 billion. The scheme seeks to increase the share of long-term interest rate fixation within the volume of lending to SMEs.

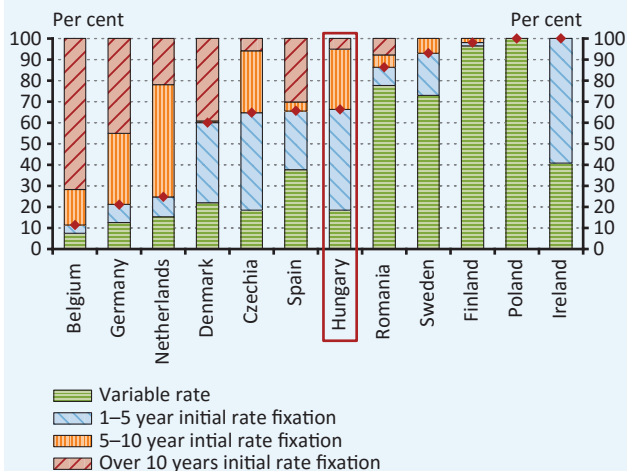
**Figure 1.5**  
Corporate loans of up to EUR 1 million by rate fixation period



Note: Contracts concluded between April 2017 and March 2018. \* A more detailed breakdown was not available for loans with rates fixed for over one year.

Source: National central banks, ECB.

**Figure 1.6**  
New housing loans by interest period in the European Union



Note: Data as of 2018 Q2. The red squares indicate the share of interest periods of up to 5 years.

Source: European Mortgage Federation.

As in the period preceding the crisis, there may be risks to the household segment such as the concentration of new lending and indebtedness that is excessive relative to income, as well as risks related to borrowing which households are not prepared to bear. Over-indebtedness is supposed to be prevented by the debt brake rules introduced by the MNB, which are effectively complemented by enhancing the financial awareness of the population. Following the phase-out of foreign exchange-based lending, the loans taken out no longer carry exchange rate risk, but – with regard to housing loans in particular – in the present low interest rate environment this segment may also face repayment problems from potential increases in the repayment burdens of variable-rate loans. Within outstanding debt, the share of loans with interest periods of more than one year is currently below 50 per cent, which is very difficult to increase solely through new lending.

In order to address this, the MNB introduced the **Certified Consumer-Friendly Housing Loan product certification, which allows housing loans to be taken out in a financially conscious and comparable manner and under favourable conditions.** For creditworthy customers, indebtedness with interest rates fixed for longer periods is also encouraged by the central bank through the differentiation of the payment-to-income ratio according to interest rate risk. Partly as a result of the measures introduced by the MNB, the share of fixed-rate loans within new lending has been steadily increasing and reached 95 per cent in November 2018.

## Recommendations

**(9) Mitigate interest rate risks for customers:** In the current low interest rate environment, with longer-term loans that are typically disbursed for housing purposes borrowers face a potential risk if they take out variable-rate loans or loans with an interest rate fixed only for a short period. To address the problem, the MNB introduced the Certified Consumer-Friendly Housing Loan product certification for standardised loans offered on comparable terms with interest rates fixed for at least 5 years, while indebtedness with interest rates fixed for longer periods is also encouraged by the central bank through the differentiation of the payment-to-income ratio according to interest rate risk. These measures ensure a low share of variable-rate loans in new lending for housing purposes. A solution to outstanding variable-rate mortgage loans may be provided through their replacement by loans with interest rates fixed for longer periods, which could be supported by measures to reduce the expenses associated with such replacement.

With regard to corporate lending, from a stability perspective there is a benefit in increasing the ratio of fixed-rate loans that provide predictable financing for the long term. For that reason, in early 2019 the MNB launched Funding for Growth Scheme Fixed with a budget of HUF 1,000 billion, with the objective of doubling that ratio.

**(10) Strengthen financial awareness:** A survey by the MNB showed that more than four fifths of young people have not

participated in any kind of financial education or training to date, and thus a general educational programme would be necessary to raise the level of financial awareness in Hungary to such a degree that would result in conscious banking and prudent borrowing. In public education, financial awareness may be further strengthened in line with the first two-year action plan of the national strategy

adopted in November 2017. Additionally, increasing the efficiency of banks' digital transformation processes, and improving the population's internet access and online culture could also increase the share of users taking a conscious approach to online banking, which could strengthen both financial awareness and banking efficiency.



### 1.3.2 Cheaper banking with more intense price competition

- (11) Continue to promote Certified Consumer-Friendly Mortgage products
- (12) Reduce lead times for loan replacement
- (13) Reduce administrative burdens and charges related to early repayment
- (14) Enable the mandatory sharing of positive credit histories
- (15) Establish the continuous querying of credit histories
- (16) Enable simple, user-friendly bank account switching
- (17) Increase the comparability of bank account plans

#### Assessment of the situation

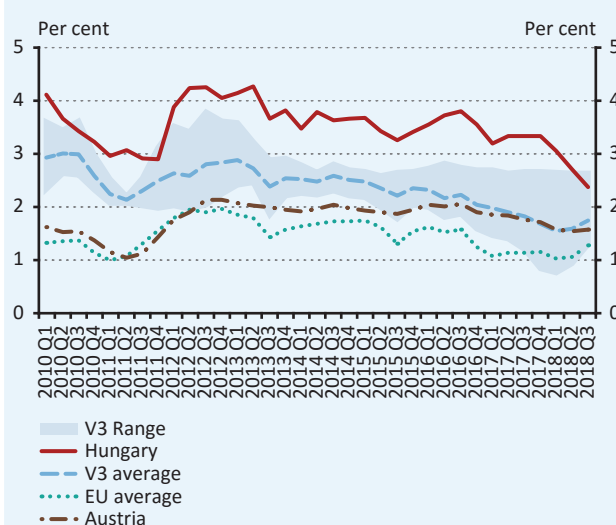
The emergence of adequately vigorous competition between banks is inhibited by the high level of administrative burdens and expenses associated with the processes of loan replacement and bank account switching. With both loans and bank accounts, in many cases the rates of the spreads and charges applied by banks indicate an inadequate level of competition between banks. A more intense competition is inhibited by the administrative burdens and charges involved in bank switching, the low comparability of bank offers, and consumers' inadequate levels of information and financial awareness. In the credit market, these factors hinder an increase in the number of loan replacements, which would both intensify competition and reduce the high volume of variable-rate loans. Another problem is that the current operating model of the Central Credit Information System (KHR), which requires customer consent, does not provide fully efficient support for credit assessment processes. In the course of credit assessments, lenders query the KHR for information on the past due payments of defaulting borrowers, whereas in respect of borrowers that make contractual repayments the disclosure of KHR credit information requires customer consent. Consequently, although the coverage of the existing credit information system is high by international standards, due to the current structure of the KHR the risk costs resulting from refused consent to the disclosure of positive credit histories are paid by good borrowers, which leads to both higher interest rates and a higher default rate.

#### Recommendations

**(11) Continue to promote Certified Consumer-Friendly Mortgage products:** Unlike with corporate loans, by regional standards the spreads on household loans continue to show significant room for reduction, one of the key reasons for which is the moderate intensity of competition between banks. One of the steps that may be seen as facilitating more intense competition between credit institutions is the introduction of the Certified Consumer-Friendly Housing Loans scheme, which – by improving product

comparability – creates transparency in market competition, also for customers with lower levels of financial awareness. A more extensive use of certified products could reduce the spreads of housing loans which have interest rates fixed for longer periods and carry lower interest rate risk. Certification could also benefit other products such as bank accounts, securities accounts and home insurance, which could be supported by the extension of the framework and the required application of its conditionality on the widest possible scale, even on a statutory basis.

**Figure 1.7**  
International comparison of spreads on housing loans extended in domestic currency



Note: In the case of variable-rate housing loans or ones with up to 1-year rate fixation the 3-month BUBOR, while in the case of housing loans fixed for a period longer than one year the corresponding APR-based smoothed spread over the IRS.

Source: MNB, ECB, EMF, Datastream, national central banks.

**(12) Reduce lead times for loan replacement:** The lead times for loan replacements could be reduced by almost half through the rationalisation of specific process components. The licensing of more efficient appraisal procedures would accelerate the process of loan replacement. Simplification of the practice of notarisation could also play a major role in reducing lead times. A standardised digital document

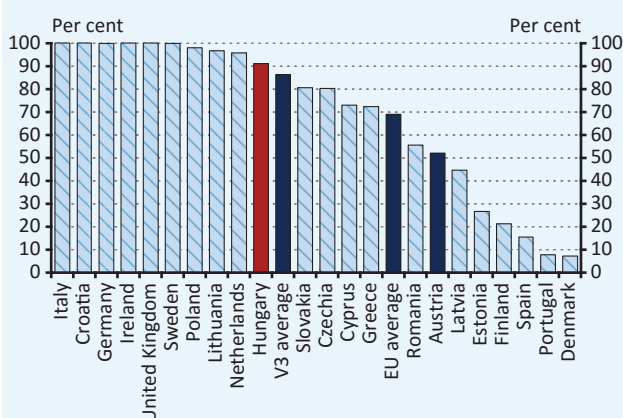


for unilateral statements of debt could both simplify the procedure and improve borrower access to information.

**(13) Reduce administrative burdens and charges related to early repayment:** The administrative burdens on customers could be reduced considerably through targeted measures such as the reduction of early repayment penalties and notarial fees. A wider use of Certified Consumer-Friendly Housing Loans could also positively affect the reduction of administrative burdens and charges.

**(14) Enable the mandatory sharing of positive credit histories:** Automatic bank access to the credit histories of non-defaulting borrowers would – by virtue of more accurate credit assessments – enable more thorough risk management and more prudent disbursements and could – on aggregate – facilitate a reduction in average interest rate spreads and consequently in available lending rates. Additionally, the effectiveness of debt brake rules could also be improved through the mandatory disclosure of positive credit data. Accordingly, it is recommended that the disclosure of data on file about non-defaulted loans without borrower consent should be mandated by law in alignment with the practice followed by a number of countries across Europe, including the Czech Republic and Poland in the region.

**Figure 1.8**  
Coverage of the credit information system (as a percentage of the adult population, 2019)



Source: World Bank – Doing Business.

**(15) Establish the continuous querying of credit histories:** The electronic provision of financial services would be

supported and service efficiency would be improved by allowing the data to be retrieved from and disclosed to the KHR database on a 24/7/365 basis in real time, and by granting both reference data providers and data subjects direct access to the data. This would substantially reduce information asymmetry between banks and their customers, offering financial institutions the possibility to establish lower risk premiums and consequently lower interest rates for customers. Enabling queries on a 24/7/365 basis requires developments to the IT system used for the management of the database.

**(16) Enable simple, user-friendly bank account switching:** Simplification of the bank switching process and improvements in one-stop-shop bank switching would improve price competition between service providers, while also reducing the costs of account switching. Accordingly, it is recommended that processing times associated with switching should be reduced further, and that the greatest possible number of related services should be transferred to the new account servicing institution. Favourable changes may be brought about in the process by the secondary account identifiers introduced in the context of instant payments, which – when specified to payment counterparties – eliminate the need for data updates between the parties to a transaction even where a bank account number linked to a secondary account identifier otherwise changes due to bank switching.

**(17) Increase the comparability of bank account plans:** This requires the establishment of a transparent, standardised practice to allow customers to compare various bank account plans in the greatest possible level of detail. This would be supported by the setup of an online interface to enable comparisons against standard dimensions and by the standardisation of bank charge structures, including in particular a transition from transaction-based to package-based pricing i.e. when an unlimited number of credit transfers can be initiated for the monthly account servicing fee. Comparability with the greatest possible accuracy would allow customers to find the plans that are optimal in terms of both the services available and the costs involved. The above objectives are supported by the European Payment Accounts Directive (PAD), which, among other standards, requires payment service providers to use a standardised terminology and fee schedule.

### 1.3.3 Cheap products with greater ease of access

(18) Develop and promote bank accounts to improve the banking relations of retirees and socially disadvantaged persons

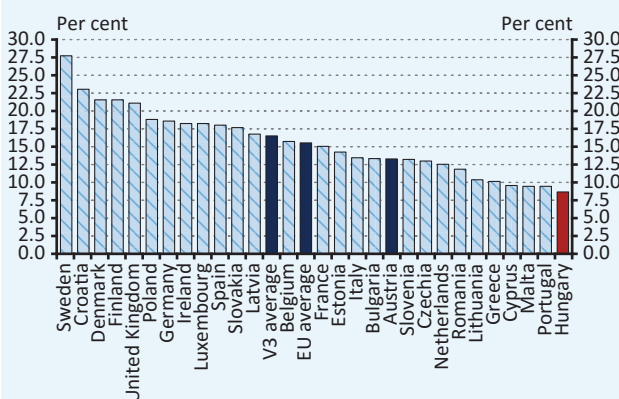
(19) Adopt standardised bank account statements

(20) Establish a standardised loan application interface for small businesses

### Assessment of the situation

In order for economic processes to run smoothly, it is essential that available resources can be accessed by participants which can make efficient use of them. **In Hungary, the most prominent role in financing both the household and the corporate segments tends to be occupied by the credit institutions sector, which is why access to bank credit is of particular importance.** While from customers' perspective benefits are offered by a wide network, cost-effective operations and a rational distribution of resources requires efforts for the optimisation and synergy of individual financial networks.

**Figure 1.9**  
Percentage of the population over 15 years of age taking out a loan from a financial institution within the past year (2015)

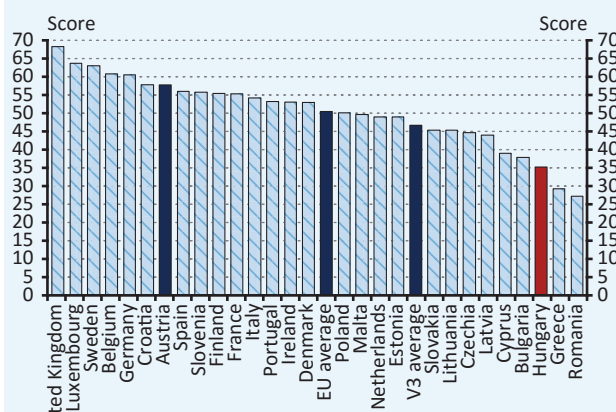


Source: World Bank – FII.

According to the MNB's Banking System Competitiveness Index (BSCI), Hungary is in the lower third of the European ranking in terms of *bank infrastructure, the extent to which bank products are used and access to bank credit*. Of the indicators, the Hungarian system is ranked in the top half only in terms of the share of borrowers included in the credit information system, the ease of access to corporate credit, and the share of applicants granted the full amount of (corporate) credit requested. Hungary is at the back of the field as regards the share of bank account holders and

the share of borrowers taking out a household or corporate loan within the past year. Although the result of the credit information system appears favourable, the absence of a mandatory positive borrower list does not help creditworthy customers to access credit. Additionally, international data also show that an outstandingly high share of the population does not have a bank account due to distrust. Special mention must be made of the situation of specific clearly identifiable groups such as that of retirees, where average account and card coverage falls significantly short of the average.

**Figure 1.10**  
International ranking within the MNB BVI Access pillar (2014–2016)



Source: ECB, IMF, IMD, World Bank, WEF.

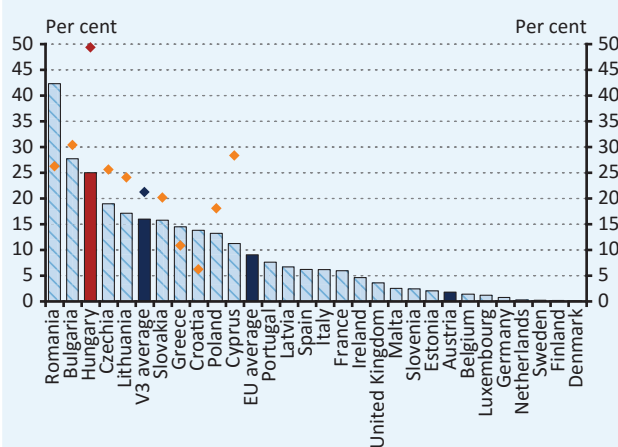
**Downsizing branch networks while providing access to products may be facilitated by a more extensive use of digital channels;** however, public awareness of these channels remains low. The practices concerned are also emerging in neighbouring countries and include in particular online account opening and credit applications, video processing, or consulting based on artificial intelligence. The legal framework for the option to identify customers electronically is provided by Act LIII of 2017. Although the number of services provided by banks on the basis of remote identification has been growing steadily, the existence of a number of administrative obstacles continues to prevent a real breakthrough.

Apart from that, it is particularly important to simplify the credit application process for micro and small enterprises. Based on international and domestic experience, the complexity of the credit application process causes problems for many small enterprises, including banks' varying and occasionally vaguely communicated requirements as well.

## Recommendations

**(18) Develop and promote bank accounts to improve the banking relations of retirees and socially disadvantaged persons:** One answer to the problem of access for disadvantaged households could be provided by the availability of accounts with highly preferential terms. Bank accounts developed for retirees and socially disadvantaged people could help to increase the number of their bank relations. It is therefore recommended that from 2020 onwards legal requirements be in place for every bank to offer an account that is available to these consumer groups on preferential terms.

**Figure 1.11**  
Percentage of the population over 15 years of age without an account at a financial institution (2017)



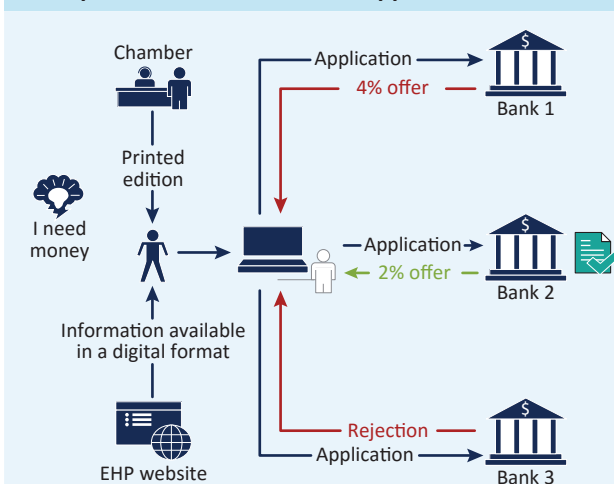
Note: The squares indicate the share of the population with no accounts due to distrust in financial institutions. The data are only available for the countries represented in the figure.

Source: World Bank–GFD.

**(19) Adopt standardised bank account statements:** Standardised bank account statements would facilitate customer access to information, improve clarity about the costs associated with bank accounts and help each customer to select the optimal service plan. The presentation of bank account statements in a standardised, more structured form could be highly instrumental in bank account switching. The standardisation of bank account statements requires an assessment of current good banking practices and customer needs, which would enable the regulator to develop a standard form that can be utilised well by every account servicing institution.

**(20) Establish a standardised loan application interface for small businesses:** In order to boost the appetite to borrow and bank competition, an electronic interface should be set up through which micro and small enterprises can submit credit applications in the same format to several banks in parallel, and participating banks should provide an offer within a few days in a comparable format. In addition to simplification and standardisation of the application, companies would be further assisted by a brochure that contains useful information on borrowing and clear guidance on each step of the loan application process.

**Figure 1.12**  
Concept of standardised credit application



Source: MNB.

## 1.4. ENHANCING DIGITAL TRANSFORMATION IN BANKING

### 1.4.1 Efficiency means lower cost for banks and lower interest rates for customers

- (21) Optimise branch networks
- (22) Improve the coverage of POS terminals and other electronic payment solutions
- (23) Provide a tax benefit on the financial transaction levy to encourage the upgrade or replacement of obsolete IT systems, and developments related to the instant payment system

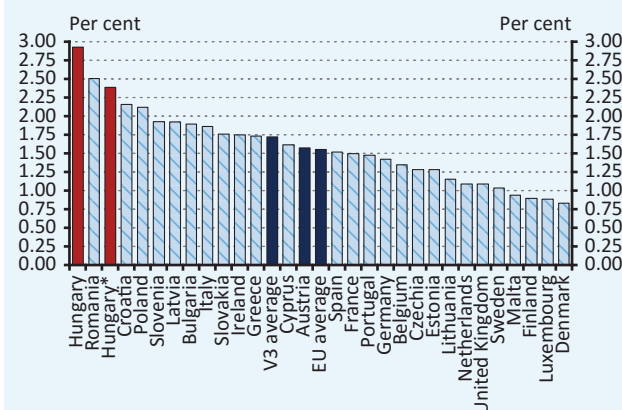
#### Assessment of the situation

The Hungarian banking system has the highest cost-to-assets ratio of the European Union countries. Data for 2018 Q1 show a reversal in the improving trend seen in recent years. In every sector, efforts must be made to reach the highest possible level of operational efficiency in order to minimise the loss of resources for both equity holders and customers. The Hungarian banking system may find positive examples to streamline its processes in the innovations of other segments in the economy and the banking systems in more advanced economies. There is room for progress in both customer interaction and product sales, and in the operation of internal systems. Many large banks across Western Europe have taken or are planning to take steps towards downsizing their branch networks and consequently their headcounts. The role currently occupied by branches is being gradually taken over by digital channels such as online banking, mobile applications and enhanced ATMs. Additionally, new types of services are emerging, in most cases developed jointly by banks and FinTech companies to improve customer experience and widen the range of available services.

Regarding internal processes, there is a need to upgrade and standardise IT systems and to modernise paper-based processes that are suitable for digital transformation. The backbone of credit institutions' daily processes is the fault-free operation of core and other IT systems. Among other findings, the MNB's 2018 survey showed that 26.5 per cent of the core IT systems of institutions still include some obsolete components that are no longer supported by manufacturers. Operational malfunctions have occurred for 12.2 per cent of such institutions, while in the case of fully upgraded systems this ratio was only 5.3 per cent. Upgraded IT systems reduce maintenance costs while increasing operational stability and providing better protection against cyber attacks. Whether taking into account all institutions or large banks only, about one half of surveyed institutions are not planning any modernisation or standardisation,

while plans for upgrades in the near future tend to be in place for systems that require development. Apart from facing cyber security risks, institutions that fail to give adequate emphasis to this may consequently be placed at a competitive disadvantage going forward.

**Figure 1.13**  
Banking system operating costs-to-total assets ratios in an international comparison (2017)



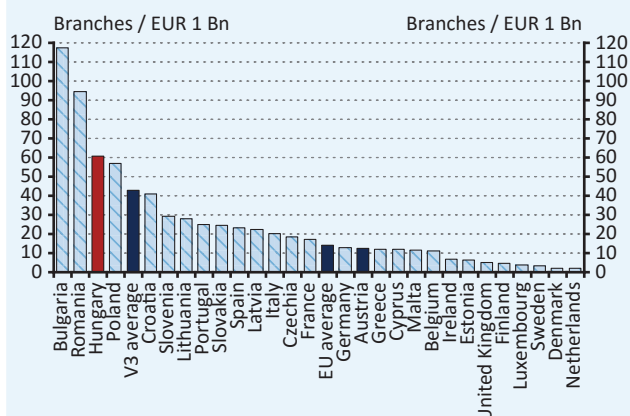
Note: Based on consolidated data, HU\* adjusted for one-off effects (foreign subsidiary banks, state levies).

Source: MNB, ECB CBD.

#### Recommendations

**(21) Optimise branch networks:** In order to ensure that customers have adequate access to banking services without an excessive increase in operating costs, synergies are required in the coverage of existing and new networks, accompanied by improvements to existing and new services. Institutions must assess where it is reasonable and profitable for them to maintain branches and where it is more efficient to promote and make more extensive use of digital channels. Although many customers still prefer personal communication for their transactions, practices to integrate online channels and mobile applications may be adopted with members of younger generations.

**Figure 1.14**  
**Number of bank branches per EUR 1 billion of private sector debt (2017)**



*Note: For missing data, estimates have been used on the basis of the most recent available data.*

*Source: ECB, IMF.*

**(22) Improve the coverage of POS terminals and other electronic payment solutions:** In recent years, Hungary has seen a significant increase in the volume of cash in circulation, and cash continues to be used extensively. In Hungary, the volume of cash in circulation exceeded HUF 6,000 billion at the end of 2018, increasing by a factor over 2.5 since early 2011 at an average annual growth rate of

over 10 per cent. The use of cash and the share of the informal economy may both become less prominent as a result of improvements in the coverage of POS terminals and other electronic payment solutions such as direct debit, electronic wallets and other efficient solutions. A major contribution to this may be made by the introduction of the instant payment system, enabling the creation of innovative payment solutions whereby electronic payments may become a relevant alternative even in situations where cash is currently the only viable option. In Hungary, there are currently approximately 14,800 POS terminals per one million inhabitants. In order to catch up with the EU average, the number of POS terminals and other merchant-side devices to enable electronic payments should be increased to approximately 26,000 per one million inhabitants.

**(23) Provide a tax benefit on the financial transaction levy to encourage the upgrade or replacement of obsolete IT systems, and developments related to the instant payment system:** For the implementation of banks' IT infrastructures, it may be advisable to introduce tax benefits to reduce the dissuasive effect of the amount of investment capital required. The efficient and secure operation of banks' systems, together with the modern services based on those systems may represent significant added value for the Hungarian economy. The tax benefit should be developed in accordance with the fiscal space available.



### 1.4.2 Banking products and services with a few clicks

- (24) Develop and deepen the digital transformation
- (25) Provide a tax benefit to encourage the development of mobile payment applications
- (26) Support digital development related to the instant payment system
- (27) Incentivise banks to introduce package pricing in retail payment services

#### Assessment of the situation

For the banking systems of EU Member States, the MNB's Banking System Competitiveness Index (BSCI) shows a high correlation between the cost-to-assets ratio and the extent to which digital channels are used. The relationship between the two factors leads to the conclusion that **the limited use of digital channels is one of the reasons why Hungary's banking system is ranked low among the EU countries in terms of operating costs to total assets.** Although the option of personal transactions at branches continues to be required by many customers, a digital infrastructure – as already rolled out in some developed countries – may provide a more efficient, quicker and more convenient solution for both sides.

The Hungarian banking system has a low ranking among the EU Member States in terms of the *share of people using online banking*, the *share of people who made or received digital payments*, and the *share of people who made a payment using the internet*.

**Banks appear to be falling behind more advanced industries and the banking systems of other countries in both back-office and front-office activities.** It appears expedient for the existing electronic solutions to be deepened before additional innovations are undertaken. Costs may also be reduced through the digital transformation of paper-based processes and the promotion of more advanced services, and customers' positive experience with the new systems could accelerate the spread of subsequent innovations. Digital and online product sales should be present from the start, and while several banks already provide services such as online account opening, the process is less known to the public.

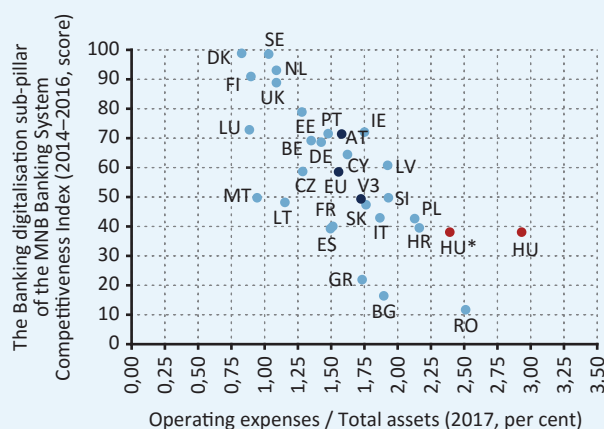
**A major shortfall is seen in electronic bill payments compared to the European average.** Although in the case of the currently most widespread 'yellow cheques' the fact that they are now easier and cheaper to pay using payment cards was a major step forward, recent years have seen only a moderate increase in the volume of batch direct debit orders, which actually qualify as electronic bill payment. This may call for the development of new electronic bill payment solutions that provide for the convenient and cheap

payment of utility bills. In technological terms, such efforts may receive substantial support from the introduction of instant payment and the central infrastructure of the service for related payment requests; however, market participants also need to make their own developments.

#### Recommendations

**(24) Develop and deepen the digital transformation:** In order to improve the efficiency of their operations, banks should also seek to extend the digital transformation in the financial sector, which the MNB is ready to support. Efforts are required for the digital transformation of back-office and front-office processes for greater efficiency and to ensure that subsequent phases of development are enabled. With these developments, Hungary may successfully reach the EU average in terms of online banking and the use of electronic payment channels. Another related aspect is product sales via digital channels, the extensive use of which should also be exploited across the entire banking system, minimising the need for personal visits to branches, and preference should also be given to digital forms of communication.

**Figure 1.15**  
Relationship between the operating costs-to-total assets ratio and the digital transformation of banks

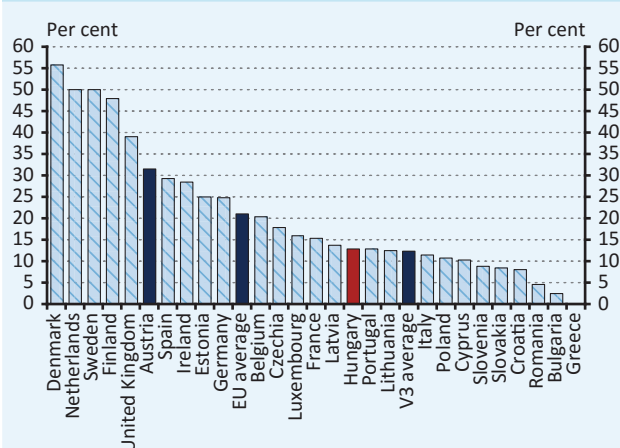


*Note: Operating costs-to-total assets ratios are based on consolidated data; HU\* adjusted for one-off effects (foreign subsidiary banks, state levies). The indicators of the sub-pillar for banks' digital transformation within the MNB BVI include the share of customers using online banking, the share of customers making or receiving digital payments, the share of customers making mobile phone payments and the share of customers making online payments.*

*Source: MNB, ECB, CBD, Eurostat, World Bank.*

**(25) Provide a tax benefit to encourage the development of mobile payment applications:** Given the extensive use of smartphones in Hungary today, and the increasing openness, especially of younger people, to the use of mobile payment applications, this line of development may lead to rapid progress in the promotion of digital channels. However, not all banks provide applications to support mobile payments, and the services already offered by certain institutions are not compatible with all smartphones. Incentives for market developments could be provided if the transaction levy on banks were to be reduced in proportion to the mobile access provided by each bank.

**Figure 1.16**  
Percentage of young people aged 15–34 making mobile payments (2014)



Source: World Bank – FII.

**(26) Support digital development related to the instant payment system:** The instant payment system will enable the spread of innovative payment services, which affects payments made in physical and electronic merchant outlets, and between persons, and the payment of certain bills. Since this makes cashless payments possible in virtually any payment situation, the more extensive use of such payment solutions would effectively support the spread of electronic

payment methods and a reduction in the use of cash. This could be facilitated by the obligation to provide customers with the option to use electronic payment methods such as payments made via the instant payment system at certain commercial or hospitality industry companies, for example at retail units that are required to use online cash registers and companies that are required to issue electronic invoices. As data input solutions, the growing range of payment services may use QR codes, NFC and even Bluetooth technology, which may also be supported by the national standards to be developed, as well as by mandatory open technologies.

**(27) Incentivise banks to introduce package pricing in retail payment services:** Regarding the choice between specific payment methods, Hungarian consumers tend to be highly cost-sensitive. Since consumers do not perceive any direct costs in the case of cash and card payments, whereas in the case of credit transfers they tend to be charged for each transaction, credit transfers are placed at a competitive disadvantage compared with cash and payment cards. This presents major difficulties in reducing the use of cash, which involves a high social cost. In order to ensure that credit transfers are used on a large scale and that the potential offered by the instant payment system is fully exploited, **it would be desirable for banks to introduce a pricing structure that does not include charges directly linked to credit transfers.** A good example may be offered by bank cards, where the dynamic growth in transaction volume seen in recent years has largely been due to the fact that consumers are charged annual fees, but not fees linked to purchases. Accordingly, and in line with the European pricing trends for credit transfers, going forward all household consumers should be granted access to **a core service with the possibility to initiate an unlimited number of credit transfers, without any restriction on their amount, in exchange for the payment of a monthly account servicing fee.** Additionally, the complete phase-out of the financial transaction duty could provide substantial support for the establishment of bank pricing on household credit transfers that can compete with cash and bank cards.

### 1.4.3 Convenient credit applications online

- (28) Make online contracting and signatures simpler and faster
- (29) Enable credit institutions to submit electronic queries for the income statements held by the National Tax and Customs Administration
- (30) Reduce the notarial fees associated with housing loans
- (31) Replace notarial certification with a central digital platform
- (32) Establish full online processing for taking out unsecured loans
- (33) Set up a central appraiser database
- (34) Automate the land registry information system (TakarNet) while ensuring continuous availability
- (35) Increase the share of mortgage and consumer loans sold through digital channels

### Assessment of the situation

Although the use of existing digital channels and the rationalisation of internal processes may in themselves improve the operational efficiency of credit institutions, **the prudent application of the latest technological advancements should be an integral part of development activities.** Given that BigTech and other FinTech companies are also experimenting with the application of innovations such as artificial intelligence and block chains in the financial system, a number of major Western bank groups also seek to make use of such innovations. Although following their emergence in the West, technology trends tend to spread slowly in the CEE region, some FinTech companies may extend their customer bases to Hungary in the course of their international expansion. As a result, in order to retain their market shares, domestic banks will either compete with international innovators or cooperate with other FinTech companies in an attempt to develop new services.

**While some domestic banks and the FinTech companies they support have been making cutting-edge innovations, a complete rethink of processes could generate efficiency gains for the banking system as a whole.** In a number of cases, under the legal regulations in effect contracts for the provision of financial services may only be made in writing,

and the terms of offering an electronic equivalent are not always clear. This is one of the reasons for the significant amount of time required for credit assessments and loan replacements. Additionally, high costs and administrative burdens are also incurred on the notarial certification of contracts, which several advanced economies are seeking to reform for greater efficiency. Although digital/online credit assessment has already been incorporated into the offering of a limited group of institutions in Hungary, in the case of mortgage loans, due to the prominent role occupied by such loans in lending to households, personal consulting is expected to remain in place in specific phases of the process. Nevertheless, automating a number of sub-processes would contribute to efficiency gains in lending and bank operations. A related field is property appraisal, where currently each bank has its own practices in place, which leads to variations in methodology and could also give rise to stability risks. For certain categories of property, there are practices in place for appraisals that do not require on-site inspections, the possibilities of which should also be explored in Hungary.

### Recommendations

**(28) Make online contracting and signatures simpler and faster:** No form of electronic signature meeting all of the criteria for the written form has been adopted by individuals

**Figure 1.17**

#### Administrative barriers to loan replacement

(HUF 10 million loan amount)	Property valuation	Credit assessment	Contracting	Certifying in due legal form	Lien	Disbursement	SUM
Average cost	HUF 30 th	free	free	HUF 45 th	HUF 17 th	disbursement fee: HUF 100 th (1%) early repayment fee: HUF 150 th (1,5%)	~ HUF 400 th
Average time	10-15 days	15-20 days	1 day	1-2 days	1 day	4 days	30-35 days

*Note: As part of the Certified Consumer-Friendly Housing Loans scheme, the average time requirement and charges of specific phases may be lower.  
Source: MNB.*



on a large scale, which **calls for the rethinking of the terms set out in legal regulations**. In reviewing regulations on the written form, primary considerations should include simplification and widening the range of financial services available online, which may be supported by the use of the Client Gateway system and e-identity cards for such purposes. Additionally, legal requirements should also be adopted to support the extensive use of the widest possible range of technology solutions in respect of remote customer identification as well. The Client Gateway system may also provide a suitable alternative for the implementation of remote consumer identification by ensuring compliance with anti-money laundering regulations and cyber security standards, eliminating the need for banks to identify customers that have already been identified as part of Client Gateway registration. One possible means of that would be the incorporation and general use of biometric identification followed by video processing.

**(29) Enable credit institutions to submit electronic queries for the income statements held by the National Tax and Customs Administration:** Online access to the income statements produced by the National Tax and Customs Administration for the certification of incomes from employment may simplify and accelerate the credit assessment process. In order to ensure the protection of data, consent to credit institutions accessing the data could be given, e.g. in borrowers' Client Gateway accounts. Implementing this could support both electronic processing and authentic income certification.

**(30) Reduce the notarial fees associated with housing loans:** Generally payable by borrowers, notarial fees may be considered excessive, imposing a major burden on customers both in connection with new borrowing and when replacing existing loans. Consequently, it appears necessary to establish lower fees in respect of mortgage loans and to simplify the notarisation process through standardisation. More moderate administrative burdens would also have a positive effect on the replacement of variable-rate loans and would thus contribute to the reduction of interest rate risk.

**(31) Replace notarial certification with a central digital platform:** The lending process could be simplified by the digital transformation and automation of notarial certification for direct enforcement. Standardisation and centralisation of the system would represent a step forward in terms of both the time requirement and costs of lending. It appears advisable to review the legal framework and technical implementation of the process currently in place, and to develop a new operating model that would result in a simpler, more efficient, faster and cheaper procedure.

**(32) Establish full online processing for taking out unsecured loans:** It is recommended that customer interactions be

redirected to online channels in the case of lending products the amount or term of which does not warrant personal consulting. The use of online channels may lead to significant efficiency gains for banks. Ensuring that positive KHR data may be disclosed and are continuously accessible, and that the central databases shared by banks and the income statements may be queried by credit institutions could substantially reduce the information asymmetry between banks and customers, and improve the accuracy of credit decisions. Interventions for the optimisation of the credit application process would enable the entire application process for unsecured loans to be taken online.

**(33) Set up a central appraiser database:** Contrary to the current appraisal practice, which requires significant amounts of time and money, a central database would allow the standardisation of methodologies and make appraisals less time-consuming, while the price map derived from such a database could also play a role in preliminary assessments. In certain areas with high transaction numbers, a methodology resting on statistical foundations and relying on a central database could complement or, in specific cases, even replace time-consuming appraisals involving physical presence.

**(34) Automate the land registry information system (TakarNet) while ensuring continuous availability:** The utility of digital access to land registry information is significantly restricted by the fact that the data retrieved still require manual processing by credit institutions, and that access is only granted during office hours. The possibility of querying the database at any time for the appropriate format and data content would significantly improve the efficiency of the system, and thereby increase the level of digital transformation in lending processes. The ability to initiate land registry entries online would also significantly reduce the expenditures associated with lending processes for both lenders and borrowers.

**(35) Increase the share of mortgage and consumer loans sold through digital channels:** Although the online disbursement of unsecured loans is already available subject to specific criteria, further lifting the restrictions should be considered once the practice has been adopted more generally, and a secure framework has been established for online customer identification and contracting. Following the digital transformation of notarial certification and the setup of a central appraiser system, within the confines of an adequately prudent legal framework the preliminary assessment of certain mortgage loans could be completed entirely online. In any case, even now it is important to recognise the process phases whereby disbursements are tied to branches and are consequently slowed down.

### 1.4.4 Innovate the banking system using innovative ideas from Hungarian companies

- (36) Ensure that administrative and operational requirements are proportional to the risks that are being addressed
- (37) Provide wider access to available information sources for new entrants to the market
- (38) Facilitate close cooperation between innovators and the regulator through the Innovation Hub
- (39) Grant preliminary operating licences in the Regulatory Sandbox framework
- (40) Enhance the Regulatory Sandbox with the capability to grant exemptions from regulatory provisions

#### Assessment of the situation

In terms of the digital transformation of banks and the incorporation of innovative products, the Hungarian banking system ranks in the lower third in the EU. One of the factors behind the Hungarian banking system's shortfall in competitiveness, both by regional and EU standards, is the general lag seen in digital transformation. Best practices across the region provide opportunities for online access to a large part of the services, fully digital interactions, as well as wider access to and better use of data, the accomplishment of which would significantly improve both customer satisfaction and banks' cost-effectiveness. In Hungary, the limited use of innovative digital solutions is also one of the major obstacles to efficiency gains. Higher cost-effectiveness achieved through a greater degree of digital transformation would support banks in increasing their profitability and strengthening their shock resistance and resilience.

**Hungary's financial intermediary system is characterised by the prominence of general barriers to market entry and operations.** The small FinTech market in Hungary scarcely supports the generation of new ideas. In recent years, several venture capital funds have invested in FinTech firms. It is a general problem that innovative companies seeking to enter the market have low levels of legal and regulatory information, lack the relevant means and suffer from the absence of past data and experience. New entrants to the market may often face substantial difficulties in meeting the IT and staffing requirements related to licensing. Such obstacles hinder financial innovation and reduce the incentives to current participants in financial intermediation for innovative operations.

**The regulatory challenge lies in the identification and prudent adjustment of the legal requirements that prevent financial innovation.** The most recent reform of the current financial regulations occurred in the years following the crisis, which is why the integration of considerations regarding financial innovations has been inadequate so far. For that reason, in a number of cases the feasibility of FinTech innovations is legally unclear or the implementation of such innovations is prevented by legal considerations,

despite the major efficiency gains that could be derived from the introduction of such innovative solutions on the market.

#### Recommendations

**(36) Ensure that administrative and operational requirements are proportional to risks that are being addressed:** In order to reduce the licensing burdens on new entrants, the regulator should review the legal requirements that provide only partial support for the management of risks, but raise major barriers to efficient operations or even to market entry. During such a review, it is important to create a level playing field and to encourage innovation with prudential considerations in mind. Following the review, regulatory requirements such as initial capital requirements for activities subject to authorisation, the types of activities that may be outsourced, requirements concerning the person of management members, specific requirements for IT infrastructure, and the range of services and information that may be used for the assessment of a customer's creditworthiness, may also be eased in the light of the actual risks involved in the operations of the institutions.

**(37) Provide wider access to available information sources for new entrants to the market:** In order to create a level playing field, it is important that the information asymmetry between market participants be eliminated. To that end, equal access must be provided to central data registers for all market participants. The operations of new market participants that do not qualify as reference data providers would currently be best facilitated by access to the KHR, whereas going forward – as the availability of other central databases improves – other access may also need to be granted on equal terms, e.g. in respect of information related to appraisals or income data.

**(38) Facilitate close cooperation between innovators and the regulator through the Innovation Hub:** The MNB has set up the Innovation Hub as a one-stop-shop to support the wider acceptance of innovative financial solutions in a flexible and goal-oriented approach. Operated by the MNB, the efficiency of the support platform may improve to a

great extent if the regulatory requirements that are found unreasonably restrictive of innovation can be adjusted within the shortest possible time. Improvements to the relations between market participants and the regulator, and a regulatory framework adequately following up digital transformation processes may encourage an innovative mindset on the market side, whereas the regulatory authority may develop adequate support mechanisms more easily on the basis of information about the preferred directions of development and the related risks.

**(39) Grant preliminary operating licences in the Regulatory Sandbox framework:** New entrants in financial intermediation (primarily FinTech companies) may be assisted by the introduction of legal regulations that allow preliminary operating licenses to be granted. As part of that, a financial provider not yet holding a license could effectively assess the market need for its financial innovation even before it is actually launched in the market, in a test environment that is controlled, available for a limited period of time and involves real customers. This

may facilitate subsequent market entry while encouraging market participants to innovate, whereas the regulator may rely on the lessons learned from testing for the assessment of potential risks.

**(40) Enhance the Regulatory Sandbox with the capability to grant exemptions from regulatory provisions:** Providing a specific framework for testing innovative technologies and having the ability to grant temporary exemptions from regulatory provisions, the Regulatory Sandbox is capable of providing incentives for the incorporation of financial innovations into bank operations at low cost and by adequately managing potential risks. **Currently operating subject to the provisions of an MNB Decree,** the regulation of the framework at the level of an act would provide testing opportunities for a wide range of market participants, which would be a forward-looking move in terms of the competitiveness of the Hungarian financial system. Such an enhanced framework may also be more effective in identifying additional requirements and regulatory shortcomings that are unreasonably restrictive of innovation.

## 1.5. WIDEN THE CAPITAL MARKET

### 1.5.1 Get successful domestic companies listed

- (41) List state-owned enterprises through a stock ownership plan for small investors
- (42) Provide incentives for listing of banks
- (43) Establish a modern corporate bond market
- (44) Ensure state participation in the development of the domestic equity market
- (45) Grant tax exemption on long-term investment accounts holding newly listed shares
- (46) Launch a specialised trading platform tailored for SMEs
- (47) Ensure the deductibility of listing expenses from corporate income tax

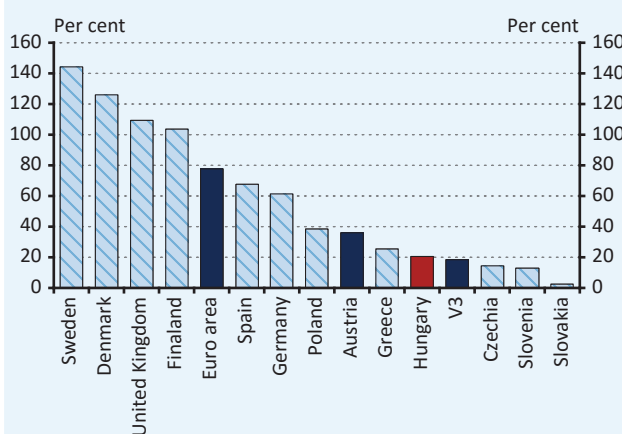
### Assessment of the situation

A number of studies point to the fact that a **diversified financial system lays the foundations for a competitive economy and sustainable growth**. In Hungary, the level of that diversification is currently very low, and finance is almost exclusively channelled through banks. Such a degree of dependence on the banking sector for financing significantly increases the vulnerability of the economy, and will freeze corporate access to funds in a credit crunch. In the future, the capital market may also gain a more prominent role due to a drop in the volume of EU funds.

The primary function of a stock exchange is to provide companies with equity funding, and thereby become one of the drivers of a modern market economy. For that reason, Hungary must also place particular emphasis on the establishment of an adequate capital market environment, and the accomplishment of that objective requires cooperation and shared interest from the participants concerned.

Notably, the point is not for equity funding to replace bank finance, but to establish a well diversified financing environment. **In Hungary, market capitalisation as a percentage of GDP is 20.6 per cent, which is modest by international standards.** That percentage indicates a major shortfall both compared to other countries in the region such as Poland and compared to advanced Western European and Scandinavian economies, where the same ratio frequently exceeds 100 per cent. Moreover, in bank-oriented economies with developed banking systems, a step towards becoming a capital market-oriented economy may drive growth (Cournède and Denk, 2015).

**Figure 1.18**  
Capitalisation to GDP (2017)



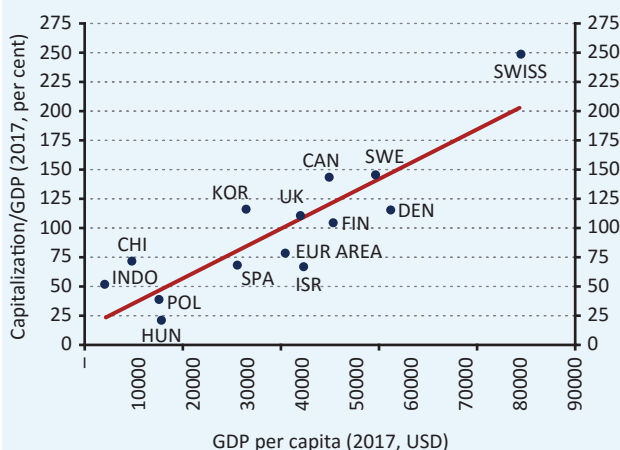
Source: World Bank, national stock exchanges of selected countries.

**Capitalisation reaching 30 per cent may increase the level of potential output by an estimated 0.2 to 0.3 percentage points in the economy.**

Additionally, household and institutional assets, the volume of which has grown significantly over the past seven years, could provide an adequate source of funding for large corporates and SMEs in Hungary, contributing to the financing and growth of the domestic economy. On the other hand, that structure would help to ensure that the population derives greater benefit from the successes of Hungary's real economy, which would have positive spill-over effects (such as the emergence of long-term self-reliance, and a more affluent population with increased willingness for parenting).

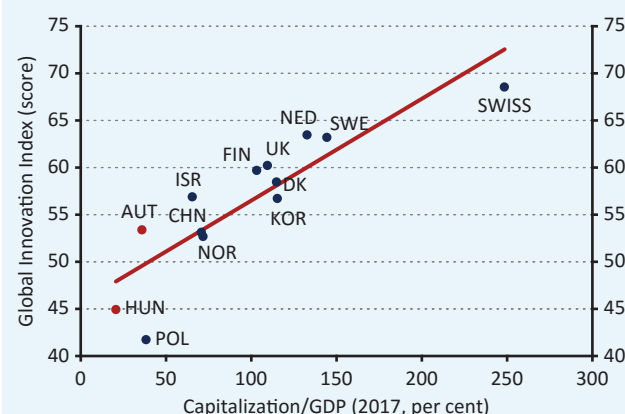
The importance of developing the domestic capital market and increasing market capitalisation is underlined by the fact that an analysis of international data shows a **strong positive correlation between the level of development of the capital market, welfare and innovation**.

**Figure 1.19**  
**Capital market and GDP per capita (2017)**



Source: World Bank.

**Figure 1.20**  
**Capital market and ability to innovate**



Source: World Bank, Global Innovation Index, 2018.

## Recommendations

**(41) List state-owned enterprises through a stock ownership plan for small investors:** Listing state-owned enterprises through a stock ownership plan for small investors would be an important and major step in increasing market capitalisation. A series of stock market sales (OTP, Magyar Telekom, MOL) carried out as part of the privatisation wave in the 1990s produced substantial returns not only for the companies sold and the state selling them, but also for investors, and among them a wide range of

household participants. In countries with a strong tradition of state participation in capital markets (France, Germany, Poland), the presence of state-owned enterprises on stock markets is virtually mandatory. That said, both Hungarian and international examples show that listing a company will not necessarily force the state to waive its influence or even its majority shareholding. From the perspective of the state, sharing its role as a shareholder with stock market investors produces an immediate positive effect in budgetary terms. Additionally, the state may derive other indirect and longer-term benefits from greater operational efficiency through higher employment and tax revenues. Given the major share of certain state-owned enterprises among the companies with the highest sales in the country, their listing would have a high significance and impact on the Hungarian capital market. Offering household investors preferential subscription terms could create a solid secondary market base, while also providing opportunities for the population to benefit directly from the successes of large state-owned enterprises and the Hungarian economy at large.

**(42) Provide incentives for listing of banks:** Incentives for listing banks would also constitute a major step in increasing market capitalisation in Hungary. For Hungary, taking that step could produce results similar to those of the bank privatisation that has already been accomplished in Poland. All of the ten Polish banks with the highest total assets are listed on the Warsaw Stock Exchange and are important players on the exchange both in terms of capitalisation and trading volumes. The entry of certain banks to the Hungarian stock exchange would also provide major benefits for participants in the domestic capital market. Fund managers, funds, and insurance companies would have a much wider range of options to purchase BSE stocks, and could increase their domestic exposures more easily due to less severe restrictions from investment limits on specific securities. Apart from having the ability to create more diversified portfolios, institutional participants would also benefit from having more liquid securities in the secondary market.

**(43) Establish a modern corporate bond market:** It is essential for companies to have access to the funds that they require for financing their daily business and long-term investments. An adequately developed, liquid bond market may provide an alternative option for raising funds in addition to borrowing from banks. The possibility of diversified finance could lead to healthy competition between bank loans and bond market funds, which could ultimately reduce the cost of funds for companies. The contribution of public institutions could provide support for developing the Hungarian corporate bond market, the size of which currently falls short of the average seen in the



neighbouring countries. While bond issues may primarily be an alternative option for larger enterprises, as the market develops, credit claims against SMEs may also subsequently appear in securitised form, which could lead to further improvement in the terms of financing in the SME sector.

**(44) Ensure state participation in the development of the domestic equity market:** The participation of public institutions may be highly instrumental, both for the recapitalisation of companies that are already listed and in order to support the transactions involved in listing new companies. In order to boost market capitalisation and ensure the quality of the secondary market, investment funds should be created to invest in Hungarian listed companies. On the one hand, it appears reasonable to assist the creation of an SME investment fund that operates transparently, which would broaden investor demand subject to adequate risk management and would thus provide SMEs with a wider range of finance options. On the other hand, state participation could be a means of supporting long-term investments in the Hungarian economy through the establishment of an equity fund that is created using public funds and is not subject to EU restrictions, which would be licensed to invest in any company size and any type of market entry. The same objective would be pursued by the creation of a combined product, a domestic multi-asset fund that would hold HUF-denominated government securities for households and Hungarian stocks listed on the BSE. Therefore, we also consider it appropriate that a **state-managed IPO fund** be set up, which would participate as an investor in the primary transactions related to the admission of companies to the stock exchange.

**(45) Grant tax exemption on long-term investment accounts holding newly listed shares:** In the event of a company being listed, shareholders may face the barrier of a potential tax liability on their shares transferred to long-term investment accounts as part of the stock exchange transaction. It is therefore recommended that in the course of the transactions of newly listed companies, **the shares remaining with the original shareholders following the transaction and transferred to their long-term investment**

**accounts should be tax exempt**, given that the capital gains derived from the transaction are not realised, and only represent a virtual profit resulting from the revaluation of the shares. Accordingly, shareholders should only pay a capital gains tax when they actually sell their shares.

**(46) Launch a specialised trading platform tailored for SMEs:** With a view to increasing the level of SME interconnectedness in the capital market, a number of initiatives have been launched both at the European level and regionally within the organisational framework of stock exchanges. At virtually all major exchanges in Western Europe (e.g. London, Frankfurt, Paris) and across the region (Prague, Warsaw, Bucharest), sub-markets have been established to cater specifically to the needs of SMEs, and regulators provide various forms of assistance, such as preferential tax and duty rates and less demanding reporting obligations for investors, to help these markets become wider and deeper. Based on these considerations, the BSE has also launched its dedicated sub-market Xtend for Hungarian SMEs. Two companies had registered on the new platform by the end of 2018, but trading has not started yet. The success of the platform going forward will be determined by the number, capitalisation and trading volumes of listed companies, which could be supported further by a variety of public incentives.

**(47) Ensure the deductibility of listing expenses from corporate income tax:** Another incentive for companies to seek exchange admission would be **the possibility of deducting direct admission expenses from the corporate tax base**. The large number of expenses arising in the course of stock exchange listing could seriously undermine the economic results of the companies concerned, which in certain cases could discourage owners from seeking stock exchange admission. According to estimates, stock exchange admission may cost a company as much as 2.5 to 4 per cent of the transaction value. The possibility of deducting such expenses from the corporate tax would be a major incentive for companies seeking stock exchange admission, whereas the effect on the budget would be marginal.

## 1.5.2 Promote an environment to support the development of the capital market

(48) Ensure consistency between capital market rules and general EU practices

(49) Improve access to digital platforms

(50) Appoint a government or ministerial commissioner for stock exchange development

### Assessment of the situation

**Compared to the current Prospectus Directive and common EU practice, on a number of points the Hungarian Capital Market Act in force imposes stricter requirements on issuers entering or already present in Hungary's open capital market**, as a result of which both the Hungarian capital market and Hungarian companies are placed at a competitive disadvantage. This competitive disadvantage is particularly problematic for SMEs seeking to register for the domestic multilateral trading facility (MTF) and the Xtend market operated by the BSE.

Adopted in June 2017, the European Union's new Prospectus Regulation ((EU) 2017/1129) will be applicable directly in all EU Member States without transposition, introducing substantially eased requirements primarily for issuers in the SME sector and for frequent issuers. Incorporating the established legal practice, as a key new element the preamble to the Regulation provides that registration for MTFs in itself will not require a prospectus. Although the Regulation is only applicable in full as of 21 July 2019, some of its provisions will enter into force earlier. The provisions of the Regulation that are applicable from July 2017 have slightly extended the range of admissions to trading in regulated markets where the disclosure of a prospectus is not mandatory.

The digital transformation of capital markets is most apparent in process automation, which, for some two decades now, has affected capital markets and trading in capital market products. As a result of automation, the trading volumes of capital market products have been increasing and transaction costs falling considerably in both primary and secondary markets. In terms of transaction costs, the fall in distribution costs is driving competition, while a higher level of digital transformation is reducing both the cost of access to information and information asymmetry. The latter trend offers particular benefits for small investors through opportunities to also gain access to primary markets on increasingly favourable terms.

The establishment of an efficient capital market structure would also be facilitated by the **appointment of a dedicated government official** whose tasks would include, with a view to the coordinated development of the capital market, the

provision of government support as required to implement the strategy of the BSE, both through coordination between the government bodies concerned and in cooperation with the BSE and the market participants involved.

### Recommendations

**(48) Ensure consistency between capital market rules and general EU practices:** The BSE has hopes that as the new Prospectus Regulation enters into force in its entirety in July 2019, most of the discrepancies and competitive disadvantages described in the assessment of the situation will be eliminated. However, as the first issuers are expected to appear on Xtend precisely in that transitory period, the BSE considers it particularly important that they not be discouraged by unreasonably strict rules, and that they not be discriminated against in favour of issuers seeking to register after July 2019. For that reason, consideration must be given to the **Hungarian legal system's earliest possible implementation of the provisions of the Regulation that will create more favourable conditions**, and in that context, to adopt amendments to the provisions of the Capital Market Act that currently create competitive disadvantages.

**(49) Improve access to digital platforms:** Providing support for digital transformation and for the more extensive use of digital platforms is a task of particular importance for national economies, given the outstanding rate of growth which – as shown by an analysis of capital market trends – certain FinTech solutions have been achieving in capital markets globally. The more extensive use of the new platforms will make the capital market accessible even for the smallest companies, allowing companies that tend to get crowded out of bank financing to raise adequate funds via these platforms. In many cases, it is such small, innovative enterprises that will become the national champions of their respective countries, providing the foundations for stable economic growth. The international experience is that in a number of regions such as Scandinavia, due to the supporting economic environment digital platforms are gaining an increasingly prominent role in finance. The MNB is of the opinion that the establishment of Hungary's regulatory and economic environment should include the setup of a framework to facilitate the emergence and operation of new digital platforms.

**(50) Appoint a government or ministerial commissioner for stock exchange development:** It is recommended that in the interest of developing the capital market a **new government or ministerial commissioner should be appointed** to ensure more effective communication and cooperation between the domestic capital market

and government policy makers. The commissioner should regularly consult capital market participants and the parties involved on proposals concerning the capital market (e.g. regulatory issues, removing barriers, tax considerations, investor protection, and education), and should report periodically on the results achieved.



## 1.6. IMPROVE THE COMPETITIVENESS OF THE INSURANCE AND FUND SECTORS

- (51) Increase the product value to customers in non-life insurance
- (52) Provide legal and technological means to facilitate changing insurers
- (53) Enhance the system of the Annual Cost Rate (TKM) and extend it to the pension funds sector
- (54) Develop the digital links between the insurance and banking sectors
- (55) Increase CASCO in motor own damage penetration
- (56) Develop the system of guarantees in the insurance and the health and pension funds sectors

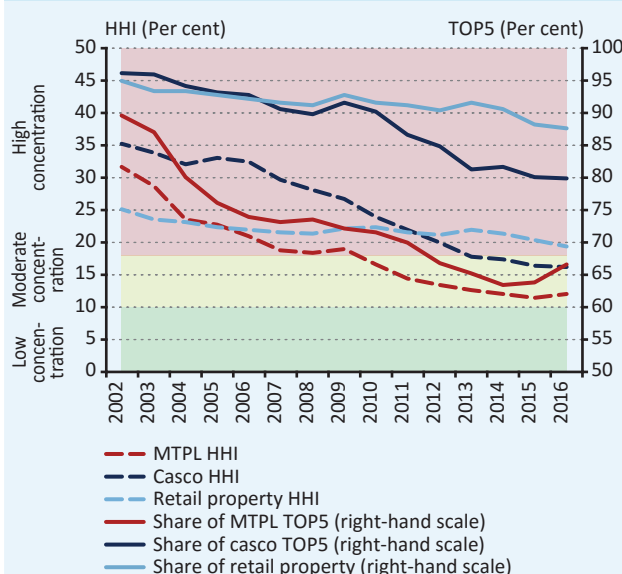
### Assessment of the situation

In many cases, non-life insurance products are not sufficient to meet customers' actual insurance needs and fail to provide adequate customer value, due to pricing and poor competition. Certain product groups in the non-life business are characterised by high market concentration, outstanding profitability and low loss ratios, which are overall a clear indication of inadequate competition and that there is room to improve the value for money provided by these products. Consequently, in specific areas economic players incur unreasonably high costs in order to cover the risks to which they are exposed, which could severely hurt their competitiveness. Overall, the alignment of the products to actual insurance needs (through adjustments to the risks covered, the terms and conditions, and to service levels) may enable the sector to provide adequate coverage for the risks arising, which would mitigate the impact of damage on both individuals and the economy at large. The corresponding adjustments in pricing would provide an optimal balance between insurance expenditures and risks.

**Competition among insurance companies is poor due to the absence of comparability and the complexity of insurer changing.** Despite the possibility that exists in principle, the number of customers switching to more favourable new products tends to be low, whereby most customers are left with insurance covers that are unreasonably expensive and are no longer aligned with their needs. The reasons for this include the facts that the procedure of insurer changing is unreasonably complex in technical and legal terms, and that it is impossible to follow the dates at which new premiums are announced. Easier insurer changing would be supported by a technical solution to facilitate data and information flows among institutions. The standardisation of premium announcement dates would give customers

a better overview of the offers available, which would intensify competition by simple means. In 2017, the Hungarian Competition Authority also proposed considering the introduction of several concentrated changing periods in a year.

**Figure 1.21**  
Herfindahl–Hirschman index in specific businesses, based on gross premiums written



Note: The background is shaded according to HHI concentration.

Source: MNB, 2018.

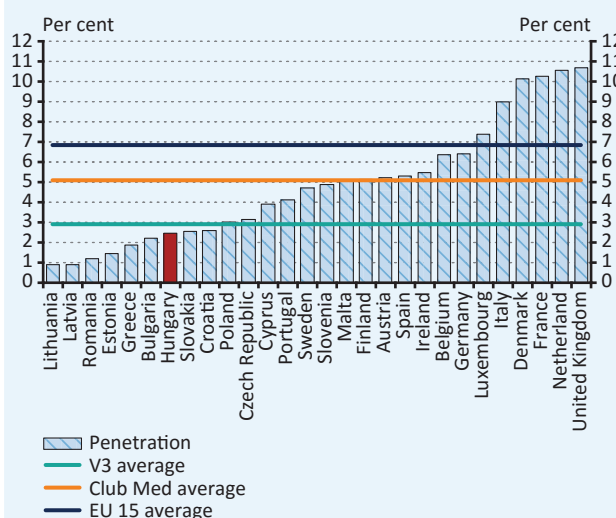
**Although regulations on ethical life insurance resulted in major progress in the insurance market, there is still room for improvement.** Currently, it is difficult to compare the various savings products in insurance and pension funds. The tools available for comparison do not appear sufficient for customers to select institutions. Owing to

their methodologies, the indicators applied on a European scale have limited uses for comparisons and for determining the actual costs involved in each product. Applied over the past few years to life insurance with a saving element, the maintenance of the Annual Cost Rate (TKM) for the long term is not necessarily advisable, which is why consideration should be given to developing a customised variety of the TKM that would allow determining the actual cost to the customer instead of model calculations. Application of the Annual Cost Rate should also be extended to pension funds in order to ensure comparability on the widest possible scale. A higher level of comparability increases customer confidence, while also creating stronger commitment to long-term products. The Annual Cost Rate and the cost control provided by it currently covers unit-linked insurance, but consideration should also be given to extending the approach to traditional life insurance.

**In the case of credit protection insurance, the flow of information between banks and insurers is ineffective, which unreasonably increases the risks to participants and hurts competitiveness.** The registration of credit-related insurance (such as credit protection, property, motor own damage) and the flow of information between the parties concerned has been found to be ineffective both by audits and the parties themselves (credit institutions and insurers). Given the high number of participants on both sides, a single solution is needed, which provides for direct, fast and cheap data queries, and the production of standardised reports. The development would essentially enable credit institutions to ensure, on a continuous basis, the existence and adequacy of the insurance coverage of pledged property. Apart from its business benefits, up-to-date information on the insurance status of collateral is also relevant to capital requirement calculations. Additionally, the system would provide for the simple initiation of assignments, making it easier for customers to change between home insurance linked to mortgage and thereby driving more intensive competition. In the case of credit protection insurance, participants would have a clear overview of what properties have already been used as collateral, which would prevent the use of a single movable asset or property to secure multiple debts.

**Insurance penetration is low by EU standards.** In its publication, “10-year future of insurance sector in 7 points”, the MNB found that in Hungary insurance penetration (gross premium written as a percentage of GDP) was low by European standards, at a mere 2.5 per cent in 2015, compared to 5.2 per cent in Austria.

**Figure 1.22**  
Insurance penetration (gross premium written as a percentage of GDP) in EU Member States



Note: Club Med countries represent Greece, Italy, Portugal and Spain.  
Source: EIOPA, Eurostat, 2018.

**The publication on the future of the insurance sector envisages the possibility for penetration growth, but that requires taking a variety of steps.** Life insurance offers great potential, which could give rise to a major penetration increase going forward. The recent upward trend in liability insurance and health insurance is expected to continue, and extra impetus for the latter could be provided by a variety of measures (see Chapter 3.1.3). In property insurance, the coverage of home insurance is already high, while the penetration of a mere 19 per cent for motor own damage<sup>2</sup> leaves the segment with ample room for growth. The process is supported by the take-off in new vehicle sales seen in recent years (particularly for financed purchases), while further growth would require the presence of product with terms and prices geared to used cars. Digital transformation of the processes related to motor own damage could drive a major reduction in costs, which in turn could make this type of insurance available on a larger scale. Currently, the tax burden on motor own damage is higher compared to other insurance products. Consideration could be given to the possibility of shifting the weights of taxes levied on the various types of insurance, which, absent any budgetary implications, could enable higher penetration through a more favourable premium structure.

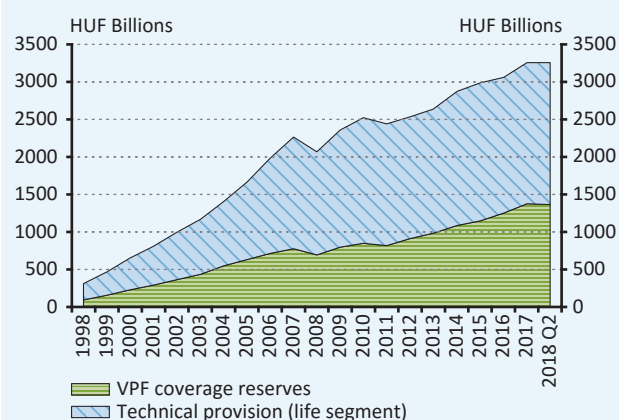
**Competition among specific sectors of the financial system may be distorted by variations in the level of development of the related guarantees, which could undermine both**

<sup>2</sup> Number of motor own damage policies as a percentage of the number road vehicles (31 December 2017).

### the financial system as a whole and customer confidence.

Customer confidence is a basic condition for the stability of the system of financial institutions. Other than prudent operations and strong supervision of institutions, that confidence is largely supported by the availability of various guarantee systems. Although no sector has a European guarantee system specific to it, in most countries there are extensive guarantee systems in place providing full coverage of either the life or the non-life business, or both, with only a few countries where absolutely no guarantees are available in these sectors. In the Hungarian insurance sector, in the event of the failure of an institution a guarantee is currently only available for compulsory motor third party liability insurance, which means that no domestic guarantee mechanism is in place to protect customers of other non-life insurance, life insurance, or voluntary funds. Consequently, investments, savings and claims in these sectors are not protected by any guarantees such as the National Deposit Insurance Fund (OBA) or the Investor Protection Fund (BEVA), on which reliance is common in other sectors.

**Figure 1.23**  
Development of life insurance and voluntary pension fund coverage reserves



Source: MNB, 2018.

The developments in benefit reserves and technical reserves in voluntary pension funds (life business) show that over the past 10 years reserves have increased significantly by more than 50 per cent, which lends particular importance to the need for guarantee systems equivalent to the deposit insurance and investor compensation schemes to be set up for the insurance and pension funds sectors as well. In order to prevent institutional failures from undermining confidence in long-term savings, a competition-neutral extension to existing guarantee systems is recommended so as to provide coverage for up to HUF 30 million on retail

customers' savings, as is the case in the bank and capital market sectors. Ensuring full coverage by the guarantee system would contribute to the stability of the financial system as a whole.

## Recommendations

### (51) Increase the product value to customers in non-life insurance:

In order to increase customer value in the non-life business, a framework should be established to provide a higher level of service aligned with actual needs, mindful of the lessons learned from regulations on ethical life insurance, as part of which consideration may be given to the extension of the concept of certified consumer-friendly products to specific types of insurance.

### (52) Provide legal and technological means to facilitate changing insurers:

In this regard, consideration may be given to the introduction of quarterly premium announcements in respect of specific types of consumer insurance. Technological assistance may be provided through the establishment of an insurance registration system.

### (53) Enhance the system of the Annual Cost Rate (TKM) and extend it to the pension funds sector:

As part of enhancements to the ethical concept in the life business, harmonise the Annual Cost Rate (TKM), which facilitates comparison of the costs of various life insurance products, with the European cost rate, and promote a shift towards customised Annual Cost Rates. Additionally, the Annual Cost Rate should be adapted to pension funds, while the costs of conventional insurance products should also be regulated in order to increase customer value.

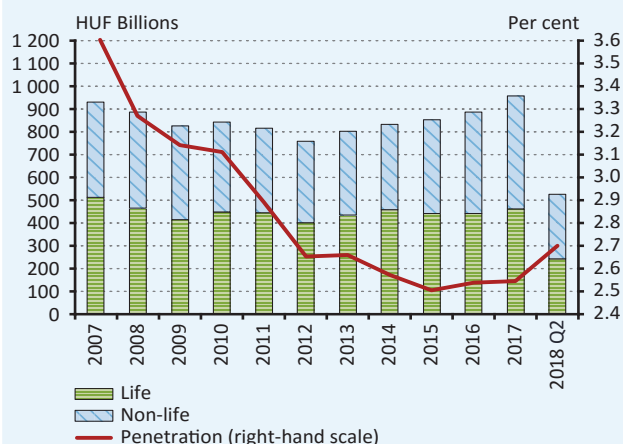
### (54) Develop the digital links between the insurance and banking sectors:

For both the non-life and life businesses, with regard to collateral insurance it is desirable that the data flows between credit institutions and insurers should be accelerated, accompanied by incentives for improved online communications, and the establishment of electronic, or even automated, mechanisms for data access.

### (55) Increase CASCO in motor own damage penetration:

It may be advisable to increase the breadth of (MOD) coverage for used cars by means of appropriate insurance products, efficient electronic solutions, and pricing aligned accordingly. Consideration could be given to shifting insurance tax weights among specific businesses and products, without any budgetary implications, in order to increase motor own damage penetration.

**Figure 1.24**  
**Penetration in Hungary**



Source: MNB, 2018.

**(56) Develop the system of guarantees in the insurance and the health and pension funds sectors:** For insurance other than compulsory motor third party liability, which is already covered by an adequate guarantee system, it is recommended that the system of insurance guarantees should be extended to retail customers up to a limit of HUF 30 million without any sectoral restrictions, as opposed to the National Deposit Insurance Fund (OBA) or the Investor Protection Fund (BEVA), to cover cases where an insurer is liquidated or has its licence revoked. Similarly, consideration should be given to providing a guarantee in cases where health and pension funds have their licences revoked or are liquidated, or where a third party, such as an asset manager, a custodian, or a credit institution servicing a fund's sight or term deposits, has its licence revoked, files for bankruptcy, or is liquidated, for all parties concerned, up to a universal limit of HUF 30 million. The guarantee fund would not be liable to provide compensation in cases where an investment loss is incurred due to normal money and capital market developments.

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## 2. Activation of household savings

### Main objective: Public debt in domestic hands

**While Hungary's external vulnerability has decreased significantly with households' rising demand for government securities, new incentives are required to enable a substantial increase in the volume of households' holdings of government securities, and through that, the reinforcement of a stable domestic funding base.** In line with the improvements in households' incomes and assets, their holdings of government securities have also been rising steadily for the past seven years. The increase in households' demand for government securities has allowed foreign holdings of public debt to be reduced below 35 per cent, and consequently the country's external vulnerability has continued to decline. Taking current sales figures into account, however, new incentives appear necessary to maintain the level of financing from households. Among other measures, this could take the form of a restructured product portfolio, increased financial incentives or the application of technological innovations and convenience functions. While an increase in cash holdings was a general trend in most countries in the aftermath of the crisis, in Hungary the volume of cash holdings as a percentage of GDP is above the EU average. On that basis, reducing the volume of cash holdings may be identified as an additional potential source of demand, given the possibility that with the appropriate measures, the accumulation of savings may be channelled into the government securities market.

**Compared to other countries in the region, private and institutional investors in Hungary hold much smaller ratios of corporate stocks, despite the urgent need to strengthen the SME sector in order to boost the capital market.** In addition to stronger supply, widening the Hungarian capital market also requires growth on the demand side, primarily through the activation of domestic investors. This is corroborated by the fact that while households' financial wealth increased by approximately 57 per cent between 2010–2017, direct stock investments have failed to increase proportionately and amount to a mere 1.6 per cent of the total asset portfolio. In Poland, listed shares account for 2.8 per cent of the financial wealth of the population, and 5.6 per cent in Germany. For companies that are mature enough to be listed, a more balanced investor composition is desired, as one of the key lessons from the crisis was that foreign investors tend to cut their exposure more rapidly than residents. The activity of domestic investors may be positively influenced by tax exempt stock dividends, incentives for employee stock ownership programmes and strengthening domestic institutional investors.



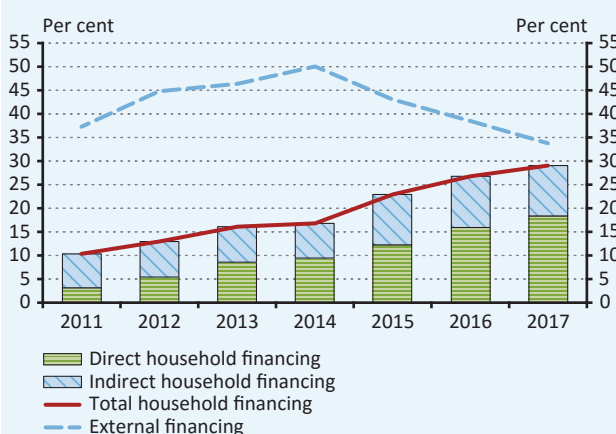
## 2.1. STRENGTHENING RETAIL GOVERNMENT DEBT FINANCING

- (1) Increase maturity of bonds and redesign the product structure of retail government securities
- (2) Encourage the transition from cash savings to government securities
- (3) Use technical innovations and convenience services for retail government securities purchasing
- (4) Redesign the arrangements for granting tax benefits, rethink the concept of long-term investment accounts
- (5) Develop sales channels

### Assessment of the situation

As a result of measures to reduce external vulnerability, there has been a major increase in the ratio of internal sources in financing public debt. After a steady increase from 2011 onwards, Hungarian households' holdings of government securities accounted for 18 per cent of Hungary's public debt. Taking into account indirect financing provided via financial intermediaries as well, the ratio is approximately 30 per cent. This development enabled a reduction in the ratio of non-resident holdings of securities within public debt, which has dropped to below 35 per cent after a steady decline from its peak of 50 per cent in 2014. Two measures played a key role in raising the level of domestic funds: first, the Government Debt Management Agency (GDMA) introduced its preference for financing based on retail government securities, and second, the central bank's Self-financing Programme also contributed to an increase in the domestic banking system's purchases of HUF-denominated government securities and thus to a reduction external vulnerability.

**Figure 2.1**  
Financing based on security holdings of households and non-residents as a percentage of public debt



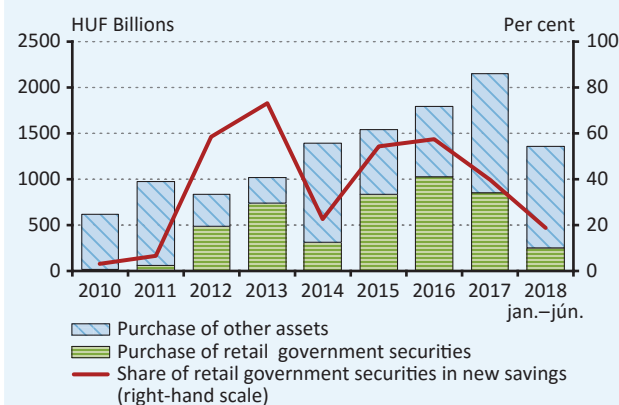
Source: MNB.

In 2018 H1, compared to earlier periods households spent a smaller proportion of their new savings on purchasing government securities, which implies a need for new

incentives to maintain the level of household financing.

After dynamic growth from 2011 onwards, households' holdings of government securities amounted to HUF 5,500 billion in September 2018. Around 2013, the primary drivers of growth were rearrangements in household portfolios, followed by major contributions from a rapid increase in wages over the next two years. However, starting from 2016 the decline in yield premiums brought portfolio rearrangements to a halt, giving way to growth in liquid investment forms. As a result, in 2018 H1 households placed a mere 20 per cent of their new savings in government securities, compared to the ratios of around 50 per cent commonly seen previously. That indicates a need for the development of new incentives, which could also target transfers from other assets in addition to new savings.

**Figure 2.2**  
Households' holdings of government securities

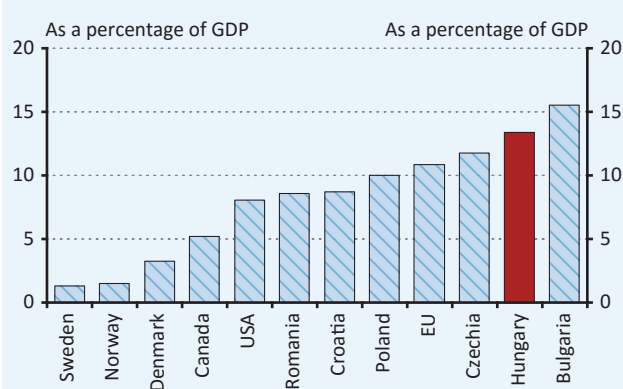


Source: MNB.

In Hungary, cash holdings are high in an international comparison and are predominantly accumulated for savings, but with the appropriate measures these holdings may be transferred to other forms of investment. In the years following the crisis, in most of the countries reviewed cash holdings increased as a percentage of GDP, driven by changes in household portfolios in an environment of falling inflation and yields. In portfolio rearrangements, a marked preference emerged for liquid assets, particularly cash, both in developed and emerging countries. Given the sharp fall in the opportunity cost of cash holdings as a result of declining

yields, households are thought to have increased their cash savings primarily in order to hold their assets.

**Figure 2.3**  
Cash holdings as a percentage of GDP in specific countries (2017)



Source: Eurostat, websites of national central banks.

## Recommendations

**(1) Increase maturity of bonds and redesign the product structure of retail government securities:** A significant increase in the average maturity of households' government securities would strengthen the stability of public debt financing by reducing rollover risk. In order to generate a substantial increase in households' holdings of government securities, it is recommended that the product range for households be widened with the introduction of securities with longer terms and attractive interest conditions.

**(2) Encourage the transition from cash savings to government securities:** It is recommended that a concept be introduced for the transfer of cash savings to government securities. Additional incentives may be needed to encourage households to invest their highly liquid cash holdings in government securities.

**(3) Use technical innovations and convenience services for retail government securities purchasing:** In addition to the developments seen in the recent past (online securities trading system- WebKincstár, mobile application, State Treasury branches), a number of other innovations may be considered which would further improve access to government securities. For that reason, it is recommended that interest capitalisation and automated purchase options be introduced, administrative burdens be reduced and the long-term investment account scheme be reconsidered.

**(4) Redesign the arrangements for granting tax benefits, rethink the concept of long-term investment accounts:** The aim is to ensure that households keep their savings in government securities of the longest possible term, which would offer interest benefits to households, while reducing the rollover risk to the state. Currently, an exemption from interest tax is granted as part of the long-term investment account scheme, but that solution is highly bureaucratic. Many households may be discouraged by the need to open a separate securities account, which must be renewed on an annual basis. For that reason, the recommendation is to provide easier access to interest tax exemptions on households' holdings of long-term government securities.

**(5) Develop sales channels:** Currently, a large share of households' holdings of government securities are held by families in Budapest, which – aside from higher wealth and educational attainment – may also be related to better geographical access. Development of the sales channels could help attract new groups to the market of households' government securities through the improved efficiency of the sales network in Budapest, broadened sales channels in rural areas, and the involvement of the post office and other agency networks. At the same time, it would be advisable for the new customers acquired by these means to be directed to the online trading system.

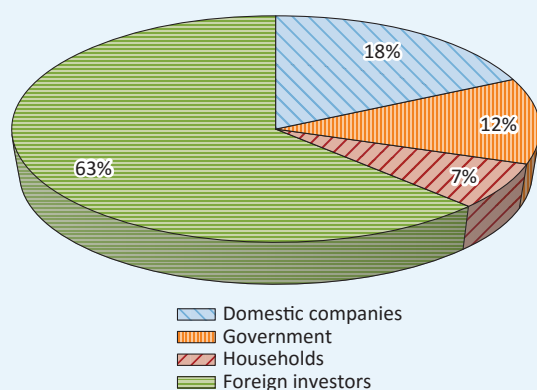
## 2.2. HIGHER SHARE IN DOMESTIC COMPANIES WITH MORE BENEFITS FROM THEIR ACHIEVEMENTS

- (6) Grant tax exemption on stock dividends
- (7) Provide incentives for employee stock ownership programme
- (8) Establish welfare funds through a combination of pension and health savings
- (9) Extend dividend tax exemptions to pension savings accounts

### Assessment of the situation

In addition to a major increase in the number of IPOs, **in order to successfully broaden the capital market it is essential that stimulus be provided on the demand side to encourage investors.** A large proportion of the companies listed on the Budapest Stock Exchange are owned by international institutional investors. This provides a less stable investor background, since – given the size of the Hungarian market – such investors may significantly increase price volatility through their ability to bring the Hungarian market under immediate and concentrated selling or buying pressure in the event of a sudden change in the market environment.

**Figure 2.4**  
Ownership structure of Hungarian listed shares  
(November 2018)



Source: MNB.

**In addition to increases in stock market trading volumes and market capitalisation, a more balanced investor base should also be created.** This could primarily be achieved by increasing the proportion of Hungarian listed shares within the portfolios of domestic institutions and households, while sustaining interest from international investors.

In Hungary, the share of households' direct stock investments within all savings is critically low by international standards, despite the benefits that even small investors could derive from a well-diversified, long-term savings portfolio that holds the right amount of exchange products.

In 2018 Q2, Hungarian households' financial savings exceeded HUF 50,000 billion, reaching the third highest growth rate in the EU in relative terms over the past seven years. This clearly shows that the low level of interest in the Hungarian equity market is not attributable to a shortage of capital, but to an extreme level of risk aversion and to the absence of adequate financial literacy and self-reliance.

**Figure 2.5**  
Growth in households' financial wealth in the  
domestic currency (2010–2017)

Country	Rank	Change (2010–2017)
Poland	1	69.50%
Sweden	2	63.71%
<b>HUNGARY</b>	<b>3</b>	<b>56.72%</b>
Czech Republic	4	45.67%
United Kingdom	5	43.31%
Denmark	6	42.41%
Finland	7	36.52%
Germany	8	32.88%
Spain	9	22.56%
Slovenia	10	14.96%
Greece	11	0.43%

Source: Eurostat.

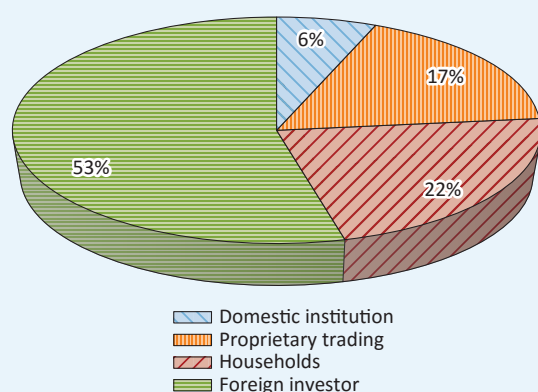
In terms of deepening the domestic investor side, a critical role may be played by boosting the ratio of long-term stock market investments in Hungarian households' financial assets, which could contribute to the welfare of the population over the medium and long term by complementing the pension system currently in place. At present, a mere 1.6 per cent of all assets are invested in listed shares, which falls significantly short of the ratios seen in countries across the region (Poland 2.8 percent) and Western Europe (Sweden 6.7 percent, Denmark 5.9 percent, Germany 5.6 percent).

Although basic liquidity is provided by private investors, the vast majority of stock market trading is generated by institutional investors, and **the BSE in particular is currently dominated by non-residents, which account for more than**



**50 per cent of all transactions.** Recent years have seen a major decline in the activity of domestic institutional investors in the classical sense (other than proprietary brokering), which today only account for a mere 6 to 7 per cent of the total equity market transaction volume.

**Figure 2.6**  
Transaction volumes on the BSE spot market by investor type (January to September 2018)



Source: Budapest Stock Exchange.

In addition to increasing the presence of institutional investors on the BSE equity market, the establishment of a healthier investor structure would also be desirable, which may be achieved by supporting domestic institutional investors at the financial and regulatory levels.

## Recommendations

**(6) Grant tax exemption on stock dividends:** Strengthening the shareholder base of Hungarian households could be facilitated by the abolition of the stock dividends tax on shares bought on the BSE.

**(7) Provide incentives for employee stock ownership programme:** Another contribution to increasing the household base could be made through incentives for employee stock ownership programmes (ESOP). One of today's key issues is labour shortage and high fluctuation. General opinion has it that the interests of employees and management are not the same as those of shareholders. Shareholding in a company is supposed to promote performance and the achievement of the targets set by shareholders. In a stage of profitability and growth of a business, an employee will be motivated for higher performance and stronger loyalty. Through shareholding, an employee may directly benefit from a company's successes. The implementation of a plan would be facilitated by the use of listed assets, giving employees the opportunity to access regular information on current market values,

which means that the incentive effect of the plan would be intensified further by transparency. In light of the above, we consider it advisable to provide public assistance for the ESOPs of listed companies by allowing ESOP costs to be deducted from the tax base. The use of ESOPs on a large scale would have a positive impact on companies, the domestic capital market and employees alike.

**(8) Establish welfare funds through a combination of pension and health savings:** The new system would involve the establishment of so-called **welfare funds**, which would bring together current participants in voluntary pension funds, health and mutual funds. In such a welfare fund, each employee and employer would **pay a specific percentage of gross wages to dedicated employee welfare accounts**, which would have separate pension and health accounts, allowing each individual to specify the amount of funds to be credited to each of the accounts. To complement the payments by these two participants, the state could make the scheme even more attractive for both participants by **granting additional tax benefits** (such as personal income tax refunds on employee payments, and the deductibility of employer payments from the tax base). The pension account would be an alternative with a similar mechanism to that of pension fund savings (see the section "Mitigating the demographic challenges to the pension system"), whereas the health account would enable use for health purposes (such as healthcare services, medicine and medical aids), and provide access to other welfare services (such as unemployment benefits, school starters' support, elderly care, home care and postnatal care) (see the section "Institutionalised and directed use of private funds"). As regards pensions, such a new measure would be in line with the new pension reform bill passed earlier this year in Poland, where the state is also trying to answer the challenges of an ageing society through the involvement of the three participants referred to above. As part of the measures in Poland, the equivalent of an estimated HUF 1,500 billion worth of new pension savings may be collected annually via this new channel, a large part of which is expected to aid the financing of Polish companies listed on the Warsaw Stock Exchange. For the Hungarian capital market, steady demand for domestic shares could be provided by the fresh capital flowing into the pension accounts, allowing economic growth to be financed and country's ability to innovate to be improved directly by means of households' long-term savings.

**(9) Extend dividend tax exemptions to pension savings accounts:** Under the current regulations, only dividends on shares held on long-term investment accounts are tax exempt. It is recommended that the tax benefit be extended to early pension savings accounts.

### 3. SME strategy

**Main objective: Annual productivity growth of 7 per cent in the SME sector**

**Due to its weight in terms of employment and value added, the sector of small and medium-sized enterprises is the most important target group for enterprise development.** The SME sector accounts for 71 per cent of total corporate employment, 47 per cent of total value added and 20 per cent of total exports. Additionally, the SME sector is predominantly domestically owned and is better embedded in the Hungarian economy than foreign-owned larger corporations, which are frequently isolated operators.

**Due to its economic significance, the SME segment is at the focus of Hungary's targeted economy development programmes.** Looking ahead, SME productivity growth should be increased in the interest of sustained economic growth, to which a substantial contribution may be made by the development programmes financed from EU or other funds.

**In the past, the growth of the SME sector was fragile.** This is partly explained by the fact that SMEs predominantly produce for the internal market, which – due to the absence of diversification – increased the level of risk in the sector. Market entry was inhibited by the absence of innovation and core digital assets at many SMEs, placing them at a disadvantage in market competition driven by digital transformation. Another problem is the dual nature of the economy, for two reasons. On the one hand, the use of capital and labour is not efficient enough when the SME sector is excessively fragmented. Compared to other countries, micro and small enterprises represent a dominant share of the Hungarian SME sector, leading to a productivity loss due to an inadequate exploitation of the benefits offered by economies of scale. Another consequence of – and also in part the reason for – this duality is that while SMEs compete for labour on the same labour market as large corporates, they tend to have more limited access to state subsidies for their developments. The approximation of labour market opportunities will be of particular importance in an environment where labour market capacities are increasingly tight, driving more and more intense competition for (qualified) labour. We propose a number of measures to improve the productivity of the SME sector, including in particular the proposals to compensate SME wage increases with grants and to apply a targeted reduction in the social contribution tax for SMEs. Additionally, to a large degree, Hungary's future competitiveness will be determined by the conditions that the state can provide for innovative businesses in their early development stage.

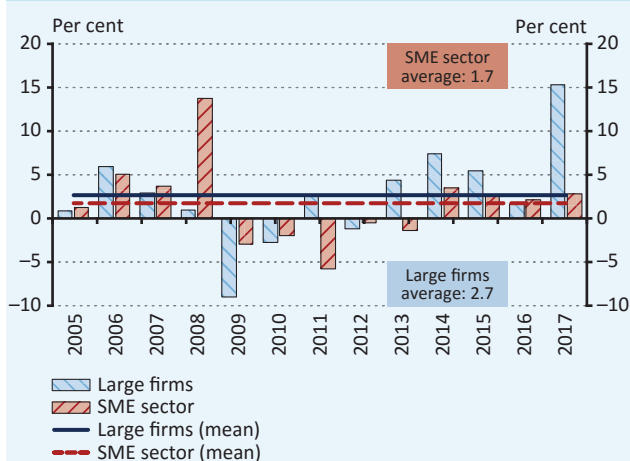
### 3.1. INCREASE SME PRODUCTIVITY THROUGH INVESTMENTS

- (1) Reduce the investment limit from HUF 500 million to HUF 100 million for the development tax benefit available to SMEs
- (2) Enable the immediate deductibility of investments in the corporate tax base
- (3) Ensure the deductibility of investments from the local business tax base
- (4) Provide assistance for SME wage increases subject to investment commitments

#### Assessment of the situation

There is a significant shortfall in SME productivity compared to both the productivity of the domestic large corporate sector and to that of non-resident SMEs. The past 10 years have seen average productivity growth of 2 per cent in the corporate sector, which is lower than the 7 per cent required for the macroeconomic path published in the Growth Report.

**Figure 3.1**  
Changes in labour productivity (per cent)



Source: MNB, based on data from the National Tax and Customs Administration.

First, in a tight labour market environment, companies face a major challenge in financing wage costs from their own revenues.<sup>3</sup> In a number of segments, this could be remedied through automation developments, which, however, are often not implemented due to the scarcity of companies' internal resources. Second, a major part of SMEs do not have advanced technologies in place that could significantly improve their productivity. Third, the corporate tax benefits available for developments generally favour large corporates. One exception is the allowance on SMEs' interest liabilities; however, this is conditional on borrowing,

which is often not a viable option precisely because of the scarcity of internal resources or the absence of collateral (primarily in the services sector).

#### Recommendations

**(1) Reduce the investment limit from HUF 500 million to HUF 100 million for the development tax benefit available to SMEs** could help more knowledge-intensive businesses to invest. Under the current tax regime, a company is eligible for a corporate tax benefit on any investment with a present value of HUF 500 million (HUF 100 million in special cases), if the investment is carried out by an SME. This threshold may be excessively high for some sectors with lower specific investment requirements, including the services sector in particular. This is shown clearly by data for 2017 from the National Tax and Customs Administration indicating that 96 per cent of the tax benefits on developments are granted to large corporates, and that nearly all of the large corporates are industrial companies. Conditional reduction of the threshold to HUF 100 million could encourage investments by knowledge-intensive companies.

**(2) Enable the immediate deductibility of investments in the corporate tax base:** Under the regulations in place, companies can deduct capital expenditures over several fiscal years. An increase in depreciation rates would allow costs to be recognised in the first year of the investment, encouraging economic entities to increase the level of their investments.

**(3) Ensure the deductibility of investments from the local business tax base:** Compared to the corporate tax, the local business tax base is significantly broader, placing a heavier burden on most companies. Due to its broader base, the local business tax is payable by a larger share of companies (without the options to carry losses forward or transfer to small business tax categories); accordingly, the possibility of deducting capital expenditures in respect of this category of tax could encourage a larger share of the companies to enhance their productivity.

<sup>3</sup> Apart from adding to labour costs, strong wage growth also drives demand. The demand effects underlying the wage ratio was addressed in detail in the 2017 Growth Report (Chapter 1).

**(4) Provide assistance for SME wage increases subject to investment commitments** could support the modernisation needs of micro and small enterprises, while also contributing to wage growth. Support for capacity-building would be available in the form of grants, which companies could access in proportion to increases in their personnel expenditures. The target group is the corporate segment

which – while faced with the greatest difficulty in financing wage costs from its own revenues – also has development needs. It is recommended that utilisation of the assistance be made subject to additional criteria for the formalisation of the economy, such as the electronic transfer of wages. The amount of assistance should not exceed the statutory ceiling for de minimis aid.

## 3.2. INCREASE PRODUCTIVITY IN THE SME SEGMENT THROUGH GREATER ECONOMIES OF SCALE

- (5) Support acquisitions and mergers
- (6) Make liquidation proceedings simpler and faster
- (7) Provide a 2-year dividend tax waiver for companies undergoing a generation change in management

### Assessment of the situation

**Structurally, the Hungarian SME sector is extremely fragmented, with the share of microenterprises significantly exceeding the weights seen in advanced economies.** As a result of the current fragmented structure, the Hungarian SME sector fails to exploit the competitiveness and productivity benefits offered by economies of scale, leading to a productivity loss at the macroeconomic level.

In addition to fragmentation, another problem is that **the average age of the owners of medium-sized and large corporates reached 65 years in 2018, which indicates the need for a generation change to soon occur in the management of these companies.** However, demand for such companies appears to be insufficient. When these companies were established in the early 1990s, the state was also an active participant in the reallocation of capital by means of compensation notes, ESOPs, existence credit, and privatisation leases (Szendrői and Kövesdy, 2018). Currently, it seems inevitable that the generation change should involve capital movements, raising the question of where the capital released will be allocated. This is where the state could play a pivotal role: while generation changers would prefer to keep their companies under family control, a number of studies confirm that the replacement of family management with professional management will significantly increase corporate efficiency.

**Participants in the corporate sector that are inactive in economic terms also hurt productivity,** while absorbing valuable resources (labour and capital) in the domestic economy. Arguably, the ratio of inactive companies<sup>4</sup> has increased steadily over the past decade and exceeded 11 per cent in 2016, a marked increase compared to the early 2000s (the ratio was below 2 per cent in 2004).<sup>5</sup> In a tight labour market environment, measures to increase the minimum wage are expected to contribute to accelerated capital reallocation by encouraging the exit of inactive

or low-efficiency companies from the market; however, additional measures may be needed to clear the market. The number of applications for insolvency is low at the national level and has been declining steadily since 2010. On the other hand, one favourable development is the high ratio (49 per cent in 2017) of successful bankruptcy proceedings resulting in a composition with creditors. Nevertheless, international benchmarks suggest that there is still plenty to be done. According to the World Bank's survey, Hungary's rescue ratio of 44 per cent falls short of the average of high-income OECD countries (71 per cent). In Hungary, proceedings are both longer and more expensive compared to the average of the most advanced OECD countries. Consequently, **regulations on bankruptcy proceedings** should set the objective of ensuring that **genuine opportunities for recovery are provided** by the timely restructuring and reorganisation of financially distressed companies (debtors).

### Recommendations

**(5) Support acquisitions and mergers:** Our calculations suggest that – compared to microenterprises – economies of scale increase the productivity of an average small enterprise by 80 per cent and that of an average medium-sized company by 230 per cent. Incentives for economies of scale may be provided by promoting acquisitions and mergers. To that end, the government should explore the possible means to bring about a shift from the current inefficient corporate structure towards a structure that provides more economies of scale and is therefore more productive. This requires a legal background to facilitate SME transactions, and a regulatory environment that enables small enterprises to access transaction finance, as well as a reduction in financing costs. It should be noted that the issue is not strictly legal in nature, and it would be equally important to build a corporate ecosystem and to support an inspiring environment for entrepreneurship. Given the intention of the companies concerned to fuse, there is a choice of several legal solutions (including

<sup>4</sup> An inactive company, also known as a zombie, is a company that has not been wound up, despite its inability to repay its debt and maintain economically viable operations in the long term.

<sup>5</sup> The phenomenon is not unique to Hungary: OECD surveys also report increases in the number of zombie companies in other member countries in the post-crisis years.

mergers, the purchase of participations, cooperation arrangements for concerted actions, transfer of assets and liabilities by means of contract assignments, etc.). Consequently, the efficiency of the SME sector may in part be improved by factors that are not economic in character (networks, confidence in the institutional system, etc.).

**(6) Make liquidation proceedings simpler and faster** because the stringency of the rules for bankruptcy proceedings and the length of such proceedings are major deterrents to entrepreneurship. As part of that effort, the required level of personal financial liability may need to be reviewed in order to support entrepreneurship without compromising fair operations. Together with Estonia, Hungary has some of the strictest regulations in place within the OECD. The maximum duration of bankruptcy protection and the 5-year injunction<sup>6</sup> period are both considered high by international standards.<sup>7</sup>

**The establishment of an adequate early warning system for likely failures could significantly improve the efficiency of bankruptcy proceedings.** Both creditors and debtors must be given an opportunity to initiate reorganisation in a regulated framework in cases where the implementation of reorganisation appears feasible based on the financial figures of the company concerned.

Efficiency gains could also be derived from a **reorganisation plan**, to be submitted along with the application for insolvency in proceedings opened at the debtor's own initiative, which would be prepared either by the debtor on its own or a contracted expert, and in addition to providing an analysis of the situation, would also present informed proposals for a solution. This would also give the debtor's owner and management the opportunity to assess the situation and consider the options available for a solution. In connection with reorganisation plans, it may be advisable for legislative work to **develop solutions to give creditors more leeway**. It is also recommended that creditors have the option to comment on a reorganisation plan and propose changes to its substance, or even that it be reworked completely. In cases where a reorganisation plan is approved by all of the creditors, it may be appropriate to apply simplified procedural rules within a shorter timeframe.

**It would be advisable to specify requirements for reorganisation plans at the legislative level**, including the formulation of specific rules for the means of restructuring that may be applied. These measures would help improve the professional quality of the plans, which in turn would greatly facilitate reorganisation processes.

Reorganisation plans tend to propose solutions involving waivers, instalments or deferred payments, despite the fact that even now the law permits the **use of other means such as debt for equity conversions and rescue financing**. Debt for equity conversions are frequently blocked by the owners of the debtor company, even in cases where conversion would transfer membership rights to a creditor that is related to the operations of the company and has the required expertise. It is recommended to examine whether the owners of debtor companies should have more limited options do so. Whether provided by original creditors or new financiers, financial solutions to bridge financial distress make it easier for debtors to recover from their indebtedness. However, a company that is having payment difficulties and is subject to bankruptcy proceedings will have even more limited access to external funds. Consequently, incentives for providers of such finance, e.g. the reclassification of the receivable from the new finance as privileged in the case of liquidation proceedings, would reduce the number of otherwise viable companies that are liquidated for temporary distress.

**Enhancing the powers of the courts hearing insolvency cases** (including both liquidation and reorganisation proceedings) **could be a major contribution to faster proceedings**, and to detecting any fraudulent and dilatory conduct. For that purpose, the courts could rely on insolvency experts. Further training for judges as part of specialised business accounting training, and enhancing their specific knowledge on insolvency matters may also improve the effectiveness of proceedings.

Through measures to minimise the possibility for a debtor to engage in procedural actions to delay the establishment of its insolvency (such as challenging a creditor's claim that it has not challenged previously), the debtor may be prevented from fraudulently delaying the satisfaction of creditors' claims against it.

<sup>6</sup> Company managers are currently subject to rather strict rules of injunction in cases where a company is struck off the register due to the complete absence of assets, or an involuntary strike-off procedure is transformed into liquidation. While the five-year injunction is considered rather long by European standards, based on the available experience, the rule does not appear to have a genuine deterrent effect. Through a moderate reduction in the injunction period, the measure would retain the character of a sanction, while also providing an opportunity for honest entrepreneurs to start again.

<sup>7</sup> Although the average 2-year length of the proceedings is in line with the EU average, the recovery rate in insolvency proceedings is only 43 per cent for covered creditors, compared to the European average of 65 per cent. In cases of financial distress, the most frequent outcome is the liquidation of the company concerned, and in an increasing number of liquidation proceedings, the proportion of proceedings taking more than 3 years to complete is also rising (14 per cent in 2017, OBH data).



Liquidation proceedings may be protracted by ongoing litigation against the debtor, because liquidation cannot be completed while such litigation remains pending.

**Tighter time limits** for hearing such cases could accelerate the process. Time efficiency gains could also be made if, following the initiation of liquidation proceedings, such **cases could be heard by the courts that proceed in insolvency cases.**

**It is recommended that liquidators have a clear time limit for the sale of assets** in order that the expected length of the procedures and thus the expected periods of recovery may be specified more precisely for creditors. This would also provide increased procedural transparency.

These measures could encourage the setup of new companies primarily in innovative segments. On the other hand, faster liquidation proceedings may also accelerate the reallocation of capital to more productive segments.

**(7) Provide a 2-year dividend tax waiver for companies undergoing a generation change in management:** The need to support generation change in the management

of family businesses has emerged due to the fact that the managers of an estimated 53,000 companies will reach retirement age in the next 1 to 5 years. Ageing may affect approximately one fifth of all companies. Such companies predominantly belong to agriculture, and rural **micro-regions are at particular risk** in this regard. While most managers facing a generation change would prefer to retain family control over their businesses, they are faced with the problem that the younger generations do not find carrying on the business attractive enough either professionally or in terms of profitability. A **2-year dividend tax waiver** could enable the generation change to introduce new models of production and/or sales, while preventing shareholder incomes from falling during the transitional period. The benefit would be subject to a positive tax base, which would ensure that assistance is allocated to efficient companies. Recognition of the completion of a generation change should be conditional on a specific degree of reduction (e.g. 30 per cent) in the owners' average age. Additionally, generation change should also be supported by other soft means such as mentoring, consulting, intermediary institutions, and building trust in the institutional system.

### 3.3. IMPROVE SME COMPETITIVENESS THROUGH TARGETED MEASURES AND NETWORKING

- (8) Increase the innovation management capacity of SMEs by establishing a non-profit advisory centre
- (9) Support the operation of clusters
- (10) Support the emergence of clusters and other forms of networks
- (11) Communicate state-sponsored programmes and opportunities on a broad base
- (12) Support the operation of mentor networks

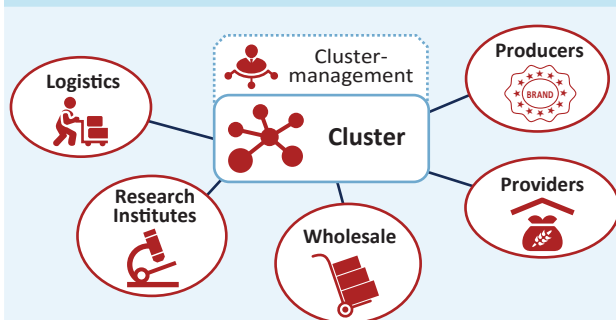
#### Assessment of the situation

The current system of development policy allows companies to apply for funds to cover their capacity-building needs without undertaking any form of cooperation.<sup>8</sup> This increases the risk of grant fragmentation as **the benefits of assistance remain within the confines of the recipient companies without any spill-over effects**. Some central programmes of the EU, including the Horizon 2020 and COSME, which are designed to support SME developments, address this issue by providing assistance for projects implemented by consortia.

**At the global level, cooperation efforts among corporates (and research institutes) are increasingly financed through clusters**, for which there are a number of good examples internationally, including the Canada Innovation Superclusters Initiative, Growth Centres Australia, and USA Regional Innovation Clusters. Clusters are an efficient means to leverage the benefits of the economies of scale resulting from cooperation among SMEs, large corporates and research institutes, and to channel innovation potential. Clusters are internationally and innovation focused, and may be implemented in any sector, or even across sectors. Cluster members generally provide full vertical coverage of production; accordingly, in addition to companies carrying out a cluster's core operations, its members also include research institutes, suppliers, merchants, carriers, warehouse operators, etc.

The size of clusters is also relevant from an international perspective, allowing the economies of scale to be effective in driving productivity. Each cluster is steered by a management body, which coordinates the joint efforts of cluster members.

**Figure 3.2**  
Schematic representation of a cluster



Source: MNB.

In Hungary, funds are available even now to finance cluster programmes, but have generated low demand.<sup>9</sup> The main reason for that could possibly be companies' ability to apply for grants or loans individually, which eliminates the need for them to cooperate. In Hungary there are currently approximately 180 clusters in operation in 28 different areas, 25 of which hold the highest qualification of accredited innovation clusters.<sup>10</sup>

In addition to stepped up funding for cooperation efforts, it is also important to make non-innovative segments more receptive to innovation. This could be aided by model demonstration programmes and knowledge centres.

#### Recommendations

**(8) It is recommended that a non-profit advisory centre be established with a business approach to increasing the innovation management capacity of SMEs.** This could be modelled on the agency "Innovate UK", set up some ten years ago to facilitate the generation of innovation activities

<sup>8</sup> Exceptions include large corporates which are only eligible for EU funds under GINOP 1 subject to a guaranteed share of SMEs in project results.

<sup>9</sup> Set up to finance cluster operations, the initial budget of HUF 2 billion for the scheme "Support for quality services provided by professional cluster organisations" was raised to HUF 7 billion in 2017, then reduced to HUF 1 billion in 2018.

<sup>10</sup> Ministry of Finance (2018): Cluster development search map. Downloaded: 8 June 2018.



in the SME sector through the involvement of professionals with private sector experience. Its main object is to match companies with partners, consumers and investors, and to provide public funds for projects implemented jointly by research institutes and companies. Such a system is best implemented when it is set up separately for each sector, which is how it may provide for the dissemination of specialised expertise. A knowledge centre in Hungary is already operational in the construction sector, but the service would need to be extended to SME consulting.

**(9) Support the operation of clusters:** We recommend that the economic development system of the future should be built around clusters so that all projects implemented in the form of clusters are given a considerable advantage in applications for grants in the field of economic development. Continuing the current setup, support for the operation of clusters could be implemented in a linear arrangement: (1) formation of a cluster by a variety of participants in a given sector or area through the creation of cluster management (early cluster phase); (2) joint cluster projects and investments (developing cluster); and (3) a cluster with professional management and R+D+I activities (accredited cluster).

**(10) Support the emergence of clusters and other forms of networks:** With smaller businesses, it would also be reasonable to rely on federations and cooperatives, which are less organised, but equally important in terms of knowledge sharing. A simplified programme for small grants announced to support the professional programmes of cooperatives, federations and other forms of associations could provide incentives for cooperation, in particular to companies of the smallest size (1 to 9 employees). Owing to their size, larger companies could be granted access to public assistance as part of the cluster support system.

**(11) Communicating state-sponsored programmes and opportunities on a broad base** profoundly influences the success of development policy. While opportunities to access EU grants are widely known, companies are less informed about lower-volume programmes. The most important element in increasing productivity could be to improve the culture of entrepreneurship through support for attitude programmes and for the introduction of modern enterprise resource planning technologies. “Industry 4.0 Model Factories” and similar demonstration programmes to be launched in other segments could play a substantial role in the future. Subsequently, it may be reasonable to develop demonstration programmes into knowledge centres (for example, in the case of the Industry 4.0 model programme this in an explicit target to be accomplished by mid-2019).

**(12) Support the operation of mentor networks:** Mentor networks are an effective means of knowledge transfer. Participants in mentor programmes currently operational in Hungary have reported a 30-per cent increase in sales and stability as a result of mentoring. In recognition of the utility of mentor programmes, the Hungarian government has allocated HUF 3.3 billion of EU funds to supporting enterprises that are run by female and young entrepreneurs, as well as those facing a generation change, or which are about to become suppliers or enter foreign markets. The state consortium has set the target of mentoring 500 companies by the end of 2020; however, given the considerably larger target group, additional funds may be needed. **We recommend that the current programme be extended for the next EU programming period, with particular regard to the need to make the mentoring programme available at all higher education institutions in Hungary.**

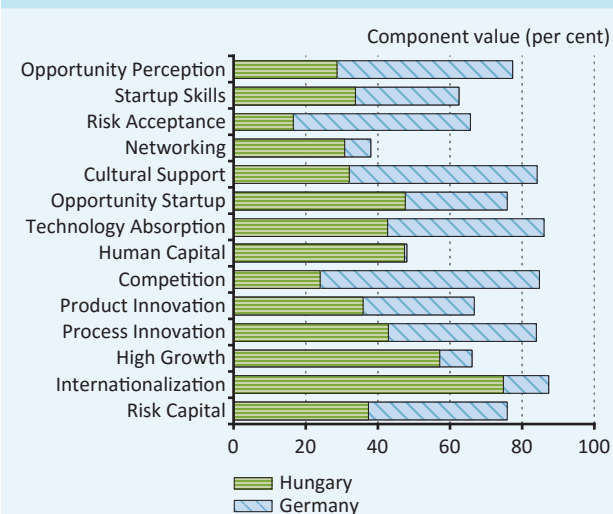
### 3.4. AN INSPIRING ENVIRONMENT FOR ENTREPRENEURSHIP

- (13) Provide preferential grant application and borrowing options for young and female entrepreneurs
- (14) Increase the number of co-working offices in large cities
- (15) Increase the number of accelerators sponsored by large corporations
- (16) Support university incubators and spin-offs
- (17) Organise and support relevant startup conferences and meetups
- (18) Grant a corporate tax exemption for aspiring entrepreneurs in their first three years

#### Assessment of the situation

Based on their propensity to innovate, Hungarian companies can be classified into three groups. **One fifth (21 per cent) of all companies are currently engaged in innovation activities and a smaller part (8 per cent) would innovate but are prevented by some circumstance, while the majority (71 per cent) cannot even see the point in innovation.** Given the varied attitude of SMEs to innovation, a differentiated approach is recommended. The biggest challenge lies in improving entrepreneurial attitudes (Figure 3.3).

**Figure 3.3**  
Dimensions of entrepreneurial attitudes in Hungary (2018)



Source: Global Entrepreneurship Index, 2018.

Startups tend to belong in the innovative segment. However, they typically lack the appropriate leadership skills that are required for market success. 90 per cent of early-stage innovative startups fail before their third anniversaries (Marner et al., 2011). For that reason, companies not only need access to funds, but also to training opportunities and social capital.

In order to ensure that access, policy should seek ongoing cooperation with the parties concerned. Work in that

regard has already been done in Hungary with contributions from professional organisations, ministries and financing institutions, which provides good examples for further development efforts (Runway 2.0.2.0, Digital Startup Strategy of Hungary).

#### Recommendations

**(15) Provide preferential grant application and borrowing options for young and female entrepreneurs** may increase both productivity and women's willingness to return to work after childbirth. In Hungary, the number of women who do not work as employees is approximately half that of men in similar work arrangements, which leaves considerable surplus productivity capacity in supporting female entrepreneurship. On average, female entrepreneurs have a higher educational attainment compared to men. In addition to access to information and funding, an equally important issue is the difficulty that women face in balancing family life with work, which could obviously be helped by improvements to lower and upper nursery services.

**(16) Increase the number of co-working offices in large cities:** Innovative early-stage entrepreneurs typically work from home and arrange for business meetings at some quite café, but that setup will not work for everyone. One aspect of that is the conflict of private life and work. Another important consideration is the substantial effect of social capital on the development of early-stage companies. Those needs are adequately met by co-working offices in larger cities. In Budapest, a number of such venues are currently operated on a market basis, while global surveys also show that solutions of this kind continue to be in high demand, due in part to digital nomads, and not only in capital cities (Global Coworking Survey, 2018). **Primarily as part of planning for municipal facility management in rural areas, we recommend that priority should be given to assessing the possibility of setting up co-working offices.**

**(17) Increase the number of accelerators sponsored by large corporations:** One attractive feature of accelerator programmes is that they provide mentor support and

facilitate the introduction of the companies involved to potential investors. In practice, accelerators provide opportunities for early-stage innovative companies to refine their business plans. Today, a growing number of large corporates (including Antenna Hungária, Telenor, and OTP) are launching programmes of this kind. The objective is to ensure the transfer of some of the knowledge coming from large corporates to innovative small enterprises. The government may facilitate this process, for instance, by providing a protected legal environment (regulatory sandbox) for companies participating in an accelerator programme for large corporates. The MNB is currently applying the tool in the FinTech area.<sup>11</sup> Additionally, existing accelerators should also be integrated in international operations.

**(18) Support university incubators and spin-offs** could increase the ratio of entrepreneurial ideas and the propensity to set up new companies. While a majority of Hungarian university students would prefer entrepreneurship to employment, only 17 per cent have a fully developed plan. Additionally, a large number of students consider that they could not have access to social capital when needed. Although examples do already exist for supporting university incubators as part of the Hungarian system of economic development, public assistance continues to be granted predominantly to incubators outside universities. However, students' needs apparently still belong to the pre-incubation stage (idea inception, concept, business setup). That puts university mentoring services in a more prominent role. In order to increase the propensity of higher-education students for entrepreneurship, we recommend that university spinoffs (enterprises based on the use of the intellectual

achievements of research organisations) be promoted. We also recommend supporting events that attract students from a variety of educational fields. The rationale for that is the fact that in many cases, the core idea required to start the innovation process is taken from a field that is completely different from where it is to be ultimately utilised.

**(19) Organise and support relevant startup conferences and meetups:** Organised via informal channels, the startup world often does not require public assistance for networking, yet there might be cases where the needs go beyond the financial means of individual organisers. Typical examples include meetups held with foreign presenters or partners in attendance. Even a public programme for small grants could significantly improve the international presence of the Hungarian startup world.

**(20) Grant a corporate tax exemption for aspiring entrepreneurs in their first three years:** There are a number of international examples showing that in their early-stage, startup companies are either tax exempt, or are granted considerable tax benefits. In the United States, as part of the "Startup NY" plan, companies are exempted from several taxes for ten years, while in Estonia companies only incur tax liabilities upon the payment of dividends. In Singapore, innovative startups are only subject to tax obligations when their profits first exceeds 100,000 dollars. Tax exemptions granted in the first two to three years would be a substantial incentive for entrepreneurship, allowing startups to focus entirely on their business. They could also help improve the startup survival rate. The proposal requires careful tax law planning in order to ensure that the benefit is only granted to new companies in their early phase.

<sup>11</sup> <https://www.mnb.hu/letoltes/innovationhub-tajekoztato.pdf>

### 3.5. QUALIFIED HUMAN RESOURCES IN SMALL BUSINESSES

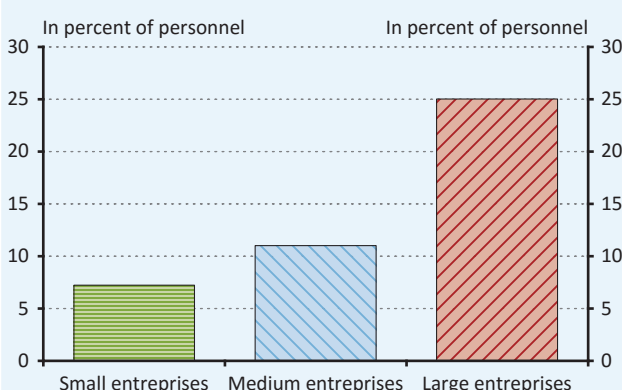
- (19) Reduce the social contribution tax further for SMEs  
 (20) Enter into strategic partnership agreements with innovative SMEs  
 (21) Provide digital courses conditional on achievements

#### Assessment of the situation

For small and medium-sized enterprises, wage expenditures are a heavier burden compared to large corporates. These enterprises are more labour intensive than larger ones, which is accompanied by lower productivity. Yet they are not in a position to pay lower wages to qualified labour, because they compete for labour in the same labour market with large corporates. Moreover, the large corporate segment has a substantial advantage over the SME sector in terms of available corporate tax benefits, which translates into an additional labour market advantage. According to data from the National Tax and Customs Administration (tax returns for 2017), in 2018 large corporates utilised more than 60 per cent of corporate tax benefits, whereas their weight in employment was only 29 per cent.

The SME segment can only become competitive with greater perceptiveness for knowledge. That change may be facilitated through an increase in the number of corporate training programmes, the urgency of which is also intensified by the challenges presented by technology and the digital transformation. A mere 11 per cent of employees in Hungarian small businesses attend further training, compared to 14 per cent in medium-sized enterprises, a significantly higher 28 per cent in large corporates (Figure 3.4).

**Figure 3.4**  
Participation rate in professional training (2015)



Note: Full-time employees. The figure shows participation rates as a percentage of employee headcounts.

Source: Eurostat.

#### Recommendations

##### (19) Reduce the social contribution tax further for SMEs:

One barrier to growth in the SME sector is that as long as SMEs do not reach the same level of productivity as large corporates, which are often foreign-owned, they will not be able to pay the same wages to their employees and will thus be prevented from attracting the best labour. The significance of this is underlined by the challenge from the open labour market of the EU. Although several tax types were introduced after 2010 specifically for small businesses (KATA, KIVA), designed in part to compensate for the above factors, a major part of SMEs continue to operate within the framework of the conventional forms of taxation. In order to improve the competitiveness of these companies in the labour market, we recommend a targeted reduction in the tax burdens on labour for small and medium-sized enterprises.

##### (20) Enter into strategic partnership agreements with innovative SMEs:

With few exceptions, a majority of specific government subsidies were granted to large corporates. In many cases, these subsidies were conditional on headcount increases, placing large corporates at an advantage over SMEs in the labour market, given the fact that the wage costs associated with the jobs created through the investment were paid in the form of subsidies for up to 2 to 3 years (not infrequently 5 years).<sup>12</sup> For instance, the wages of an experienced developer must equally be financed by an innovative SME from its own revenues, while standing virtually no chance for specific subsidies. For that reason, it is recommended that the government should enter into individually considered strategic agreements with SMEs that represent cutting-edge technology in Hungary. The agreements could be financed from the scheme for the promotion of investments.

##### (21) Provide digital courses conditional on achievements:

The general level of educational attainment could be increased substantially by providing entrepreneurs with flexible further training opportunities outside of working hours. Training material should not focus on enhancing lexical knowledge, but rather on developing skills across industries (such as creativity, thinking, IT skills, etc.). A standardised system of digital courses tied to specified deliverables would provide for the comparability of employee skills, which – in addition to increasing productivity – could also facilitate a more effective allocation of labour.

<sup>12</sup> Between 2004 and 2018, subsidies were granted in the average amount of HUF 6 million per prospective employee (current prices), roughly corresponding to 3 years worth of gross wages at the average manufacturing wage level calculated for the whole period.

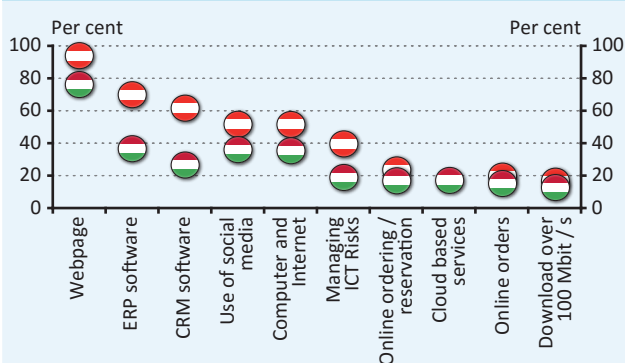
### 3.6. SUPPORT AN SME SECTOR THAT IS COMPETITIVE IN MODERN TIMES

- (22) Make company websites mandatory
- (23) Develop digital infrastructure in rural areas
- (24) Tighten rules for the management of ICT risks
- (25) Establish the János Neumann Fund to support firms' ICT developments
- (26) Prefer knowledge-intensive industrial services in EU funds' disbursement

#### Assessment of the situation

Global trends clearly indicate that companies will inevitably have to undergo digital transformation. Despite this, domestic SMEs tend to invest little in digital technologies. By contrast, within Hungary's borders large corporates have been making extensive use of leading digital technologies such as ERP, CRM, and cloud services. In terms of infrastructure, additional developments are required primarily in rural areas, while on a national scale the reduction of digital illiteracy may be identified as the most important task.

**Figure 3.5**  
Ratio of medium-sized enterprises using advanced technologies (2015)



Source: Eurostat.

It is also important to see that although most companies use computers in production, they typically have no measures in place at all to manage IT risks. In addition to the risk to the production of individual companies, this may also give rise to problems at the level of the national economy.

In addition to the incorporation of technologies, policy also needs to provide an adequate answer to the development of technologies. For the current EU programming period, the government has undertaken to allocate 60 per cent of its economic development funds to the development of enterprises (Partnership Agreement, 2014). However, a technology focus is only featured indirectly in assistance

policy. Going forward, specialised technology institutions, dedicated grants, and support for clusters may all contribute to a stronger technology focus.

#### Recommendations

**(22) Make company websites mandatory:** Today in Hungary one in four companies does not have a website. This is a problem both in terms of market efficiency (related to partner searches) and of transparency. A great number of free website-building applications are now available that can be used without any IT expertise. Making initial company registration and the maintenance of a company's registration (tax number) conditional on the existence of a corporate website or a page on a social media platform could increase company visibility.

**(23) Develop digital infrastructure in rural areas:** In a number of rural areas investments in digital infrastructure are needed. Building the infrastructure for super-fast internet access (above 100 mbit/s) individually is not an economically viable solution for companies. For network carriers, building a network is only worth the investment when a certain critical mass has been reached. A voucher programme modelled on a UK example, under which assistance would be provided to companies directly, could help to increase the demand for super-fast internet access and thus ensure additional investments. Supporting companies directly could enable them to achieve the most economical utilisation of resources through carrier tenders. According to UK calculations, a programme of this kind recovered approximately eight times the amount spent on it (Dept. for Culture, Media and Sports, 2017). Faster access also enables companies to access processes with higher value added (cloud services).

**(24) Tighten rules for the management of ICT risks:** According to a survey carried out in 2018, one in four SMEs made expenditures on IT development within the past year, and only one in five managers perceives material risk from an attack against company assets. This is despite the availability of free security software that may help

companies to manage such risks.<sup>13</sup> In this regard, ways should be examined for policy to provide incentives for IT security purchases to SMEs, even by means of regulatory instruments.

**(25) Establish the János Neumann Fund to support firms'**

**ICT developments:** The use of ICT assets is primarily a matter of shaping attitudes, for which a public assistance programme is currently in place. The need is also indicated by the fact that the HUF 2 billion budget initially allocated to the programme was raised to HUF 4.6 billion in 2018. Going forward, a targeted public fund could primarily support the incorporation of existing technologies (such as ERP and CRM software, and cloud services) through attitude shaping, education and an investment budget.

**(26) Prefer knowledge-intensive industrial services in EU**

**fund's disbursement:** Throughout the world, government policies conventionally think in terms of priority sectors. By contrast, modern economic development is more commonly dominated by mixed and horizontal approaches, given that companies and company networks (clusters) no longer belong to a single statistical sector. This calls for a stronger technology focus in EU assistance. In the assistance policy of the current programming period, a substantial technology focus is only seen in IT technologies, which should be extended to some key technologies where Hungary has a prominent role, and that should not be restricted to research and development.<sup>14</sup> It could be reasonable to set up a venture capital investment company on the German model of High-Tech Gründerfonds.

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<sup>13</sup> <https://www.portfolio.hu/vallalatok/a-kkv-k-fele-nem-is-hallott-a-gdpr-rol-de-a-digitalisacioval-is-hadilabon-allnak.292350.html>

<sup>14</sup> In Hungarian development policy, specialisation is pursued through the S3 smart specialisation, but in the assessment of applications for research and development funds, advantages may only be derived by applicants implementing their projects in the following areas: photonics, laser technology, material technologies, bionics, metal processing for other than mechanical engineering, electronics and semiconductor technology, advanced hydrocarbon technology, modern packaging technology, chemical industry, construction, textile industry, woodworking and furniture industry, logistics, and the cultural and creative industry.



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## 4. Foreign trade

**Main objective: 10,000 new exporting SMEs**

**In terms of the volume of its foreign trade as a percentage of GDP, the openness of the Hungarian economy is outstanding even by European standards.** The inflow of foreign direct investment from the mid-1990s played a substantial role in Hungary's high European ranking. Arguably, Hungary is now one of the countries with the highest levels of integration into global commercial chains. The country's openness rose from the initial 35–40 per cent to more than 160 per cent of GDP, while its level of integration into global value chains exceeded the world's average by more than 37 per cent in 2011. However, the internal capacity of Hungary's economic structure to generate added value remains weak, due to the high import intensity of production. On the other hand, in many cases the support provided to the services sector in the current system of incentives appears inadequate compared to the sector's significance. The growing weight of services in the economy is naturally inherent in and one of the drivers of productivity gains. In that regard, it would be particularly important for various public development policy instruments to provide substantial support for knowledge-intensive services.

**At present, SMEs are not extensively involved in foreign trade.** Hungary's highly open foreign trade is essentially attributable to the large enterprise segment, with the SME segment providing only approximately 20 per cent of the total volume of Hungary's foreign trade. Taking all company sizes into account, 25 per cent of domestically-owned foreign traders are both exporters and importers, 11 per cent are only exporters, while 46 per cent are only importers. Consequently, it is important to increase the volume of exports for both Hungarian companies that are not yet engaged in foreign trade and for those which already are. In the SME segment, primary consideration should be given to the markets of neighbouring countries, whereas the large corporate segment may find suitable targets in fast-developing regions. At the product level as well, special markets may be identified for Hungarian companies to succeed. The state also plays an important role in exploiting such opportunities. In recent years, the Hungarian institutional system of export incentives has undergone a number of changes, and we seek to contribute to that process with a few proposals.

**In addition to being less capital intensive, the export of services is also more resilient to crises, and this will increase the prominence of these exports going forward.** Domestic companies may find the greatest potential in areas related to agricultural technology and environmental protection (water purification, green energy), and in providing information technology services.

**With an Eastern shift in global power, investments from the East, and particularly East Asia, have also become more prominent worldwide.** Due to its excellent geographical position, Hungary may be a primary target for new FDI from the East. Additionally, Hungarian companies will have a range of opportunities to benefit from the inflow of such capital.

## 4.1. INCREASE THE ACTIVITY OF HUNGARIAN SMALL AND MEDIUM-SIZED ENTERPRISES ABROAD

- (1) Strengthen export of services (besides export of goods)
- (2) Exploit the benefits offered by China's One Belt One Road initiative
- (3) Support the entry into fast-growing new markets with stable institutions
- (4) Support foreign traders in Hungary, introduce a new trading house concept
- (5) Enable market-ready companies to operate temporarily in international co-working offices
- (6) Separate country, sector and product promotion and corporate brand building

### Assessment of the situation

**Foreign market entry and joining international production chains represent important breakthrough points for SMEs.** Participation in external trade entails higher corporate employment, labour productivity and total factor productivity. With the development of information technology, large distances between trading partners has become surmountable, making entry into foreign markets more affordable not only for large companies, but also for SMEs.

The weight of services in external trade is increasing dynamically due to the spread of information and communication technology, and SMEs may soon play an important role in services exports as well, which tends to incorporate more value added compared to the export of goods. Since services are less capital-intensive, the export of these also favours SMEs. Additionally, certain segments such as premium food, agricultural technology or water technology may offer breakthrough opportunities for Hungarian SMEs.

**intensity or knowledge-intensive services.** SMEs may primarily seek opportunities to increase exports to areas near Hungary. Regional trade, primarily with areas in South-East Europe, is supported by manageable distances, along with high growth potential, and low language barriers due to the Hungarian population in neighbouring countries. Additionally, companies may consider regions with dynamic population growth, as well as those with a substantial increase in effective demand due to a widening middle class.

### Recommendations

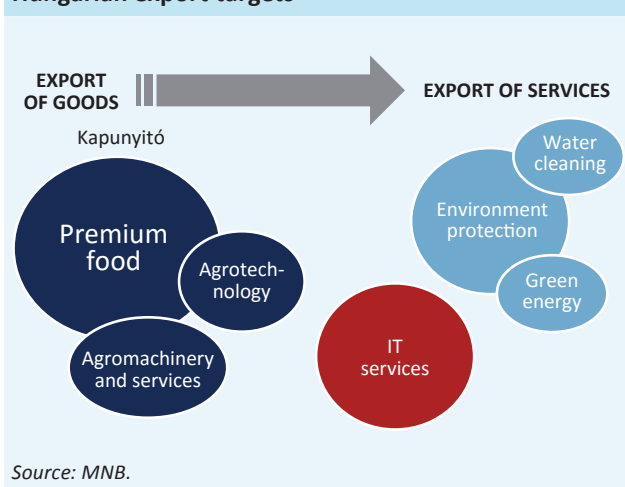
#### (1) Strengthen export of services (besides export of goods):

In Hungary, prior to the inflow of manufacturing FDI, services accounted for about one-third of total exports, which fell to around 15 per cent by 2005, and remains below the 20 per cent mark today. Supporting services is warranted by several factors. First, the lessons learned from the past ten years show that the export of services has been more resilient to crises compared to the export of goods. Second, as economic prosperity becomes more extensive, the demand by Hungary's foreign trade partners for services is increasing both in manufacturing and in the segment of end users. Third, the spread of the technological solutions available (internet, cloud technology) has made the export of services significantly easier compared to earlier periods. Domestic companies may find the greatest potential in providing services related to agricultural technology and environmental protection (water purification, green energy), and information technology services. Changes in the structure of services trade also influences the structure of production in Hungary, lending more emphasis to market services.

#### (2) Exploit the benefits offered by China's One Belt One Road initiative:

China's One Belt One Road initiative has a number of ongoing Hungarian implications. SMEs' export activities are supported by eight foreign trade attachés in China, and a Hungarian-Chinese Joint Economic Committee is also operational. Foreign trade is assisted by the 2013 credit agreement between the China Export-Import Bank and Eximbank. From China's perspective, Hungary is

**Figure 4.1**  
Hungarian export targets



Source: MNB.

**In the near future, it would be important for a larger number of SMEs to export products of higher technological**

strategically located, surrounded by advanced markets from the west and dynamically developing markets from the east, and with easy access to a market of 500 million as an EU Member State. Going forward, this asset could also be exploited by seeking to maintain and develop mutually beneficial cooperation arrangements. The exploitation of Hungary's favourable geographic location may also benefit sectors such as tourism and transport.

**(3) Support the entry into fast-growing new markets with stable institutions:** These criteria may be met by the following regions: Mexico and Brazil, Southeastern Europe, some economies in Africa and ASEAN countries. These countries are developing at a significantly more rapid pace than advanced economies. Additionally, most of these locations have established stable institutional environments over the past decades, enabling long-term development efforts by the Hungarian institutional system of external economy. Entry into new markets could be facilitated by such gate openers as premium foodstuffs or agricultural machinery, which might also place the domestic agricultural and food industries in a favourable position. The key targets for SMEs' exports of goods are regions near Hungary, primarily Southeastern Europe.

**(4) Support foreign traders in Hungary, introduce a new trading house concept:** Hungarian trading houses typically link foreign buyers with Hungarian suppliers, while most of the gains from trading (distribution) remains with the foreign partners and carriers that organise the export

process. The value added could be increased by a direct link between domestic exporters and wholesalers in the target market. That calls for the current trading house concept to be remodelled so that the Hungarian Export Promotion Agency (HEPA) also supports, and is even engaged in, export and distribution activities.

**(5) Enable market-ready companies to operate temporarily in international co-working offices:** For Hungarian companies, physical presence in foreign markets tends to be a costly alternative. This applies particularly to smaller companies. The Hungarian institutional system of external economy (comprising embassies and trading houses) manages a number of properties whose utilisation could be increased through the temporary accommodation of representatives of Hungarian companies. Hungarian companies could also be housed in co-working offices, which are becoming increasingly popular worldwide. Personal presence (even for a week or two) facilitates joint efforts e.g. with the network of foreign trade attachés, creating the potential for the inception of a larger number of successful projects through public assistance.

**(6) Separate country, sector and product promotion and corporate brand building:** The new foreign trade strategy requires that the means and roles of export promotion should be reconsidered. In a possible new structure, the following responsibilities and roles could be distinguished: 1. country promotion; 2. sector promotion; 3. product promotion; 4. company sales.

## 4.2. UTILISE THE KNOWLEDGE RECEIVED WITH FDI

- (7) Channel public development funds to manufacturing sectors that are knowledge-intensive or well embedded domestically
- (8) Provide incentives for strongly subsidised enterprises to use Hungarian suppliers
- (9) Give priority to supporting productive investments on the services side when programming for the next EU programming period

### Assessment of the situation

**The operation of foreign direct investments (FDI) in Hungary can only be considered successful if the presence of foreign companies benefits a range of segments.** Structural data indicate that Hungary has not been successful in this regard, given the strong dependence of the value added on imports of foreign intermediate products.

Import-intensive production in dominant sectors will create an economy with a low internal capacity to generate added value. The high use of imports may have a number of unfavourable consequences:

1. high probability of production stoppages in the event of disruptions to international supplier channels or in cases of production changeovers;
2. secondary benefits from production capacity increases will be derived by foreign suppliers rather than domestic operators;
3. production consumes no or only very limited amounts of location-specific resources (land, minerals, location-specific expertise), creating a high relocation potential for such activities.

A substantial majority of the specific benefits available to date have helped manufacturing companies with import-intensive operations: In 2017, 92 per cent of the tax benefits on development were utilised by manufacturing companies, while investment funds granted under specific government decisions were, with few exceptions, also channelled to manufacturing. It would be advisable to place more emphasis on services, which generally have better multiplier properties.

**Services are more labour-intensive compared to manufacturing, which is why in this sector the focus would reasonably be different from capacity development subsidies and tax benefits on investments.** Over the past two years, the wage ratio, which measures the ratio of the cost of labour to value added, has been 9–10 percentage

points higher for services compared to manufacturing. As a result, a targeted reduction of the tax burdens on labour could also substantially improve the relative profitability of services. According data from the European Commission, in 2018 the effective tax burden on non-financial corporations was 11.1 per cent in Hungary (the second lowest in the EU), whereas the burden on labour income amounted to 46.2 per cent, the highest rate in the Union.

### Recommendations

**(7) Channel public development funds to manufacturing sectors that are knowledge-intensive or well embedded domestically:** Over the past almost three decades manufacturing was a priority target for foreign direct investment. The inflow of manufacturing FDI was encouraged by major government incentives, and in many cases involved greenfield investments. To this day, there exist a number of manufacturing sectors that have Hungarian traditions accompanied by good multiplier properties and yet have not benefited from state subsidies. These include the manufacturing of non-metallic mineral products, special-purpose mechanical engineering, and the textile industry. It would be advisable for investment aid granted to large corporates, and for EU funds to focus on these multiplier sectors within manufacturing. In the case of sectors with traditionally strong FDI presence (such as the automotive industry and electronics), efforts should be made to ensure that the highest possible proportion of the activities relocated to Hungary are related to high value added segments (R+D, design, prototyping, etc.).

**(8) Provide incentives for strongly subsidised enterprises to use Hungarian suppliers** is essential in order to improve the internal capacity of the economy to generate added value. For instance, a mere 7 per cent of the suppliers to Audi are Hungarian-owned (HIPA, 2016). Hungarian suppliers tend to occupy medium and low positions along the supply chain and in many cases supply only relatively simple parts; moreover, these companies often supply to one or two companies, which exposes their operations to risk. Consequently, suppliers should be supported in securing higher positions along their value chains, broadening their product ranges and exploring new buyer needs.

**(9) Give priority to supporting productive investments on the services side when programming for the next EU programming period:** Given the favourable multiplier properties of services, it is reasonable to leverage the possible links between manufacturing and services. The opportunities for that are provided on a historic scale. Global trends indicate that the ongoing automation revolution will generate previously unseen levels of demand for value-added industrial services such as sensors, artificial

intelligence, cognitive systems, custom design, big data, etc. By contrast, in the current grant system, when applying for capacity building assistance, it is in fact SMEs from some high value-added service sectors that are at a disadvantage compared to manufacturing companies.<sup>15</sup> Going forward, the priorities of EU assistance should be set by giving particular prominence to supporting manufacturing on the professional services side.

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<sup>15</sup> The following sectors of high value-added services are not included in the Irinyi plan (Strategy for industrialisation in Hungary), which means that no extra points are awarded to applicant SMEs operating in these sectors: information technology services; information services; architectural and engineering services; technical testing and analysis; scientific research and development; design. (Source: GINOP-1.2.2-16 – Call for competition – Support for capacity building investments in micro, small and medium-sized enterprises)

## 5. Labour market

**Main objective: A single-digit personal income tax rate and annual net real wage growth of 5 per cent**

Several favourable developments have been observed in the domestic labour market in recent years, but there are also additional reserves and opportunities for improvement in a number of areas. Since 2010, as a result of economic policy measures to stimulate higher employment and growth, Hungary has seen a substantial increase in employment, which rose at the highest rate in the EU, accompanied by a historically low rate of unemployment (3.7 per cent). The primary instrument in driving employment was the reduction of taxes on labour, accompanied by a range of government measures, such as the introduction of the Job Protection Action Plan, the extension of public employment, and the rationalisation of welfare transfers, to support the recovery of the labour market from the crisis. While the measures contributed to the convergence of Hungary's quantitative labour market indicators to the regional and EU averages in many respects, the Hungarian activity rate still falls short of the EU average. In recent years, the Hungarian labour market has become very tight, with a number of regions and industries facing constraints from labour shortages. Since the turnaround in growth, Hungary has also seen strong growth in average wages, which – in addition to underlying wage developments – has also been driven by significant increases in the minimum wage and the guaranteed wage minimum between 2010 and 2019 (by 103 per cent and 108 per cent, respectively). However, despite the significant wage growth, the average level of Hungarian wages remains considerably lower than in the EU, and over the longer term that gap may be reduced through continued wage convergence accompanied by improvements in productivity. In terms of further training, the situation of Hungarian employees corresponds to the regional average, but falls short of the levels seen in Western European countries, and particularly in Scandinavia. Participation in lifelong learning contributes to higher labour productivity, while also enabling companies to innovate and export. Knowledge related to entrepreneurship needs to be enhanced to ensure that intentions to start businesses actually produce companies that succeed.

**As regards the Hungarian labour market, it is particularly important that reserves be mobilised and exploited more efficiently, that wages be increased sustainably, accompanied by personal income tax cuts, and that the system of adult education and further training be reinforced.** The Fundamental Law of Hungary specifically states that the country's economy is based on value added labour and the freedom of enterprise, with a view to ensuring which Hungary seeks to provide the conditions for every capable and willing person to work. Additionally, Hungary has specific measures in place to protect the jobs of young people and parents (Fundamental Law of Hungary, 2011). In terms of the quantity of labour, substantial reserves can be identified among public employees, registered unemployed persons, inactive vulnerable groups (people around retirement age, young people, low-skilled people, women of childbearing age) and Hungarians living abroad. The activity of disadvantaged groups may primarily be increased through the instruments of the tax regime, with the extension of the Job Protection Action Plan possibly playing an important role in this regard. Additionally, the employment of groups that have looser ties to the labour market might also be supported by promoting atypical forms of employment. Incentives for Hungarians living abroad to return home can be provided through wage increases in high-demand professions and foreign recruitment. Sustainable wage growth requires additional reductions in taxes on labour, in particular a cut in the personal income tax to 9 per cent. In order to ensure the continual development of labour, efforts should be made to improve the institutions of adult education and training. Additionally, tax benefits, grant programmes and regulatory instruments should also be used to strengthen the system of professional further training and to provide incentives for companies to invest the greatest possible amount of resources in the continual improvement of their employees.



## 5.1. ACTIVATE LABOUR MARKET RESERVES FOR THE PRIVATE SECTOR

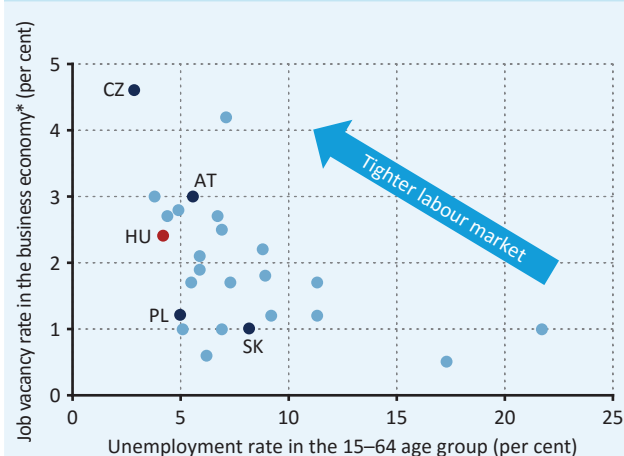
- (1) Public employee wages to be paid by the state after private sector employment for a certain period when the employer will continue employing them for at least the same length of time
- (2) Increase the difference between the wages paid for public work and the minimum wage
- (3) Raise the permitted upper limit on the amount of earnings for persons employed below the retirement age or while receiving pension
- (4) Provide additional incentives for atypical forms of employment to encourage capacity building and organisational development

### Assessment of the situation

Despite the favourable labour market developments seen in recent years, substantial labour market reserves remain. One of the areas with substantial reserves is public employment, where a large number of people still work despite the sharp fall seen in last year. The number of people in public employment was approximately 220,000 in 2016 and is currently around 120,000–130,000. Employment figures indicate that many of those exiting public employment have found employment in the private sector, which is partly attributable to targeted public programmes (training programmes, employment allowances, access to assigned mentors, labour market services). Another group with significant labour market reserves is the group of people around retirement age, whose activity falls short of the European Union average. In Hungary, the activity rate of people aged 55–74 is around 30 per cent, and lower in more advanced age brackets.

**Participation of public employees and people around retirement age in the primary labour market could ease the tightness of the labour market.** In recent years, the domestic labour market has become significantly tighter. Corporate surveys have identified labour as a bottleneck in several sectors, and an increasing barrier to production in some sectors. The unemployment rate is currently at a historically low level, accompanied by an increase in vacant jobs in recent years. As a result, the Hungarian labour market is relatively tight compared to other markets across the European Union (Figure 5.1). In the MNB's reform path, the inflow of public employees and people around retirement age is expected to contribute to an increase in private sector employment by 250,000 employees by 2030.

**Figure 5.1**  
Labour market tightness in the European Union (2017)



Note: \* Job vacancy rate in the business sector shows the vacant jobs as a percentage of total jobs in sectors B–N.

Source: Eurostat.

### Recommendations

**(1) Public employee wages to be paid by the state after private sector employment for a certain period when the employer will continue employing them for at least the same length of time:** Incentives for the employment of public employees in the private sector should also be provided on the employer side. Wage cost assistance is currently granted to employers who engage some of their employees as assigned mentors to help the integration of former public employees. Apart from that, additional types of assistance could also encourage employers to hire public employees. A possible instrument could be for the state to undertake to pay the wages of a former public employee



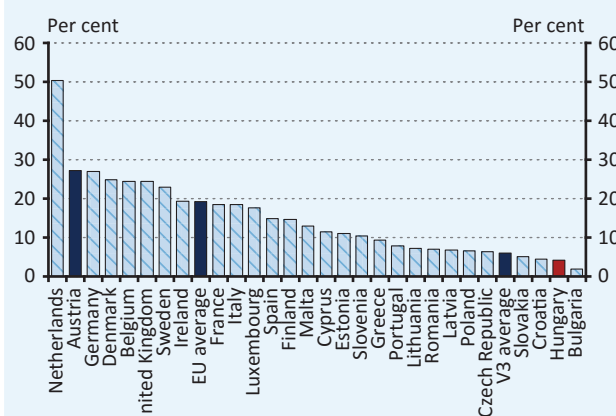
for a specific period, subject to a commitment by the employer to retain the employee for an additional period of at least the same length. Compared to continued public employment, the measure would not generate additional expenditures for the budget, while it would compensate employers for the costs incurred during the integration of former public employees.

**(2) Increasing the difference between the wages paid for public work and the minimum wage** would further increase the gap between earnings in the primary and secondary labour markets, encouraging public employees to transfer to market-based employment.

**(3) Raise the permitted upper limit on earnings for persons employed below the retirement age or while receiving pension:** Where a recipient of a pension payable to women on 40 years of service, an early retirement benefit, or a service allowance, is employed for work below the retirement age, the suspension of pension payments is required by law if the recipient's earned income exceeds 18 times the minimum wage in effect (currently HUF 2,682,000 per year). Raising the permitted upper limit would contribute to both the higher labour market activity of pre-retirees and reducing the shadow economy.

**(4) Additional incentives for atypical forms of employment to encourage capacity building and organisational development** essentially involve the promotion of home office and part-time employment. In Hungary, these forms of employment have traditionally been less current in a European comparison. In the domestic labour market, just over 4 per cent of employees are part-timers, compared to ratios of over 19 per cent across the EU, and 27 per cent in Austria (Figure 5.2). In Hungary, the low share of part-time employment is particularly apparent in the case of women aged 25–49, where a Hungarian ratio of 5 per cent is contrasted by Austria's nearly 50 per cent.

**Figure 5.2**  
**Share of part-time employment within total employment in the European Union (2018 Q2)**



Source: Eurostat.

In recent years, the government has sought to encourage the wider use of flexible employment through the announcement of an EU grant programme (GINOP-5.3.2-16), under which a budget of more than HUF 6 billion was made available for supporting capacity building and organisational development activities, and minor infrastructure investments. Atypical employment has a number of benefits: it gives employers flexibility and places a lighter burden on employees, which will result in fewer work hours lost and less paid sick leave, while facilitating the employment of mothers with young children and of young people and students. Consequently, it still appears reasonable to introduce a measure by means of similar grant programmes to encourage atypical forms of employment; however adequate monitoring of the measure will also be needed to prevent freeriding and moral hazards.

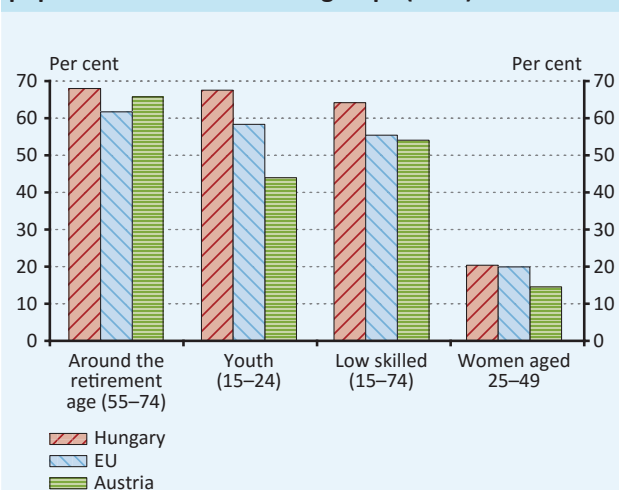
## 5.2. ACTIVATE LABOUR MARKET RESERVES VIA TAX REGIME INSTRUMENTS

- (5) Expand the category of elementary occupations of the Job Protection Action Plan
- (6) Extend the Job Protection Action Plan to employees' contributions
- (7) Extend the Job Protection Action Plan up to the minimum wage
- (8) Extend the Job Protection Action Plan in the form of sector-specific allowances based on criteria for reducing the shadow economy
- (9) Provide an incentive for the employment of pre-retirees by granting a tax exemption on employers' voluntary pension fund contributions
- (10) Introduce a counter-cyclical labour market contribution
- (11) Promote targeted working time reduction combined with full or partial social contribution tax compensation and/or public wage compensation in vulnerable groups

### Assessment of the situation

Following a sharp increase, Hungary's employment and activity rates have caught up with the regional level, but continue to fall short of the ratios in the EU and Austria. Inactivity is most typical among pre-retirees and the retired, young people under 25 years of age, the low-skilled, and women of childbearing age (Figure 5.3). Although Hungary's unemployment rate of less than 4 per cent indicates almost full employment, it fails to capture the ratio of the inactive who do not seek employment. Hungarian employment appears to have additional labour reserves that could be mobilised through the labour market participation of the inactive working-age population.

**Figure 5.3**  
Share of inactive people within the working-age population in certain social groups (2017)



Source: Eurostat.

**Future employment growth could be supported via new measures or by the transformation of existing ones.**

The Job Protection Action Plan, launched in 2013, seeks to support the employment of vulnerable labour market groups. The measure was targeted at the groups hardest hit by the crisis and also the social segments that tend to be the most responsive to incentives provided via the tax system (Svraka et al., 2013). Essentially, as part of the measure, tax benefits are granted to employers that employ workers from the selected target groups. Target groups were specified according to several dimensions (educational attainment, demographics, economic branch), with benefit rates varying accordingly. The success of the measure is indicated by the fact that in 2018 employers made use of benefits in respect of an average of 900,000 employees per month, and that employment in the groups concerned has increased by some 40-50 per cent since the programme was launched (the number of employees outside of the target groups increased by more than 10 per cent during the same period). Given the current tightness of the labour market, however, in contrast to previous years the primary function of the incentives today is not to ensure that jobs are protected, but rather to facilitate additional activity and employment of groups that may have been completely inactive in the past.

**Within the changes taking effect from 2019, employees in the two largest target groups of the Job Protection Action Plan (aged under 25 and over 55) are being replaced by a new category that targets new entrants to the labour market.** The removal of the two large target groups may reduce the number of beneficiaries of the Job Protection Action Plan by almost one half, which poses a risk to the development of employment. At the same time, the transformation provides an opportunity for the application of preferential terms in the employment of formerly inactive people who did not even seek jobs. The new target group is subject to a higher per capita benefit amount, and, in accordance with the MNB's previous proposal, the upper

limit of the benefit on the social contribution tax is being increased from the previous HUF 100,000 to the amount of the yearly relevant minimum wage.

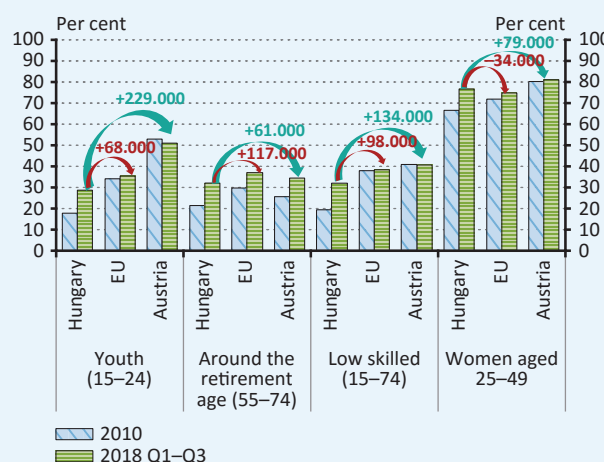
In part, our proposals concern the transformation of benefits under the Job Protection Action Plan, and in part they seek to promote the introduction of additional incentives affecting the system of taxes and contributions levied on labour.

## Recommendations

**(5) Expand the category of elementary occupations of the Job Protection Action Plan:** We consider it both necessary and viable to widen the scope of the employer benefits available under the Job Protection Action Plan. Activity in the group that targets employees with elementary occupations continues to fall short of the EU average and the Austrian level by a significant 10 percentage points approximately. Supporting this group is also important because in the Hungarian labour market, significant labour supply responses to tax changes can primarily be demonstrated for employees who are low-skilled, low-income or face other social disadvantages. This measure could be implemented through the extension of the benefits to other groups within the International Standard Classification of Occupations (ISCO) – in addition to the currently eligible ISCO Major Group 9.

**(6) Extend the Job Protection Action Plan to employees' contributions:** Providing work incentives for the least employed groups could significantly increase the level of employment, given Hungary's labour reserves that are estimated at several hundred thousand people based on the employment rates of the EU and Austria. If young people in Hungary aged 15–24 were to be employed at a rate corresponding to the Austrian level, that in itself could increase employment by more than 200,000 people (Figure 5.4). Data suggest that significant reserves amounting to a total of 140,000 people may also exist in pre-retiree age brackets and among women of childbearing age. Additional reserves for Hungary's primary labour market may be provided through incentives for Hungarians living abroad to return home, and the gradual redirection of public employees to the private sector. It may be reasonable to introduce labour supply incentives for these groups, such as extending the Job Protection Action Plan to employees' contributions. As opposed to employer benefits, the extension to employees' contributions would result in an immediate increase in net wages, which in turn would, even in the short term, encourage the groups concerned to take employment.

**Figure 5.4**  
Development of the employment rate in certain social groups



Note: The red and green numbers indicate the additional employment needed to reach the rates of the EU and Austria, respectively, in 2018 Q1–Q3.

Source: Eurostat.

**(7) Extend the Job Protection Action Plan up to the minimum wage:** From a fiscal perspective, targeted benefits are a more effective means of increasing employment than general tax cuts. In order to ensure that the targeted benefits on employer's contributions available as part of the Job Protection Action Plan remain effective, it may be advisable to increase the upper limits up to the minimum wage. This measure would thus provide additional support to more vulnerable groups in the labour market, making a more pronounced contribution to employment growth. Based on the measures announced in recent months, the proposal to raise the ceiling on available benefits from HUF 100,000 to the current amount of the minimum wage is being implemented in 2019.

**(8) Extend the Job Protection Action Plan in the form of sector-specific allowances based on criteria for reducing the shadow economy:** Extension of the Job Protection Action Plan may also involve additional considerations such as the objective of reducing the shadow economy. Each year, in the Hungarian labour market, construction is found to be the sector most affected by undeclared work. While overall an estimated 11 per cent of employees are undeclared in Hungary, the same ratio has been around 30 per cent in recent years (Ministry of Finance, 2018). The targeted introduction and extension of sector-specific benefits could make legal employment more attractive from the perspectives of both employers and employees. Employment growth could also reduce labour shortage in the sector.

**(9) Provide an incentive for the employment of pre-retirees by granting a tax exemption on employers' voluntary pension fund contributions:** In 2019, two opposing developments have an effect on the employment of pre-retirees. First, the group over 55 years of age is being removed from the target group of the Job Protection Action Plan, and second, the employment of retirees is to become almost completely exempt from taxes and contributions. In the population over 55 years of age, activity in Hungary is around the EU average, which has largely been attributable to previous benefits under the Job Protection Action Plan that are currently being phased out. We recommend that – following the phase-out of Job Protection Action Plan benefits for people over 55 years of age – another tax incentive be introduced, with an even more limited fiscal impact, for pre-retirees. Such a measure could consist of granting a tax exemption on employers' contributions to voluntary pension funds in respect of people over 55 years of age, which would also support self-reliance. The lower threshold of 55 years for the target group could be increased moderately with gradual increases in the retirement age.

**(10) The introduction of a counter-cyclical labour market contribution** would involve the alignment of the current 1.5 per cent contribution rate to cyclical movements in the labour market. The rate could be higher when employment is favourable, and could be reduced in the event of a real economy downturn or when unemployment rises. The fiscal revenue from the contribution currently has a pro-cyclical effect, given the negative correlation between developments in the unemployment rate and fiscal revenues, i.e. contribution revenues increase when unemployment falls (Figure 5.5). A cyclically aligned contribution rate would offset that phenomenon, which in turn would support counter-cyclical fiscal policy.

**Figure 5.5**  
Revenues from labour market contributions as a percentage of GDP, and the unemployment rate



Source: HCSO, MNB forecast.

**(11) In vulnerable groups, incentives for targeted working time reduction** could be also provided through a benefit on the social contribution tax or wage compensation from the government. The proposed measure is in line with our recommendation for the promotion of atypical forms of employment, while it appears advisable to provide specific additional incentives to support groups of particular concern that are vulnerable from a labour market standpoint. Support for the target groups could have a favourable effect on the labour supply of those groups, while reduced working time could provide employees the common benefits of atypical forms of employment. Since the flexibility of labour supply in lower-income and socially disadvantaged groups is higher than the average, the various financial incentives are expected to drive considerable employment growth in these target groups.

## 5.3. SUSTAINABLE INCREASE IN WAGES

- (12) Continue the reduction of taxes on labour, introduce a single-digit personal income tax rate  
(13) Attract digital nomads

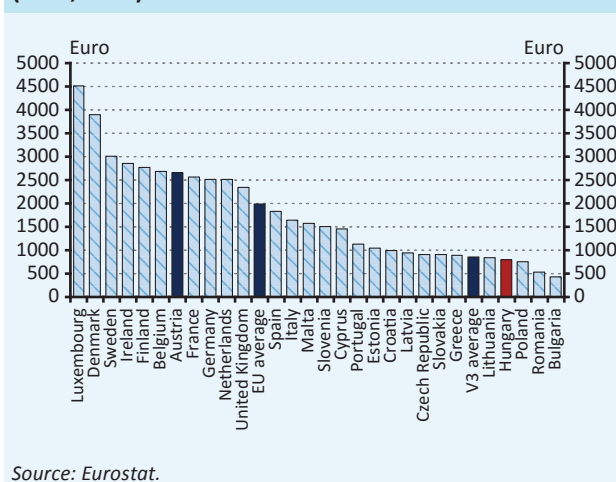
### Assessment of the situation

Since the turnaround in growth, Hungarian average wages have grown significantly, but remain well below the EU average. In terms of growth in average gross real wages between 2015–2017, Hungary is ranked in the top three in the European Union. To a substantial degree, in a tight labour market environment the growth in average wages over the past period has been driven by powerful underlying wage developments, and by significant increases in the minimum wage and the guaranteed wage minimum in 2017–2018. Additionally, overall wage growth has also been supported by the implementation of career path models and other sector-specific wage increases such as those in education, healthcare and law enforcement. Via an increase in households' disposable incomes, wage growth has also been a driver of aggregate demand. However, even despite the major wage growth seen in recent years, average wages in Hungary – as in the other countries of the region – continue to fall significantly short of the EU average. Compared to Hungary, the average gross wage is more than twice as high in the EU, and more than three times as high in Austria (Figure 5.6).

Contrary to schools of economic thought resting on neoclassical foundations that focus on cost competitiveness, wage growth is no longer considered as a factor that can only worsen competitiveness. The concept of the high-pressure economy appeared in economic sciences at the beginning of the 1970s, according to which, if economic policy keeps the economy under higher-than-average demand pressure, permanently higher GDP can be achieved. In an economy steadily and predictably under demand pressure, companies expect their markets to expand and thus increase their demand for factors of production, machinery and equipment and workers. Consumer demand for goods can also rise steadily, since employment and income are more predictable. In order for stable wage growth to be a driver of productivity, the economy must be wage-led. Naastepad and Strom (2006), and Onaran and Obst (2016) consistently found that the economies of most OECD countries and of the vast majority of the EU15 were wage-led. In wage-led economies, due to the increase in aggregate demand, wage growth acts as a driver of productivity through consumption, learning, better capacity utilisation and investments. In high-pressure economies, labour market reserves become restricted and

the labour market becomes tight, without a reduction in productivity (MNB 2016, 2017). According to our survey based on company-level and employee-level data, the competition for employees contributed to the increase in wages, hours worked and investment in Hungary (MNB, 2018). An analysis of wage growth should also consider the fact that given the current levels of tightness and mobility in the labour market, wage growth is of particular relevance to the retention and attraction of labour.

**Figure 5.6**  
Monthly gross average wages in the European Union (2017, euro)



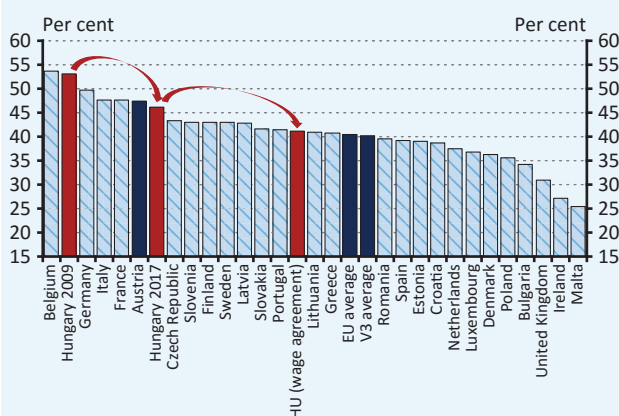
Source: Eurostat.

Since 2010, dynamic wage growth has been accompanied by a significant decrease in the taxes on labour. As the focus shifted from labour taxes to consumption taxes, in 2011 a flat rate was introduced for the personal income tax at 16 per cent, which was cut to 15 per cent in 2016. On the company side, apart from the corporate tax being lowered to 9 per cent, the impact of the strong wage dynamics on labour costs was also mitigated by a reduction in the social contribution tax. The rate of the social contribution tax dropped from 27 per cent to 22 per cent in 2017, and then to 19.5 per cent in 2018. As a result of these measures, both average and marginal tax wedges have fallen substantially in recent years, contributing to growth in labour supply and demand (Figure 5.7). In an EU comparison, the average tax wedge nevertheless remains high, and a reduction of this could provide further incentives for employment and drive economic growth. This could be supported by the possibility for the social contribution tax to drop further to 11.5 per cent in successive 2-percentage point steps from 2019



onwards in accordance with the 2016 wage agreement; however, given the current situation on the labour market, more benefits could be derived from a cut in the personal income tax rate.

**Figure 5.7**  
Average tax wedge of an employee without children and earning average wages in 2017 in EU Member States and in Hungary, assuming a further 8-ppt decrease in the social contribution tax, as specified in the wage agreement



Source: European Commission, MNB calculation.

In the reform path described in the MNB Growth Report, net real wage growth of an average annual 5 to 6 per cent is foreseen, as a result of which net real wages are expected to nearly double by 2030. Complementing a range of other measures on competitiveness, wage growth could also be supported by the following proposals.

## Recommendations

**(12) Continue the reduction of taxes on labour, introduce a single-digit personal income tax rate:** Notwithstanding the

measures implemented in recent years, taxes on labour also need to be reduced further, which would have a positive impact on both the labour market and competitiveness. As the focus shifts from labour taxes to consumption taxes, production for exports will become cheaper overall, while imports will become more expensive due to higher sales tax rates, the combination of which will eventually improve Hungary's competitiveness in its export markets. Given the current situation on the labour market, which is characterised by high demand, compared to a reduced social contribution tax, a cut in the personal income tax rate could provide more benefits. A reduction of the personal income tax rate would provide incentives on the supply side of the labour market by increasing the probability of employment and additional labour, while lowering the social contribution tax would support the labour market on the demand side. A further advantage of a cut in the personal income tax rate is that it would also reduce the tax on interest from savings. In that way, it would provide incentives for savings to be increased and used actively in the government securities market and the stock exchange.

**(13) Attract digital nomads:** Employment growth could also be driven by attracting digital nomads (flexible, non-resident employees who are not restricted geographically and primarily use advanced technology solutions for work). Attracting digital nomads could also facilitate the adoption of new forms of work and thus the wider use of flexible and atypical forms of employment, which is a driver of competitiveness. Additionally, the employment of digital nomads could also help companies to reduce their expenditures on physical infrastructure. In an international comparison, Budapest is favourably ranked among suitable locations for this type of employment;<sup>16</sup> however, surveys also indicate room for further improvement in specific areas such as standards in healthcare, urban wifi, and command of English.

<sup>16</sup> Sources: <https://nomadlist.com/>, <https://www.christhefreelancer.com/digital-nomad-destinations/>

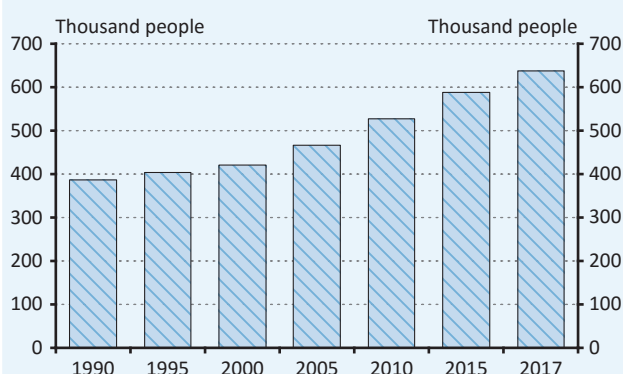
## 5.4. INCENTIVES FOR HUNGARIANS LIVING ABROAD TO RETURN HOME

- (14) Increase wages paid in high-demand jobs in the public sector
- (15) Increase awareness of family support elements, run campaigns to raise awareness of the educational and healthcare system supported by the state
- (16) Support Hungarian companies' recruitment abroad through the deduction of expenditures and tax benefits
- (17) Simplify the recognition of degrees obtained abroad

### Assessment of the situation

**Hungarian nationals living abroad provide the domestic economy with significant labour reserves.** The number of Hungarians habitually residing abroad is estimated between 260,000–350,000 by some sources (HCSO, 2018 and HCSO, 2015), while other estimates run at approximately 600,000 (UN figures<sup>17</sup>) (Figure 5.8). Most Hungarians living abroad reside in the European Union, with the primary destination countries being Germany, the United Kingdom, Austria and the Netherlands, while the primary destination country outside Europe is the United States (HCSO, 2014).

**Figure 5.8**  
Number of Hungarians living abroad, but born in Hungary

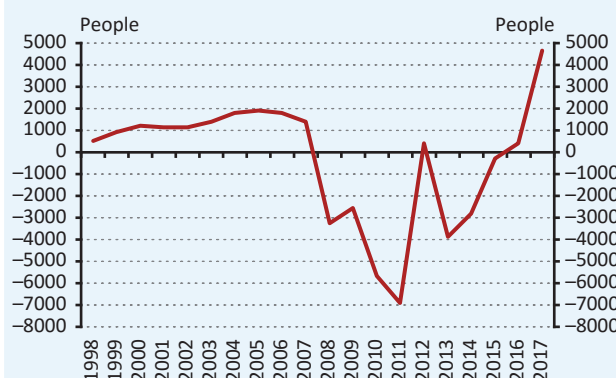


Source: UN.

However, in terms of the proportion of the population living abroad, the Hungarian indicator (6.5 per cent in 2017) is the lowest in the region, and also significantly below the EU average. Over the past two decades, every country in the region has seen an increase in the proportion of its population living abroad. However, while in most new Member States of the EU a considerable wave of emigration already started following accession, in case of Hungary it only became relatively significant in the aftermath of the crisis (Benk – Gábor, 2017). Among the Visegrád Countries, Poland has the highest proportion of population living abroad (12.4 per

cent), while the CEE region is topped by Romania at 18.2 per cent, which is also outstanding in an EU comparison. In recent years, Hungary has experienced a positive turnaround in terms of its net migration balance, attributable in part to the inflow of Hungarian nationals born abroad, and in part to the number of recent returnees (Figure 5.9).

**Figure 5.9**  
Hungary's net migration balance from the flow of Hungarian nationals



Source: Eurostat, HCSO.

The vast majority of Hungarians living abroad belong to the younger age groups and also have above-average levels of educational attainment and willingness to work. Most Hungarians living abroad are under 40 years of age, while the proportion of graduates is nearly twice the ratio within the domestic population according to the HCSO. Attracted primarily by Germany and Austria, skilled workers have also taken jobs abroad in significant numbers (HCSO, 2014). Work as the primary motivation for emigration is also confirmed by emigrants' high willingness to work and activity rate. In countries acceding the European Union in 2004, developments in emigration have also been influenced by wage differences, the situation of the domestic labour market and economic prospects (Hárs, 2015). Overall, due to their age distribution, and higher levels of educational attainment and willingness to work, Hungarians living abroad represent substantial growth

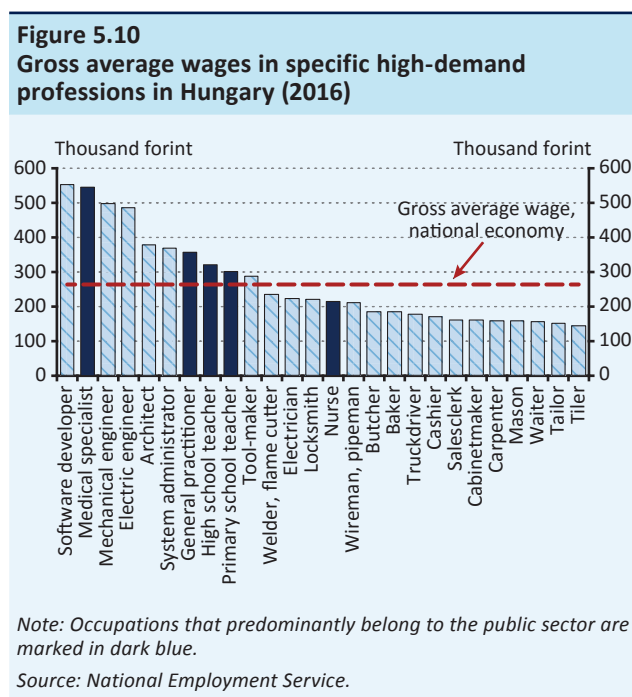
<sup>17</sup> Sources of data: <http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates17.shtml> and <https://jakubmarian.com/emigration-in-europe-destination-countries-and-percentages-of-emigrants/>



potential for the Hungarian economy. The MNB's reform path foresees the employment of 100,000 Hungarian nationals returning from abroad.

## Recommendations

**(14) Increase wages paid in high-demand jobs in the public sector:** In the case of several high-demand professions in the public and other sectors, wage increases could contribute to stronger appeal and retention. The past period has seen an increasingly significant shortage of skilled professionals in construction, services and healthcare, and looking ahead an increasingly significant shortage of teachers also appears likely. Despite the wage increases in recent years, wages need to be increased further in the high-demand professions concerned, which could both facilitate the return of Hungarian nationals, and potentially increase the appeal of these professions to young people (Figure 5.10). Seeking to provide incentives to return home for nationals working abroad in science, Poland has a programme in place that offers returnees Western European levels of remuneration.



**(15) Increase awareness of family support elements, run campaigns to raise awareness of the educational and healthcare system supported by the state:** A possible means of providing incentives for Hungarians living abroad to return home is to raise awareness of Hungary's family support benefits, which are generous by international

standards. In Hungary, for the first three years following the birth of a child, the state provides some form of cash benefit as an income replacement (family tax and contribution allowance, infant care allowance, childcare allowance, childcare aid, family allowance), which is an outstanding practice by international standards, while a range of other benefits are also available, including the Family Housing Benefit Scheme (CSOK) and the first-marriage allowance. Another effective incentive for emigrants to return home could be provided by raising awareness of the educational and healthcare system supported by the state, which could also be promoted in campaigns run domestically and abroad.

**(16) Support Hungarian companies' recruitment abroad through the deduction of expenditures and tax benefits:** Incentives for Hungarians living abroad to return home could also be supported by domestically-owned companies' recruitment abroad. Incentives for domestic companies to call home Hungarians living abroad could be provided through a variety of benefits including the deductibility of recruitment expenses, a tax benefit on repatriated employees and assistance for foreign advertising. In the case of employees returning home after foreign employment in professions different than their qualifications, a higher rate of tax benefit, e.g. for a duration of one year, could help young graduates who quit their professions to find employment in Hungary according to their qualifications. An initiative similar to recruitment has also been launched in Romania, as part of which the government organised job fairs in the main destination countries (Italy and Spain) to convince nationals working abroad to return home and ran an awareness-raising campaign on the options to set up business in their home country.

**(17) Simplify the recognition of degrees obtained abroad:** Simplifying the recognition of degrees obtained abroad and even offering such recognition free of charge could support the return of young graduates who earned their qualifications abroad, and help them find employment in the Hungarian labour market. In the case of continued education, recognition is within the powers of the chosen educational institution, whereas for the practice of a profession, the recognition of educational attainment and professional qualifications is a responsibility of the Education Authority. Currently, the recognition of professional qualifications can take up to four months and cost up to HUF 60,000. Accordingly, in specific professions chamber membership or other examinations may also be required.<sup>18</sup>

<sup>18</sup> Source: Education Authority: [https://www.oktatas.hu/kepesitesek\\_elismertetese/kulfoldon\\_szerzett\\_oklevelek/felsofoku\\_oklevel](https://www.oktatas.hu/kepesitesek_elismertetese/kulfoldon_szerzett_oklevelek/felsofoku_oklevel)

## 5.5. STRENGTHEN THE SYSTEM OF ADULT TRAINING

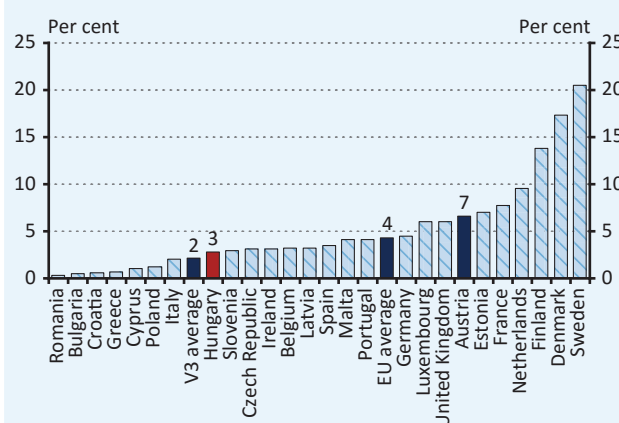
- (18) Introduce output criteria and independent examination centres in the system of adult education and training
- (19) Ensure that first qualifications may be obtained free of charge in adult training
- (20) Develop digital and language skills in senior generations

### Assessment of the situation

In the development and further training of human capital already present in the labour market, adult education and adult training plays a particularly important role. A distinction is made between the two. Adult education is essentially a formal arrangement (involving legal status as a learner), and is covered by subsidies.<sup>19</sup> By contrast, adult training comprises training programmes outside school arrangements, which do not involve legal status as a learner or a student, and charge attendants fees (EduLine, 2015). In both arrangements, training programmes can be offered for professions included in the National Register of Vocational Qualifications. In practice, however, subsidised adult education does not cover the full range of qualifications, and even what is available is unevenly distributed geographically.

By international standards, participation in training is low among low-skilled people in Hungary (Figure 5.11). In that social group, a mere 3 per cent of the surveyed population had participated in any kind of training within the preceding four weeks, which – although it exceeds the regional average – is less than half the Austrian level and falls considerably short of the levels seen in Scandinavian countries (particularly Sweden and Denmark), which have the most advanced adult training systems. The HCSO regularly publishes data on formal training programmes. In the 2017/2018 academic year, a total of approximately 96,000 learners attended adult education programmes, including 2,405 learners in primary schools, 27,602 in vocational schools, 34,348 in vocational grammar schools, and 31,537 in grammar schools (HCSO, 2018). We have no accurate attendance information on training programmes outside the formal school system. The HCSO most recently published survey data in 2014 (HCSO, 2014), but in that dataset no distinction was made between adult training programmes and other forms of training outside the school system (such as conferences and workplace induction training). That said, the results show that in Hungary low-skilled people receive significantly less training compared to people who already have higher levels of educational attainment.

**Figure 5.11**  
Low-skilled participation in training (2017 or latest available year)



Note: Number of participants in education or training within the past four weeks as a percentage of the population aged 25–64 with up to primary educational attainment; no data are available for Slovakia and Lithuania.

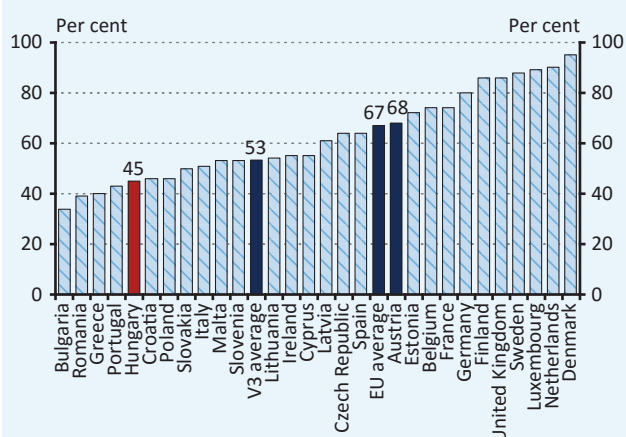
Source: Eurostat.

In addition to the training of labour market participants, the development of more senior age groups (pre-retirees and retirees) is also part of the adult training system. In many cases, they would require types of training similar to those provided to active labour market participants.<sup>20</sup> In their case, however, other methods of knowledge transfer (e.g. self-study groups, involvement of grandchildren) are more appropriate. According to a survey in Hungary, 55 per cent of respondents aged 55–74 had not used the internet within the preceding three months (Figure 5.12). The successful development of the digital skills of seniors could be a major contribution to making their daily lives easier. That would also remove some of the burden that is now placed on the next generation and the public care system. For the purposes of developing adult training systems, consideration should definitely be given to examples from Scandinavian countries (notably Sweden and Denmark), where significant progress has already been made in this regard.

<sup>19</sup> First qualifications can be obtained free of charge without any conditionality involved, and while second qualifications are also free, most schools only provide that option as part of evening or correspondence courses (EduLine, 2018).

<sup>20</sup> Due to technological development, senior people qualify as low-skilled in many areas through no fault of their own.

**Figure 5.12**  
**Proportion of internet users among people aged 55–74 (2018)**



*Note: The chart shows the proportion of people that have used the internet within the past three months.*

*Source: Eurostat.*

## Recommendations

**(18) Introduce output criteria and independent examination centres in the system of adult education and training:** In order to standardise the quality of adult training programmes, it is recommended that for each programme output criteria be specified instead of a curriculum. Such a model would enable training institutions to choose their preferred form of training (e.g. by giving prominence to training that combines the benefits of contact training and distance education), while examinations would be administered by examination centres operating independently of the training institutions. This arrangement would allow reductions in training times with regard to qualifications obtained previously, or skills acquired in practice. In that way, the system would operate on a principle similar to that of language schools and

language examinations. In the case of the adult education and training system, it would be reasonable to develop a career tracking scheme so that the largest possible body of data is available for the improvement of training programmes.

**(19) Ensure that first qualifications may be obtained free of charge in adult training:** In order to increase the number of participants in adult training, it is recommended for the state to cover some of the training expenses. Partial or full coverage of the expenses of the first training programme is advisable where no subsidised adult education programme is offered within a specific geographical range. Scholarship programmes may also be designed in order to ensure that the loss of income due to learning is not a barrier to participation (it would be reasonable to offer scholarships subject to part-time employment). Additionally, steps should also be taken to provide employees the easiest possible access to training locations (e.g. by supporting public transport or purchasing school buses).

**(20) Develop digital and language skills in senior generations:** It is recommended that going forward Hungarian society place greater emphasis on preparing more senior citizens for the modern age. This could be done by launching free, interactive training programmes with a practical focus for the development of basic computer and foreign language skills. In recent years, a range of programmes has been launched to provide such training to various groups of the population (e.g. entrepreneurs, job-seekers), which could be used as models in the design of similar programmes aimed at seniors. With a view to increasing seniors' digital presence, it is recommended that an internet access option should be designed that is available to retirees under more preferential terms compared to the standard digital welfare suite and that a media campaign should be run to raise awareness of the importance of knowledge sharing within families.

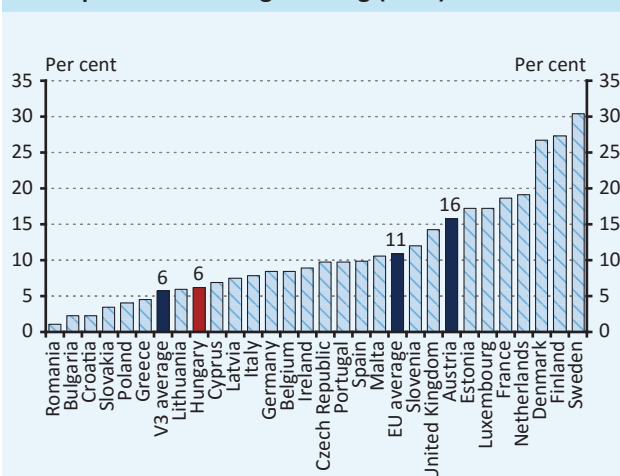
## 5.6. STRENGTHEN PROFESSIONAL FURTHER TRAINING

- (21) Provide incentives for lifelong learning by allowing education expenses to be deducted from the corporate income tax base
- (22) Introduce a mandatory further training minimum for companies
- (23) Reimbursement of the fees of successfully passed examinations for the most renowned international certifications
- (24) Support the retraining of labour released as part of reducing red-tape by covering costs and granting allowances on contributions

### Assessment of the situation

**Participation in lifelong learning is not a characteristic of the Hungarian population** (Figure 5.13). According to Eurostat survey data for 2017, 6 per cent of people aged 25–64 had participated in some form of training in the preceding four weeks. The same ratio was 16 per cent for Austria and over 30 per cent for Sweden. Continual training is becoming increasingly important in order to keep up with development. In Estonia, the structure and reform of the entire educational system is derived from the country's strategy on lifelong learning. Hungary has also developed its own strategy on the subject (Government of Hungary, 2014).

**Figure 5.13**  
Participation in lifelong learning (2017)



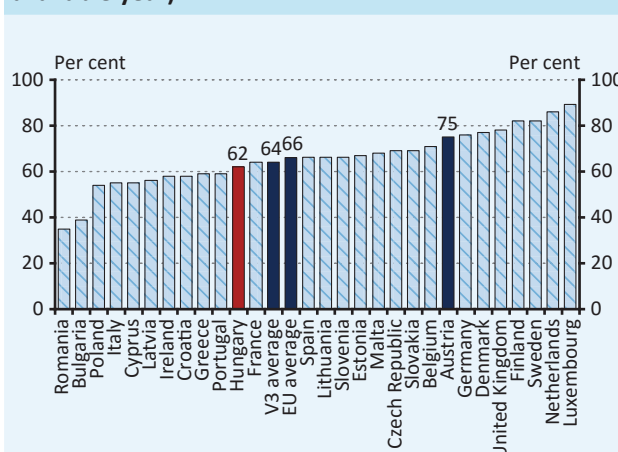
Note: Number of participants in education or training within the past four weeks as a percentage of the population aged 25–64.

Source: Eurostat.

In terms of digital skills, Hungarian employees rank in the middle of the European Union, but fall short of Austrian employees (Figure 5.14). 62 per cent of the Hungarian population aged 25–64 have at least basic digital skills, compared to the Austrian ratio of 75 per cent. The development of digital skills would also be important for a shift towards e-administration. One of the key drivers of

efficiency gains in the public sector could be the reduction of bureaucracy, which is discussed in more detail in the chapter on the efficiency of the state. At the same time, the retraining and further training of the labour released in the process will pose challenges for the adult training system. Meeting those challenges successfully requires deliberate preparations and the implementation of carefully designed and organised training programmes.

**Figure 5.14**  
Digital skills among employees (2017 or latest available year)



Note: Proportion of employees aged 25–64 with at least basic digital skills.

Source: Eurostat.

While studies show that adequately qualified labour with skills developed in line with international trends contributes to a country's competitiveness, Hungary currently falls short of the required level in terms of professional further training. There may be a number of reasons explaining why the population is prevented from access to training of adequate quality. In a survey, the HCSO found that in 30 per cent of cases participation was prevented by some personal circumstance, whereas in the rest of the cases the factors at play were not attributable to the persons concerned. The most prominent barrier was found to be high training expenses, followed by the

shortage of time due to work or family commitments (HCSO, 2014). Employer attitudes are also highly relevant to participation in training. As the primary reason for non-participation, domestic employers referred to the fact that their employees' current skills were already sufficient for the needs of their companies. Other prominent reasons include the preference for hiring employees who are already adequately qualified, the excessive burden that training expenses would impose on companies, and that employees are prevented by work commitments. Notwithstanding that, company attitudes may change as labour shortage and innovation intensify and production for exports gains in prominence. For that reason, it would be advisable to use a variety of channels to encourage employers to make efforts to support employee training.

## Recommendations

**(21) Provide incentives for lifelong learning by allowing education expenses to be deducted from the corporate income tax base:** Expenditures on education and further training are key drivers of productivity. Currently, most companies fail to provide (adequate) further training opportunities for their employees. In order to reduce training expenses for both employees and employers, it is recommended that arrangements be made for the partial deductibility of learning-related expenses from the corporate tax base. At the same time, eligibility for the benefit should be conditional on the successful completion of training. The benefit should cover the expenses of internal company training as well as financing attendance in adult training programmes and other further training. Incentives for lifelong learning are commonly provided within tax regimes across a number of European countries. In Austria, Finland and the Netherlands, learning expenses undertaken in connection with work and for the maintenance of professional skills are deductible from employees' taxable incomes. Additionally, a range of tax benefits are also available to employers.

**(22) Introduce a mandatory further training minimum for companies:** In order to improve employees' level of qualification and therefore their productivity, it is

recommended that an further training minimum should be introduced for companies, subject to the establishment of the appropriate system of public assistance. Systems of mandatory further training are already in place for a number of professionals (medical practitioners, accountants, government officials). It appears advisable to set up, possibly under the auspices of a university, a database of electronic course material developed for general fields such as foreign languages, IT security and finance basics. Companies could be given free access to pre-designed courses, but would also have the option to run proprietary programmes that are company or industry specific, or focus on technical language. It is recommended that funds be made available in the form of grants for the development and delivery of such courses, and for study trips related to international best practices. At the same time, it is also reasonable that a system be developed for quality assurance on company training programmes.

**(23) Reimbursement of the fees of successfully passed examinations for the most renowned international certifications:** Certifications representing world class quality and international standards, such as the CFA in investment analysis, FRM in risk management, and CISA and CISSP in IT security, have gained global prominence over the past decades. Incentives to obtain such qualifications would greatly contribute to raising the level of skills up to international standards for employees working in high value added jobs.

**(24) Support the retraining of labour released as part of reducing red-tape by covering costs and granting allowances on contributions:** Implementation of this proposal could provide for alternative career paths for labour employed in public administration and transferred from the public sector as a result of efficiency gains. The attainment of qualifications that can be utilised on the labour market may reduce unilateral employee dependence, while helping to reduce the labour shortage that specific professions are facing nationwide. Apart from the coverage of training expenses, the appeal of retraining programmes could be enhanced through guaranteed base pay for the training period, and allowances on contributions for retrained labour.



## 5.7. STRENGTHEN ENTREPRENEURIAL PROPENSITY

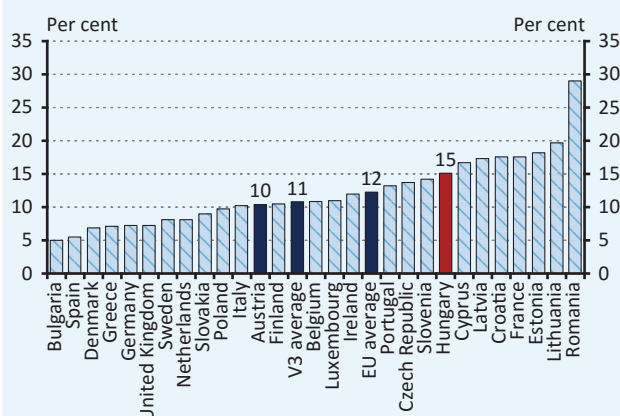
(25) Incorporate entrepreneurship skills into public and tertiary education

(26) Run domestic and foreign media programmes for the promotion of entrepreneurship

### Assessment of the situation

The Hungarian population essentially has the intention to start new companies (Figure 5.15). In Hungary, 15 per cent of people aged 18–64 who are currently not entrepreneurs consider starting a company within the next three years, which is above the average of both the region and the Union. Intention is indeed matched with action: among OECD countries, Hungary has the highest ratio (16 per cent) of new companies as a percentage of those already in the market. The entry of new companies into the market created an annual 100,000–120,000 new jobs in the country (OECD, 2017). However, a major part of these new companies are sole traders or microenterprises, which fall short of larger companies in terms of productivity, profitability and contribution to exports.

**Figure 5.15**  
Intention to start a new company (2017 or latest available year)



Note: Percentage of the population aged 18–64 who are currently not entrepreneurs and are planning to start a company within the next three years.

Source: Global Entrepreneurship Monitor.

Apart from the number of new companies, Hungary also ranks first among OECD countries in terms of its enterprise death rate. According to Schumpeter's theory of creative destruction, the succession of older, less productive companies by new, more productive businesses may have a positive impact on convergence. However, Hungary has a higher than optimal enterprise death rate: according to OECD figures, 27 per cent of active companies went out of

business in 2014, leading to the loss of 350,000 jobs (OECD, 2017). Across OECD countries, the average enterprise death rate was 10 per cent, with Poland and the Czech Republic having the second and third highest rates (15 per cent each). Moreover, while newly created companies started with an average headcount of 2–4 employees, the average size of companies going out of business was 15 employees in industry and 3 employees in services. The high enterprise death rate may indicate that new entrepreneurs are not adequately prepared for the challenges they are about to face. Consequently, knowledge related to entrepreneurship needs to be enhanced to ensure that the population's intentions to start businesses actually produce companies that succeed.

### Recommendations

**(25) Incorporate entrepreneurship skills into public and tertiary education:** It is recommended that the acquisition of core knowledge on entrepreneurship and the skills required for the implementation of enterprises be integrated at multiple levels into the educational system. Public education should focus on the transfer of core knowledge on the operation of companies. It is recommended that a larger share of higher education programmes incorporate advanced courses on entrepreneurship, covering both general knowledge required for starting companies (e.g. how to draw up business plans) and field-specific knowledge (e.g. on available grants). In Finland, at all levels of education particular focus is given to the development of entrepreneurial mindset and competencies. Apart from incorporation into curriculum subjects, assistance for the acquisition of entrepreneurship is also provided to students through specific courses and professional programmes. For instance, students are given opportunities to visit companies as early as in primary school. It is also important to prepare teachers, e.g. as part of their degree courses, for the transfer of the mindset and knowledge of entrepreneurship. In order to make employees and entrepreneurs on the market more successful, the targeted development of entrepreneurial competencies should be incorporated into the adult training system. Training programmes should cover the development of foreign language skills, digital skills, as well as sales and marketing skills. The options to provide public assistance for such training are explained in detail in the chapter "Strengthen professional further training".

**(26) Run domestic and foreign media programmes for the promotion of entrepreneurship:** It appears reasonable to launch an information campaign on the benefits of entrepreneurship (including the creation of value and the freedom of decision making). As the campaign should

primarily address young people, it is recommended that the main channel of the campaign be the media (primarily social media) that best reach that target group. These channels have the added benefit of providing the ability to address both Hungarians living in the country and those living abroad.

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## 6. Regional convergence

**Main objective: Unemployment rate below 6 per cent in every county**

**The territorial effect of economic developments is twofold:** the economy is characterised by the concentration of businesses and labour, which produce a productivity surplus in the short term, but over the longer term this intensifies economic and social differences between regions. Economic policy seeking to achieve territorial equalisation has two ways to support the process: by allocating labour to capital, and by allocating capital to labour.

**In Hungary, significant territorial differences can be identified in terms of both labour and capital flows.** Regional inequality in the labour market is indicated by the significant variation in unemployment rates within the country. In more developed regions of Hungary (Western Transdanubia and Central Hungary), the utilisation of labour capacities has virtually been maximised due to the strong demand for labour, whereas the eastern part of the country is characterised by high labour supply and low demand. The low geographical mobility of domestic labour is a major driver of territorial inequality. In parallel with the regional inequalities in the labour market, the level of development in Western Transdanubia and Central Hungary is above the average, while that in the eastern and south-western parts of the country falls considerably short of the national average. In the allocation of EU funds, the purpose of which is in part to reduce regional inequalities, the problem arises that a major share of the development funds allocated to less developed regions will indirectly flow back to more developed ones.

**Reducing regional inequalities can be facilitated by measures that encourage labour mobility and capital flows.** Measures supporting labour mobility currently focus on commuting. Geographical mobility may be further strengthened through hostels for workers, the operation of nurseries, and access to settlement allowances. Additionally, access to rented housing on preferential terms and programmes to support change of residency status may also drive labour mobility. Providing mobility incentives to supplement the employment benefits granted to public employees could support the direction of public employees towards the primary labour market. The greater mobility of capital and the reduction of regional inequalities could be promoted by strong reliance on the sectoral and technological specialisations of economic centres outside Budapest. Additionally, intensive support is required for development efforts that rely on local resources.

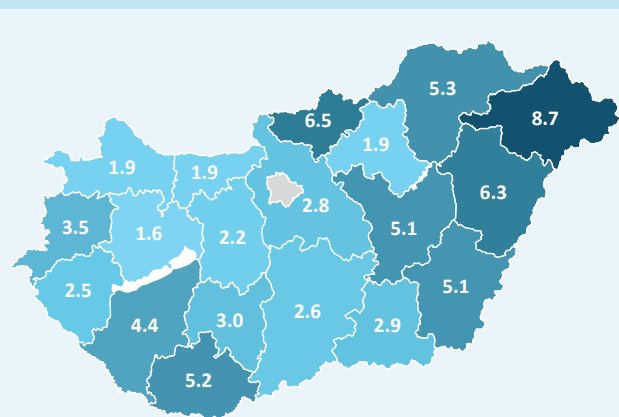
## 6.1. ENCOURAGE LABOUR MOBILITY

- (1) Support labour market mobility by providing incentives for commuting
- (2) Support labour market mobility by supporting change of residency status
- (3) Provide mobility incentives to supplement the employment benefits granted to public employees
- (4) Improve interurban passenger transport
- (5) Introduce coupon benefits based on the Polish model

### Assessment of the situation

In the Hungarian labour market, major territorial differences can be identified in terms of the quantity of labour. Although the national average of the unemployment rate is steadily under 4 per cent, there are major variations across the country. At the county level, the highest unemployment rate is found in Szabolcs-Szatmár-Bereg county, and the lowest in Veszprém county (Figure 6.1). Additionally, it should be noted that in the more developed regions of Hungary (Western Transdanubia and Central Hungary) the utilisation of labour capacities has virtually been maximised due to the strong demand for labour, whereas the eastern part of the country is characterised by high labour supply and low demand (Figure 6.2).

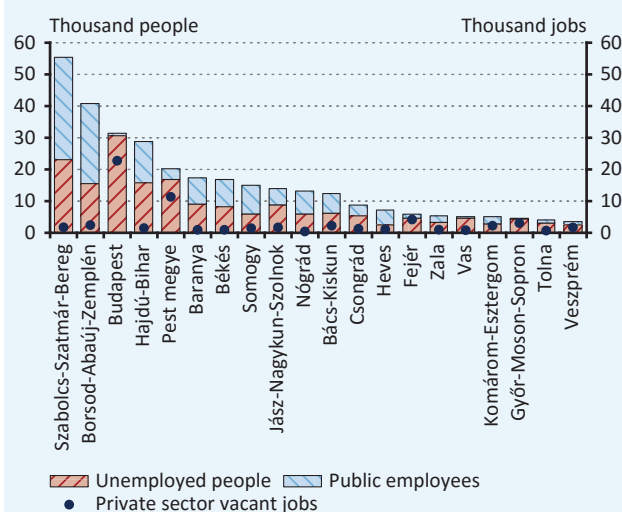
**Figure 6.1**  
Unemployment rate by county (% , 2018 Q3)



Source: HCSO.

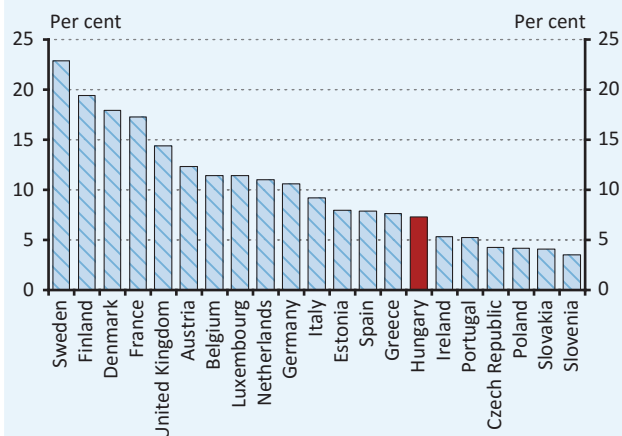
The low geographical mobility of domestic labour is a driver of regional inequality in the labour market. The Hungarian population is less mobile compared to other countries across the European Union (Figure 6.3). To a substantial degree, low mobility is determined by the weak significance of the market for rented housing, which is accompanied by a high proportion of home-ownership. At the national level, an average 85 per cent of the population are home-owners, with property accounting for 75 per cent of their total assets. The share of property within

**Figure 6.2**  
Private sector vacant jobs and labour reserves (unemployed and public employees) by county (2018 Q3)



Source: HCSO, MNB calculation.

**Figure 6.3**  
Residential mobility of the population within Member States of the European Union (2007)



Note: Percentage of households that have changed residence within the past two years.

Source: Caldera Sánchez-Andrews, 2011.

total assets is particularly high in poorer regions, which is a further barrier to mobility.

**Another barrier to growth is that in more developed regions housing and other subsistence expenses are also higher,** which limits the frequency of relocation for work. Current strategy documents on regional development identify improved transport conditions as the required means, but that would be insufficient in itself.<sup>21</sup> Housing assistance is warranted for lower-income households, and for younger age groups, which are overall characterised by higher levels of mobility.

**In terms of mobility incentives, support is currently most prominent for commuting.** The most frequent means by which employers support employee mobility include allowances on local and interurban transportation passes, and the provision of car allowances and company cars, while less frequent forms of assistance include the operation of nurseries, settlement allowances, and hostels for workers. While the former set of instruments primarily supports commuting, the latter are designed to encourage change of residency status. Apart from geographical mobility, occupational mobility (a measure of the ability and willingness to change between professions and occupations) is also low in Hungary (Sebők, 2016). Supporting labour market mobility is a primary objective in several Member States of the European Union. One of the most common forms of incentive consists of reimbursements and assistance for commuting expenses, while in Germany and Austria tax benefits are also available on travel expenses. Additionally, in several countries (such as Slovakia, Poland and Sweden) assistance is available for employment-related relocation and accommodation. Innovative initiatives include the coupon system that Poland has had in place since 2014, according to which participants are guaranteed to have a part of their training, induction and employment expenses covered by the Labour Office.

## Recommendations

**(1) Support labour market mobility by providing incentives for commuting:** In Hungary, assistance for labour mobility is provided in various forms, with limited results. Currently, companies primarily support transportation to assist the geographical mobility of their employees. Commuting may be strengthened further through the application of a wider

range of incentives, e.g. by providing access to company bus services or hostels for workers and operating nurseries. Among atypical forms of employment, the more extensive use of part-time and flexible employment also supports mobility and employment.

**(2) Support labour market mobility by supporting change of residency status:** In addition to the measures in place, incentives for labour mobility may also be provided through programmes to support change of residency status, for instance by allowing companies to account the expenses of accommodation provided for mobility. Change of residency status may be facilitated through the provision of service flats, rented housing, or the conditional exemption of the duty on property purchases, or of municipal taxes levied on property. In the latter case, the exemption could be made conditional on the relocation distance. Additionally, people taking employment in relatively underdeveloped regions would be greatly supported by access to free construction sites, subject to a sales prohibition for a specific period.

**(3) Providing mobility incentives to supplement the employment benefits granted to public employees** could support the direction of public employees towards the primary labour market. Under the current regulations, public employees who find employment in the primary labour market before the programme is completed, receive twice the amount of the compensation for the period over which the public employment relationship would have continued in the absence of regular employment. Nevertheless, this provides insufficient motivation for working at a greater distance, while local opportunities for work are limited. It is recommended that for one year after taking up employment, full reimbursement for the expenses of job-seeking and subsequent commuting should be provided to people transferring from public employment. It also appears advisable for the employment reward to incorporate a compensation for distance, given the significant weight of the distance from residence in public employees' wage requirements.<sup>22</sup> The transfer of public employees to the primary labour market could be facilitated by means of assistance provided directly to companies for the construction of workers' hostels (subject to their own contributions similarly to municipalities), in addition the ability to deduct hostel expenses from the corporate tax base.

<sup>21</sup> The main source of funding for regional development and in particular for employee mobility is the Territorial and Settlement Development Operational Programme (TOP). Funds may be drawn by cities with county rights and counties for developments in employment, enterprise promotion, and environmental protection, and for local developments managed at the Community level. In the EU current programming period, funds are available in the amount of approximately HUF 1,085 billion.

<sup>22</sup> According to a 2017 survey by Századvég on public employees, respondents are only willing to take up employment at a distance of at least 100 km for a net monthly wage of HUF 250,000 to 300,000.

**(4) Improve interurban passenger transport:** In Hungary, urbanisation and the growth of agglomerated areas have been accompanied by an increase in the number of commuters. In 2011, the proportion of daily commuters was 34 per cent, with the largest share of employees (32 per cent) traveling to work by car. Given the increasing prominence of commuting, it is particularly important to provide adequate public transport and infrastructure conditions (see Chapter 12 for more details) in the agglomeration areas of both Budapest and rural towns. In rural areas, it is particularly important to improve the links between larger municipalities and district centres and their agglomeration areas. The accessibility of rural towns would be improved through a better-quality road network, more frequent interurban bus services and the better alignment of transport schedules. Transport to and from suburban Budapest could be accelerated and made more comfortable through the modernisation of suburban railway lines and vehicles, the development of tracks in the areas of Budapest, and direct links between the railway, suburban railway and underground railway networks. In those efforts, progress has been made in the form of the government decrees issued in November 2018 concerning, among other measures, the establishment of underground links between the Budapest Déli and Nyugati

Railway Terminals, the development of circular rail, and the future links between and extension of suburban railway lines. Interurban transport would further be supported by a higher number of intermodal hubs equipped with smart passenger information systems and P+R parking facilities, which would promote modal split development, while making it easier for passengers to change between services.

**(5) Introduce coupon benefits based on the Polish model:**

In 2014, Poland introduced a coupon scheme consisting of four components (training, apprenticeship, employment, settlement) with the primary objective of promoting the mobility and employment of unemployed people under 30 years of age. Based on the model of the Polish scheme, extensions could also be made to the mobility incentives provided in Hungary. The primary target group for a coupon scheme could include more vulnerable groups with lower degrees of labour market attachment, such as public employees, permanent job-seekers, mothers with young children, and pre-retirees. In terms of types, coupons could provide support for job-seeking, commuting, employment and accommodation. As a common feature, the state would undertake a part of the expenses incurred by eligible employees or employers in order to promote incentives for employment at a distance.

## 6.2. DIRECT SUPPORT FOR LESS DEVELOPED REGIONS

- (6) Ensure strong reliance on the sectoral and technological specialisations of economic centres outside Budapest
- (7) Provide for the favourable treatment of tenders based on local suppliers and resources
- (8) Introduce a territorial compensation mechanism to counterbalance the labour drain
- (9) Introduce a compensation mechanism for teachers taking up employment in less developed regions

### Assessment of the situation

**The territorial effect of economic developments is twofold: the economy is characterised by the concentration of businesses and labour, which produces a productivity surplus in the short term, but over the longer term this intensifies the regional differences and, in particular, often social differences between regions.** Economic policy seeking to achieve territorial equalisation has two ways to support the process: by allocating labour to capital, and by allocating capital to labour.

**In Hungary, significant territorial differences can be identified in economic terms.** In parallel with the regional inequalities on the labour market, the level of development in Western Transdanubia and Central Hungary is above the average, while that in the eastern and south-western parts of the country fall considerably short of the national average. Almost twice the national average level of development has been registered in the capital city, whereas GDP per capita in Nógrád county is only slightly above 40 per cent of the national average (Figure 6.4).

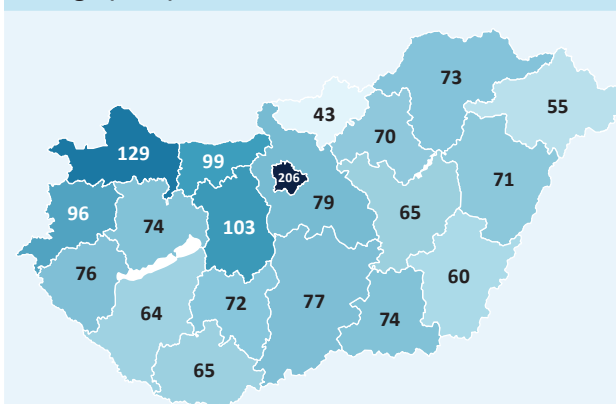
**Successful rural development models are all based on strong regional centres.** This lends key importance to the development of regional centres in order to provide for agglomeration externalities, even across borders. The international networks emerging in regional economic centres and Budapest substantially support Hungary's competitiveness.

**The most disadvantaged municipalities need to strengthen their economies based on local communities and resources.** Often operating with the involvement of local governments, this sector typically lacks export capacities, but potentially plays a major role in local employment and population retention, as well as in safeguarding the strategic resources that are present in rural space.

**The Modern Cities Programme was designed to promote the development of the regional and local economy.** Launched in 2015, the programme contributes to the

economic, infrastructural and social cohesion of rural areas. The Government has entered into HUF 3,750 billion worth of agreements with 23 cities with county rights (county seats and another 4 towns) for over 260 projects. The agreements mainly cover the extension and construction of industrial parks, motorway development and the construction of community institutions (e.g. swimming pools, spas, gymnasiums, playgrounds and cultural centres) until 2025. To date, about a quarter of the allocated amount has been disbursed. Apart from the development of towns, looking ahead from a rural development perspective additional support is provided by the Hungarian Village Programme, to be launched in 2019, under which grants will primarily be available for the creation and renovation of church and municipal community spaces.

**Figure 6.4**  
GDP per capita as a percentage of the national average (2017)



Source: HCSO.

**Hungary already has in place a range of instruments to promote the mobility of capital and reduce regional inequalities.** The Government uses several instruments to equalise regional inequalities. Amounts of EU funds for economic development are most commonly allocated on the basis of the regional aid map.<sup>23</sup> EU funds for regional development are primarily allocated to ensure regional convergence and to strengthen social integrity. Substantial amounts of additional funds are provided in the form of agricultural assistance. Assistance awarded under specific

<sup>23</sup> The regional aid map is a legal provision setting out the maximum rates of public assistance that may be granted as investment aid to companies carrying out investments in specific regions of Hungary, or respectively smaller territorial units in the case of more developed regions. For details, see: <http://tvi.kormany.hu/regionalis-tamogatasi-terkep>

grant decisions is also required to follow the regional aid map used for EU funds. However, in the allocation of EU funds, the problem arises that a large share of the development funds allocated to less developed regions will flow back to more developed ones, indicating that there is still room for improvements in allocation efficiency.

## Recommendations

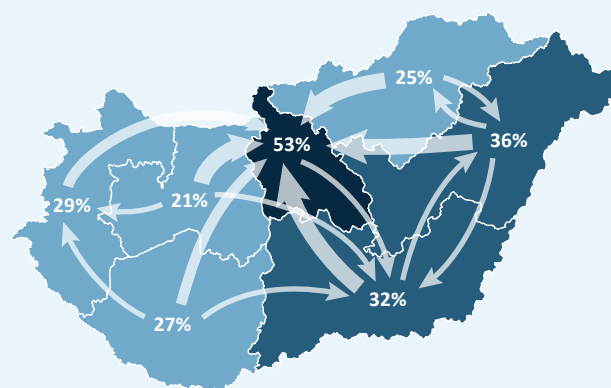
### (6) Ensure strong reliance on the sectoral and technological specialisations of economic centres outside Budapest:

On the one hand, there are sectors that are important in terms of the role of rural areas in labour retention. Such sectors include agriculture, the food industry and tourism; accordingly, it is recommended that priority should be given for their development. On the other hand, there are individual (county-specific) specialisations, which may provide the foundations for specific competitive advantages. In 2014, in cooperation with county actors (innovative companies, research institutes, civil society organisations), the directions of smart specialisation were identified for each county (S3 National Smart Specialisation Strategy). However, the current system of public assistance is only aligned to these directions of specialisation in the case of R+D+I efforts, which restricts the scope of county-level specialisation. In sectoral policy, particular importance is attached to the targeted selection and development of sector-specific activities that are either economically viable or strongly rooted in the region concerned. On those grounds, it is recommended that targeted assistance is provided in suitable regions e.g. for the food industry, agriculture, water management, or tourism.

**(7) Provide for the favourable treatment of tenders based on local suppliers and resources:** In the context of EU funds, the problem arises that a major share of the development funds allocated to the development of less developed regions will flow back to more developed ones, primarily to Central Hungary. According the MNB, between 2007–2013 an estimated 31 per cent of assistance flowed back directly to the central region (Budapest and Pest County) (Figure 6.5). Of the demand generated by means of the funds allocated to developing regions, 68 per cent favoured other regions (MNB, 2017).<sup>24</sup> Local utilisation of support could be improved by giving more support for development efforts that rely on local resources. Therefore, **it is recommended that in EU grant programmes, preferential treatment should be given to applications that rely heavily on the resources available in developing regions.** This primarily involves locally corporate cooperation (clusters and cooperatives), as well as local employment and sourcing from local suppliers. The tax benefits available in ‘Free Enterprise Zones’ can

also be increased subject to commitments by recipient companies to use local resources. Under the regulations in place, companies operating in ‘Free Enterprise Zones’ are eligible for tax benefits on developments, and benefits on the social contribution tax and vocational training contributions in respect of their investments and increased employee headcounts. ‘Free Enterprise Zones’ cover the 1,200 most distressed municipalities.

**Figure 6.5**  
Proportion received by local suppliers from the amount of projects implemented in a given region, and the volume of demand generated with suppliers outside the region



Source: MNB Inflation Report, December 2017.

**(8) Introduce a territorial compensation mechanism to counterbalance the labour drain:** The consequences of territorial inequalities in the labour market could be mitigated by introducing a compensation mechanism, as part of which compensation would be granted to specific districts or counties for employees who have been trained but are not employed there. This is based on the idea that an area affected by the outflow of qualified employees should be compensated for the loss of value due to the labour outflow.

**(9) Introduce a compensation mechanism for teachers taking up employment in less developed regions:** It is recommended that in relatively underdeveloped regions the system of nurseries and primary schools should be developed in terms of staffing. A compensation scheme should be in place to provide work incentives to nursery professionals and schoolteachers for taking up employment in relatively underdeveloped regions. One potential benefit under the scheme could be to grant home ownership subject to the completion of a service period of adequate length, such as 10 years. The attraction of teachers to less developed regions could also be supported by the development of physical infrastructure.

<sup>24</sup> For more details, see: Inflation Report, December 2017, special topic.



## 6.3. FUNDING IN LESS DEVELOPED REGIONS

- (10) Incorporate territorial differentiation into the Széchenyi Card Programme
- (11) Provide a combination of capital and funding through banks' participation
- (12) Provide a wider range of benefits in 'Free Enterprise Zones'
- (13) Increase the absorption of funds from the European Investment Bank

### Assessment of the situation

**The convergence of less developed regions would be supported by the alignment of sources of funding to local needs.** The processes and institutional operations of financial intermediation affect economic development at the regional level (Mérő, 2003) and consequently also have an impact on the development of regional differences and inequalities in levels of development. Companies operating in less developed regions tend to apply for credit in smaller volumes, but with higher risks.

**In the absorption of the financial instruments provided for development policy purposes with the support of the EU, disadvantaged regions and target groups are only reached to a limited extent.** The companies reached by EU financial instruments are highly concentrated in territorial terms. In order to ensure that the system of financial institutions involved in the intermediation of reimbursable development funds may serve the purposes of cohesion more effectively, further improvements should be made to both the specialisation of financial products and the governance structure of the system. Specialisation means the development of more customised financial products and services. Additionally, in the context of the financial instruments for EU funds, systems of intermediation should be developed jointly for capital and debt products.

**Less developed regions in Hungary continue to lag behind, despite dynamic growth in the Hungarian economy as a whole.** Going forward, an effective means of reducing that difference and increasing local employment could be to ensure that privately-owned companies remaining in or relocating to less developed regions have access to finance on terms offering substantial advantages over market terms. There are a range of possible instruments to support that development, which are described briefly below.

### Recommendations

**(10) Incorporate territorial differentiation into the Széchenyi Card Programme:** A major share of the funds under the Széchenyi Card Programme is channelled to companies that would also be creditworthy without those funds. Introducing benefits that are subject to population

size, e.g. available in municipalities with fewer than 5,000 inhabitants, could ensure that a larger portion of the assistance flows into less developed regions.

**(11) Provide a combination of capital and funding through banks' participation:** Companies operating in less developed regions could be provided with capital by Hiventures Zrt., an existing member of MFB Group, which – linked to an FGS (Funding for Growth Scheme) loan granted by a commercial bank – would give the companies simultaneous access to cheap capital and funding.

**(12) Provide a wider range of benefits in 'Free Enterprise Zones':** Currently, companies carrying out additional investments in less developed regions are eligible for tax benefits (allowances on developments and the labour tax burden). Extending the scope of these benefits could also increase the number of companies relocating to such regions.

**(13) Increase the absorption of funds from the European Investment Bank:** Under the policy of the EIB, the maximum amount of credit that may be granted to a single country is equivalent to 2.5 times of that country's contribution to the Bank's share capital. In 2017, Hungary's contribution to the EIB's share capital was EUR 1.75 billion, based on which the maximum available credit would amount to EUR 4.38 billion. In 2017, Hungary received EUR 772 million worth of funds from the EIB Group, compared to EUR 1.3 billion called by Romania and EUR 5.4 billion by Poland. In 2018, the Hungarian Government signed an additional loan agreement with the Bank in the amount of EUR 225 million, increasing the total amount of funds available to Hungary to approximately EUR 1 billion. With regard to the possibility of a further increase in the loan amount, it is recommended that the potential amount of EIB funding should be raised above EUR 1.5 billion.



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## 7. Family-friendly programme

**Main objective: 110,000 births per year**

Since the 1980s, demographic developments in Hungary have been characterised by a steady decline and ageing of the population. Similarly to other countries across the Union, available population forecasts project the possible continuation of these unfavourable developments in the coming decades. As a result, the size of the working-age population may fall considerably, which in the long run would have an unfavourable impact on economic growth, fiscal balance and competitiveness.

Nevertheless, one positive sign is that Hungary's fertility rate has already been on the rise in recent years. The total fertility rate increased from its historic low of 1.23 in 2011 to 1.53 in 2016, which is its highest value since 1996 and represents the second fastest growth rate in the EU. The increase in the fertility rate has largely been attributable to post-2010 government measures to facilitate parenting. The financial resources and disposable incomes of families have been increased considerably by the family tax base allowance, the extra childcare allowance, and the housing subsidy for families, while a substantial relief in their daily lives has been provided by means of an increase in infant nursery capacities, the introduction of free schoolbook supplies up to year 9, and the extension of mass catering. However, in spite of the rising fertility rate, the necessary demographic turnaround has not yet taken place in Hungary, as the replacement level fertility rate of 2.1 has not yet been reached. The Hungarian figure falls short of the European Union's average of 1.6, but the fertility rate remains below replacement level fertility in all EU Member States.

The MNB's competitiveness programme puts forward a number of proposals for the continuation of the government's family-friendly programme until 2030. Measures on family policy that have been implemented in the past period and those announced in February 2019 provide considerable support for the starting and growth of families. However, given the weight of the issue, the development of family support measures is unlikely to be considered complete for a long time to come; with that in mind, this chapter formulates additional proposals which, together with the ongoing programmes, may contribute to the achievement of the desired demographic turnaround. Although some of the proposals have already been formulated in previous central bank publications, the majority are new recommendations developed with contributions from a wide range of MNB staff. Responding to a call by the Charity Group of the MNB, itself recognised as a family-friendly workplace, a total of 180 employees have contributed proposals and ideas on possible ways of making life easier for families, focused on the requirement that in order for demographic developments to improve, the financial assistance required for parenting and opportunities to balance work and family life should be provided at the same time. The ideas contributed in response to the call "Tuned to Families" have been incorporated into the proposals presented in this chapter. Our proposals aiming at a demographic turnaround include specific elements in the family support system, the family tax regime, the institutional system providing day care for children, measures to increase women's participation in the labour market, as well as first homes and the pension system.

Consideration must be given to the fact that the birth of first, second and third children may be encouraged efficiently by different incentives. In addition to various forms of parenting assistance, substantial support may be provided for the birth of first children through the family-friendly development of the healthcare system, including higher public assistance for infertility screening. The birth of second and subsequent children may be supported by increasing the amount of maternity benefits granted during early childhood subject to mothers' previous labour market participation (infant care allowance, childcare allowance). Incentives for the birth of third children may be provided through the family tax regime: depending on the applicable parameters, the introduction of full tax exemption for large families may strongly encourage parents to have three or more children. In order to support women's re-entry into the labour market, it is recommended that the increase in infant nursery capacities seen in recent years should be continued, namely, that infant nursery capacities should be increased from 40,000 places in 2016 to a level that can provide service for every applicant even in the case of an increasing number of annual number of births. Women's re-entry into the labour market may also be facilitated by the adoption of atypical forms of employment on a larger scale. Home starters may be supported

by an increase in the amount of the housing subsidy for families available to families with two children. This should be accompanied by the introduction of an initial capital scheme to support Hungarians working abroad in re-settlement and parenting. Recognition of the number of children in the pension system may also act as an incentive for parenting in acknowledgement of parents' expenditures on raising children, and in consideration of the fact that coverage for the retirement benefits of childless retirees will also be provided by the future contributions of today's children.

**In the domestic housing market, apart from cooling prices, desirable objectives may also include support for first home buyers and the increased efficiency of construction output.** In the domestic housing market, the significant and geographically concentrated increase in prices has been a considerable barrier to home purchases, while the construction of new homes has been delayed by several frictions. Adjustments to stamp duty regulations could decelerate property purchases for investment, while improving the opportunities for young families to start their homes. In addition to increasing the size of the construction workforce and introducing technological developments for greater efficiency, a new approach may also be needed in the sector in order to accelerate the renewal rate of the housing stock.

**The current rate of population decline could be reduced substantially if a fertility rate of 2.1 could be reached and sustained in the long term.** Over a time horizon of several decades, favourable demographic developments could also contribute to economic growth with the entry of the more populous new generations into the labour market. However, as the benefits on the pension system from a demographic turnaround starting today would only be felt over a horizon of several decades, the present demographic challenge could be mitigated by a supplementary system seeking to achieve massive scale and full coverage. On those grounds, we are proposing guaranteed membership in the supplementary voluntary pension funds where individual contributions would be supplemented by employer and state assistance.

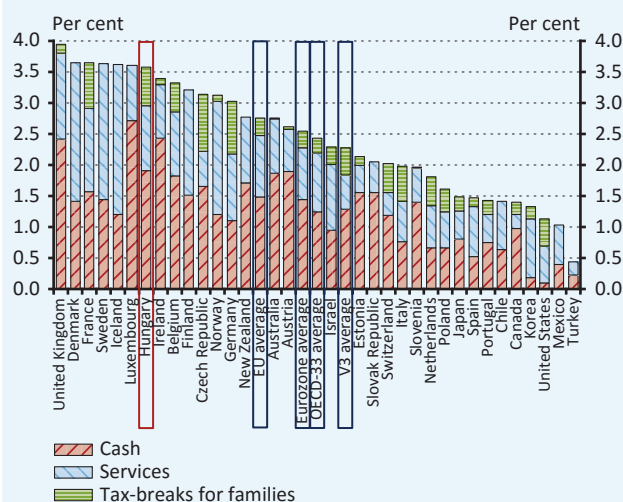
## 7.1. STRENGTHEN THE ELEMENTS OF THE FAMILY SUPPORT SYSTEM

- (1) Raise the ceilings applicable to the infant care allowance and the childcare allowance
- (2) Raise the amount of the one-off maternity allowance subject to an employment relationship (introduce a progressive allowance amount for additional children, depending on the number of children)
- (3) Introduce an initial capital scheme for young returnees who undertake to have children in Hungary
- (4) Provide a one-off health fund allowance to cover the expenses of childbirth care
- (5) Support parenting by higher-education students
- (6) Ensure the constant review of the elements of the family support system and analysis of their efficiency
- (7) Promote parenting (by awareness raising, advertising of family support elements and support for preparatory trainings)

### Assessment of the situation

In an international comparison, public spending on family benefits are high in Hungary. In 2013, family benefit expenditures accounted for 3.6 per cent of GDP (Figure 7.1). Within this, cash benefits amounted to 1.9 per cent and in-kind benefits (services) to 1.1 per cent of GDP, while Hungarian families received support in the form of tax breaks in a total amount equivalent to 0.6 per cent of GDP. The Hungarian figure for 2013 is substantially higher than the OECD average of 2.4 per cent, and was the 7th highest among OECD countries.

**Figure 7.1**  
Public spending on family benefits in OECD countries  
(as a percentage of GDP, 2013)

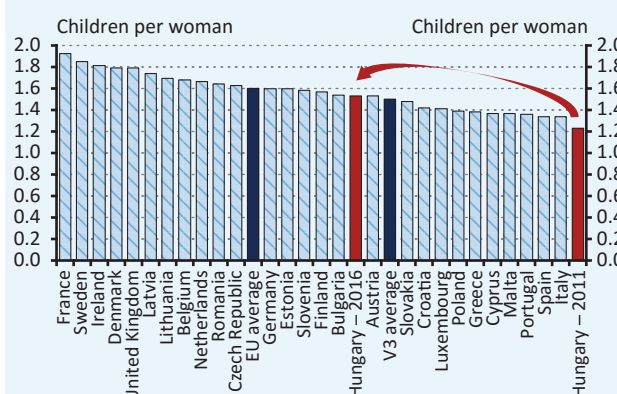


Source: OECD.

The government measures adopted in recent years may have further increased public spending on family benefits. Such measures include, for instance, the introduction of

the extra childcare allowance, the increase in infant nursery capacities, the increase in the family tax base allowance for families with two children and the extension of the family tax base allowance to contributions. Simultaneously, the fertility rate has also been rising in recent years from its historic low of 1.23 in 2011 to 1.53 in 2016 (Figure 7.2).<sup>25</sup>

**Figure 7.2**  
Fertility rate (2016)



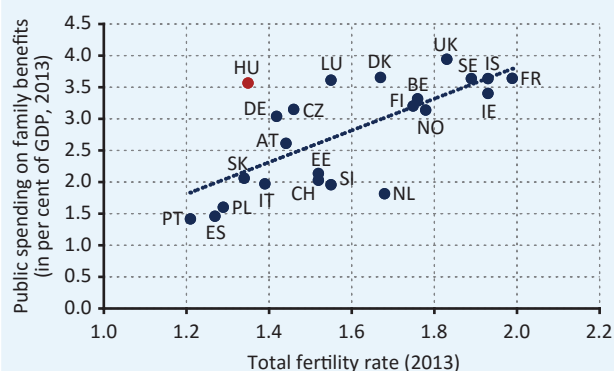
Source: Eurostat.

Despite its already substantial spending on family benefits, Hungary's fertility rate continues to fall short of the target (Figure 7.3). An examination of the correlation between the two variables should take into account the fact that the impact of family support measures only has an effect with a lag of several years. Hungary's situation indicates the importance of not only the amount of family benefits but also the manner (effectiveness) of their spending. Correlation between the two variables is reinforced by the fact that in addition to family benefits, parenting decisions are influenced by a range of other factors such as age, relationship status, housing, educational attainment and health status.

<sup>25</sup> Eurostat

**The family support system may serve several purposes:** on the one hand, it reduces the financial burdens of parenting through benefits granted for children already born, and on the other hand, it gives effect to population policy considerations by seeking to encourage future childbearing.<sup>26</sup> The latter is also warranted by economic policy considerations, given the accelerated population ageing that accompanies a low number of births, which, in the long term, primarily through a decline in the working-age population, will also have a negative impact on both economic growth<sup>27</sup> and competitiveness.

**Figure 7.3**  
**Total fertility rate and public spending on family benefits as a percentage of GDP in European countries (2013)**



Source: Eurostat, OECD.

**The family support system can promote the achievement of a demographic turnaround by removing the financial barriers to families having their planned number of children.** In 2016, the ideal number of children was reported at 2.2, while the mean personal ideal number of children was 2.0 for women and 1.9 for men.<sup>28</sup> These values approximate the replacement level fertility rate of 2.1, but in reality the desired number of children are not born, and Hungary's fertility rate falls significantly short of the planned number of children.

**The income replacement capacity of family support elements that are conditional on employment may influence the realisation of parenting intentions.** Such benefits include the infant care allowance and the childcare allowance, which are established with reference

to paid employment prior to childbirth. The infant care allowance is granted for the duration of maternity leave (24 weeks) in the gross amount equivalent to 70 per cent of the recipient's prior wages.<sup>29</sup> Childcare allowance is disbursed following maternity leave up to the child's age of 2, and its amount is also equivalent to 70 per cent of the recipient's prior wages, but is limited to 70 per cent of twice the minimum wage. For women with prior income above that ceiling, the income replacement capacity of childcare allowance diminishes with higher income.

Kapitány and Spéder (2011) found that **women with medium and higher incomes have a lower likelihood of realising their parenting intentions compared to lower-income women**, which is presumably attributable in part to the higher loss of earned income. Their examination as regards the number of children showed that in the three middle income quintiles, women re-entering the labour market have a considerably lower likelihood of giving birth to the planned number of children. Parenting intentions were realised within 3 years by 30 per cent of women in the lowest quintile, but only 11–15 per cent of women in the three middle income quintiles.<sup>30</sup> **For this reason, and due to the dynamic wage increase in recent years, it may be justifiable to raise the ceiling of the childcare allowance.**

**Cash benefits granted as part of the family support system contribute to the financial security of families.**

Among the various forms of financial support, a distinction can be made between guaranteed benefits and benefits linked to insurance status. Guaranteed benefits include e.g. the family allowance, maternity allowance and childcare benefit, whereas the infant care allowance, childcare allowance and family tax base allowance are linked to insurance status.<sup>31</sup>

**Due to demographic developments, the number of family allowance recipients is falling:** as the benefit is payable up to the child's compulsory school attendance age, the number of recipients is falling because entering eligible cohorts are smaller than exiting cohorts. By contrast, **for the childcare allowance an increase is seen in the number of recipients** due to the introduction of the extra childcare allowance in January 2014, as a result of which the number of benefit recipients increased from a monthly average 83,700 in 2014 to about 97,500 by the end of 2017<sup>32</sup>

<sup>26</sup> Ignits – Kapitány (2006).

<sup>27</sup> Kreisz-Hudák – Varga – Várpalotai (2015).

<sup>28</sup> Kapitány – Spéder (2018).

<sup>29</sup> The infant care allowance is exempt from health and pension contributions, but its gross amount is subject to personal income tax.

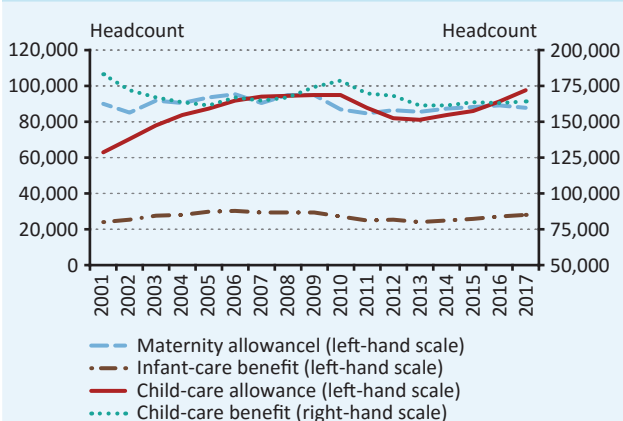
<sup>30</sup> Kapitány – Spéder (2009).

<sup>31</sup> The infant nursery care and tax benefits, comprising in-kind services provided to families as part of family benefits, are discussed in more detail in separate subchapters.

<sup>32</sup> HCSO (2018a)

(Figure 7.4). The number of maternity allowance recipients follows the developments in the annual number of births. The number of women receiving the infant care allowance shows the number of women insured prior to childbirth. The number of recipients of the infant care allowance has increased in recent years from a monthly average 24,000 recipients in 2013 to 28,000 in 2017. **An important instrument over the medium and long term could be to further increase the role of family support elements linked to participation in the labour market.**

**Figure 7.4**  
Number of recipients of family support and childcare benefits



Source: HCSO.

## Recommendations

**(1) Raise the ceilings applicable to the infant care allowance and the childcare allowance:** We recommend that the ceiling should be raised for both benefits for higher income replacement capacity, in order to reduce the financial barriers to the birth of the planned number of children. We recommend raising the 70 per cent ceiling for infant care allowance and raising the 70 per cent ceiling and linking it to the average wage for the childcare allowance. The increased amount of the childcare allowance is not expected to act as a barrier to mothers' re-entry into the labour market, because since 2014 women in paid employment have received both wages and the childcare allowance between the ages of 0.5 and 2 years of their children.

**(2) Raise the amount of the one-off maternity allowance subject to an employment relationship (introduce a progressive allowance amount for additional children, depending on the number of children):** Currently, the amount of the one-off maternity allowance was equivalent to 225 per cent of the minimum old-age pension, or HUF 64,125 in 2018. As the expenses arising in connection with the birth of a child are significantly higher than that amount and impose a major financial burden on young parents,

it appears advisable that the amount of the benefit be increased. Additionally, the amount of the benefit should also be increased progressively depending on the number of children, which would in part acknowledge the additional expenses incurred in raising several children, and the extra amount of time required by parents for work at home. In Singapore, for instance, following the birth of the first and second children, public benefits are paid in higher amounts in respect of every subsequent child. It appears reasonable that progressive increases should be introduced subject to employment.

**(3) Introduce an initial capital scheme for young returnees who undertake to have children in Hungary:** In order to encourage employees of parenting age to return to Hungary, the launch of an *initial capital scheme* is recommended. As part of the scheme, every returning member of a family would be eligible for a specific amount of one-off public assistance, subject to the family's commitment to have at least one more child within the next 3 years, and not to transfer their habitual residence to another country within the next 5 years. The amount of the benefit could be raised for families settling in disadvantaged regions.

**(4) Provide a one-off health fund allowance to cover the expenses of childbirth care:** To cover healthcare expenditures related to parenting, it is recommended that a one-off targeted health fund allowance be granted to all expectant mothers in the 6th month of pregnancy, to cover benefits related to antenatal care and childbirth. In the UK, a one-off pregnancy benefit is granted in the 25th week of pregnancy.

**(5) Support parenting by higher-education students:** Support for parenting by higher-education students could accelerate the realisation of parenting intentions related to first children. In terms of support for parenting by higher-education students, the introduction of students' childcare allowance in 2014 was a major step forward. In order to improve living conditions, consideration should be given to a further increase in the amount of students' childcare allowance. Additional support for parenting by higher-education students may be provided through the provision of baby- and family-friendly dormitory accommodation either by creating new capacities or by converting existing dormitories for young student couples with children. Support for parenting while in higher-education may also be provided through an increase in the permitted number of "passive terms".

**(6) Ensure the constant review of the elements of the family support system and analysis of their efficiency:** In addition to the amount of family benefits, their effectiveness is also important; consequently, for each



benefit it appears reasonable to monitor, on an annual basis, developments in the number of recipients and the achievement of its objectives (whether the benefit supports an increase in the number of births and adequate financial security for families).

**(7) Promote parenting (by awareness raising, advertising of family support elements and support for preparatory trainings):** In order to support the birth of the planned number of children, adequate information should be provided to young people of reproductive age about the cash benefits and tax breaks for which they will be eligible

in the event of parenting. Additionally, it may also be advisable to launch an advertisement campaign to promote parenting, as in the case of Denmark, where parenting is encouraged through humorous advertising. As part of that, it is recommended that talks with a family focus should be given in secondary schools to allow children from an early age to develop an open attitude to future parenting. Additionally, it may also be useful to arrange preparatory training courses for young couples on the most important points to know about parenting, to cover health issues and prepare participants for the changes they will experience in their everyday lives as a result of parenting.

## 7.2. FAMILY-FRIENDLY DEVELOPMENT OF THE HEALTHCARE SYSTEM

- (8) Provide for the prevention and treatment of diseases that inhibit parenting
- (9) Run an information campaign on insulin resistance and provide free insulin resistance screening for women of reproductive age
- (10) Provide more active support for artificial insemination
- (11) Provide a wider range of state-subsidised examinations during pregnancy
- (12) Reduce the number of foetal deaths through improvements to prenatal care
- (13) Reduce vaccine prices
- (14) Align consulting hours to working hours

### Assessment of the situation

**The demographic difficulties that Hungary is facing are significantly exacerbated by the shortfall in the number of children actually born compared to the desired number of children.** Among fertility indicators, a prominent role is occupied by the perceived ideal number of children and the personal ideal number of children. These indicators are commonly used to determine the expectations prevailing in society and potential fertility levels. In 2016, for both women and men of reproductive age, the ideal number of children was reported to be slightly higher (2.2) compared to the replacement level fertility rate of 2.1. The figures for the personal ideal number of children were somewhat lower (2.0 for women and 1.9 for men), but still above the actual fertility rate. The actual and planned numbers of children show that an increasing shortfall from plans tends to cause families to reduce their plans along their life path (Kapitány and Spéder, 2018).

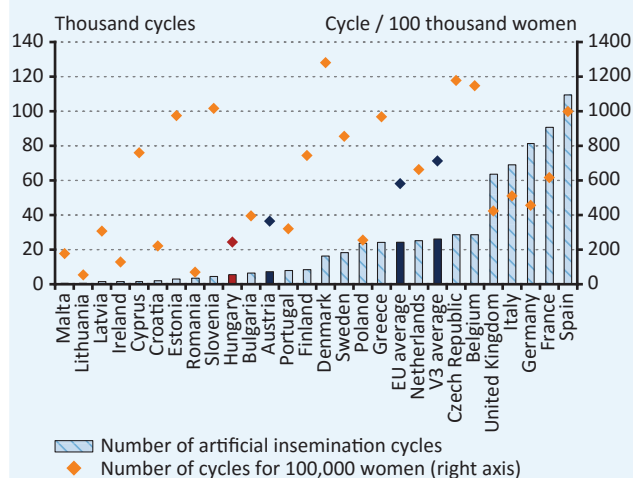
**The introduction of targeted screening tests related to parenting and more extensive state participation in parenting-related healthcare benefits may encourage the birth of first children. Delays to fertility schedules are frequently attributable to health reasons.** Infertility has become endemic: according to the World Health Organization, there are an estimated 48 million infertile couples worldwide, including some 300,000 in Hungary. The situation has become increasingly severe over the past two decades, and the region of Central and Eastern Europe is one of the regions being the hardest hit. Infertility problems affect men and women to equal degrees: infertility is attributable in 40 per cent of the cases to men and in 40 per cent to women, and in 20 per cent to both through now fault of their own. While infertility may have congenital health causes, acquired infertility for a variety of causes

(including polycystic ovary syndrome, insulin resistance, and hypothyreosis) is also becoming increasingly common (Medicalonline, 2018). The earliest possible diagnosis and treatment of such issues could contribute to the (earlier) birth of first children, and the effective realisation of the planned number of children. Among other aspects, this is also relevant because infertility treatment is in many cases conditional on the treatment of the underlying disease or infection, which may require up to several years.

**In Hungary, currently no accurate data are available on the number of children born via artificial insemination.**

This is in part attributable to inadequate data flows among healthcare institutions, due to the lack of database interoperability. Additionally, only partial data are collected on the activities of institutions engaged in artificial insemination (OBDK, 2015). Based on data from registers related to artificial insemination procedures, 4–5 per cent of children in Hungary are born via infertility interventions. At around age 30, in vitro fertilisation is successful in half of the cases, with an average 2–3 treatments required for the desired result (Medicalonline, 2018). Based on (unfortunately incomplete) data from the European Society of Human Reproduction and Embryology (ESHRE), in Hungary 5,600 interventions were carried out in 2014 (estimated at 7,000 in a domestic report, which is also not comprehensive), which corresponds to 243 fertilisation cycles per 100,000 women of reproductive age (Figure 7.5). This figure is a mere 40 per cent of the EU average and one-third of the average of other Visegrád Countries. Hungary has an outstandingly high number of in vitro cycles carried out for women over 40 years of age, which indicates that Hungarian couples tend to insist on parenting intentions even when their chances for successful treatment are considerably reduced.

**Figure 7.5**  
**Number of artificial insemination cycles (2014)**



Note: The database relies on registers and does not provide full coverage. No data are available for Luxembourg and Slovakia. Per cent of women of reproductive age (aged 15–49).

Source: ESHRE, Eurostat.

## Recommendations

**(10) Provide for the prevention and treatment of diseases that inhibit parenting:** In order to identify and address health barriers to fertility as soon as possible, more active support is recommended for targeted fertility-related screening tests for both sexes. It is recommended that publicly-funded gynaecological screening tests be introduced from the age of 16 for the early diagnosis and treatment of diseases, hormonal problems, infections and tumours. Testing should also include thyroid function tests. It is recommended that dedicated leave should be introduced for employees under 35 years of age, which could be utilised for fertility-related health examinations or training to support parenting (lifestyle counselling, stress management). Preparations for parenting could also be facilitated through the organisation of publicly-funded antenatal training courses.

**(11) Run an information campaign on insulin resistance and provide free insulin resistance screening for women of reproductive age:** Given that one of the potential causes of female infertility is undiagnosed insulin resistance, it would be important to run an information campaign to raise women's awareness of the symptoms of the disease to enable the earliest possible diagnosis. To ensure early diagnosis, it may also be reasonable to introduce publicly-funded screening tests for women of reproductive age.

**(12) Provide more active support for artificial insemination:** In order to reduce waiting times, it is recommended that artificial insemination procedures, similarly to maternity care, should be exempt from output volume restrictions. It is also recommended that the number publicly-funded benefits available to one person should be increased (the number of publicly-funded interventions would not change, but patients would only be required to pay a contribution to additional interventions instead of the full charge). It is recommended that the control of service providers should be improved in an effort to increase the success rate of procedures, reduce costs and formalise the sector.

**(13) Provide a wider range of state-subsidised examinations during pregnancy:** In order to reduce the expenditures arising during pregnancy, it is recommended that the range of subsidised benefits be extended to include the most popular examinations (e.g. 4D ultrasound, Streptococcus-B tests). It is also recommended that priority be given to expectant mothers in scheduling examinations. Additionally, it is recommended that consideration be given for reimbursement to be provided from social security funds, against an invoice, for the private medical expenses incurred by expectant mother during pregnancy. The rate of reimbursement should preferably be set between 50–80 per cent, subject to a cap on the aggregated amount of the benefit. The introduction of that measure would also encourage the formalisation of the operations of private medical practices.

**(14) Reduce the number of foetal deaths through improvements to prenatal care:** The number of foetal deaths is estimated at an annual 16,000–17,000 in Hungary, of which approximately 400 occur at a late stage. That figure could be reduced through improvements to the system of prenatal care and through the mitigation of risk factors such as smoking and alcohol consumption. It is recommended that going forward, emphasis on the importance of a healthy lifestyle should be increased further as part of prenatal care.

**(15) Reduce vaccine prices:** Apart from compulsory vaccination for infants and young children, it also appears necessary that prices be reduced or social security support be increased for optional vaccination in order to protect the personal health of children, and of the members of communities. Such vaccinations include e.g. rotavirus vaccination, chicken pox vaccination, and meningococcal B vaccination. Rotavirus vaccination and meningococcal B vaccination cost several thousand forints per dose of

vaccine. In these cases, it may be necessary to subsidise vaccine prices.

**(16) Align consulting hours to working hours:** Families with young children are faced with the problem that their children become ill very easily and frequently. Since consulting hours in primary care and ambulatory care tend to coincide with general working hours, parents are often

forced to take sick leave or time off for care arrangements. In respect of consulting hours, it is recommended that medical practitioners should be obliged to offer consulting hours outside of general working hours at least one day a week. That measure would also help expectant mothers who work during pregnancy. In France, for example, consulting hours are arranged so that they also meet the needs of parents with young children.

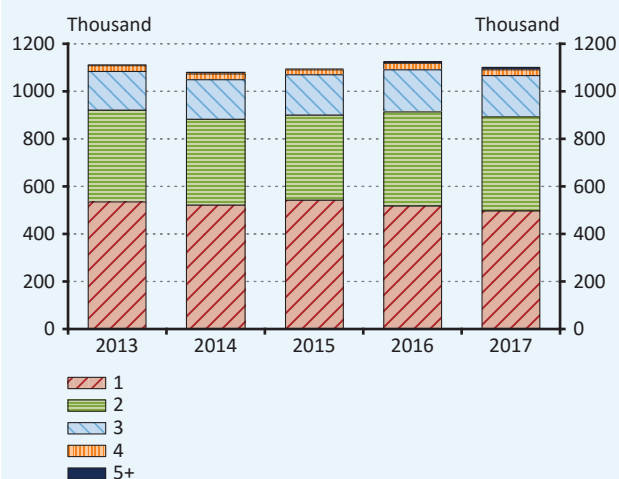
### 7.3. FAMILY-FRIENDLY TAX REFORM

- (15) Ensure that the employment-related elements of the family support benefits track the dynamic wage growth (e.g. via the family tax base allowance)
- (16) Reform the family tax base allowance by allowing negative taxation
- (17) Grant full tax exemption for mothers in large families
- (18) Increase the family tax base allowance for the children of mothers giving birth under 30 years of age

#### Assessment of the situation

**Hungarian families are granted substantial allowances via the country's income tax system.** The incentives introduced for demographic purposes are at a high level even by regional standards, primarily due to the family tax and contribution allowance, which is granted in support of Hungarian families to an annual average number of around 1.1 million recipients (Figure 7.6), in an amount equivalent to an average of 0.7 per cent of GDP per year.

**Figure 7.6**  
Annual number of recipients of the family tax base allowance by the number of dependents



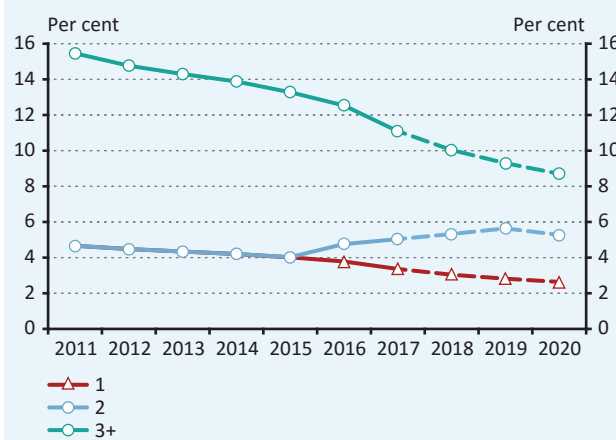
Source: National Tax and Customs Administration, Ministry of Finance.

**The tax system enables incentives to be provided for parenting, which may help to control unfavourable demographic developments over the long term.** The various incentives incorporated into the tax system may have a substantial impact on parenting. According to a study conducted using almost half a century worth of data from the USA, the correlation between tax benefits and fertility rates is mainly significant for younger women (Ridao-Cano – McNown, 2005). Others argue that the favourable effect of higher tax benefits on parenting intentions is primarily demonstrable for lower-income

women (Mumford – Thomas, 2016). In a Hungarian context, Szabó (2017) has found that the introduction of the family tax base allowance may in itself have increased the number of childbirths in Hungary by 6,000–18,000 between 2011 and 2013. Increasing the number of births is essential in order to mitigate the unfavourable demographic and labour market trends (the decline of the working-age population in Hungary) over the long term.

**Ever since its introduction, the family tax base allowance has been part of the Hungarian tax system as a lump-sum benefit; however, it has lost some of its advantage as a result of dynamic wage growth.** The amounts available as part of the family tax and contribution allowance are not influenced by growth in wages or the real economy. Accordingly, the advantage provided by the allowance has gradually been decreasing each year, which has been accelerated by the strong growth in average gross wages since 2017. The amount of allowance per dependent has increased only among families with two children, while in other cases the amount granted per child will have dropped by almost one half relative to the average wage between 2011 and 2020 (Figure 7.7).

**Figure 7.7**  
Family tax base allowance per child as a percentage of the average gross wage, by the number of dependents



Source: HCSO, MNB forecast.

## Recommendations

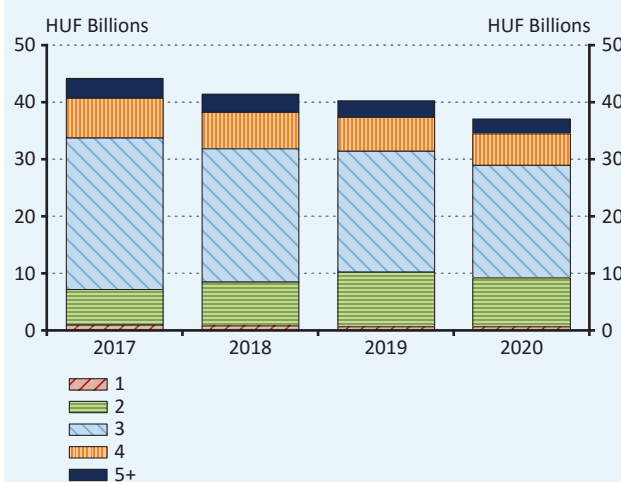
**(17) Alignment of the employment-related elements of the family support benefits with wage growth** could increase the appeal and purchasing value of the benefits. If the objective is to achieve the 2011 ratio of family tax allowances to the average gross wage, then allowance amounts would need to be increased one and a half times, which would reduce fiscal revenues by 0.2 per cent of GDP. Going forward, increases in allowance amounts could be tied to the average gross wage at the national economy level, or to developments in the relevant annual minimum wage.

**(18) A reform of the family tax base allowance by allowing negative taxation** would require that assistance be provided to households with legal incomes that are prevented from making full use of the allowance. Transfers would be provided to households that are otherwise also eligible for the family tax base allowance, the sum being equivalent to the monthly amount otherwise required for full utilisation of the tax and contribution allowance.

Despite the substantial increase seen in the average gross wage at the national economy level, a large number of families still cannot fully utilise the allowance. This primarily affects large families with more than 3 children, where the potential allowance may exceed HUF 100,000, but requires a gross monthly income of at least HUF 310,000 in order to be utilised in full. Negative taxation would act as an income supplement for families that would otherwise lose that allowance amount in the absence of an adequate income of their own. The measure proposed is suitable to provide a substantial incentive for parenting and to increase the fertility rate, because in an estimated 75–80 per cent of the cases it would provide additional financial resources for households with at least three children. Under the current taxation circumstances, the measure proposed would reduce fiscal revenues by less than 0.1 per cent of GDP (Figure 7.8).

**(19) Grant full tax exemption for mothers in large families:** Announced in February 2019, the tax exemption for mothers in large families could provide a powerful incentive

**Figure 7.8**  
Estimated amount of family allowance that is not utilised due to insufficient income, by the number of dependents



Source: MNB calculation.

for parenting four or more children. Under the measure, from 2020 onwards, all women who have given birth to four or more children would be exempt from the personal income tax for their entire lives, and the allowance would also be granted even for adult, non-dependent children. Based on the lessons learned from its initial application, the measure could subsequently be extended to entire families or mothers with at least three children.

**(20) Increasing the family tax base allowance for the children of mothers giving birth under 30 years of age** could promote earlier parenting. In 2016, the average age at which a woman gave birth to her first child was 27.8 years. However, there are significant differences underlying the average, as women with high levels of educational attainment tend to prefer parenting at a higher age. Where the first child is born before the mother reaches 30 years of age, the likelihood of parenting a second and third child is higher compared to cases where parenting the first child is postponed. The tax system may provide an incentive for earlier parenting by means of the family tax base allowance, which may in turn contribute to an increase in the fertility rate.



## 7.4. DEVELOPING THE INSTITUTIONAL SYSTEM PROVIDING DAY CARE FOR CHILDREN

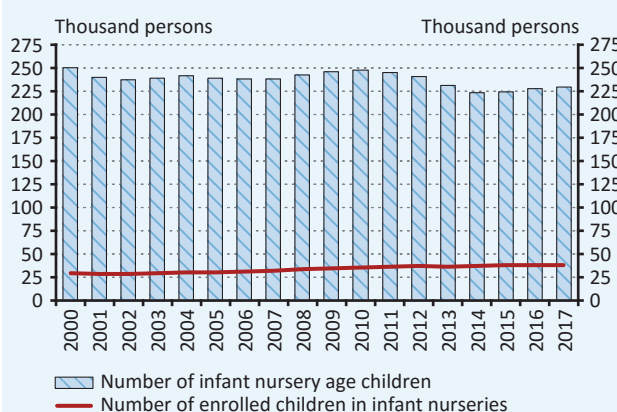
- (19) Ensure that infant nursery care is available for all Hungarian children between 2 and 3 years of age
- (20) Increase nursery school capacities in order to enable admissions to mini groups from the age of 2.5 years
- (21) Support the use of private nurseries through public contributions to charges
- (22) Make family-friendly improvements to the public education system (e.g. longer duty hours aligned with working hours)

### Assessment of the situation

Since 2010, Hungary has seen a significant increase in infant nursery capacities. The number of active infant nursery places varied between 24,000 and 27,000 in the 2000s, with some 32,000 available places in 2010.<sup>33</sup> Based on the latest available data, the number of active places increased to 40,000 in May 2017, up 23 per cent compared to 2010. Until 2013, the number of enrolments exceeded the capacities available, while in 2017 there were 38,000 enrolments for 40,000 active places. Across the entire care system, in 2017 a total of 46,000 places were available, with additional day care opportunities provided in “mini” infant nurseries, workplace infant nurseries, and family infant nurseries. In these institutions, there were a total of 6,127 enrolments for some 6,500 active places in May 2017.<sup>34</sup>

At the same time, the number of available places falls significantly short of the potential number of users. While infant nurseries typically provide day care for children between the ages of 6 months and 3 years, infant nursery care is also frequently used over 3 years of age. For that reason, potential users comprise at least 2.5 cohorts, the combined size of which exceeds 200,000 children (Figure 7.9).<sup>35</sup> During the 24-week maternity leave following childbirth, paid employment is not allowed for recipients of the infant care allowance. On the other hand, from September 2015, nursery attendance has been compulsory from the age of 3, but only starting from the year in which by 31 August the child reaches the age of 3. For that reason, there is a high proportion of children over 3 years of age among children in infant nursery care: In 2016, out of all enrolments some 30 per cent (more than 11,000) were for children over 3 years of age,<sup>36</sup> indicating the need for a higher number of infant nursery places compared to the capacities calculated on an age group basis.

**Figure 7.9**  
Number of infant nursery age children and infant nursery enrolments in Hungary



Source: HCSO.

Access to infant nursery care is characterised by large territorial inequalities. In 2017, day care for children under 3 years of age was not available locally in 2,610 Hungarian municipalities. 26 per cent of all children under 3 years of age, i.e. a total of 72,000 children had no local access to lower nursery care in 2017 (Figure 7.10). 31 per cent of all infant nursery places are available in Budapest, and 83 per cent in municipalities with over 10,000 inhabitants. In 2017, 2,200 children were not admitted due to capacity shortages.<sup>37</sup>

Access to lower nursery places is assumed to have improved further in 2018. This is because, from January 2017, local governments are required by the Child Protection Act to provide infant nursery care in every municipality where the number of young children under 3 years of age exceeds 40, or there is demand for care for at least 5 children.

<sup>33</sup> HCSO (2018b).

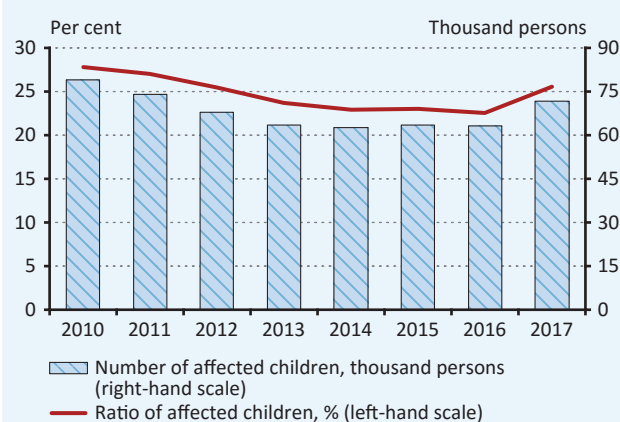
<sup>34</sup> HCSO (2018c).

<sup>35</sup> Over the past years the annual number of births varied between 92,000 and 93,000.

<sup>36</sup> HCSO (2018b).

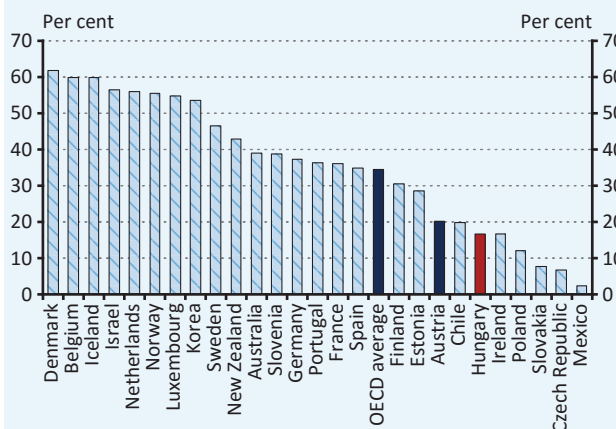
<sup>37</sup> HCSO (2018c).

**Figure 7.10**  
Number and percentage of children under 3 years of age with no access to day care in their place of residence



Source: HCSO (2018c).

**Figure 7.11**  
Enrolment rates in early childhood education and care under the age of 3 years in OECD countries (per cent, 2016)



Source: OECD (2018).

In an international comparison, Hungary has a low proportion of children in infant nursery care based on the most recent figure, which is available for 2016. According to OECD data, in Hungary the proportion of young children under the age of 3 years increased from a mere 7 per cent in 2005 to 17 per cent in 2016. Nevertheless, in 2016 the ratio for Hungary was significantly below the OECD average, which was twice as high, at 34 per cent (Figure 7.11). The relatively low enrolment rate may be attributed to a shortage of places, to parental attitudes, and also to the range of childcare benefits, which, by international standards, are provided for relatively long periods after childbirth.<sup>38</sup>

**Hungary appears to have a high level of state participation in early childhood day care.** In 2016, 86 per cent of young children in infant nursery care attended publicly-founded institutions. Following Slovenia (94 per cent), this is the second highest proportion among OECD countries, and is also substantially above the 44 per cent average for the Visegrád Countries.<sup>39</sup>

**A further increase in infant nursery capacities may provide substantial support for women's re-entry into the labour market.** A survey conducted in 2015 by the Hungarian Central Statistical Office found that 31 per cent of the 252,000 responding mothers with young children identified the development of the infant nursery care as the measure

ensuring the shortest possible time period between child birth and subsequent re-entry into the labour market. Following the flexible work arrangements provided by employers, the development of infant nursery care was the second most frequent response in the survey of mothers with young children.<sup>40</sup>

**In order to achieve sustainable economic development and a demographic turnaround, there is a need to further increase the number of infant nursery places.** In its 180-point proposal, the Magyar Nemzeti Bank set the objective of making infant nursery care available for all Hungarian children between 2 and 3 years of age by 2030 by means of further increasing the number of infant nursery places from 40,000 in 2016 based on the directions announced by the government in order to fulfil the expected increasing need for infant nursery care.<sup>41</sup> The number of children between 2 and 3 years of age was 93,000 in 2017, but may reach 113,000 by 2030 in the case of a sustained improvement in demographic trends. The infant nursery care system must be prepared for increasing demand as a combined result of women's increasing labour market activity and the increasing birth rate. However, consideration should also be given to the fact that not all mothers seek to re-enter the labour market before their children reach the age of 3,<sup>42</sup> and the possibility that children under 3 years of age will not be enrolled for infant nursery care if a younger brother or sister is cared

<sup>38</sup> OECD (2018)

<sup>39</sup> OECD (2018)

<sup>40</sup> HCSO (2015).

<sup>41</sup> MNB (2018a)

<sup>42</sup> A survey carried out by the HCSO in 2014 found that a high proportion of women receiving childcare benefits preferred to spend the full 3-year benefit period at home in order to care for their children (HCSO, 2015).

for at home. **Additional capacity increases may ensure that mothers seeking to re-enter the labour market after childbirth can resume employment by relying on the infant nursery care system.**

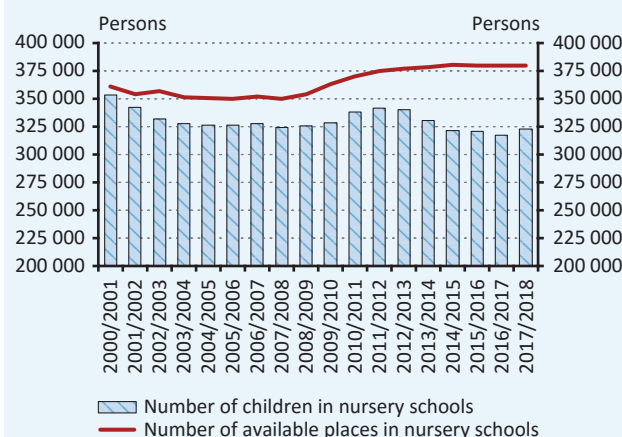
## Recommendations

**(22) Ensure that infant nursery care is available for all Hungarian children between 2 and 3 years of age:** The re-entry of women into the labour market following childbirth is mainly influenced by the number of available infant nursery places. With regard to the number of young children with no access to infant nursery care, and to women's growing labour market activity, the infant nursery developments and capacity increases started in recent years should continue. When creating new institutions, territorial inequalities in access should also be taken into account. A step in that direction was the government announcement of 10 February 2019 to increase the number of infant nursery capacities to 70,000 places by 2022, with 10,000 of the additional places possibly made available by the end of 2019. It is recommended that the infant nursery development programme underway should continue until 2030 so that infant nursery places may be guaranteed for all children seeking enrolment even if the number of births is increasing.

**(23) Increase nursery school capacities in order to enable admissions to mini groups from the age of 2.5 years:** Under the National Public Education Act, children who are mature for nursery school at the age of 2.5 may enrol for nursery education before the age of 3 subject to the availability of places. For that reason, the number of nursery school places should also be increased in order to enable the transfer of these children to nursery school education, which would in turn enable the number of available infant nursery places to increase. Given that in territorial terms nursery school services are more widely available compared to infant nurseries, the enrolment of children for nursery school education under the age of 3 enables mothers with no local access to infant nursery care to re-enter the labour market six months earlier.

In the 2017/2018 school year, a total of 379,000 nursery school places were available in Hungary. The number of enrolled children was lower, with a total of 323,000 children attending nursery school in the 2017/2018 school year. Accordingly, at national level there were 85 children per 100 places. Despite that, occupancy exceeds 100 per cent in certain municipalities.<sup>43</sup>

**Figure 7.12**  
**Number of nursery school places**



Source: HCSO.

**(24) Support the use of private nurseries through public contributions to charges:** The most important barrier to the establishment of privately-operated institutions for early childhood education is the level of charges required for economically viable operations. Charges could be reduced significantly if these institutions were also eligible for the normative amount paid in respect of children enrolled in public institutions. Since these institutions are relieving some of the burden on the public care system, it is recommended that they also receive the public normative amount for their own headcount. In order to reduce charges further, consideration should be given to adding a fourth pocket to Széchenyi Recreation Cards, which would be dedicated to funding private education services.

**(25) Make family-friendly improvements to the public education system (e.g. longer duty hours aligned with working hours):** Working parents are faced with the problem that childcare in nurseries is only provided until 4 or 5 pm. It is recommended that these institutions provide longer hours at least until 6 pm on specific days or even every working day of the week. This may require a further increase in the number of nursery teachers.

<sup>43</sup> HCSO (2018d).

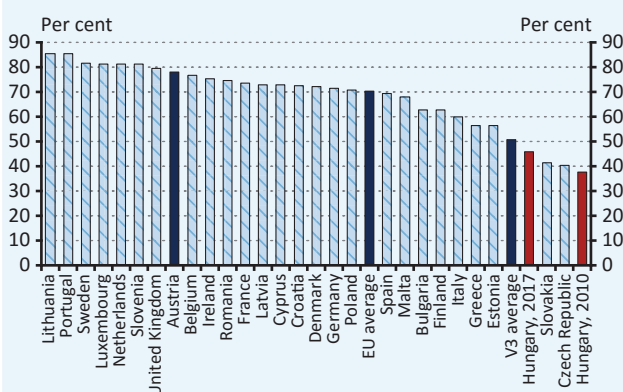
## 7.5. SUPPORT FOR THE DAILY LIVES OF FAMILIES WITH CHILDREN

- (23) Support the re-entry of women into the labour market following childbirth
- (24) Create a family-friendly workplace environment and provide incentives for day care in the workplace
- (25) Support summer camps for children
- (26) Clarify the legal status of babysitters
- (27) Set up a public school bus system

### Assessment of the situation

By international standards, Hungary has a low employment rate for women with young children. Among women aged 25–49, the employment rate for mothers with children under 6 years of age was 45.8 per cent in 2017, which is substantially lower than the average of 70.2 per cent for the EU Member States and is currently the third lowest in the EU (Figure 7.13).

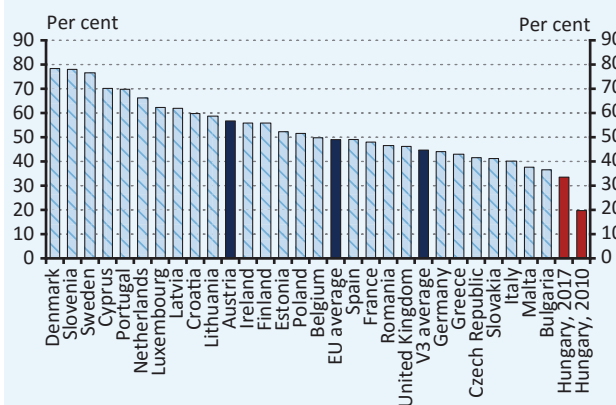
**Figure 7.13**  
Employment rate for women aged 25–49 among women with one child under 6 years of age (per cent, 2017)



Source: Eurostat.

In recent years, the employment rate for mothers with young children has increased in Hungary, which has also been supported by government measures. Such measures include e.g. the Job Protection Action Plan introduced from 2012, and the extra childcare allowance effective as of 2014, as part of which mothers re-entering the labour market while receiving a childcare benefit (childcare allowance or benefit) are eligible for both their wages and benefits. From 37.6 per cent in 2010, Hungary's employment rate for women with children under 6 years of age increased by 8 percentage points until 2017, when the indicator was already higher than those of the Czech Republic (40.3 per cent) and Slovakia (41.2 per cent). However, a significant shortfall is identified compared to the EU average, Austria, and also Poland among the countries in the region.

**Figure 7.14**  
Employment rate for women aged 25–49 among women with three or more children under 6 years of age (per cent, 2017)



Source: Eurostat.

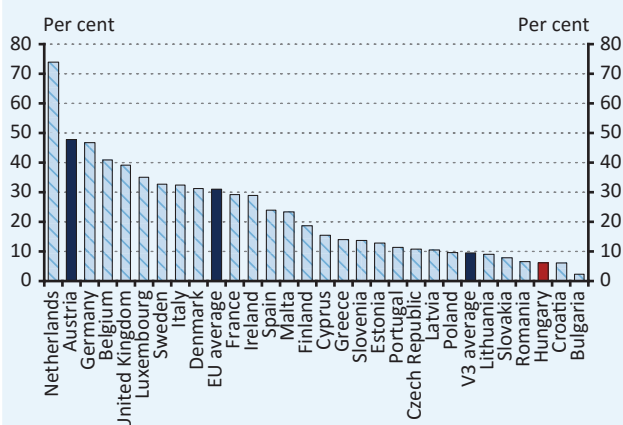
The employment rate for women with three or more children under 6 years of age is also low: the Hungarian figure stood at 34 per cent in 2017 (Figure 7.14). While this value represents a substantial increase compared to the 20 per cent value in 2010, it remains the lowest among the Visegrád Countries. According to Eurostat data for 2017, women with three or more children were employed in a proportion of 57 per cent in Austria and 52 per cent in Poland.

Measures to support the daily lives of parenting families can further increase the employment rate for women with young children, which in turn may also contribute to a higher number of births over the long term. Among EU Member States, countries with higher employment rates for women also tend to have higher fertility rates. Applying the Scandinavian dual-earner family model, Sweden and Denmark have fertility rates of 1.79 and 1.85 and employment rates of 89 per cent and 84 per cent, respectively, for mothers with young children. Similarly, high employment rates for mothers with young children are accompanied by high fertility rates in France, Ireland and the UK. The realisation of parenting intentions may be supported by women of reproductive age expecting an easy re-entry into the labour market following childbirth.

In addition to improvements to the institutional system of childcare, **women's re-entry into the labour market may also be facilitated by the more extensive use of atypical forms<sup>44</sup> of employment.** Examples include part-time employment and teleworking, which facilitate the balance of work and household responsibilities. When provided with opportunities for part-time employment, women seeking to resume work can generally re-enter the labour market earlier compared to full-time employment. In a survey conducted in 2015 by the Hungarian Central Statistical Office, responding mothers with young children identified employers' attitudes as the most important factor of re-entry into the labour market. 41 per cent of the 252,000 responding mothers with young children identified flexible work arrangements provided by employers in consideration of individual life situations as the measure ensuring the shortest possible time between parenting and subsequent re-entry into the labour market.<sup>45</sup>

**In Hungary, out of all women aged 20–64 only 6.2 per cent were employed part-time in 2017, which is substantially lower than the EU average of 31 per cent (Figure 7.15).** According to HCSO data, in 2017 137,000 women worked part-time in Hungary.

**Figure 7.15**  
**Ratio of women in part-time employment in the EU Member States (2017)**



Source: Eurostat.

**Part-time employment tends to be more widespread in Western Europe countries:** in 2017 the ratio of women in part-time employment was 31 per cent in Denmark, 33 per cent in Sweden and around 30 per cent in France. Among EU Members, the Netherlands has the highest proportion

of women in part-time employment, with Austria ranked second at 48 per cent. By contrast, in Central and Eastern European countries, the ratio of women working part-time is low: out of all women aged 20–64, 11 per cent were employed part-time in the Czech Republic, 10 per cent in Poland and 8 per cent in Slovakia. The Hungarian figure also falls short of the levels for the Visegrád Countries despite the fact that **in Hungary under the Labour Code a mother may request part-time employment until her child reaches the age of 3**, and a mother with three or more children may request part-time employment (at one-half of full working hours) until her youngest child reaches the age of 5.

## Recommendations

**(27) Support the re-entry of women into the labour market following childbirth:** In order to facilitate the re-entry of women into the labour market following childbirth and the daily tasks of child raising, it is recommended that **incentives for the use of atypical forms of employment be provided by means of contributions and benefits.** It is recommended that in jobs where this is technically feasible, mothers with a preference for part-time over full-time work be given opportunities for such employment. Additionally, consideration should be given to having legal provisions in place under which the option of part-time work is also available for women with children over the age of 3. The appeal of part-time employment and telework may be increased by granting allowances on employer's contributions in respect of employees engaged in such arrangements. It is recommended that employers develop internal policies with specific provisions for home office/teleworking opportunities, and the conditions for taking those opportunities. Additional incentives may also be provided through grant programmes under which funds are specifically made available for creating the infrastructure required for teleworking. Another example for a possible solution is provided by France, where the state grants an income supplement to mothers in part-time employment.

**(28) Create a family-friendly workplace environment and provide incentives for day care in the workplace:** In order to improve the employability of parents with young children, campaigns should be run and information material compiled to promote the recognition of the *Family-Friendly Workplace* title. It would also be possible to raise the current cap of HUF 2 million on the grants that may be awarded to a single company. In addition, it is recommended that the state actively support the setup and maintenance of a

<sup>44</sup> Atypical work is defined as "all forms of engagement for work that differ in one or more of their elements from conventional employment in space and time" (Hárs, 2013). Our proposals primarily concern opportunities for part-time work and teleworking.

<sup>45</sup> HCSO (2015).



system for day care in the workplace, which would include a range of on-site nurseries and supplementary care facilities, while the setup and maintenance of such services could also be made mandatory above a certain employee headcount. In the 2016/2017 school year, there were only 7 workplace infant nurseries in operation in Hungary, providing day care for 38 young children.<sup>46</sup>

**(29) Support summer camps for children:** For most parents it is a major challenge to place their children during school holidays. To help negotiate that challenge, it is recommended that in cases where the parent's employer contributes to a child's camp or the employer itself organises a camp for the children of its employees, the employer should be allowed to deduct its related expenses from its corporate tax base.

**(30) Clarify the legal status of babysitters:** Babysitters can provide substantial assistance to parents for balancing work and household responsibilities, for example, by supervising children after care hours in nurseries and schools until the parents' return home from work. The legal status of babysitters in Hungary is currently unclear, and in most cases their services are not invoiced. It would be advantageous to develop a concept to allow babysitting services to be provided in a fully regular manner, while also ensuring the formalisation of the segment. In addition, we recommend the establishment of an accreditation system

that would enable the state to control the quality of the various babysitting and childcare training courses, and to support participation in such courses. If the system of state-approved babysitter training courses is set up, it is recommended that babysitters obtaining their qualifications in this way should, subject to their consent, be included in a publicly accessible register that any user of the service can query at any time to verify that their chosen babysitter has the appropriate qualifications. It may be practical for the database to flag service providers that also offer to care for several children collectively. In order to reduce the costs of childcare, it is recommended that the invoiced costs of babysitting services be deductible from the tax base. Another example for a possible solution is provided by France, where costs related to childcare can be recognised in the form of a benefit on the personal income tax.

**(31) Set up a public school bus system:** In order to make traveling to schools easier, it is recommended that a public school bus system be created to help children get to school before school hours, and then take the children home safely after school. The system would primarily be maintained using central budget resources, while local governments could be given a major role in its organisation. Given the alignment of the proposed measure with the plans of the Ministry for Innovation and Technology, the system of the school bus network, based on an American model, could also be organised in Hungary within two years.

<sup>46</sup> HCSO (2018c).



## 7.6. SUPPORT FOR HOME STARTERS

- (28) Make family-friendly improvements to the services of the financial system
- (29) Extend eligibility for non-refundable assistance under the family housing benefit scheme (CSOK) as an incentive for the birth of second children
- (30) Adjust the figures specified in the CSOK rules so that the scheme may effectively track developments in the property market
- (31) Remove the HUF 35 million cap on the CSOK available for the purchase of used homes
- (32) Tighten the rules applicable to the purchase of homes for investment
- (33) Develop new district concepts to improve the territorial allocation of housing developments
- (34) Utilise vacant public housing
- (35) Increase the tax advantage on first home purchases
- (36) Arrange for the continuous review of the value threshold of the tax advantage on new home purchases

### Assessment of the situation

**Housing conditions determine families' quality of life and also influence their parenting decisions.** Among the financial factors necessary for parenting, the existence of a stable workplace and adequate housing are the most important for both 18–29-year-olds and 30–40-year-olds.<sup>47</sup> By supporting access to housing for young couples, housing policy can also contribute to an increase in the number of children. This is true, because the longer couples are delayed in gaining access to adequate housing for parenting, the fewer productive years they will have for the realisation of their parenting intentions. On the other hand, a family may need more spacious housing as the number of children increase. In its 2015 Housing Survey, the Hungarian Central Statistical Office found that 45 per cent of the families seeking to move from their current homes within 3 years were households with children.<sup>48</sup>

**The state has a range of instruments in place to support families' access to housing and to make housing expenses affordable.** Housing subsidies are provided from the budget, and the VAT rate on newly built homes was temporarily reduced from 27 per cent to 5 per cent between 1 January 2016 and 31 December 2019. From January 2018 onwards, HUF 1 million worth of outstanding mortgage debt is cancelled for each of the third or additional children a family intends to have. As a substantial contribution to the affordability of housing expenses, household overheads were reduced between 2012–2014 involving cuts in the prices of district heating, electricity, water and natural gas, and administrative prices have been frozen since October 2014.

**Announced in February 2019, the Family Protection Action Plan comprises a range of measures to support young couples' access to housing.** Under one of these measures,

from 1 July 2019 the loan granted at a subsidised interest rate as part of applications for the family housing benefit scheme (CSOK) will also be available for the purchase of used homes. Capped at maximum 3-per cent interest rate, the maximum loan amount is HUF 10 million for families that already have two children or have parenting intentions for two children, and HUF 15 million for families that already have three or more children or have parenting intentions for three or more children. Additionally, from 1 July 2019 the HUF 35 million cap is also being lifted in respect of CSOK applications for used homes. The rural family housing benefit scheme is scheduled to be introduced in 2019 H2 as part of the Hungarian Village Programme, permitting the amounts of benefit granted for the purchase or construction of new homes to be utilised for the purchase of used homes in municipalities with fewer than 5,000 inhabitants where the number of inhabitants has declined since 1 January 2003. Additionally, the mortgage debt cancellation introduced from 2018 will be extended, granting a waiver on the eligible family's outstanding mortgage debt in the amount of HUF 1 million on the birth of a second child, HUF 4 million on the birth of a third child, and HUF 1 million on the birth of each subsequent child born after 1 July 2019.

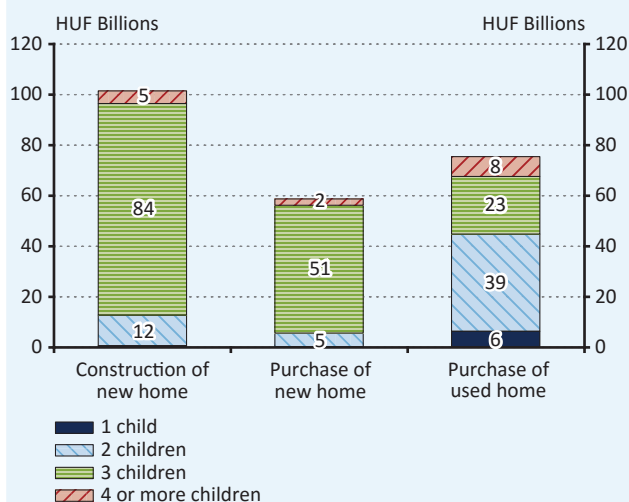
**The family housing benefit scheme (CSOK) was introduced in 2015** to provide support, depending on the number of (undertaken) children, for the purchase or construction of new and used homes. The highest amount of non-refundable benefit of HUF 10 million is available to families with three children for the purchase or construction of new homes. Based on the data available, between 2016 Q1 and the end of 2018 Q4 the CSOK benefit was disbursed in the total amount of HUF 189 billion, with benefit contracts made for a total of HUF 237 billion. Between January 2016 and the end of December 2018, a total of 76,000 benefit contracts were signed, with 68 per cent of the total amount used by

<sup>47</sup> NCSSZI (2012).

<sup>48</sup> HCSO (2018e).

families for the construction or purchase of new homes, and 32 per cent for the purchase of used homes (Figure 7.16).<sup>49</sup>

**Figure 7.16**  
Benefit contracts under the family housing benefit scheme by number of children (cumulated data, 2016 Q1–2018 Q2, HUF billion)



Source: Ministry of Finance.

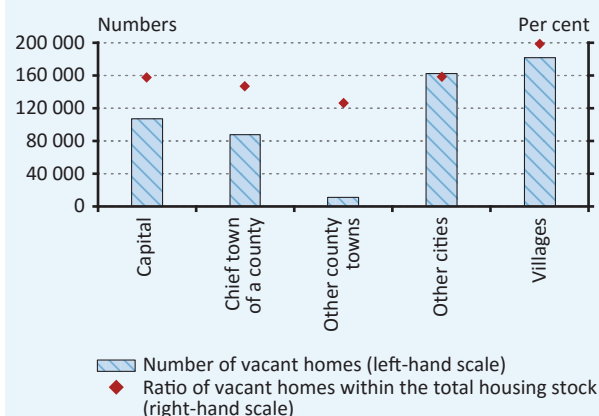
A majority of the families applying for a family housing benefit scheme had three children or had parenting intentions for three children. 82 per cent of the benefit amount for the construction of new homes was granted to families with three children and 12 per cent to families with two children. 86 per cent of the benefit amount for the purchase of new homes was granted to families with three children. Of the families receiving CSOK for the purchase of used homes, 51 per cent had two children and 30 per cent had three children. Overall, 66 per cent of the benefit contracts signed between January 2016 and December 2018 for a total amount of HUF 237 billion were for the benefit of families with three children.

**Public spending on housing subsidies has been rising steadily since 2015**, with approximately HUF 185 billion worth of subsidies paid out in 2017. To a large extent, the increase in spending seen in recent years has been driven by an increase in the amount paid out in connection with the family housing benefit scheme and by the cut in the VAT rate for newly built homes.

**In Hungary, vacant public housing represents potential that could also support demographic targets.** According to data from the 2016 microcensus, Hungary's housing stock consisted of 4,405,000 homes in October 2016 (HCSO, 2016). In 2016, 12 per cent of the total housing stock

(550,000 homes) was vacant (Figure 7.17). In villages, the proportion of vacant homes was 15 per cent, a substantially higher ratio compared to urban municipalities.

**Figure 7.17**  
Number and ratio of vacant homes within Hungary's total housing stock, by type of municipality (2016)



Source: HCSO.

In 2016, 3 per cent of vacant homes (a total of 16,312) were owned by local governments. The number of vacant public housing units increased since the previous survey, the 2011 census. In 2011, a total of 13,911 units of public housing were reported as vacant.

## Recommendations

**(28) Make family-friendly improvements to the services of the financial system. Adjust student loan rates according to the number of siblings:** When setting interest rates on student loans taken to finance higher-education studies, it is recommended that the number of the student's siblings be taken into account. In the case of families with two or more children, the state could grant a progressively increasing rate of interest allowance on student loan plans. **Introduce children's early savings accounts:** Introduce a free securities account that may already be opened prior to childbirth, featuring public assistance and individual top-ups, with a preference for investments in the government securities market. A tax exemption could be granted for these savings which could be used for hospital expenses related to childbirth, as well as for health or school expenditures.

**(29) Extend eligibility for non-refundable assistance under the family housing benefit scheme (CSOK) as an incentive for the birth of second children:** Announced on 10 February 2019 with effect as of 1 July 2019, applications for subsidised loans will also be accepted for the purchase

<sup>49</sup> MNB (2018c): Trends in Lending.

of used homes in an amount of up to HUF 10 million for families that already have two children or have parenting intentions for two children, and up to HUF 15 million for families that already have three or more children or have parenting intentions for three or more children. Under the current regulations, the grant amount of the CSOK benefit available to families that already have two children or have parenting intentions for two children is HUF 2.6 million for the purchase or construction of new homes as well. With regard to the specificities of Hungary's family structure and to rising property prices, consideration should be given to the design of a more powerful benefit plan for families that already have two children or have parenting intentions for two children. Data from the HCSO's 2011 census show that out of all Hungarian families with at least one child, over one half have only one child, one third have two children, and a mere 12 per cent have three or more children. The proposal may be carried in several ways. Account may be taken of the size of the current home, or, assuming a specifically forward-looking measure, consideration may be given to limiting eligibility to parenting intentions.

**(30) Adjust the figures specified in the CSOK rules so that the scheme may effectively track developments in the property market:** Due to continuous changes in prevailing housing market terms, house prices also tend to change substantially from time to time; therefore, consideration may need to be given to indexing the maximum amount of subsidies available as part of the CSOK (e.g. using the MNB house price index). Additionally, as announced by the government on 21 February 2019, in small municipalities with populations below 5,000 inhabitants, the subsidy available for the purchase of new homes may also be utilised for the purchase, extension or, up to 50 per cent of the subsidies, for the upgrade of used homes, as a measure introducing territorial differentiation in favour of smaller settlements over larger ones.

**(31) Remove the HUF 35 million cap on the CSOK available for the purchase of used homes (implemented):** Under the current regulations, the purchase price of a used home for which the CSOK benefit is requested is capped at HUF 35 million. However, as announced by the government on 10 February 2019, that restriction is to be removed, which – in view of the dynamic property price increase seen in the past period – is expected to support the greater utilisation of the CSOK.

**(32) Tighten the rules applicable to the purchase of homes for investment:** In Budapest, the sharp increase in house prices is partly attributable to the fact that a relatively high proportion, some 40 per cent, of homes are purchased for investment. In that light, it appears reasonable to cool house prices in the capital city by means of tighter stamp duty regulations on homes purchased for investment. Additionally, in order to discourage the investment

motivation, it may also be advisable to differentiate the amount of CSOK subsidies according to the number of properties already owned. Apart from that, house prices may also be cooled by directing households' savings to areas outside the property market.

**(33) Develop new district concepts to improve the territorial allocation of housing developments:** To achieve a level of new construction that supports the maintenance of housing stock quality, a completely new mindset is required, primarily involving the development of new district concepts, the designation of new residential areas, and the implementation of related infrastructure developments, with particular regard also to the application of modern technologies. This approach would help create a more liveable environment, as opposed to efforts to cram even more homes into areas in the closest possible vicinity to the centre. Additionally, the application of technologies that are also mindful of efficiency would increase the probability for an accelerated rate of housing stock renewal.

**(34) Utilise vacant public housing:** In view of the volume of vacant public housing, consideration should be given to using such units to provide first homes for young people, which would also support parenting.

**(35) Increase the tax advantage on first home purchases.** Currently, first home buyers under 35 years of age are required to pay one half of the 4 per cent duty on the onerous transfer of property in cases where the market value of the residential property does not exceed HUF 15 million. In 2017, 26 per cent of the home purchases by buyers under 35 years of age exceeded the HUF 15 million threshold, and were therefore not eligible for the full duty allowance. At the same time, in order to support young home and life starters, it appears reasonable to introduce a duty exemption on the acquisition of the first residential property (first share of ownership). It is recommended that the threshold be reviewed and indexed to a house price index at regular intervals to ensure that the highest possible proportion of young people remain eligible for the benefit.

**(36) Arrange for the continuous review of the value threshold of the tax advantage on new home purchases:** Under the current regulations, the purchase of a new home constructed (commissioned) by a contractor is exempt from the duty up to a purchase price of HUF 15 million, and for a purchase price between HUF 15–30 million the 4-per cent duty is only applied to the part above HUF 15 million. In 2017, 69 per cent of available new homes in Budapest were offered at priced above HUF 30 million and were therefore not eligible for the duty allowance. In alignment with the trends in house prices, it is recommended that the current thresholds be reviewed regularly, and indexed as required. The duty allowance applied to new homes supports both home starters and the renewal of the housing stock.

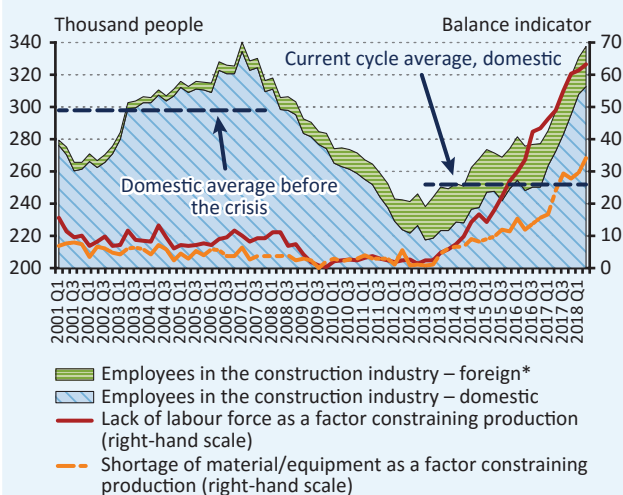
## 7.7. SUPPORT FOR HOME CREATION BY THE EXPANSION OF CONSTRUCTION CAPACITIES

- (37) Increase the construction workforce
- (38) Scheduled market entry of public investments
- (39) Ease administrative barriers to home construction

### Assessment of the situation

In addition to the construction capacity shortage, a healthy pick-up in home construction is also restricted by the capacity-absorbing impact of public investments and commercial property developments. At present, the supply side of the Hungarian housing market is characterised by several conflicts. In addition to the capacity-absorbing effect of public investments and commercial property developments, the general capacity shortage characterising the construction sector is a significant impediment to a healthy pick-up in home construction. A large part of the enterprises mention the absence of skilled labour and shortage of commodity and equipment, as factors hampering construction output (Chart 7.18).

**Chart 7.18**  
Number of construction employees and factors hampering construction output

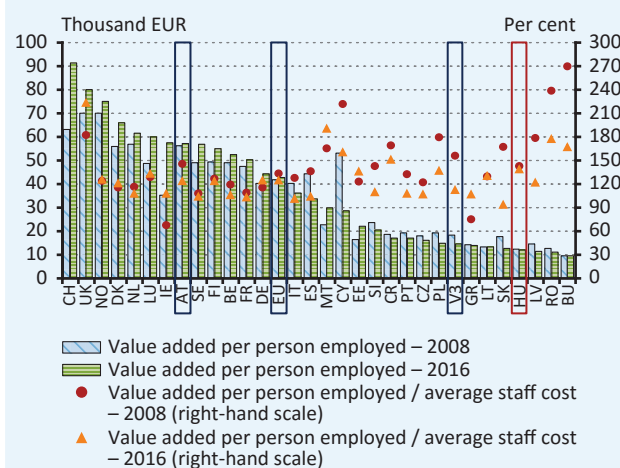


Source: HCSO, European Commission.

**Renewal of the Hungarian housing stock is occurring at a slow rate, one cause of which is the low productivity of construction.** In 2017, roughly 14,400 new homes were completed across the country, which resulted in a – even by international standards – low, i.e. 0.3-per cent annual renewal rate of the Hungarian housing stock. This indicator was 1.4 in Austria, 1.3 in Poland, 0.9 in Slovakia, and 0.6 per cent in the Czech Republic and Romania. One of the

main reasons for the low renewal rate, in addition to the construction capacity shortage, may also be the relatively low productivity of the sector (Chart 7.19). All of this is presumably attributable to the low investment ratio of enterprises, the inappropriate utilisation of the economies of scale, as well as to the use of obsolete technologies.

**Chart 7.19**  
Construction sector's productivity in years 2008 and 2016, in a European comparison



Source: Eurostat.

### Recommendations

**(37) Increase the construction workforce:** At present, the construction skilled worker profession is not sufficiently popular in the younger generations as a career model. The popularisation of the profession is essential for the replacement of the labour force. In addition to supporting the dual education and retraining programmes, support for infrastructure investments facilitating geographical mobility may be also worth considering. With a view to ensuring the resupply of labour force, the objective may be to create and support new forms of education, and thus the new labour force would be also able to operate modern technologies, in addition to implementing green, energy-efficient projects.

**(38) Scheduled market entry of public investments:** Public investments absorb a major part of the construction

capacity available in Hungary. The impact of this, on the one hand, is the major deterioration of the housing developments' access to capacities, and on the other hand the substantial increase in construction costs. We recommend referring the scheduling of the construction market entry of public investments to the responsibility of a single central organisation, which would help mitigate the aforementioned negative risks impacting housing developments, and it would be also feasible to implement the countercyclical market entry of the public construction requirements. The countercyclical presence of the state on the construction market would also support the long-term maintenance of the construction sector's capacities. This is of the utmost importance because in an unfavourable economic situation capacities swiftly come down, while in the period of recovery they are restored extremely slowly.

**(39) Ease administrative barriers to home construction:**  
A substantial part of the administrative burdens connected

to housing developments is related to construction permits and property registration procedures, which mostly influence the timing of the commencement of the developments and the completion of the new homes. Based on this, we propose to consider making the construction regulation more transparent, structured, straightforward and objective, as well as to rationalising and making the licensing processes belonging to the competence of the various specialised authorities more efficient. Of the efficiency-increasing measures, it is worth mentioning electronic processing and the involvement of communication to a higher degree in the execution of the procedures. Creating transparency and efficiency, in parallel with expecting the fulfilment of the applicable requirements, would support the acceleration of the procedures. The diversion of the administration of the property registration to electronic channels – at the same time preserving human control – would also shorten the duration of the administrative procedures related to housing developments.



## 7.8. RECOGNITION OF PARENTHOOD IN THE PENSION SYSTEM

(40) Acknowledging the number of children raised in assessing the initial pension amount

(41) Considering the family tax allowance for pension calculation

### Assessment of the situation

In the Hungarian pension system, which operates on a pay-as-you-go principle, demographic trends are of key importance, since **the pension for the parents' generation is produced by the contribution payers of active age**. Similarly to the underlying trends characterising the EU countries, in Hungary a decrease in the population and the ageing of the society can be observed, caused by the fertility rate falling short of 2.1, the necessary level for the simple reproduction of the population, and by the gradual rise in life expectancy.

The persistence of the current demographic trends may result in a situation **in the future, where a shrinking working-age population will have to pay the pensions of an increasing number of elderly people**. Through the reversal of the demographic trends, the recognition of parenthood in the pension system may contribute to the long-term sustainability of the social insurance-based pension scheme and to the provision of adequate pensions.

**The recognition of parenthood via the pension system may essentially serve two purposes.** Equity, on the one hand, i.e. the offsetting of the extra costs incurred as a result of having children, and on the other hand, motivating people to have children. The argument for the first purpose is that **the costs of having children typically occur at the level of individuals, while raising children also generates social benefit** (e.g. cover for the pensions of people without children will be also provided by the future contributions of today's children).<sup>50</sup>

**Raising children can also be regarded as an investment in human capital.** Since the costs occur at the level of families, the yield must also appear at family level.<sup>51</sup> According to the estimates of Giday and Szegő (2012), in order to raise a child of 21 years with an average level of education,

parents spend HUF 10 million from their wages, and the labour input of the parents is estimated at a further HUF 9 million, which is accompanied by a state subsidy of roughly HUF 13 million.<sup>52</sup> According to the authors, due to this the acknowledgement of parenthood in the pension system is "making the pension claim – formerly made invisible – visible and enforcing it, rather than a social benefit" (Giday és Szegő, 2012).

In the coming decades, the children of parents spending large amounts on raising their children will produce the cover for the pensions of all beneficiaries, regardless of whether or the beneficiary was involved in raising the age group that provides the funding. It should be noted that parents receive social benefits from the budget, but those cover only smaller portion of the costs related to parenthood.

In addition, it is also an argument for acknowledging parenthood that **in their active age parents renounce the consumption of part of their income, while an individual without children can accumulate on average higher savings** for his old age, which may cover the shortfall compared to the pension assessed for those with children.

**The acknowledgement of parenthood in the pension system may be also justified by the less favourable pension prospects of women with children.** In 2016, in the group of beneficiaries aged 65-79 years, women's pension payment was by 15 per cent lower, on average, compared to the retirement provision of men (Chart 7.20). At the same time, the Hungarian value is more favourable than the average of 37 per cent, applicable to the EU Member States.<sup>53</sup> In the case of pension payments, the difference between the genders primarily reflects the inequality between wages, since women spend on average less time on the labour market due to the years spent raising children, a higher ratio of them are part-timers and their career wage is lower.

<sup>50</sup> Banyár (2012), Botos – Botos (2012), Giday – Szegő (2012)

<sup>51</sup> Giday – Szegő (2012). In addition to privatising the social benefit of raising children, this problem may also be resolved by "socialising" the costs of parenthood, for example, by reimbursing of the total cost of parenthood (Banyár, 2012).

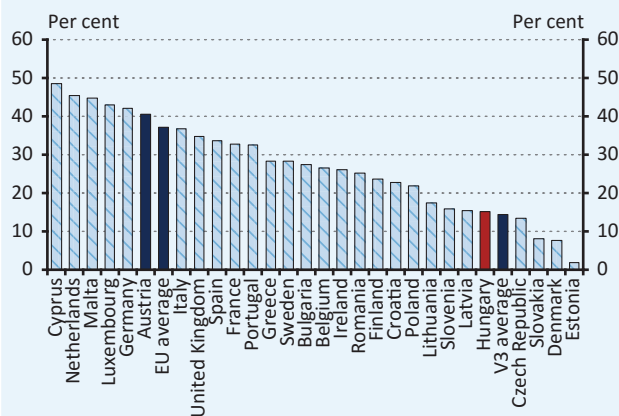
<sup>52</sup> The precise settlements may be supported by the method of National Transfer Accounts (NTA) (Gál et al, 2014).

<sup>53</sup> European Commission (2018)



The gender wage gap was 14 per cent in 2016 in Hungary, which essentially corresponds to the difference observed in pensions.

**Chart 7.20**  
**Gender pension gap in the case of pensioners aged 65-79 years (per cent, 2016)**



Source: European Commission (2018).

**An increase in the number of children raised results in a decrease in women's career wage and numbers of years spent in service, and thus in a lower initial pension.** Based on the results of a survey by Borlói (2012) on a small sample, the more children a woman raised in Hungary, the lower her pension insurance entitlement was. **For example, the initial pension calculated for mothers with three children was 22 per cent lower on average than that for women with no children.** Borlói (2012) also demonstrates that the link between the higher number of children and lower pension can also be verified in groups with identical education.

**At the same time, the pension system already partially acknowledges childcare:** on the one hand, the period covered by maternity allowances qualifies as service time, and on the other hand, women – irrespective of whether or not they have children – upon acquiring the 40 years of eligibility they may retire before the statutory retirement age; in calculating the 40 years of eligibility, the time spent on raising children is acknowledged up to 8 years.

The recommendations presented below are aimed to increase the replacement rate of the parents (primarily mothers) to ensure that the parents who brought up the contribution-payer children, do not suffer a disadvantage due to having children, when their initial pension is calculated.

## Recommendations

**(40) Acknowledging the number of children raised in assessing the initial pension amount:** We propose that – based on the number of children raised – parents should receive a pension supplement of a certain degree. The pension supplement could be of fixed amount, established as a percentage of the pension or determined as a percentage of the child's wages. For example, in France, the pension benefit of mothers with three or more children is increased by 10 per cent. A pension supplement depending on the gross wages of the children would be payable in respect of children who are employed in Hungary, which could also contribute to the reduction of shadow employment (by encouraging tax and contribution payment based on real wages) and to the return of employees working abroad to Hungary. The supplement based on the gross wage also takes into consideration that obtaining a higher education degree for a child typically entails extra costs for the parents, and that employees with higher qualification usually make higher contribution payments to the pension fund. On the other hand, in the long run it may encourage parents to allocate as much resources as possible to the education of their children, since not only the state but the family as well benefits from the accompanying higher return.

**(41) Considering the family tax allowance for pension calculation:** Upon determining the monthly average wage serving as a basis for the old-age pension, at present the net income is calculated as follows: first, the statutory contributions (health insurance contribution, labour market contribution, etc.) defined in the laws effective on the payment date are deducted from the gross wage. Thereafter, the amount of the personal income tax, calculated at the personal income tax rate effective in the individual years, is deducted. When making the adjustment for personal income tax, it is not the actually paid personal income tax that is deducted from the gross wage, but a hypothetical amount calculated at the prevailing rate. **In practice, this means that the effect of the family tax allowance in reducing the personal income tax is not taken into consideration when assessing the pension amount.** If the family tax allowance was taken into consideration in the calculation of the net income, compared to the present calculation method, a higher net wage would be determined for parents with children, who benefit from the family tax allowance, when calculating the initial amount of the pension.

## 7.9. MITIGATING THE DEMOGRAPHIC CHALLENGES OF THE PENSION SYSTEM

- (42) Membership in supplementary pension funds by subjective right
- (43) Support employers' contributions to supplementary pension funds
- (44) Increase the effectiveness of state subsidies in supplementary pension funds
- (45) Increase investment and cost effectiveness and security
- (46) Ensure that welfare funds provide a range of family-friendly services and support home purchases

### Assessment of the situation

The demographic trends can be characterised by two main megatrends: while willingness to have children decreases, life expectancy increases (ageing society). Consequently, a shrinking active population has to provide for an expanding inactive, pensioner population. As a result of these two opposite trends the **old-age dependency ratio** (showing the proportion of the number of people over 65 to the number of the working age (15-64) population), **may double by 2060 compared to today's level of around 30 per cent** (Palotai – Virág, 2016). Thus, even if the present fertility rate of 1.5 reaches the desirable level of 2.1, a demographic turnaround starting today will only have an effect on the pension system at a horizon of 30-40 years and thus it may improve the balance of the scheme only after 2050-2060. For this very reason, a solution to the aforementioned demographic problems is founded on two legs:

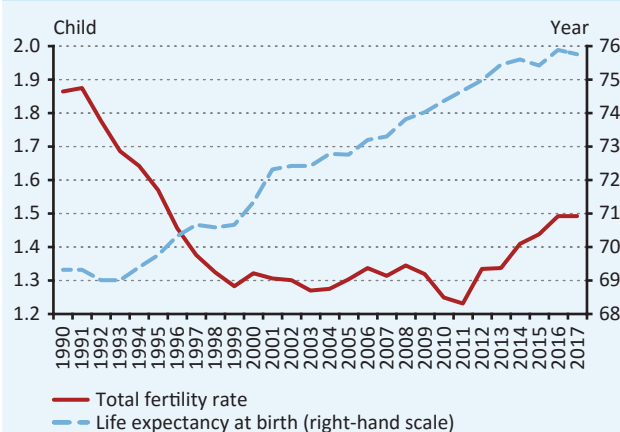
- 1) a significant increase in the fertility rate, i.e. encouraging the population to have children, and
- 2) increasing the pension supplement reserves.

A stable supplementary system, targeting masses of people/full coverage, can contribute substantially to relieving

the public schemes and maintaining the economy and competitiveness by balancing the income differences of the individual careers (difference between the incomes of the active-inactive periods). It can be generally stated that the individual stability of the households makes a strong contribution to the financial stability of a converging country.

**Developed countries are characterised by significant pension supplement savings.** The developed European and Asian countries usually have pension supplementary reserves exceeding 20 per cent of GDP, and thus it is also important for Hungary to increase these reserves. 86 per cent of the income of the present Hungarian pensioners comes from the public pension system (earned income accounts for further 12 per cent), while the ratio of income from own savings is merely 2 per cent (Palotai – Virág, 2016). Experience shows that the younger generation tends to plan in advance to a lesser degree than the previous generations, and thus within the voluntary pension scheme the ratio of those below the age of 35 decreased substantially in the past 15 years. Successful convergence is generally conditional on a high rate and proper structure of capital accumulation. Dynamic growth requires a high investment ratio, where internal savings play a key role. An additional element of a well-functioning supplementary pension system with high penetration is that **it simultaneously supports the resolution of several problems, since it is key to financing both the government and the economy, and it is able to balance the different income situation of the individuals in their different stages of life and manage the demographic challenges of the society.** Withdrawal from current consumption flows to the financing of the economy, thereby contributing to sustainable development and exerting a countercyclical effect. The scheme of pension supplementing savings may only be successful if the inflow of savings is additional and does not disrupt the fiscal balance. The private pension fund scheme was not successful, because – among other things – it was built not on additional savings, it increased the budget deficit and resulted in easy profit in a system which in fact lacked competition (Banai – Palotai, 2018). Similarly to the Western European, or to the recently implemented Polish system – through the measures described in detail later – additional, supplementary funds could appear on the pension savings market.

**Chart 7.21**  
Changes in life expectancy at birth and total fertility rate in Hungary



Source: HCSO.

The Hungarian state provided a tax refund before as well, but it is necessary to improve the efficiency of the scheme, and strive to reach a wider range of people with a rational strategy. 20 per cent of the annual individual payments to the voluntary pension fund, pension insurance and retirement savings account, subject to various limits, are credited to the individual account. For example, in the case of pension funds, a maximum of HUF 150,000 may be reclaimed annually, which may be reached by an annual saving of HUF 750,000. The target group of the aforementioned product is different, but these schemes reached, even jointly, only about 1-1.5 million people, which represents 20-30 per cent of the active population of 4.5 million persons. A large number of these are inactive or do not benefit from tax allowance. In order for the scheme to become an efficient supplement to the public scheme and to provide a real solution for the future problems of the pension scheme, a coverage of 70-80 per cent would be necessary. This requires a well-considered government strategy and then the main elements of the scheme must be maintained in the long run in a predictable way.

## Recommendations

**(42) Membership in supplementary pension funds by subjective right (automatic enrolment):** The scheme based on membership by subjective right and opt out – known from the UK, US, Italian or Polish examples – is able to achieve substantially higher coverage than any scheme that is based on voluntary membership (opt in). Thus, employees may decide on the payment and on the degree thereof based on membership by subjective right. The administration of this can be implemented most efficiently through the employers. The payment may be a fixed,

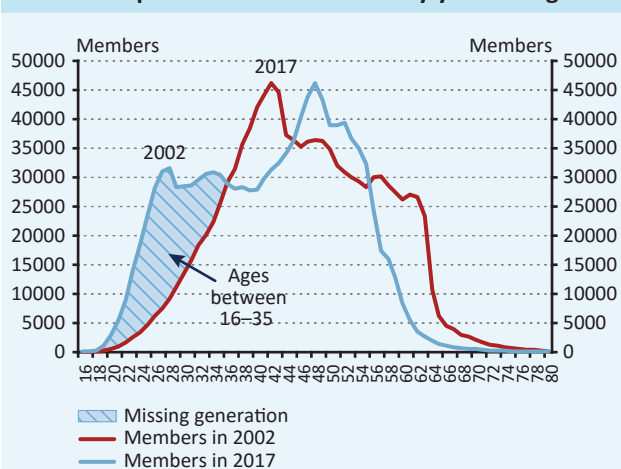
recommended rate (e.g. 1 per cent of the gross wage, but this could be modified annually (e.g. 0 per cent, 2 per cent or a customised rate)).

**(43) Support employers' contributions to supplementary pension funds:** Employers could supplement employees' payment with a similar amount, exempted from tax and contributions (or subject to preferential taxation) optionally, or on a mandatory basis up to the recommended level. With this, employers could strengthen employees' loyalty and increase the willingness to save.

**(44) Increase the effectiveness of state subsidies in supplementary pension funds:** The tax allowance, functioning as an incentive in the current system, does not appeal to certain groups of the population (sole traders paying small taxpayers' itemised lump sum tax ("KATA"), those paying low tax or persons benefiting from other tax allowances). In the declining tax environment, it may be more expedient to introduce a normative state subsidy with a limit that is lower than the present one. The scheme may be parameterised in such a way that with an identical headcount it would cost more than today. The rate of the subsidy could be determined on a tiered basis; e.g. in the basic case a normative subsidy of 10 per cent, while in the case of a higher income-proportionate 20 per cent would be credited to the individual account; at the same time the present limit of HUF 150,000 could be reduced to HUF 100,000. In this way, the incentive would be able to encourage a wider range of persons to make regular saving. An additional opportunity is to encourage women to have children by a one-off benefit paid in respect of the children born to the pension supplementing account or by increasing the normative subsidy. Despite the lower limits than at present, the normative subsidy – which to some extent may as well be implemented in a differentiated way – may be an appropriate way to increase the willingness to pay. The new subsidy regime would have no impact on the pension insurances; in their case the maintenance of the present tax credit and limits would provide the opportunity for further saving.

**(45) Increase investment and cost effectiveness and security:** The increased payments, resulting from the above measures, may represent a cost advantage compared to the present costs in the voluntary pension fund sector being developed. In addition, revising the present cost model, it would make sense to change the financing of the institution's operation from the present, one-sided, payment-based financing to a more balanced asset- and payment-based financing (similarly to insurance companies). As part of this, the 6-per cent deduction from the payments could be reduced to 3-4 per cent, maintaining the limit of 0.8 per cent as a percentage of assets in such a way that

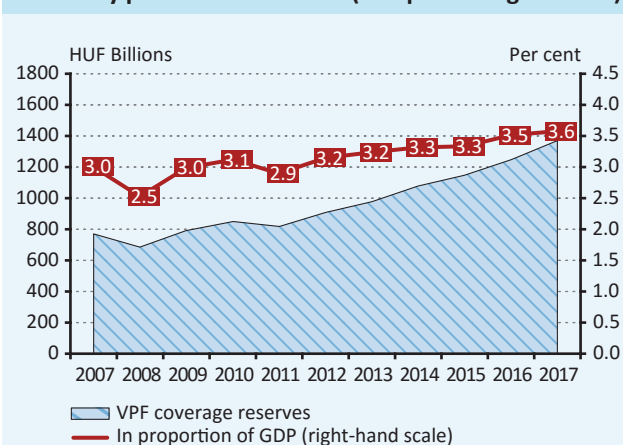
**Chart 7.22**  
Number of pension fund members by years of age



Source: MNB.

operation can be financed from both sources. With a view to having a more efficient investment structure that is able to finance the economy and is based on risk-taking aligned with long-term savings, consideration should be given to the introduction of target date funds, the limiting of indirect investments and foreign currency exposures and making the cost deduction of non-paying members independent of the investment yields. The safety of the system could be enhanced by a prescribed minimum reserve level securing long-term operation (a quasi solvency capital), in parallel with which a guarantee scheme serving the safety of the invested amounts could be set up.

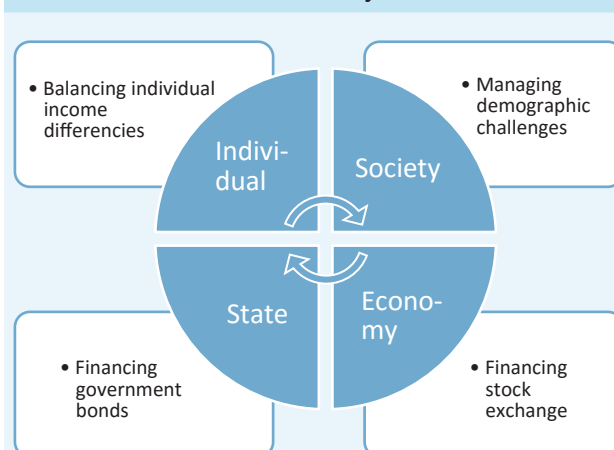
**Chart 7.23**  
Voluntary pension fund assets (as a percentage of GDP)



Source: MNB.

**(46) Ensure that welfare funds provide a range of family-friendly services and support home purchases.** The payments received in the welfare funds (see the subsection entitled “Activation of household savings”) serve various purposes, and to this end the pension and the health pockets are separated from each other. In certain situations of life, such as the purchase of first home, the birth of a

**Chart 7.24**  
Four-dimensional scheme of objectives



Source: MNB.

child or extraordinary family events (unemployment of the breadwinner, caring for older family member), the pockets could be transferable, which would help motivate young people as well, who are at present missing from the system, to make saving for pension and health purposes. With this solution, the entire fund sector could be converted into a novel, more cost-efficient model under common control, which – under adequate regulation – could also serve economic development and demographic objectives.

Joint implementation of the aforementioned recommendations provides a potential solution for all four requirements towards pension supplementing schemes. For the individual, it insures the balancing of the income between the active and inactive years. In view of the extensiveness of this and of the fact that it offers a solution for many, it is also able to manage the demographic challenges at the level of the society. Moreover, with the indirect household government securities financing tool, it is also able to boost stock exchange demand.

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## 8. Healthy society

**Main objective: 64 years of healthy life expectancy**

**Health forms part of the national wealth, and it is the basis of Hungary's most important resource, i.e. human capital.** Thus, the health status of the Hungarian population is not merely an important personal and family matter, but also one of the most important issue of the economy. It should be emphasised also in terms of individual and economic efficiency that being in a healthy condition is primarily based on preserving one's existing health. Accordingly, the competitiveness proposals place a great emphasis on this as on the improvement of medical care.

**The health status of the Hungarian population lags behind the countries in the region of a similar development level, which – due to the gradual ageing of the society – imposes an increasing burden on the health care system, which struggles with a number of challenges.** In terms of health care, prevention of illness is the simplest and most economical way to ensure the proper health condition of the population. In Hungary, a significant proportion of the population suffer from illnesses that could be prevented by a healthier lifestyle (e.g. high blood pressure and diabetes). One of the biggest problems for the Hungarian health care system is that a significant portion of diseases are only diagnosed in an advanced stage, which increases the costs and reduces the efficiency of the treatment. In Hungary, despite the falling trend, the years lost due to preventable death is still high, while the standardised death rate from malignant tumours is the highest among the EU Member States. The health care expenditure as a percentage of GDP exceeds the average of the countries of the region (within that public expenditure is below average, while private expenditure exceeds the average), but falls short of the EU average. One of the problems of the Hungarian health care system is that private expenditures on health are not spent in an institutionalised form (through health funds or private health insurance). The sector's supply with human resources also represents a challenge, particularly the non-transparent wage setting of doctors, the low nurse-to-doctor ratio, and the ageing of doctors and nurses.

**The biggest contributions to the sustainability of the health care system and to increasing the number of healthy life years could be made by raising the health awareness of the population and by placing much more emphasis on prevention than at present.** The prevention of diseases and striving for a healthy lifestyle are essentially the responsibility of the individuals, which – according to the Fundamental Law – the state fosters, among other things, 'by organising health care provision and by supporting sports and regular physical exercise' (Fundamental Law of Hungary, 2011). For the early recognition of illnesses and thereby for the reduction of the burdens of illnesses, it is necessary to improve access to the provision system. Quick treatment and regular post-treatment check-ups improve the efficiency of the provision system. Development of the infocommunication technologies and the spread of digitalisation may substantially reduce the number of doctor-patient meetings and the burdens on health professionals.

**The provision system has efficiency reserves in several areas, the utilisation of which could make it possible to improve the effectiveness of the system even without increasing the level of expenditures.** Although certain parts of the health care system strive to be cost-effective individually, this results in inefficient solutions on aggregate. We deem it important to place the focus of health policy on long-term, systemic cost efficiency. The high level of expenditures on OTC pharmaceuticals and the low bed occupancy rate represent efficiency reserves, the careful reallocation of which (e.g. for prevention or primary care) could help improve the efficiency of the health care system. Health funds may play an increasing role in the financing of the private health care system. The reduction of households' direct out-of-pocket health care expenditures could be facilitated primarily by diverting these funds into institutionalised channels. A major increase in health funds and supplementary health insurances would significantly increase the efficiency of the private expenditures, which are paid at present as well; accordingly, we are recommending guaranteed membership in health funds, where the individual contributions would be supplemented by employer and public transfers.

## 8.1. STRENGTHENING OF PREVENTION

### 8.1.1 Preventing illnesses

- (1) Promote healthy eating habits through information and tax benefits
- (2) Incorporate basic health knowledge into public education curricula
- (3) Extend the public health product tax
- (4) Increase the excise duty on spirits
- (5) Increase the excise duty on tobacco products to reduce smoking and the costs of related diseases
- (6) Provide opportunity for regular sports activities
- (7) Offer grant schemes to support the creation of quality working and residential environments

### Assessment of the situation

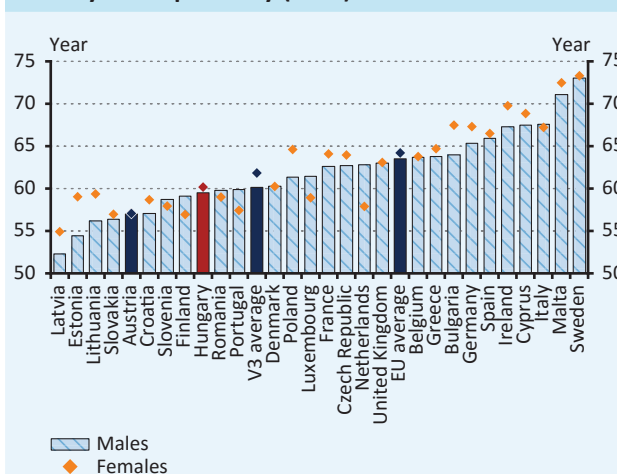
The prevention of diseases is the simplest and most economical solution to improve the health status of the population. At the same time, this can be achieved primarily outside the health care system. The focus of primary prevention is on the general protection and support of health. At this level, the objective is to prevent the development of illnesses, which usually requires non-medical means such as health education and health information (National Healthcare Services Centre, 2018).

The prevention of illnesses and striving for a healthy lifestyle are essentially the responsibilities of the individual. If the population decides to eat unhealthy food, not to exercise and generally fails to maintain its health condition, it will have severe consequences for the health care system. Actually, the health care system encounters the affected members of the population only when they already need medical treatment. In the case of several chronic illness, when the illness has already developed, the health care system is only able to treat the symptoms of those illnesses that can only be prevented and not cured.

If the health awareness of the population was successfully strengthened, and the number of those living a healthy lifestyle increased significantly, it could significantly contribute to the increase the healthy life expectancy of the population (Chart 8.1). One of the most important means of preventing illnesses is to strive for conscious nutrition. The eating habits of the Hungarian population contribute to the development of numerous endemic diseases (high blood pressure, diabetes). Education for a healthy lifestyle should already start within the framework of public education. It would be essential to put greater emphasis on the basics of health (symptoms upon which the doctor should be consulted) in public education than at present. The information should cover healthy nutrition habits (e.g. explaining why the offering of public catering

changes) and it should emphasise the importance of regular exercise. It is more difficult to change the attitude of adults. In their case, the joint application of information (providing reliable information, based on science, on illnesses and prevention) and incentives may be expedient. Special attention should be paid to reducing alcohol consumption, and particularly the consumption of substandard quality spirits, the excessive consumption of which substantially contributes to the deterioration of the health condition. Efforts should be made to curb smoking, which makes a substantial contribution to the development of certain chronic illnesses (e.g. COPD) and to early death.

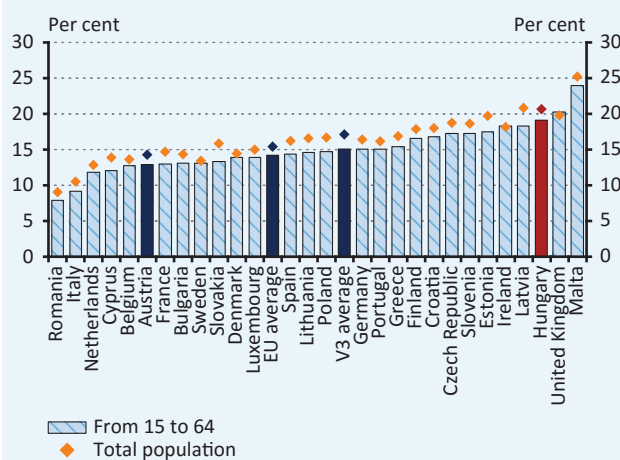
**Chart 8.1**  
Healthy life expectancy (2016)



Note: Based on self-reported data and mortality.  
Source: Eurostat.

**Regular exercise reduces the risk of obesity and contributes to the prevention of several endemic diseases.** In Hungary, the ratio of obese population is the third highest in the Europe Union (Chart 8.2). We deem it advisable to support sports activities as widely as possible and to provide public subsidies for the development of mass sports facilities.

**Chart 8.2**  
**Ratio of obese population (2014)**



Note: People with BMI 30 or higher fall within the obese range.

Source: Eurostat.

**In the future, efforts should be made to ensure that employees can perform their duties under proper health circumstances.** Based on the data of the World Health Organisation, in Hungary back and neck pains had the highest disease burden in 2016, based on years lived in disability (YLDs) (World Health Organisation, 2018a), which is mostly the consequence of the sedentary work performed in a non-ergonomic environment.

## Recommendations

**(1) Promote healthy eating habits through information and tax benefits:** We recommend further increasing the ratio of healthy food in public catering and launching a campaign to emphasise the importance of conscious nutrition. Proper nutrition contributes to the preservation of health, the maintenance of well-being and efficient work. In relation to healthy nutrition, a variety of trends are able to claim success. The eating habits of the Mediterranean and Scandinavian countries are totally different, nevertheless they are able to achieve longer life expectancy than the Central and Eastern European countries. On the other hand, mindful eating and high-quality food are common features of the successful countries in this area. All of this can be fostered by introducing VAT tax allowance on the raw materials that form part of healthy eating (mostly vegetables and fruits).

**(2) Incorporate basic health knowledge into public education curricula:** We deem it important to place greater emphasis on the teaching of basic health knowledge in public education than at present, which should extend – in addition to nutrition – to the importance of regular and proper physical exercise and to the expansion of oral

hygiene skills. The objective is that young people receive – through complex prevention programmes related to lifestyle – real and feasible alternatives to manage stress and anxiety, resolve conflicts and to spend their free time in a meaningful and useful way. Special attention should be paid to ensuring that patients only use therapies with adequate medical foundations. The use of insufficiently proven therapies is often ineffective or may lead to a delay in real therapy or even to additional health impairment.

**(3) Extend the public health product tax:** The consumption of unhealthy products (e.g. crisps, alcohol) has detrimental effects on the human body, which reduces labour productivity in the long run. To reduce the consumption of unhealthy products, we recommend that public health product tax (PHPT) be increased and the range of affected products be extended. In order to reduce the sugar content of soft drinks, it is worth examining the example of Great Britain, where the general reduction of sweet taste became a common objective, and thus they try to reduce not only the use of sugar, but also of sweeteners. We recommend implementing a tiered system of tax on prepacked products with added sugar (with tiers of 10, 25 and 50 grams) and imposing the public health product tax on the use of palm oil – produced in a way that pollutes the environment and has unfavourable health effects – in the food industry. In addition, consideration should be given to imposing the PHPT on processed meat products of high fat content (e.g. bacon) and on locally prepared products with high sugar or salt content (e.g. pastries, hamburgers).

**(4) Increase the excise duty on spirits:** In Hungary, the annual consumption of spirits and the number of alcohol-related deaths significantly exceeds the EU average. After adjustment for households' income position and the lower price level, in Hungary alcohol is much cheaper than in the EU on average. Increasing the excise duty on spirits with high alcohol content, which have the most detrimental effect on health, may contribute to curbing consumption. In parallel with this, the tax increase may also generate budgetary resources.

**(5) Increase the excise duty on tobacco products to reduce the popularity of smoking and the costs of related diseases:** Smoking is one of the most significant health risks, which makes a major contribution to the death of tens of thousands persons annually (lung cancer is the second most frequent cause of death among men in Hungary). The direct and indirect costs of smoking heavily burden the health budget. Despite the significant measures taken in Hungary in recent years (introduction of national tobacco shops, prohibition of smoking in catering institutions), the ratio of

regular smokers – and particularly of juvenile smokers and of those consuming cut tobacco – remains high in Hungary. To curb smoking, we recommend increasing the excise duty on tobacco products, introducing the uniform packaging as soon as possible, and raising the awareness of the school-age youth using modern tools.

**(6) Provide opportunity for regular sports activities:** To ensure that as large a part of the population as possible pursues sports, we recommend supporting corporate sports clubs, authorising the financing of sports-related cost via health funds, reducing the VAT content of sports equipment and providing a subsidy for the development of mass sports facilities. Regular exercise could be also fostered by introducing ‘therapeutic exercise’, which could be prescribed by doctors. The attending physicians – similarly to the currently operating medicinal bath care – would have the opportunity to prescribe for their patients regular exercise (e.g. swimming pool, sports centre or fitness ticket), which can be financed with public contributions or via health funds. In parallel with the rise in the number of participants in mass sports, consideration should be also given to the development of sports health care, as

the treatment of injuries resulting from exercise often requires specialised skills. In the case of public programmes which foster the regular exercise of the population, the Netherlands offers a model to be followed. The programme promotes sports and physical exercise close to the home of people, by employing ‘neighbourhood sports motivators’ and supporting sports centres. Children’s opportunity to do sports may often be restricted by the fact that the parents cannot afford the cost of the training. We recommend that if the parent’s employer contributes to the sports activity of children, it should be possible to deduct the related costs from the tax base.

**(7) Offer grant schemes to support the creation of quality working and residential environments:** We recommend that in the future earmarked grant funds be made available for the development of ergonomic working environments (and particularly office chairs and proper lighting) and residential environments (and particularly, high quality beds). Furthermore, we recommend that – in order to promote healthy lifestyle among children – chairs and desks also be gradually replaced in schools with equipment that supports proper posture.

### 8.1.2 Supporting early recognition

- (8) Strengthen the functions of the general practitioner system
- (9) Support regular physicals and screening tests
- (10) Set up a National Health Database
- (11) Develop and systematically implement a comprehensive mental health package
- (12) Strengthen the system of emergency medical services

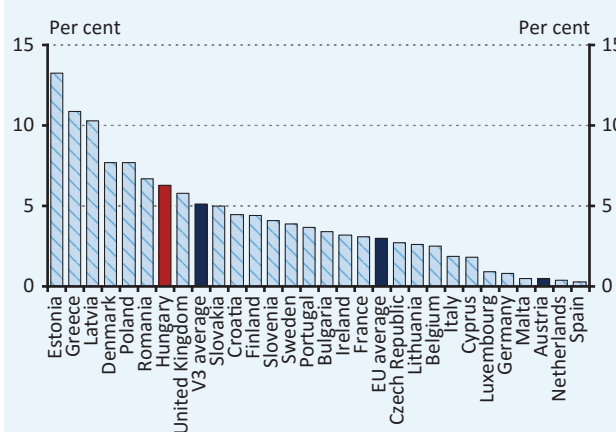
#### Assessment of the situation

The purpose of the secondary level of prevention is to recognise illnesses in their early stage, and to provide patients with fast, efficient treatment. One of the greatest problems of the Hungarian health care system is that a large number of diseases are diagnosed only at an advanced stage. This shortcoming has several negative consequences. On the one hand, patients need to wait long for the necessary medical examination, which – in addition to the pain that often accompanies the illness – also puts substantial emotional burden and uncertainty on them and their family. As a result of the health problems, sick people are absent from work or their productivity decreases, and thus it also generates direct losses for the economy. In addition, as a result of the late diagnosis, the condition of the patients worsen before actual treatment can be started. Due to this, often more expensive treatments become necessary (e.g. the patient who could be treated as an outpatient needs to go to hospital) or the treatments must be performed in a shorter time, which increases the burden on the staff of the provision system. One of the reasons why Hungarian mortality statistics are among the worst in the European Union is late diagnosis. In the case of the most significant causes of death, early detection and treatment started in due course can substantially improve survival rates.

For the early recognition of illnesses and thus for the reduction of the burdens of diseases, it is necessary to improve access to the health care system. The ratio of those not having access to health care for any reason (i.e. the rate of unmet needs for medical examination) is slightly higher in Hungary than the average of the region, and more than twice as high as the EU average (Chart 8.3). Strengthening primary care, and particularly the system of health physicals and screening tests, is essential to ensure that the health care system can get in touch with the patients in time. In addition, it would be progressive to create a database (National Health Database), which – contrary to the present data collection for financing purposes – facilitates the continuous monitoring of the population's health status and the performance of public health and morbidity analyses. The results of all screenings

and health physicals could be collected in this database, which would make it possible to follow the changes in the health condition of individuals and the entire population. The setup of such a database would be a major achievement also by international standards.

**Chart 8.3**  
Self-reported unmet needs for medical examination (2017)



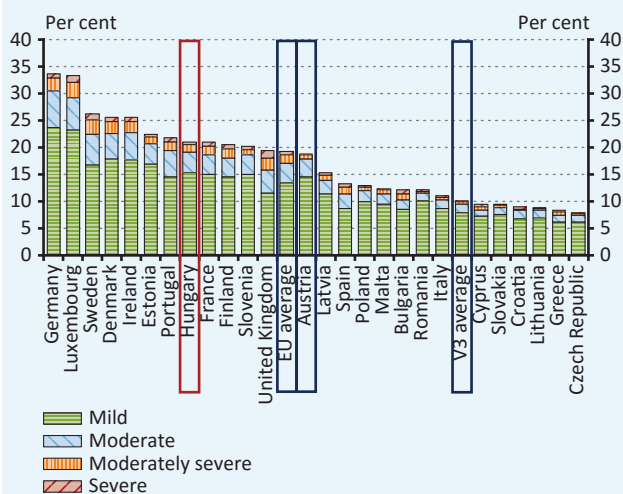
*Note: The ratio of those who reported that they had unmet health care needs in the past 12 months; population over the age of 16; 2017 or latest year available*

*Source: Eurostat.*

The maintenance of the mental health of the Hungarian population needs to receive even higher priority in the health care system and social discourse than today. In Hungary, the ratio of those suffering from symptoms of depression is higher than the EU average, and particularly than the average of the region (Chart 8.4). Mental problems put severe burden on the patient suffering the disease and on their environment. Among other things, the family situation, inactivity, income differences and alcohol consumption are important contributors to the development of mental illnesses. For this very reason, dealing with this problem goes beyond the framework of the health care system; a comprehensive strategy and action plans are need for prevention. In addition, it would be necessary to increase the volume of information available on mental diseases and to improve the social perception of these diseases.



**Chart 8.4**  
**Ratio of people with current depressive symptoms (2014)**



Note: Age group of 16-64; no data available for Belgium and the Netherlands.

Source: Eurostat.

## Recommendations

### (8) Strengthen the functions of the general practitioner system:

The prevention function of the general practitioners (GPs) is particularly significant, since most patients first turn to GPs with their symptoms. It would be expedient to expand the medical tests performed by GPs (e.g. taking of blood) and to organise the higher level of the care system in such a way that when necessary the GPs can immediately refer the patients to the appropriate specialist. This could be facilitated by the ongoing training of GPs, the continuous improvement of the equipment, increasing the number of nurses, expanding the range of mandatory vaccinations (e.g. HPV vaccine). In addition, we deem it advisable to provide extraordinary support for the setup of group practices and practice communities, and to expand the quality indicators based pay-for-performance financing, both in the prevention and care areas. Further means of strengthening primary care could be the strengthening of the mother and child health (MCH) district nurse system, which is outstanding also by international standards, and increasing the social recognition of nurses.

**(9) Support regular physicals and screening tests:** It must be ensured that once a year each Hungarian citizen can participate in screening – in line with their sex, age and risk factors – and at least every 2 years in a comprehensive health physical. This may be facilitated by the development of public and private screening centres, the extension of mandatory screenings (e.g. dental examinations), the introduction of targeted screenings related to having

children (e.g. infertility tests), the introduction of an extra day-off for screenings ('Health Day'), strengthening the occupational health network, and improving the school health care systems and connecting it with the social care system more tightly. Increasing screening tests will impose major burdens on the health care system in the short run, as a large volume of diseases, at present unknown, will be revealed. For this very reason, it is important to ensure that sufficient resources are available in the health care system for the further examinations and treatment of the patients.

**(10) Set up a National Health Database:** It would be expedient to collect the results of the regular health physicals and screenings in a newly established health database (National Health Database), which would support morbidity and public health analyses, and the development of a targeted invitation system to screenings based on big data risk analyses. This database could provide a uniform platform for disease-specific registers, the wider operation of which would be progressive in many respects. When creating the database, it is worth examining the example of Singapore in detail, where the National Electronic Health Record system is based on the principle of 'One patient, one health record' (NEHR, 2018).

**(11) Develop and systematically implement a comprehensive mental health package:** To improve the Hungarian population's mental health, it is necessary to elaborate a comprehensive mental health package, covering – among other things – all areas of prevention. We deem it advisable to include in the objectives of the strategy that all patients should have access to the necessary care, the social acceptance of these diseases should improve and the disease burden of mental diseases should decrease. In recent years, mental health was also in the focus of the World Health Organisation Regional Office for Europe. According to the latest estimates of OECD, in Hungary the annual cost of mental diseases exceeds 3.1 per cent of GDP (OECD, 2018). When elaborating the strategy for Hungary, it would be worth building on the main elements of the European Mental Health Strategy (World Health Organisation, 2018b). It would be expedient to develop – built on local requirements and needs – a concept of a national network dealing with mental health and capable of multilevel intervention, based on international best practices (e.g. European Alliance Against Depression). Furthermore, efforts should be made to include elements in education, which strengthen mental health (e.g. communication, development of social relations skills), to support cost-efficient intervention tools (e.g. mental health helplines, voluntary aid networks) and to introduce proper (not only health care) screening tools. Furthermore, to prevent job burnout and mental diseases, the spread



of stress management methods should be supported (e.g. company trainings). A clean and orderly environment is also a precondition for mental health, and thus a public hygiene programme, conscious education about this, as well as consistent handling of public hygiene violations may also have favourable effect.

**(12) Strengthen the system of emergency medical services:** a properly functioning system of emergency medical services is an extremely important part of the health care system, since in the most critical cases, it is the ambulance service that first meets the patients. Prompt medical aid increase the chances of survival and may also result in major savings during the subsequent treatments of the patients. Despite the developments in recent years (e.g.

introduction of central rescue management system, GPS-based measurement of arrival time), based on the data of the National Ambulance Service, in 2017 ambulances were able to arrive at the site within the targeted 15 minutes only in 65 per cent of the cases (National Ambulance Service, 2018). In order to reduce the difference between the arrival times and territories (e.g. in Pest county the ratio of arrival within 15 minutes was below 50 per cent), we deem it necessary to increase the staff number, implement a comprehensive wage increase covering all staff members, provide the funds necessary for the ongoing renewal and maintenance of the equipment and to renovate the ambulance stations. The enhancement of the ambulance system may also contribute to the reduction of the burden of the emergency treatment centres.

### 8.1.3 Supporting recovery from illnesses

(13) Extend funding methods based on patient cooperation

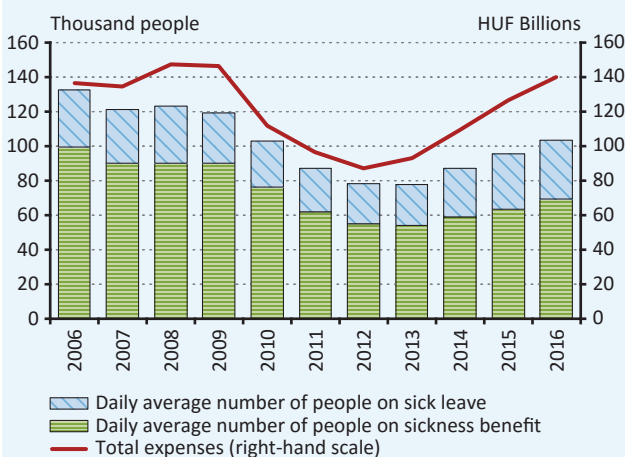
(14) Strengthen rehabilitation care

(15) Increase capacities for long-term and home care by strengthening cooperation between the health care and social care systems

#### Assessment of the situation

The purpose of tertiary prevention is to minimise impairments stemming from illnesses and to prevent the deterioration of the quality of life. The third level of prevention is also important, because by preventing the exacerbation of illness and reducing the probability of complications, it contributes to decreasing the volume of labour force lost due to illnesses in the economy (National Healthcare Services Centre, 2018). In 2016, on an average working day more than 100,000 persons were absent from work due to health reasons, which – in addition to their absence from production – generated a total direct cost of HUF 140 billion to the employers and the social insurance (Chart 8.5).

**Chart 8.5**  
Number of working days missed due to illness and the related benefits



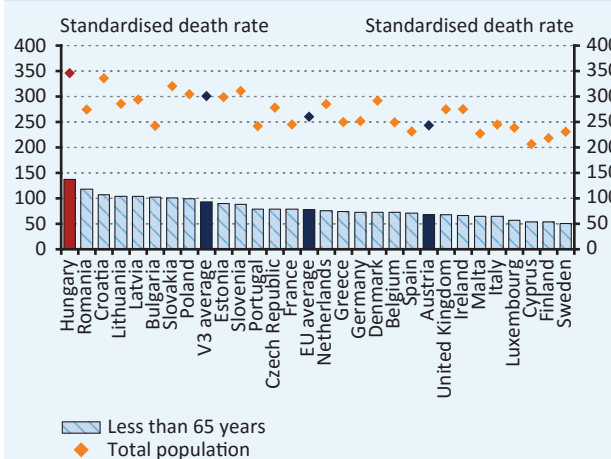
Note: 'Total expenses' includes the benefits paid by employers during sick leave and the sickness benefit paid by the social insurance fund. The number of sick leaves essentially mean working days, while the sickness benefit means calendar days.

Source: HCSO.

In Hungary, it is a major problem that following the acute treatment of illnesses, the rehabilitation and continuous monitoring of patients does not receive the necessary attention. In Hungary, the standardised death rate of malignant tumours is the highest in the EU, both in the population below 65 years and in the total population (Chart 8.6). This is also attributable to the fact that the

5-year survival rate of cancer – despite the declining trend – is 61 per cent on average, but in the case of certain tumours it does not even reach 50 per cent (e.g. stomach, bronchial, lung and colon cancers). In the case of ischemic stroke – one of the most frequent causes of death – the 30-day death rate is 12 per cent, but one year after the stroke more than 25 per cent of the patients are no longer alive in Hungary (National Healthcare Services Centre, 2017). By strengthening rehabilitation and check-ups, major improvement could be achieved in this area, which would contribute to the reduction of (early) death.

**Chart 8.6**  
Standardised death rate of malignant tumours (2015)



Note: The standardised death rates shows the potential death rate of the respective country by disease groups, if the breakdown thereof by age was identical with that of the standard European population.

Source: Eurostat.

**Due to the ageing of the population, the demand for long-term care will continuously increase.** In Hungary, this form of care is rather underdeveloped; public spending on this area is low even by international standards: in 2016, it was 0.3 per cent of GDP, compared to the Austrian value of 1.5 per cent (Eurostat, 2018). In order to meet the increasing challenges, we deem it necessary to increase the available capacities in this area. It could be a good opportunity for this, if the portfolios of the inpatient institutions providing acute care at present were reviewed and the wards that operate in uneconomically or at a location that is unsuitable in terms of provision organisation were transformed into

wards providing long-term care. The health administration has already recommended this solution several times; nevertheless, not all of the necessary change-overs have been implemented yet. In addition to increasing the capacities, efforts should be made to strengthen the cooperation between the social and health sectors, since the management of numerous challenges, related to the ageing population, requires both sectors.

**In Hungary, it is a severe problem that patients tend not to take the prescribed medicaments or to adhere to the additional rules necessary for the success of the therapies (e.g. diet, going for check-ups).** To increase the patients' willingness to cooperate, we propose that financing incentives should be introduced that could make patients interested in their recovery also in financial terms. One possible method of this is to increase the public subsidy for certain medicaments subject to the patient's adherence. However, before implementing this type of amendment, it would be expedient to prepare impact analyses on the potential consequence of the measures.

## Recommendations

**(13) Extend funding methods based on patient cooperation:** We recommend to introduce the principle of bilateral commitment. According to this, not only the financing entity has obligations, but the patients as well, who are obliged to follow and carry through the therapy prescribed by the doctors. If they fail to do so, their medical care will entail higher costs in the future, to which they will be required to contribute to a higher degree. In the US model, built on private insurance, these types of obligations bear the utmost importance. With a view to improving patients' adherence, we recommend that in the case of unfinished rehabilitation provisions patients should repay part of the costs related to the provision. Furthermore, we

recommend that positive incentives should be introduced on pharmaceuticals, based on the patient's adherence. In practice, this would mean that in the case of certain chronic illnesses (e.g. diabetes, high blood pressure), upon complying with the therapy and the related supplementary prescriptions (e.g. exercise, diet, participation in screenings) the public subsidy on the medicaments taken would increase.

**(14) Strengthen rehabilitation care:** We recommend that within the care system rehabilitation should receive greater attention than at present. It would be important to ensure that all patients have access to the rehabilitation care necessary for them in their given condition, with human resources of sufficient quantity and quality (physiotherapists, psychologists, dieticians). Successful rehabilitation improves patient's quality of life and productivity, and may generate major savings by reducing further treatments of patients.

**(15) Increase capacities for long-term and home care by strengthening cooperation between the health care and social care systems:** The continuous ageing of the population imposes increasing burdens on the health care system. The OECD country report on Hungary in 2019 treats this topic as a priority. According to its calculation, ageing will increase the health care and long-term care expenditures by 0.7 percentage point of GDP by 2040 (OECD, 2019). Challenges may be managed most efficiently by the harmonisation and the continuous cooperation of the health care system and the social care systems. It would be worth transforming the redundant acute hospital capacities for long-term care purposes. In addition, it would be definitely forward-looking to increase the cost-efficient home care and home assistance capacities to ensure that the fewest possible elderly people are in hospital with problems that could be taken care of in their home as well.

## 8.2. TRANSFORMING THE HEALTH FINANCING SYSTEM

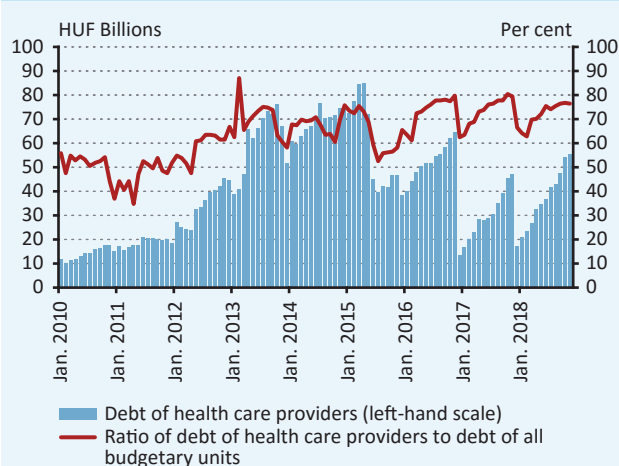
### 8.2.1 Reviewing the public financing scheme

- (16) Establish a public funding system based on actual costs
- (17) Ensure that administration and controlling on a case-to-case basis is implemented at health care institutions
- (18) Review the application of performance volume limits
- (19) Introduce a financing method across levels of care
- (20) Extend the application of pay-for-performance financing methods
- (21) Set up a professional feedback system for patient treatment histories

### Assessment of the situation

At present, the public financing of the health care system is not based on the actual costs of the treatments, which contributes to the continuous indebtedness of the institutions. The weight of the costs of the treatments relative to each other (technically, the codes underlying the financing) have not been significantly updated in the past 10 years, despite the appearance of new technologies and pharmaceuticals. In addition, financing has not followed the inflation of the new procedures and products. All of this, in addition to the often inadequate financial management at the hospitals, leads to the indebtedness of the institutions, which reoccurs despite consolidation performed almost on an annual basis (Chart 8.7).

**Chart 8.7**  
Outstanding debt of health care providers



*Note: The time series of health care institutions includes institutions for both outpatient and inpatient services, the management institutions of the health care sector, as well as universities with clinical centres.*

*Source: Hungarian State Treasury.*

It is a major problem of the Hungarian health care system that the care package is not defined and the actors are not aware of the actual costs of the individual care. At

present, a large part of the health care institutions cannot tell how much the specific treatment of a patient has cost exactly. The present financing scheme does not require them to prepare detailed justifications of expenses, and thus neither the institutions nor the financing entity have a real view of the costs of providing health care. Furthermore, it also causes a problem that the public care package is not adequately defined; at various points of the country different treatment options are available for the same illness.

**For market-based private financing (health funds, health insurers), it is a restriction that the relationship of the public health care system with private financing is not clarified.** Clients can use the services of public health care providers through the health funds, if the providers are able to issue invoices for the costs of the care, but currently this works only to a limited degree. One of the most important practical conditions of the spread of supplementary (private or public) health insurances is that the insurers must understand what kind of services the public health care system provides for the patients, since they try to build their products on those services. Transparent, clear relations could create conditions for major growth of the insurance sector.

**When planning public health care spending, it would be important to place greater emphasis on systemic efficiency for the budget formulation.** At present, the actors of the health care system make efforts individually to reduce the costs, but this does not necessarily yield the desired result. One of the disadvantages of the performance-volume limit (PVL) is that it does not support the most efficient utilisation of the available resources. One example of this is when for a diagnostic equipment (e.g. CT) the provided financing is sufficient only for 6 hours per day, while the equipment would be able to operate 24 hours a day and there would be enough patients in need of such examination. In this case, although some saving is realised on the diagnostics budget, in total the treatment of the patient may cost more for the public as a result of waiting than it would cost with

an earlier diagnosis. For this very reason, in order to ensure the efficient utilisation of the available resources, efforts should be made in the future to harmonise the financing budgets based on the typical patient paths.

**At present, there is no feedback on the relationship between successful recovery and financing.** Financing of the institutions, with a few exceptions (e.g. the warranty rules applicable to readmission<sup>54</sup>) does not depend on whether the patient they have treated has effectively recovered as a result of the treatment. In many cases, the institutions have no information on the patient's further fate and whether the treatment applied by them indeed achieve the expected result. Thus, it would be necessary to extend the application of the pay-for-performance financing method, i.e. criteria related to the quality of the provision should be also included in the financing.

## Recommendations

**(16) Establish a public funding system based on actual costs:** We recommend the performance of a comprehensive, centrally organised and financed cost assessment, the results of which may serve as a basis for new financing codes (weights). In addition to operating expenses and material costs, the cost survey should also include a precise review of the experts' time spent. It would be important to ensure that the financing amounts so determined take into consideration the average qualification and salary of the doctors and nurses working in the respective area, and that they also cover depreciation and the increase in operating expenses accompanying the development of the infrastructure (e.g. operating costs of air conditioners). Furthermore, we deem it important to review the forint value of the financing codes and weights on a continuous basis.

**(17) Ensure that administration and controlling on a case-to-case basis is implemented at health care institutions:** The professional, business-like operation of health care institutions is essential for the reconciliation of the owners' and the users' expectations towards these institutions. The application of other sectors' best practices (e.g. chip card-based access control, unique identification of all products used) in health care institutions would increase the transparency of operations and the efficient business management of the institutions and the individual departments. The introduction of case administration and case control systems may provide important input for the management evaluation systems and the central decision

supporting systems, which may contribute to ensuring that the finances of the health care institutions once again become balanced after a long time.

**(18) Review the application of performance-volume limits:** We recommend that the performance-volume limits (PVLs), based on historical traditions, be revised to ensure that they are aligned with the needs of the population belonging to the health care institutions and with the structure of health care services provided by the institutions. Consideration should be given to the introduction of PVLs determined at a professional level to ensure that the institutions are not interested in curbing the performance of less profitable professions (e.g. endocrinology). In the longer run, in parallel with the strengthening of professional and financial control, consideration should be given to reviewing the application of performance-volume limits. The advantage of the PVL system is that it does not encourage institutions to treat as many patients as possible (even when treatment is not necessary). At the same time, it is a disadvantage that an incorrectly defined PVL may contribute to the fact that some of the patients receive the necessary provision only with a delay.

**(19) Introduce a financing method across levels of care:** When planning the public Health Insurance Fund, we deem it expedient to strengthen the efforts for systemic efficiency and harmonise the financing of the various phases of treatment. It should be ensured that the operation of the individual institutions is determined not only by the short-term cost control. The health care actors should be made interested in ensuring that – on the whole (i.e. not only at the respective provision level) – the improvement in patients' health is achieved with the lowest possible expenditure. A possible way of this could be the introduction of a financing method, overarching the various provision levels, connected to the specific disease of the respective patient. Similarly to the system based on diagnostic-related groups (DRG), already existing in inpatient care, an average financing amount would be payable for the treatment of the patient, which would be distributed among all providers treating the patient (GP, outpatient clinic, inpatient provider) and the costs related to the provision (e.g. the public insurance pharmaceutical reimbursement) would be also deducted from this. Part of the financing would be available to the providers only if the patient went through the designated patient path and is satisfied with the efficiency of the provision, and thus does not seek assistance for the same problem from another doctor within a specified time.

<sup>54</sup> If the patient returns to the hospital with the same illness within a predetermined time, the two inpatient cases in fact are treated as a single hospital case and financing is provided only once.

**(20) Extend the application of pay-for-performance financing methods:** We recommend that the financing methods include indicators related to the quality and efficiency of the care, and earmarked supplementary financing should be attached to the fulfilment of these. The public insurers would be able to motivate the doctors and institutions related to it to enhance the quality of care through personal feedback and financial incentives (e.g. advantage in tenders for the procurement of instruments). The employment of tools already proven in the sector (e.g. pharmaceutical sales representatives) by the public may contribute to the efficient delivery of information on the change in requirements and the defined quality objectives to the doctors. The pay-for-performance (P4P) system is operated in primary care by a number of countries, including Hungary (general practitioner indicator scheme). However, this method is used less frequently in inpatient care. However, it may be worth examining similar initiatives in Brazil, South Korea and the United States (OECD, 2014).

**(21) Set up a professional feedback system for patient treatment histories:** We recommend that a system be elaborated, which provides doctors with information on the further fate of patients and also makes them interested in the recovery of patients. The feedback system should cover patients' satisfaction, as well as professional feedback from other doctors. This system should be elaborated in such a way that makes it the doctors' responsibility to assess whether the patient has received proper treatment, according to their professional opinion, during their earlier care. A system based on a similar principle already works in inpatient care (readmission under warranty time). This approach should be extended to outpatient care and to the individual level of doctors. The clarification of responsibilities in this way could contribute to making doctors interested in the success of care.



## 8.2.2 Improving the situation of human resources

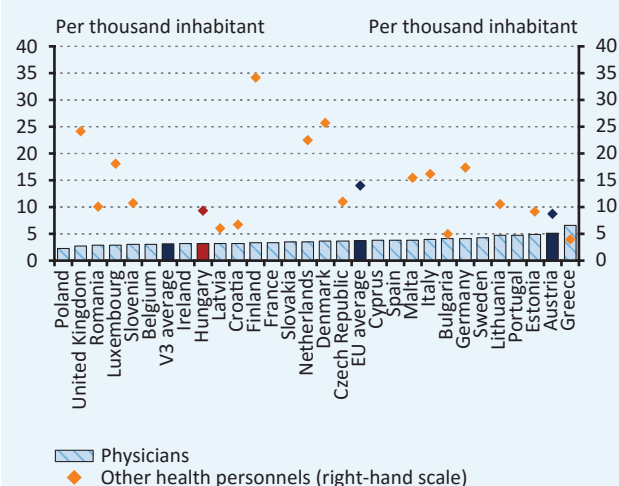
(22) Establish a transparent remuneration system

(23) Increase the number of health care personnel and staff

### Assessment of the situation

The number of licensed doctors as a percentage of the population is higher in Hungary than the average of the other Visegrád countries, but falls short of the EU average (Chart 8.8). At present, the domestic register of doctors contains the individuals with medical qualifications (basic register) and those who complied with their in-service training obligation and thus hold an activity licence (operation register). Thus, in fact the Eurostat indicator provides information on the upper limit of the number of actually working doctors. At the same time, the register also contains doctors who completed the mandatory in-service training, but changed career, do not perform direct curative work (e.g. researchers, pharmaceutical sales representatives), do not work in the public provision system or temporarily work abroad. This means that we have no reliable information on the number of doctors working in the Hungarian care system or on the number of doctors missing from there.

**Chart 8.8**  
Number of physicians and other health care personnel per thousand inhabitants (2016 or latest available data)



Note: The number of physicians is that included in the operation register. Other health personnel include nurses, midwives, medical assistances and home care nurses.

Source: Eurostat.

Based on the reports of the professional actors, the Hungarian public health care system struggles with a major shortage of experts, the reasons for which go beyond the issue of remuneration. The absence of a wage increase for several years was a key contributor to the fact that the public health care lost its attraction. The options of the public care institutions are rather limited due to the fact that they have to employ their doctors and the specialist staff in accordance with a centrally developed, fixed career model. The basic advantage of this model is the predictable wage path; however, the application thereof represents a disadvantage for the actors in situations of human resource shortage.

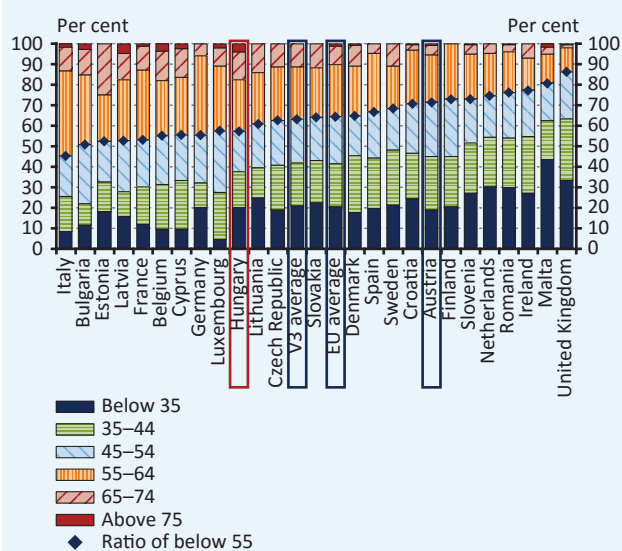
The inadequate care structure and inefficient allocation of resources also contribute to the shortage of specialists in the public health care system. The present form of the care system is inappropriate: primary care and prevention do not receive sufficient attention, while the care system focuses on the not-too-efficient hospitals (for more details, see the section entitled 'Increasing efficiency in the care system'). In addition, doctors spend a large part of their time on administrative and nursing tasks instead of the actual treatment of patients.

The absorption by private and foreign care institutions and change of career are key contributors to the shortage of human resources. At present, the employees leaving the public health care system are primarily motivated by the more pleasant work environment rather than by the higher wages. Some of the public institutions (primarily those in Budapest) are in need of renovation, 'parasolvency' (gratuity paid to health care providers) distorts operating procedures, the equipment is obsolete, doctors may face the absence of certain medicines and instruments, and the shortage of staff significantly increases the workload. Many of these problems do not exist in private health care institutions, which thus are able to entice employees from the public sector. In the case of working abroad, this is supplemented by the substantially higher wage and the strongly protocol-based treatment, which significantly reduces doctors' personal responsibility. In recent years, the possibility of changing career impacted the specialist staff to a higher

degree, since their wages – despite the wage reviews connected to the career model – are still relatively low at the national economy level. In the case of doctors, the change of career usually means only retirement from active healing work; for them more opportunities are available in the periphery of health care (e.g. pharmaceutical sales representative positions).

**As a combined result of these factors, Hungarian doctors and health care personnel are over-age.** In Hungary, 43 per cent of the physicians are older than 55 years and 17 per cent of them are older than 65 years; however, this trend characterises not only Hungary but also a number of EU countries (Chart 8.9).

**Chart 8.9: Physicians by age (2016 or the latest available data)**



Source: Eurostat.

**In addition to medical careers, making careers in the health care profession more attractive is essential for the sustainability of the health care system.** At present, in Hungary the ratio of health care personnel to doctors is almost 3, while this ratio is 3.7 on average in the EU, but in the quite developed health care systems this ratio may be even two times higher (e.g. the Netherlands 6.4, United Kingdom 8.8 and Finland 10.3) (Chart 8.8). It would be

worth examining how Finland organises its care provision, since in its case 3.5 times more health personnel fall to the same number of doctors, as a percentage of the population, thereby contributing to the fact that in terms of efficiency it has one of the best health care system in Europe (Health Consumer Powerhouse, 2018).

**It would be definitely forward-looking, if – in addition to nurses – the number of complementary specialists (e.g. psychologists, dieticians and physiotherapists), as well as of the assistants performing administrative tasks would also increase in the Hungarian care system.** They are the ones who – in addition to relieving doctors of burdens – are able to contribute substantially to the improvement in the efficiency of treatments.

## Recommendations

**(22) Establish a transparent remuneration system:** In view of the general labour shortage, consideration should be given to the development of a market-based wage-setting system in the health sector. In addition, in order to prevent the burnout of experts, the monitoring of human resources should be improved to ensure that doctors and health care personnel are indeed on duty only for the defined maximum hours.

**(23) Increase the number of health care personnel and staff:** To ensure more efficient utilisation of the limited available human resources, health care specialist careers should be made more attractive (e.g. continuing the already started wage review, provision of a housing subsidy, establishing hospital nurseries), and the number of ancillary specialists (e.g. psychologists, dieticians) and staff (e.g. administrators) should be increased and integrated into financing. In order to ensure that patients have access to the necessary medical examinations, the daily tasks of doctors must be substantially reformed. All tasks that do not require doctor's competence must be outsourced to the specialised staff. However, this can be ensured only if much higher number of specialised staff is available in the provision institutions than today. Furthermore, efforts should be made to outsource administration (internally) to the highest possible degree so that everybody actually performs those tasks in the institutions that are closely related to their qualification and position.

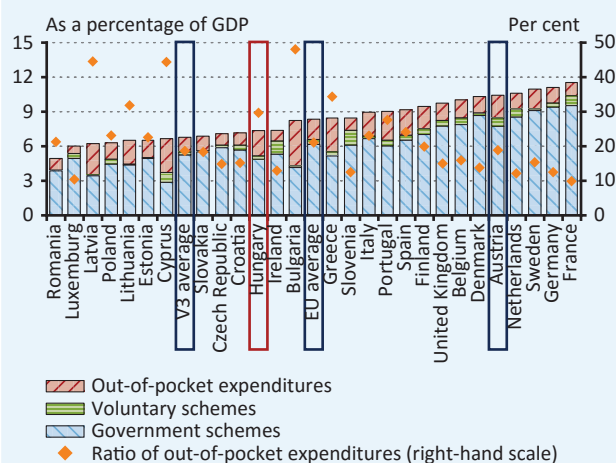
### 8.2.3 Institutionalised and controlled utilisation of private resources

- (25) Elaborate the conditions for a system of supplementary private health insurance
- (26) Guaranteed membership in the health funds and provision of targeted incentives for in- and out-payments
- (27) Extend support to prevention and service invoices
- (28) Provide tax benefits on corporate health care packages
- (29) Provide tax benefits on private health insurance

#### Assessment of the situation

**Hungary approximates the developed countries from below in terms of its total health expenditures.** In terms of health care expenditures as a percentage of GDP, with its present ratio of 7.4 per cent Hungary lags behind both the EU average (8.4 per cent) and the developed EU countries. The ratio of total expenditures as a percentage of GDP in Finland, Austria, the Netherlands and Sweden is 9.4 per cent, 10.4 per cent, 10.6 per cent and 10.9 per cent, respectively. In the case of the Hungarian expenditure, 4.9 percentage points came from public funding, 0.3 per cent through the regulated and supervised voluntary intermediary institutions (health funds, private health insurances and non-profit organisations), i.e. institutionalised channels, and 2.2 percentage points directly from households as out-of-pocket expenditures (Chart 8.10).

**Chart 8.10**  
Health care expenditures as a percentage of GDP by financing scheme (2016 or the latest available data)



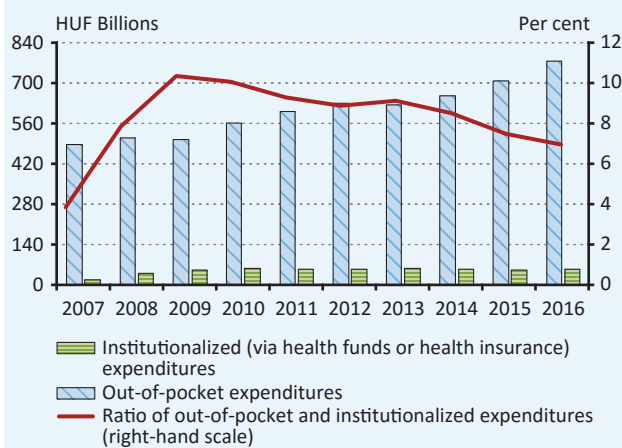
Note: No data for Malta.

Source: Eurostat.

**One third of the total health care expenditure was financed from private funds in Hungary, which was the fifth highest ratio in the EU in 2016.** However, voluntary

institutionalised spending, i.e. such related to health funds and private health insurance, account for merely 2.5 per cent of the total expenditures (Chart 8.11). In recent years, health fund expenditures exceeded HUF 50 billion, but half of this is spent by households on the purchase of pharmaceuticals and other (therapeutic) products. Only 25 per cent of the health fund spending is on health care services (MNB, 2018).

**Chart 8.11**  
Ratio of out-of-pocket and institutionalised (via health funds or health insurance) expenditures



Source: MNB, HCSO.

**The reduction of the out-of-pocket health care expenditures could be facilitated primarily by diverting these funds to voluntary institutionalised channels.** These institutions would be able to enforce the transparency of the institutions of the care system, the separation of the public and private care systems, the reduction of the shadow economy in the sector, the increase of the economies of scale as well as compliance with the quality criteria, which are important for the safety of the care. In addition, health funds and health insurers are able to negotiate lower prices for patients with the service providers, and the active use of these institutions would allow better planning of the financing of health care services, and thus in the case of illnesses or accidents individuals and their families would not be exposed to major financial shocks.

**It is necessary to strengthen the role of health funds in the private health care system.** Health funds offer savings accounts for health care purpose, extendable to all members of the family, which provide their clients with flexible options for utilisation. Through this institutionalised channel, clients may purchase, among other things, private health insurance or pharmaceuticals, or use any health care services for invoice. Health funds also have an accumulation function, as they provide opportunity for advance saving for old age and it may be combined with other forms of savings (e.g. pension funds).

**The penetration of institutionalised channels can be increased through voluntary participation only to a small degree.** Hardly 23 per cent of the active Hungarian population has membership in health funds, and in recent years both the number of members and the number of depositors have continuously declined. Certain groups of the population (minimum wage earners, the self-employed, young people, beneficiaries of family allowances) are unable to use the related tax allowance or can use it only at a reduced rate, which has an unfavourable effect on the willingness to join the system. The present incentives have reached their limits; without the active participation of the government and employers, penetration in Hungary cannot be significantly increased.

**While the public services are almost comprehensive, private health insurance is developing slowly.** At present, health care is the subjective right of most of the population, which substantially curbs the demand for supplementary private health care provision and the financing thereof. Although the shortening of the waiting period and the higher expectations of services of convenience could justify growth in demand, at present supplementary private health insurance is a product suitable for the use of premium services, affordable only for a narrow class of people. In its present form, private health insurance is unable to fulfil the role of being an efficient supplement to the public health care system.

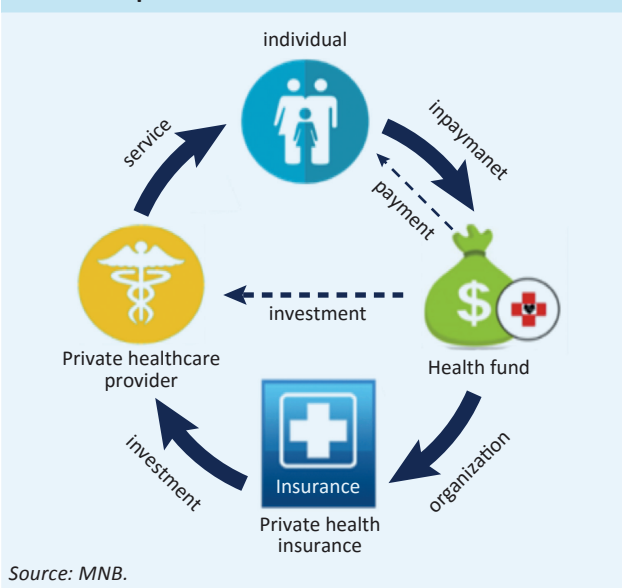
**In addition to the tax allowance, the government could also help develop the private health care system by making the health care system more transparent.** At present, the main impediment to the penetration of private health insurance is the unclear relationship between the public and private provision system. If progress was made in this area, it could substantially contribute to the growth of the private insurance market, which would be able to relieve the public provision system of substantial burdens.

In terms of the implementation of supplementary private insurance, the example of Slovenia deserves special attention. Within the scope of a comprehensive reform, the Slovenian government was able to achieve that 16 per cent of total health care expenditures is spent via the voluntary schemes, with the 70-per cent penetration of supplementary insurance making a key contribution in this regard. In the insurance system, which provides higher quality services, the premium of the private insurance is standardised, there is also a non-profit public insurer in the market and a risk equalisation system also operates among the insurers (National Healthcare Services Centre, 2014).

## Recommendations

**(24) Elaborate the conditions of a system of supplementary private health insurance:** Synergic, trilateral cooperation between health funds, private providers and insurers is necessary to create an efficiently operating and extensive service financing private health insurance scheme built on and supplementing the social security system (Chart 8.12). In this scheme, the health fund members continue to have the option to make top-up payments, as well as to initiate immediate withdrawals from the individual account (e.g. when buying therapeutic equipment). The health fund, as its key duty, organises the service and, by means of competition, provides the best private insurer offers. Thus, they are able to offer to the members group supplementary health insurance packages at a favourable premium, which also provide cover for services that the patients would only be able to finance from long-term accumulation. For the private insurer, the risk pool created from the members would cover the costs of surgical interventions entailing higher costs and of feared diseases (e.g. cancer, stroke, heart attack) while for the smaller claims reserves would be recognised in the traditional manner. Continuous control among the individual actors is guaranteed: the health fund guarantees the best service for the members by inviting bids of private insurers, while the insurer controls unauthorised utilisation and verifies the quality and price level of the services rendered by health providers. The process thus created substantially contributes to curbing households' out-of-pocket health expenses and thereby to the reduction of the shadow economy. The benefit of the presented model for the clients is that they can use convenient services, which require much less input from them and are accessible faster, which would materially reduce the waiting time and also contribute to the shortening of public waiting lists.

**Chart 8.12**  
**Extended operation model of health care**

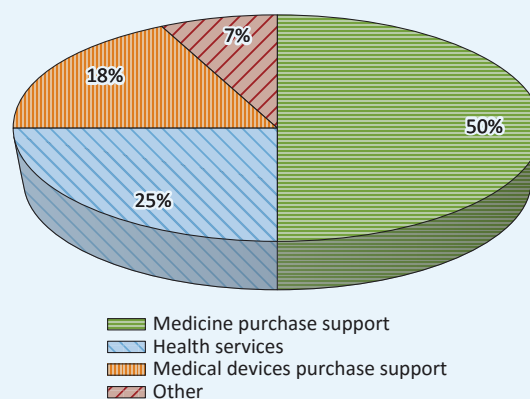


**(25) Guaranteed membership in the health funds and provide targeted incentives for in- and out-payments:**

The financing of the scheme presented in the previous subsection can be built based on the three-party model, where the employee, the employer and the public all have a role. Employees would be members of the supplementary fund scheme by subjective right, and it would be at their discretion to decide on the contribution and the rate thereof as a percentage of their wage (0 per cent, 1 per cent, 2 per cent, customised). Employers would have the option to supplement the employee's contribution with a similar amount exempted from tax and contributions (or at a preferential tax rate). The public subsidy in the form of a tax credit would be replaced by a normative subsidy, applicable to both the contributions and the pay-outs. In addition to faster access, this would be available also for those groups of society, which at present cannot benefit from this (e.g. self-employed paying small taxpayers' itemised lump sum tax ('KATA'), those paying low tax or persons benefiting from other tax allowances). The tiered public subsidy could be implemented on a normative basis, with limits lower than at present. When opting for the base level (e.g. 1 per cent of the gross salary), a normative reimbursement of 5-10 per cent could be credited to the individual account. When opting for a higher contribution, a higher normative reimbursement could be received. By channelling out-of-pocket health expenditures into an institutionalised structure, it will be possible to use the expenditure – at present dominated by pharmaceuticals – in a more purposeful and efficient way (Chart 8.13). By accumulating health expenditures in a controlled system, the use of often overpriced services, frequently paid from patients' own pocket, could be curbed and the ratio of pharmaceutical

expenses could be reduced. In addition to a variety of health spending of smaller amount, the expenditures of the larger surgical interventions and feared diseases (e.g. cancer, stroke, heart attack) would become available and more affordable to the members through supplementary private insurance. With settlement directly between the providers, the volume of administration can be reduced, which allows the funds to operate in a more cost-efficient manner. At the same time, it is important to ensure that the regulation of health funds facilitates keeping of operating expenses at a low level. The introduction of the new operational model outlined above can be implemented in several steps. In the initial phase of accumulation, with the gradual expansion of the available services, sufficient time can be provided for the expansion of the health care infrastructure.

**Chart 8.13: Details of health expenditures via health funds (2017)**



**(26) Extend support to prevention and service invoices.**

The public should subsidise in a wider range and at a higher rate – than the 10-per cent credit, available already now in the case of the prevention services – when the purpose of the payment from the health fund is a health care service or prevention. If the payment is made without using any service, i.e. for buying pharmaceuticals, the supplementary subsidy must not be credited. The extension of the subsidy would contribute to the more rational and more efficient utilisation of health expenditures. Utilisation can be facilitated by expanding the range of services. By creating multilevel, group supplementary insurance packages, which contain both prevention services and treatments, it would be possible to satisfy consumer needs at all levels. As a result of integrating insurers to this degree, the protection of health, as a risk-mitigating tool, could receive more attention.

**(27) Provide tax benefits on corporate health care packages.** A possibility that could be provided to employers



is that the insurers elaborate custom health insurance packages aligned with the company's requirement, which would be available for the employer by making contributions to a health fund or through a self-established fund. In this way, the employer's contribution could be a remuneration element exempted from tax and contributions or taxed at a preferential rate, which may also be encouraged by normative reimbursement.

**(28) Provide tax benefits on private health insurance:** An optional element is that the tax credit – functioning in the current model of pension insurance as well – would be also available in the case of supplementary private health insurance contracts, which would provide the option – subject to a certain level of individual contribution – to reclaim part of the contribution (e.g. 20 per cent) from the personal income tax, subject to certain limits.



## 8.3. IMPROVEMENT OF THE CARE SYSTEM

### 8.3.1 Strengthening control in the care system

- (30) Ensure that minimum requirements, professional and financial directives and protocols are regularly reviewed and updated
- (31) Develop a clear definition of the care package covered by social security
- (32) Strengthen professional and financial control
- (33) Ensure standardised measurement and publication of the performance of health care institutions and patient satisfaction
- (34) Increase the reporting obligations of private health providers
- (35) Introduce a management assessment system in public institutions

#### Assessment of the situation

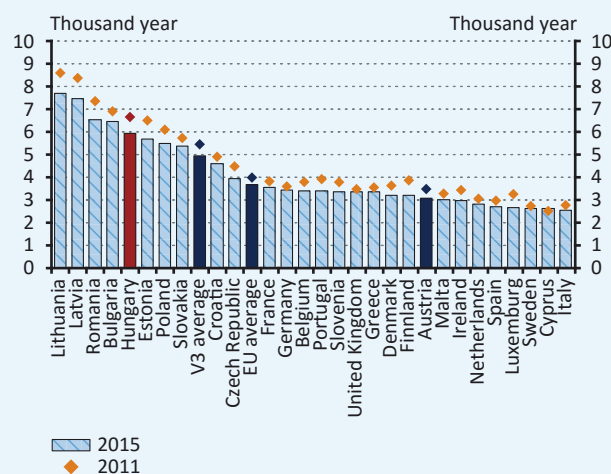
A basic condition for the predictable, transparent operation of the health care system is that there should be evidence-based, valid and continuously reviewed minimum requirements, professional and financing guidelines and protocols, mandatory both for the private and public service care providers. The minimum conditions necessary for the operation of the health care institutions are included in Decree of the Ministry of Health, Social and Family Affairs of 2003;<sup>55</sup> however, the active health institutions are not always able to comply with these conditions. For this very reason, it would be expedient to review the minimum conditions currently applicable and amend them in such a way that they impose requirements on the institutions which they are able to comply with, while compliance with such requirements should be controlled strictly.

At present, the quality of professional and financial control in the Hungarian health care system is inadequate. Until we have reliable information on the operation of the health care system, and thus on the health status of the population, it will not be possible to measure the development of the health care system. The improvement of the population's health status is a necessary condition for the realisation of sustainable convergence, as the high rate of chronic diseases and early death is a major impediment to economic growth (Chart 8.14).

Strengthening professional control is also essential to ensure that the patients treated in the public and private care systems can be clearly separated from each other. At present, it is common practice in Hungary that the patient, with a view to evading the waiting time, goes to the private practice of the doctor. The doctor diagnoses

the patient, but performs the necessary treatment not at the private practise, but at his main job, i.e. in a hospital financed by the public, circumventing the waiting list. After the treatment, the patient once again goes to the private practice for check-ups. In this case, a major part of the costs of the treatment was paid by the public, while the patient – in return for a substantial sum – cut ahead of the other patients on the waiting list. To terminate the interpenetration of the care system and avoid such situations, it is essential to strengthen controls. To attain the best results realisable from the available resources, it is essential that the public and private care systems cooperate in a new, clarified and straightforward way, which serves the interests of society.

**Chart 8.14**  
Potential years of life lost



Note: In the case of people who die before the age of 70, the cumulated number of their years of life until the age of 70, standardised on 100,000 persons

Source: Eurostat.

<sup>55</sup> Decree 60/2003 of the Ministry of Health, Social and Family Affairs on the professional minimum conditions of rendering health services

**In addition to strengthening professional control, a key to the successful transformation of health care is the availability of as high a volume of real information as possible in relation to the operation of the care system.**

In many cases, even the financing entity or the maintainer of the institutions have no reliable information on the individual institutions, while patients are completely unable to acquire information from a credible source in relation to the performance of the Hungarian care system and the individual providers and on the quality of care. In order to ensure that the development of the health care system can be effectively measured and tracked, it is essential to develop an information system that compares the performance of the individual care providers and patients' satisfaction with the service providers, by standardised methods, in a manner also accessible to the public. Such database could serve as a basis for the development of a management evaluation system that would also be able to make the managers of the institutions interested in the development of the operation.

**Due to the simultaneous presence of the public and private sectors, efforts should be made to ensure that the actors of both system have identical rights and obligations.**

It would be important to transform the current system in such a way that forces private care providers, in addition to public care providers, to provide accurate data on their activity in the course of collecting financing and other data (e.g. working time of doctors, nosocomial infections). Private service providers should be subject to the same reporting requirements and should also agree to the publication of aggregated data related to their activity. In addition, it would be also essential that private services provider contribute to the training of the employees.

## Recommendations

**(29) Ensure that minimum requirements, professional and financial directives and protocols are regularly reviewed and updated:** The basic condition for predictable, transparent operation is that there are up-to-date, evidence-based, valid and continuously reviewed minimum requirements, professional and financing guidelines and protocols, mandatory both for the private and public service providers. The repeated development of this, as well as the regular and strict control of compliance are essential for patient safety and for the improvement of the quality of the care system. Furthermore, we particularly recommend the more active use of checklists during care provision.

**(30) Develop a clear definition of the care package covered by social security:** In order to ensure that all patients

are aware of the exact type of care they are entitled to under social insurance, it is essential that the content of the care package be clearly defined, easy-to-understand and available in an up-to-date form. This measure would contribute substantially to the clarification of the doctors' and the health care institutions' scope of responsibility, the curbing of parasolvency and thereby to the reduction of the shadow economy, as well as to the development of the supplementary private health insurance.

**(31) Strengthen professional and financial control:** An essential condition of the success of the reforms is the strengthening of the professional and financial control tool of which can be, for example, the appointment of chancellors along with the management of the institutions, the development of a management evaluation system assessing the performance of the institutions' management, central analysis of the institutions' controlling data at the case level, and the significant reinforcement of the audit departments of the National Health Insurance Fund of Hungary, the National Public Health and Medical Officer Service and the National Healthcare Services Centre. Strengthening central control is important for the clear separation of the patients treated in the public and private care systems. With the more extensive verification of the data reported by the institutions, major cost savings could also be achieved in the system, while the quality of the care could be also improved by introducing targeted incentives based on the provided data. Furthermore, consideration should be given to making medical documentation easier to understand, which would increase the transparency of the institutions' performance for the patients (whether the patient indeed received the treatment stated in the hospital discharge report).

**(32) Ensure standardised measurement and publication of the performance of health care institutions and patient satisfaction:** At present, the patients are unable to obtain information from an official source with regard to the quality of care and the performance of the individual institutions, and thus – apart from their personal experience – they get a view only based on examples taken at random, published in the press or on the internet, or information provided by the actors of the sector. In order to improve the quality of information provided to the patients and to ensure that the development of the health care system can be effectively measured and assessed, a system should be developed that compares the performance of the individuals providers and patients' satisfaction with the providers, by standardised methods, in a manner also accessible to the public. An example of the health information system, to be followed, is the National Health Service (NHS) Digital portal in the

United Kingdom. The range of the data published by it cover prescription practices, the degree of HR supply and patient satisfaction.

**(33) Increase the reporting obligations of private health providers:** It would be important to transform the system in such a way that forces private providers, in addition to public providers, to provide accurate data on their activity in the course of collecting financing and other data (e.g. working time of doctors, nosocomial infections). Furthermore, it would be important to ensure that private service providers are subject to the same reporting requirements (e.g. they should join the Electronic Health Cooperation Service Space) and agree to the publication of aggregated data related to their activity. The introduction of the online cash registers at all private health care providers would facilitate the transparency of private expenditures in health care and the strengthening of controls (for more

details, see the subsection entitled 'Reduction of tax evasion').

**(34) Introduce a management assessment system in public institutions:** In order to ensure that the managers of the health institutions are personally interested in the efficiency of their own institution, we recommend that a management evaluation system be introduced in the public institutions. It would be expedient to build the system on the incentive programme used by the National Health Insurance Fund of Hungary for distributing part of the consolidation funds. The system would assess the performance of the care providers, and particularly that of the senior management, based on a number of pre-defined indicators (e.g. outstanding debts, number of nosocomial infections, waiting time at the emergency departments). The obtained results could serve in the future as a basis for the management's bonus and the distribution of development funds.

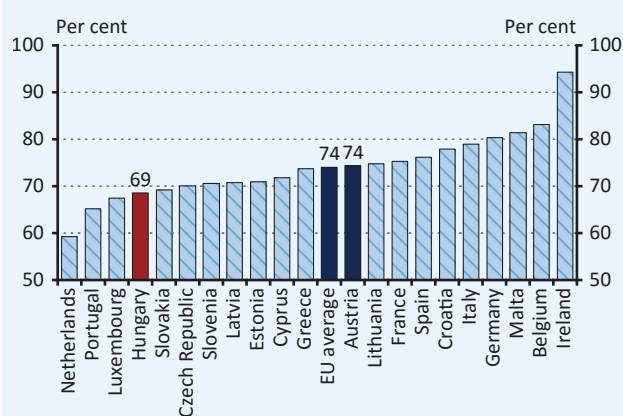
### 8.3.2 Increasing efficiency in the care system

- (36) Increase the capacity for active same day-care
- (37) Reallocate and reduce pharmaceutical expenditures on a professional basis
- (38) Treat the pharmaceuticals trade as a strategic industry
- (39) Develop telemedicine
- (40) Increase reliance on innovative technologies to simplify care management

#### Assessment of the situation

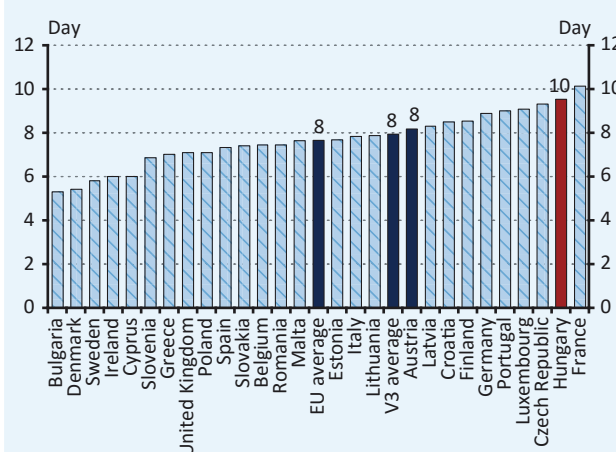
The Hungarian health care system has major efficiency reserves in several areas, the utilisation of which could make it possible to improve the effectiveness of the system even without increasing the level of expenditures. The Hungarian health care system is essentially built around hospitals, representing the most expensive form of provision. Hungary has one of the highest number of hospital beds per capita among the OECD countries (OECD, 2018). The utilisation rate of the Hungarian acute inpatient care is low by international standards<sup>56</sup> (Chart 8.15), while the average duration of hospital stay is distinctly high (Chart 8.16). It would be expedient to review the structure of the inpatient care institutions and to transform the inefficient institutions into long-term care providers (for more details, see the section on 'Recovery from illnesses').

**Chart 8.15**  
Hospital bed occupancy rate (2016 or the latest available data)



Note: In acute inpatient care.  
Source: Eurostat.

**Chart 8.16**  
Average duration of hospital stay (2016 or the latest available data)



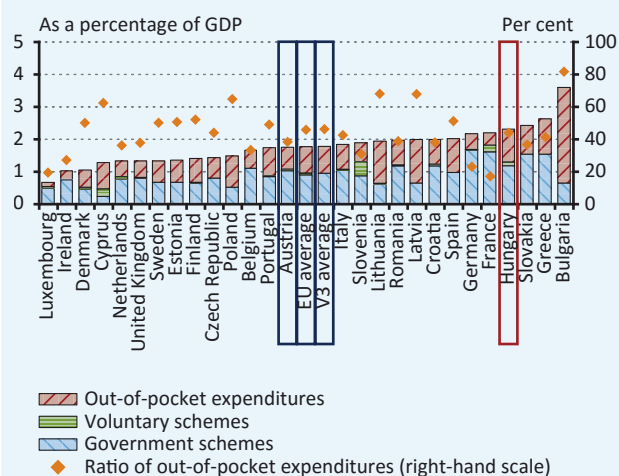
Note: In acute inpatient care, no data for the Netherlands.  
Source: Eurostat.

**Increasing the ratio of same-day treatments is a relatively simple way of making the care system more efficient.** It is possible to perform a number of smaller surgeries in the form of day-care, where the patient usually does not have to stay even one night in the hospital. In fact, the institutions are already interested now in these types of treatments (higher funding is due for the same-day treatment of a patient than for several days' hospital stay); however, in the case of such treatments, the doctors are usually deprived of parasolvency. Same-day care rose dynamically in Hungary; however, in 2015, only 47 per cent of the participants in potential day-care treatment left the institution on the day of the provision (National Healthcare Services Centre, 2017).

<sup>56</sup> In the case of bed occupancy rate the achievement of 100 per cent is not a goal; the international literature deems 70-85 per cent acceptable in acute care.

As the combined effect of several factors, Hungary's pharmaceutical expenditures as a percentage of GDP is one of the highest in the EU (Chart 8.17). When examining the rate of pharmaceutical expenditures, the range of prescription drugs and over-the-counter drugs must be separated. In the case of prescription drugs, a fixed part of the price is paid by the public health fund, while the remaining part is paid by the patient, either directly or through a health fund.<sup>57</sup> In the case of prescription – and usually more serious – drugs, doctors cannot be circumvented as they are the ones who prescribe the medicine for the patient. In 2016, the turnover of prescription drugs amounted to HUF 463 billion, of which HUF 342 billion was paid by the public and HUF 121 billion by the patients. In the case of prescription drugs, the role of pharmaceutical sales representatives should not be ignored, as they are interested in persuading the doctors to prescribe as much drugs as possible and they perform their work in Hungary in a distinctly permissive regulatory environment. In the case of over-the-counter drugs, the role of doctors is not so straightforward, since patients may buy medicine they deem necessary without the doctor's recommendation (in 2017 HUF 132 billion was spent for purchasing over-the-counter drugs) (HCSO, 2017). The fact that more than one quarter of the commercials broadcast in Hungarian television promoted some kind of medicine presumably plays a key role in the purchasing of over-the-counter drugs (Kantar Media, 2016).

**Chart 8.17**  
Pharmaceutical expenditures as a percentage of GDP by financing scheme (2016 or the latest available data)



Note: No data for Malta.

Source: Eurostat.

Thus, the Hungarian population essentially buys a large volume of drugs,<sup>58</sup> but in fact they do not take those drugs. The studies dealing with this topic, and the health status of the population as well, suggest that patients' willingness to cooperate is low when it comes to medication adherence. On the whole, it may be stated that a large volume of drugs is prescribed for Hungarian patients (and patients often expect the doctor to prescribe the drug), in addition to which they purchase additional drugs at their own initiative, but in fact they do not always take these drugs. As it appears from this fact, this issue cannot be resolved with a single measure; several smaller steps could improve the situation.

**Development of infocommunication technologies and the spread of digitalisation may substantially reduce the burdens on doctors and other health care personnel.** The storage of health data in a shared database (which will be realised by the gradual implementation of Electronic Health Cooperation Service Space) will reduce the examinations performed several times, permit the doctors to know the patients' medical history and also substantially reduce the volume of administration tasks. The utilisation of the opportunities provided by telemedicine (e.g. remote diagnostics, remotely issuing lab results, continuous monitoring of blood pressure) requires relatively larger investments; however, by using them, major savings may be realised on the whole.

## Recommendations

**(35) Increase the capacity for active same day-care:** We recommend increasing the capacity of institution capable of providing same-day care and introducing incentives at the level of institutions (e.g. ratio of same-day treatment, taken into consideration in the management evaluation system) and at the individual level (e.g. introducing bonus for doctors depending on the number of surgical interventions), to spread the more cost-efficient – and often providing more modern care – same-day procedures to an even higher degree. The government's intention corresponds to the recommendation; the National Healthcare Service Centre announced in November 2018 the establishment of same-day surgical departments at twenty locations for HUF 8 billion. The various care systems' attitude towards same-day care varies. In Sweden and Denmark, even more serious surgical interventions (e.g. hip or knee replacement) are also performed as same-day surgery. The ratio of same-day hernia surgeries is typically over 75 per cent in the

<sup>57</sup> Roughly 50 per cent of the health funds' expenditures is spent on pharmaceuticals in Hungary (MNB, 2018).

<sup>58</sup> Mostly, because due to the pharmaceutical procurement methods applied by National Health Insurance Fund of Hungary, the price of prescription drugs is low by international standards.

Scandinavian countries, while in Austria surgeries are not performed in this form (National Healthcare Service Centre, 2017).

**(36) Reallocate and reduce pharmaceutical expenditures on a professional basis:** Consideration should be given to reviewing, on the basis of professional criteria, whether it is indeed necessary to prescribe this volume of drugs in this structure. With a view to raising the funds necessary for the application of innovative therapies, consideration should be given to the reduction of the reimbursement rate of the drugs with low therapeutic cost. Furthermore, the activity of pharmaceutical sales representatives and clinical trials should be made transparent. To reduce the volume of over-the-counter drugs, an advertising tax should be imposed on the advertising of drugs and other health products, the proceeds from which could be used in an earmarked manner for the elaboration of health improvement and patient adherence programmes.

**(37) Treat the pharmaceuticals trade as a strategic industry:** In recent years, drug shortages and drug supply problems arose also in several developed countries. In order to ensure continuous drug supply, consideration should be given to declaring the pharmaceuticals wholesale trade a strategic industry.

**(38) Develop telemedicine:** Greater emphasis should be placed on the development of remote diagnostic health solutions in Hungary that facilitate the reduction of the number of doctor-patient meetings and continuous monitoring of patients.

**(39) Increase reliance on innovative technologies to simplify care management:** The developments observed in other sectors substantially increase the demands of health care users. Administration via the internet and making appointment or the tracking of packages (e.g. lab results, samples) already generate specific requirements towards health care providers. Compliance with these requirements necessitates a large volume of IT development, but at the same time it may also substantially increase the efficiency of the health care system. In addition, the performance of tasks organised in a regional network should be expanded. Liaison and sharing medical reports between the doctors via the internet is an efficient way for geographically isolated doctors to conduct regular professional consultations. The use of modern tools may facilitate the standardisation of the care quality and the reduction of regional disparity. In the United States, there are already (mostly surgical) experiments in progress for the application of Google Glass in hospitals, which was well received by the doctors (Wei et al., 2018).



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## 9. Knowledge-based society

### Main objective: Hungarian university in the TOP 200

**One of the greatest tasks of the education system is to prepare the youth for a future state of the labour market that is increasingly difficult to predict, due to the accelerating technological progress.** At the present rate of progress, it is hardly possible to anticipate exactly what kind of knowledge students commencing their studies now will need during their labour market career. For this reason, the emphasis should be placed on the development and enhancement of the students' appropriate skills and on the provision of practice-oriented skills (primarily language, IT and corporate finance skills). Based on the results of international tests (TIMSS, PIRLS, PISA), Hungarian students duly acquire the specified curriculum, but they are unable to use it appropriately in real life situations. Furthermore, the Hungarian education system does not sufficiently reduce the inequalities among students coming from differing social and economic background. Partly due this, the degree of early school leaving without qualification is twice as high in Hungary as the level registered in the region and in Austria. In addition, the foreign language and digital skills of the Hungarian population are among the lowest in the European Union. Due to the foregoing and with a view to improving the financial literacy of Hungarian society, it is justified to enhance the public education methodology, amend the framework and focus of education, and further increase the appreciation of teaching careers.

**In Hungary, the wage premium of the tertiary education degree is outstanding by international standards, i.e. it is very much worthwhile to continue studying.** This is partly due to the fact that fewer people participate in tertiary education or hold tertiary degree than the average for Europe and the region. Experience shows that boosting the ratio of tertiary education graduates is an essential precondition for breaking out of the middle-income trap. On the other hand, based on the international rankings of tertiary education institutions, at present the Hungarian universities are not among the top universities in the world. The ratio of those graduating from faculties of science is relatively low in Hungarian society as a whole, but no major lag can be observed in terms of new graduates. The further increase in the number of graduates from faculties of science could contribute to sustainable convergence by strengthening innovation activity. With a view to increasing the number of tertiary education graduates (particularly graduates from faculties of science), it is necessary to broaden the enrolment base of tertiary education and develop a subsidy system which – irrespective of the financial circumstances, as is formulated by the Fundamental Law, 'based on aptitude' – makes it possible for everyone to participate in tertiary education (Fundamental Law of Hungary, 2011).

**Advancing in the tertiary education rankings can only be achieved by conscious development and targeted measures (particularly by the reinforcement of teaching staff).** To increase the number of graduates from technical, scientific and ICT faculties, the teaching of scientific subjects must be developed primarily in public education. We deem it important to spread the attitude in Hungarian society that it is possible to meet the challenges of the modern era only with lifelong learning.

## 9.1. IMPROVING THE PUBLIC EDUCATION SYSTEM

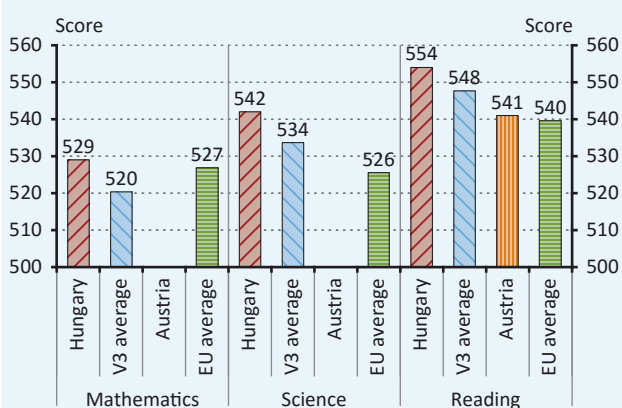
### 9.1.1 Primary education focusing on the development of skills

- (1) Introduce a grounding grade 0 in primary schools on demand
- (2) Elaborate a National Core Curriculum focusing on skills development and practical knowledge
- (3) Improve the methods and forms of teaching and learning
- (4) Ensure standardised measurement and publication of the performance of educational institutions and the satisfaction of stakeholders
- (5) Introduce a basic examination at the end of primary school studies
- (6) Increase the weight of sciences and information technology in secondary school admission examinations
- (7) Improve career guidance and promote increased awareness in career planning

#### Assessment of the situation

Based on the results of international tests, Hungarian students duly acquire the specified curriculum, but are unable to use it appropriately in real life situations. The TIMSS (mathematics and science) tests performed by the specialist institute of Boston College<sup>59</sup> assess the knowledge of pupils attending the fourth and eighth classes, while PIRLS (reading) test assesses the knowledge of pupils attending the fourth class, every 4 years. These tests – in contrast to the PISA tests which measure competences – primarily focus on the testing of the acquired curriculum. In the latest tests, Hungarian pupils achieved good results in an international comparison; in the fourth class they managed to exceed the average of the participating EU and Visegrád countries in all 3 subjects (Chart 9.1).

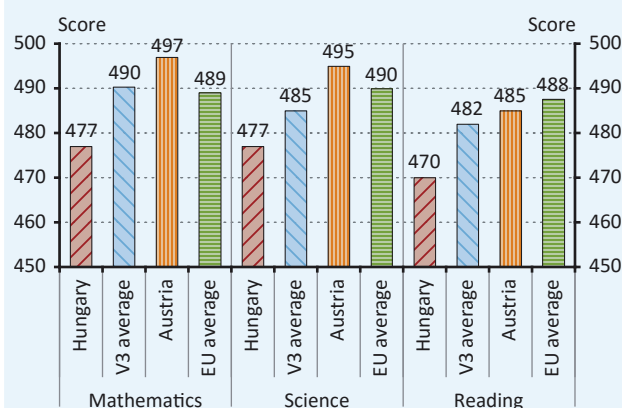
**Chart 9.1**  
Results of the TIMSS and PIRLS tests in the case of pupils attending the 4th grade (2015-2016)



Note: Austria does not participate in the TIMSS tests; the EU average – in the case of all tests – is the average of the EU countries participating in the tests. Average of all participating countries = 500.  
Source: IEA (a).

In the PISA tests, which assess practical application of the curriculum, the results of Hungarian pupils lag behind the international averages (Chart 9.2). The OECD examines the competences of the age group of 15 year-olds, every 3 years in 3 subjects (mathematics, sciences and reading). In the latest test, performed in 2015, Hungary's results deteriorated substantially in the subjects of sciences and reading, while in the case of mathematics the declining trend observed in previous years stopped. The deterioration in results is mostly attributable to the fact that there was a significant increase (to 18.5 per cent) in the ratio of pupils who did not satisfy the expected minimum level in any of the subjects (OECD, 2015). The rise in the level of underperformers may have also been partly attributable to the substandard level of digital skills, as 2015 was the first year when the tests were fully computer-based (for more details, see the section entitled 'Enhancing digital skills').

**Chart 9.2**  
Results of PISA tests (2015)



Note: The tests are completed at the age of 15.  
Source: OECD.

<sup>59</sup> TIMSS and PIRLS International Study Centre.

**At present, the Hungarian education system does not sufficiently reduce the differences arising from students' social and economic background.** Education is one of the most important and efficient ways to create equal opportunities and achieve social inclusion. The individual and social rates of return of education are distinctly high in Hungary, and thus investment in this area contributes to economic development through numerous channels.<sup>60</sup> In order to ensure that the broadest sections of society are active in the labour market, we deem it necessary to shape education and teachers' attitudes. It would be necessary to spread in the Hungarian education system the attitude – as one of the key contributors to the success of education in Estonia – that by applying differentiated teaching methods, teachers can produce the best performance for each child. In the demographic situation of Hungary, this is necessary for setting the Hungarian economy on a sustainable convergence path.

**One of the main challenges for the education system is to prepare the young for a future state of the labour market that is increasingly difficult to predict, due to the accelerating development.** At the present rate of development, it is almost unimaginable exactly what kind of knowledge students commencing their studies now will need during their labour market careers. For this reason, it is essential for Hungary to develop an education system that endows the youth primarily with the love of learning, and the demand for and capacity of continuous development. Primary education is the key to achieving this, as its quality is a determinant of success at the further levels of education.

## Recommendations

**(1) Introduce a grounding grade 0 in primary schools on demand:** Consideration should be given to permitting schools to introduce a grounding grade 0, which would be a transition between kindergarten and school education. The primary goal of this grade would be to increase the success of catching up, i.e. disadvantaged or cumulatively disadvantaged pupils would have more time and receive more attention for acquiring basic skills. This is important because pupils who fall behind at this level (e.g. do not learn to read) will only be able to fulfil the higher levels of education with great difficulties. The success of such a programme is conditional on providing the participating teachers with special in-service training, and when communicating the programme it must be ensured that the

children participating in the programme do not start with a disadvantage during later education. The introduction of the 9-class primary school made a major contribution to the success of the Polish education reform in recent years.

**(2) Elaborate a National Core Curriculum focusing on skills development and practical knowledge:** When elaborating the new National Core Curriculum (NCC), which is in progress at present as well, efforts should be made to shifting the focus of education to skills development and practical knowledge. The development of basic skills is essential for ensuring that the students leaving the education system are able to adequately respond to the continuously changing challenges of the labour market throughout their career. In addition to providing the necessary lexical knowledge, schools play an important role in developing students continuously and also educating them in accordance with social norms. It would be particularly important in the first years of formal education to place even greater emphasis than now on mastering basic skills. It would be progressive to expand the range of targeted basic skills, at the national level, to include foreign language and IT skills as well. Learning methodology issues should receive greater attention in the education process (how to learn/teach correctly), and students should be also made aware of the reasons for including certain subjects in the curriculum. Greater emphasis should be placed in the education process on the provision of students with knowledge necessary in practical life (e.g. basic financial or legal skills). Furthermore, the NCC should make students understand the importance of continuous self-development and provide them with skills necessary for lifelong learning.

**(3) Improve the methods and forms of teaching and learning:** To meet the challenges faced by education systems in the modern era, teaching methodology should be substantially enhanced in Hungary. After reviewing the international best practices (particularly the experiences in the Finnish or Estonian education system), it may be worth elaborating a continuously updated collection of methodological recommendations, which contains the latest learning and teaching methods, from which teachers can select their preferred solutions. We recommend that – based on the Estonian model – there should be institutions among the Hungarian public schools that have the opportunity to test the new methods under controlled circumstances (e.g. form of education in blocks instead of class of 45 minutes).

<sup>60</sup> The MNB's 2018 Growth Report deals with this topic in detail.

**(4) Ensure standardised measurement and publication of the performance of educational institutions and the satisfaction of stakeholders:** We deem it important to measure the performance of educational institutions and the satisfaction of students in a standardised manner and to publish the results. Consideration should be given to storing the data generated at various levels of education in a shared database (e.g. National Education Database), which would facilitate the comparison of the efficiency of the various teaching methods, the development of management decision supporting solutions based on objective data and the elaboration of a standardised quality assurance system.

**(5) Introduce a basic examination at the end of primary school studies:** We recommend that a basic examination should be introduced at the end of the 8<sup>th</sup> grade, concluding the studies until then and primarily measuring the skills and the practical application of the curriculum, which at the same time would also replace the secondary school entrance examination. Based on the Polish experience, the introduction of such a basic examination would contribute to improving the results of the PISA tests taken at the age of 15, and the students would have the opportunity to face real exam circumstances earlier than is currently the case.

**(6) Increase the weight of sciences and information technology in secondary school admission examinations:** Efforts should be made in public education to encourage students to like the natural science subjects and later to be open to further education in these areas. To this end, in the early phase of teaching these subjects, teachers

should try to raise the students' interest through practical examples and experiments (the education system of the United States is particularly strong in this area) and less emphasis should be put on the theoretical issues in this period. Furthermore, travelling to experimental sites should be set up, which would facilitate the presentation of natural science points of interest to a larger number of students in a cost efficient way. To increase the ratio of science graduates, in addition to mathematics one more IT or natural science subject should be included in the secondary school entrance examination on a mandatory basis. In addition, it would be expedient to carry out the exams on computer, which would also simplify the examination process.

**(7) Improve career guidance and promote increased awareness in career planning:** It would be important to start students' preparation for their future careers in the primary school already. It would be expedient to deliver as much information as possible – in a way suitable for the children's age – to pupils to help them select the profession they want to pursue as adults, based on information taken from real life. The means of this may include the organisation of career afternoons in school or offsite classes at enterprises close to the institution. In the United States, the parents are involved in this process, by talking about their job in the classes. Efforts should be made that the activity and messages of the organisations involved in career orientation are harmonised at the local and national level as well. More conscious career planning may reduce the student drop-out rate in subsequent education, decrease the ratio of career changers and increase the number of science students.

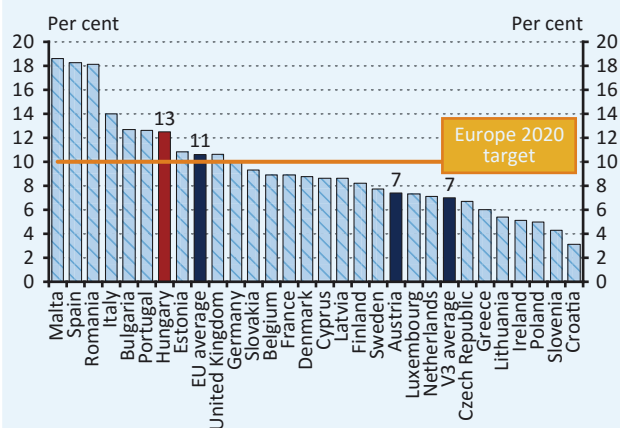
## 9.1.2 Strengthening secondary education

- (8) Implement curriculum reform in the secondary school system
- (9) Apply output criteria and more flexible curricula
- (10) Strengthen dual vocational training
- (11) Strengthen the links between vocational training schools and market actors
- (12) Ensure flexible switching between various forms of education
- (13) Reduce (early) school leaving without a qualification

### Assessment of the situation

The degree of early school leaving without a qualification is twice as high in Hungary as the level registered in the region and in Austria (Chart 9.3). It is much more difficult to find a job in the labour market for young people without secondary or vocational qualification or many of them become inactive in the long run. The reduction of early school leaving below the level of the other Visegrád countries is possible with the simultaneous implementation of several measures. With a view to educating people of low qualification, who are already present in the labour market, it would be expedient to strengthen the Hungarian adult education system; for more details, see the section on labour market.

**Chart 9.3**  
Ratio of early school leavers (2017)



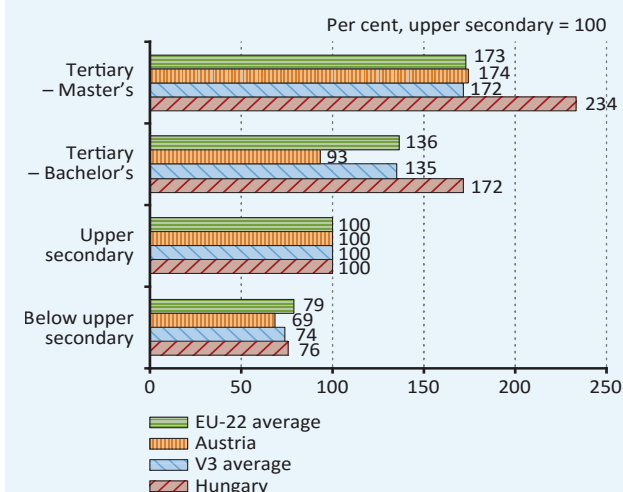
Note: In the age group of 18–24 years, the ratio of those with primary education at most, not participating in additional education.

Source: Eurostat.

In Hungary, the wage premium of a tertiary education degree is outstanding by international standards (Chart 9.4). A bachelor's degree secures a 70-per cent higher wage for the employee, while the wage of employees with a master's degree is almost two and a half times higher than that of the employees with secondary school qualification. The employment data show that a higher rate of those with tertiary education level are in employment. For this reason, secondary education (particularly grammar schools) should

be enhanced in such a way that the largest possible ratio of graduates can continue their studies in tertiary education. Furthermore, it is also essential to ensure that vocational school students can continue their studies in tertiary education not only theoretically, but in practice as well.

**Chart 9.4**  
Relative earnings of workers, by educational attainment (2016)



Note: Upper secondary = 100

Source: OECD.

### Recommendations

**(8) Implement curriculum reform in the secondary school system:** With a view to increasing the efficiency of secondary education (particularly grammar school), the mandatory curriculum should be revised and the role of elective courses should be increased. The role of secondary education is not the development of skills, but rather the filling of the developed structure with as deep knowledge as possible. It would be expedient to increase the role of elective courses in secondary schools, and formulate basic and advanced level groups even within the classes as early as in the 9th grade. This is because in the case of those students who do not wish to deal with a topic outside the secondary school subject, it is not efficient to teach the present curriculum based on theory. It is sufficient



to provide them with much more practice-oriented education, focusing on the daily application areas of the topic and providing only the necessary basic knowledge. By contrast, in the case of students wishing to deal with the respective topic in more details, theoretical foundations – which characterises a large part of the subjects today – are necessary. The division of these two directions may improve the efficiency of education (everybody get the level of knowledge they need), and it provides an opportunity to acquire deeper knowledge. Furthermore, a general subject should be introduced in all forms of secondary educations, which – if necessary, in a period of several years – would cover at least the basic economic, financial, social, legal and psychological knowledge.

**(9) Apply output criteria and more flexible curricula:** In addition to the centrally defined curriculum, teachers – particularly in secondary education – should be allowed to choose the teaching methods more freely, at their discretion. It would be worth connecting the introduction of this system, supporting the development of more flexible curriculum, to a major development of the performance measurement of teachers, schools and vocational training centres. The national competence test should be extended to such a degree that it facilitates the monitoring of students' individual progress, and thereby the measurement of the institutions' and teachers' value added. Furthermore, part of the institutions' financing should depend on the schools' performance measured by output and value added criteria (e.g. ratio of students accepted by universities, degree of progress achieved between the start and end of the education). A similar system already works successfully, among other countries, in Estonia.

**(10) Strengthen dual vocational training:** One of the most efficient ways to strengthen vocational education is the application of dual education, which has been introduced in Hungary as well. At the same time, it would be important to fill the courses with as much practical skills and contents as possible, to ensure that the students graduating from those course are effectively ready to enter the labour market. With a view to strengthening dual education, we recommend rationalising the number of the courses included in the National Qualification Register (NQR) and developing a system that forecasts labour market trends, based on the German model. Furthermore, consideration should be given to providing students with public scholarship for the period of obtaining the vocational certificate after the baccalaureate with a view to substituting the income lost due to postponing the start of work. Based on the experiences of recent years, it may be worth reviewing whether dual education is necessary in all areas of vocational education (e.g. in the case of artistic education).

**(11) Strengthen the links between vocational training schools and market actors:** We recommend that, based on the Dutch model, market enterprises should also participate in the installation of modern training workshops at vocational educational institutions (e.g. several companies are interested in ensuring that new graduates are able to repair their products). With a view to enhancing the quality of education, the number of practical training venues should be increased and particularly the large companies should be involved as actively as possible. In addition, it would be expedient to develop closer cooperation between the companies participating in dual education and the vocational training institutions also in the area of education (e.g. pedagogical in-service training opportunities, easing the administrative burdens related to involving practical experts in the vocational education system which is struggling with a major human resource deficit).

**(13) Ensure flexible switching between various forms of education:** In order to reduce the number of drop-out and career changer students, we recommend that transferability between the various forms of education should be indeed guaranteed in the education system. The system must provide all students with the opportunity to find the education institution that best fits their needs, even if initially they started their studies in a different institution. The transferability between grammar school and vocational education would primarily be facilitated by reducing the administrative obstacles and improving the perception of vocational education. Improving the quality of vocational education may also increase the number of students continuing their studies in tertiary education.

**(14) Reduce (early) school leaving without a qualification:** It may contribute to reducing the drop-out rate, if – for the pupils who underperform at the basic examination concluding the primary school – bridging programmes of 1-2 years were organised to prepare them for vocational education. In addition, it would be expedient to provide the students who wish to leave school early with an opportunity to obtain some kind of lower qualification (e.g. sub-vocational qualification) in a simplified manner. Consideration should be given to amending the rules of the public work programme by excluding young people below the age of 18. With this solution, the volume of labour force available to the primary labour market would not decrease, but there would be less incentive in the system to leave school early. In addition, the after-school support programme – which facilitates catching up by the socially disadvantaged – should be strengthened and expanded, and consideration should be given to extending the operation of the special Roma collages to public education and vocational training.

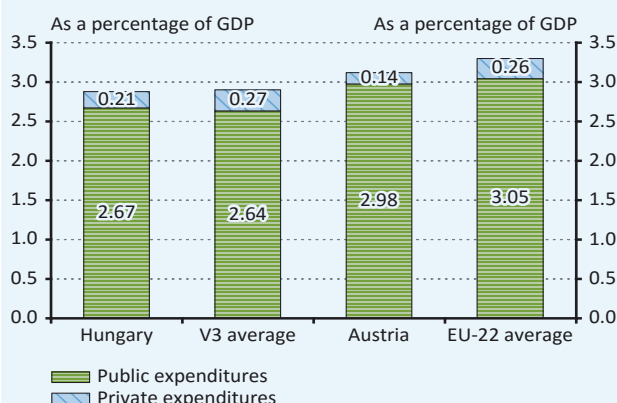
### 9.1.3 Making teacher's career more attractive

- (14) Allocate more public and private funds to education
- (15) Increase the number of primary school teachers and teaching assistants
- (16) Provide regular further training for teachers
- (17) Improve the social esteem of teachers, kindergarten teachers and nursery nurses by extending and enhancing the career path model

#### Assessment of the situation

In a regional and international comparison, Hungary allocates an average volume of funds to public education<sup>61</sup> (Chart 9.5). Public education is financed primarily from public funds; the share of private funds is usually below 10 per cent.

**Chart 9.5**  
Public education expenditures as a percentage of GDP (2015)

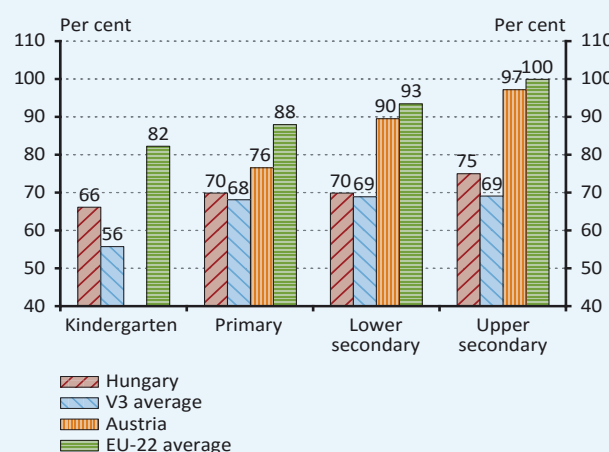


Note: The increase in Hungarian expenditures since 2015 (e.g. the introduction of the teacher's career model) is not yet included in the data shown in Chart 9.5.

Source: OECD.

At present, the financial recognition of the teacher's profession lags behind that of other occupations requiring tertiary education qualification (Chart 9.6). In Hungary, the average wage of public education workers – despite the introduction of the career path model – is only 70-75 per cent of employees holding a tertiary education degree in other professions. This value is higher than the average of the other Visegrád countries, but lags substantially behind the Austrian and EU average. As a result of the level of wages, the vision and prestige among those choosing a teacher's career, there is a risk that the quality and efficiency of teaching may deteriorate.

**Chart 9.6**  
Teachers' wages as a percentage of the average wage of tertiary education graduates (2016)



Note: As a percentage of the average wage of people holding a tertiary education degree, employed full-time, belonging to the age group 25–64. In the case of Austria there are no data for kindergarten wages.

Source: OECD.

In order to improve the efficiency of education, it would be necessary to increase the number of teachers and organise regular in-service trainings. At present as well, the shortage of teachers in public education is a factor hindering the improvement in the quality of teaching. Based on the OECD data, by international standards the teacher-student ratio is favourable in Hungary (11 students for each teacher, compared to the OECD average of 14). In Hungary, the average number of pupils per class in the lower grades of primary school corresponds to the OECD average (21), while it is slightly lower in the upper grade (21 compared to the international average of 23) (OECD, 2018). At the same time, the HCSO statistics show that there are roughly 4,000 vacancies in the Hungarian education sector (HCSO, 2018). All this suggests that there may be major frictions within the education system. Having enough teachers on the whole is to no purpose, if their distribution by region and

<sup>61</sup> Eurostat shows substantially higher expenditure level in the case of education expenses, which is due to the fact that upon calculating the expense level, the OECD only takes into consideration the costs directly related to education (e.g. public catering or free textbooks qualify as social expenses in their terminology). This approach is more suitable for assessing the quality of education, and in this way we also get a view of the volume of private funds, which is substantial particularly in the case of tertiary education.

subjects taught does not correspond to the structure. The harmonisation of the structure with the volume and quality of the available human resources may help standardise the quality of education.

**The aging of the teaching staff and the absorbing effect of the general wage increase resulting from economic development improving the human resource supply more difficult.** For this reason, it is essential to make teacher's career more attractive to gifted young people. In the Scandinavian countries, and e.g. in Singapore, teachers are among the most valued members of the society (in financial terms and also based on other criteria), as a result of which young people struggle for admission to the teacher's faculties, characterised by major overapplication for acquiring a great position. Efforts should be made in Hungary as well to achieve that the education system can offer a real alternative to students when choosing their career. Competition guarantees that the education of the coming generations is in safe hands.

## Recommendations

**(16) Allocate more public and private funds to education:** With a view to providing the financial background for our recommendations related to education, the education expenditures should be raised and private resources should be involved to a higher degree. The demographic processes (decrease in the number of children) automatically free up resources in education, but the realisation of this (e.g. merging of classes) is not an easy task. However, in addition to higher efficiency, additional resources must be provided to achieve that the Hungarian education system once again becomes one of the best in the world.

**(17) Increase the number of primary school teachers and teaching assistants:** To increase the quality of primary education, we recommend adopting teaching methods in Hungary where several adults deal with the children during the classes. This would facilitate dealing with the pupils in smaller groups and thus each pupil would receive greater attention. Subject to creating a proper financing background, this can be achieved by increasing the number of teaching assistants. The latter solution can be implemented more simply, since to become a teaching assistant it is sufficient to complete an NQR course. This job may be particularly attractive to young mothers, who wish to return to the labour market as part-timers after the birth of the child. The role of the teaching assistants may be increased based on the example of the Anglo-Saxon countries (United Kingdom, USA). It would be particularly

important to increase the number of primary school teachers and teaching assistants in the disadvantaged areas. To this end, it would be expedient to employ teachers with special skills in these settlements, with an outstanding wage premium, as high as 50 per cent, reducing their teaching hours burden and supplementing their work with special development activities.

**(18) Provide regular further training for teachers:** The regular further education of teachers in relation to the methodology and curriculum is essential to increase the quality of education. The education and in-service training of teachers should be modernised (e.g. digital skills, methodological developments) and expanded (e.g. conflict management, special methodology necessary for adult education). In addition, it may be worth expanding the range of institutions involved in university students' practical training with provincial schools operating in small settlements. For the financing of further education, we recommend adopting the Estonian model, where part of the schools' budget may only be used for the further education of teachers. In addition, consideration should be given to making obtaining a degree in the second academic subject of teachers free in tertiary education (which may as well be in the form of a targeted scholarship system).

**(19) Improve the social esteem of teachers, kindergarten teachers and nursery nurses by extending and enhancing the career path model:** By continuing the wage review, started earlier, it can be achieved that an increasing number of secondary school graduates choose the teacher's career and fewer teachers change profession. Since the introduction of the teachers' career model in 2013, teachers' wages rose by 50 per cent. Satisfaction with the teachers' work and the efficiency of education should be included in the wage review criteria, which could represent a positive financial incentive for teachers. The career path model is essentially a good framework for the professional development of teachers and nursery nurses who love their profession, which would be worth expanding further. By enhancing the quality of professional further education and of the teaching environment and teaching aids, it is possible to improve teachers' motivation and commitment to the profession. A series of marketing campaigns, presenting the attractive elements of the career path model, the advantages and social usefulness of the teacher's occupation, may divert secondary school students to the teacher's career and prompt past career changers to return. The acceptance of the teacher's career can be strengthened in the general public. Furthermore, the career path model should be expanded by recreation and research leave, available every 5-10 years.

### 9.1.4 Increasing the efficiency of language teaching

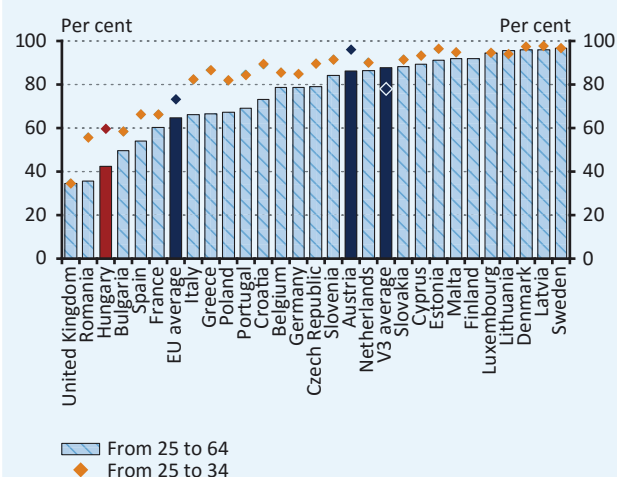
- (18) Redesign language examination requirements and align school programmes accordingly
- (19) Provide public support and premises for extra-curricular foreign language activities and language exam preparatory courses
- (20) Provide the option to take secondary school admission and secondary school leaving examinations in English

#### Assessment of the situation

**The foreign language skills of the Hungarian population are among the lowest in the European Union (Chart 9.7).**

By their own admission, only 42 percentage of the age group of 25–64 years spoke at least one foreign language in 2016. In the case of the youth entering the labour market (age group of 25–34) this ratio is slightly better (56 per cent), but at EU level this is still one of the lowest. The absence of foreign language skills substantially reduces the options of certain employees, since they have no or only limited access to several knowledge-sharing channels (e.g. literature, internet sources). In practice, all of this reduces knowledge, learning and innovation capacity, which limits economic development.

**Chart 9.7**  
Ratio of people speaking at least one foreign language (2016)



Note: Self-reported; no data for Ireland; no data for Finland for the age group of 25–34 years.

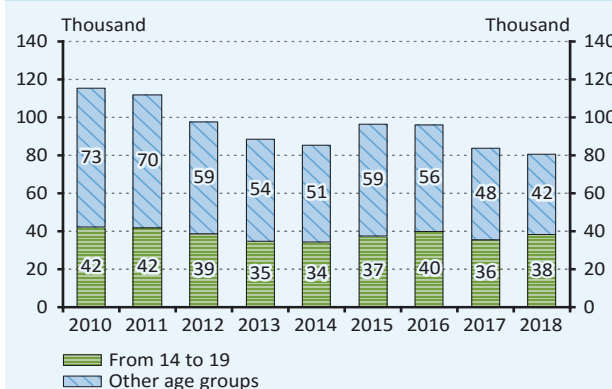
Source: Eurostat.

**The shortcomings of employees in the area of foreign languages reduces Hungary's international competitiveness.** For international companies, the availability of a sufficient number of foreign language-speaking employees in the labour market is of outstanding importance, since this knowledge is essential for their daily operation. In the case of Hungarian-owned SMEs the expectations are lower, but some of these companies operate as suppliers

for international companies. In addition, the expansion of the range of exporting SMEs appears as an objective in this publication as well (for more details, see the section entitled 'External economy and economic structure'), which also requires a higher level of foreign languages skills.

**The number of English language exams passed in Hungary shows a decreasing trend in the past years, while the ratio of the age group of 14–19 years is continuously increasing (Chart 9.8).** The knowledge of English at least at the intermediate level – in addition to the increasing labour market opportunities – is more and more necessary in daily life as well. In the publication entitled '180 steps for the sustainable convergence of the Hungarian economy', the MNB set the objective that all students should pass the English language exam at least at the intermediate level by the end of their public education. At the same time, it is worth supporting the learning of other languages as well (e.g. German, French, Chinese) since the knowledge of a foreign language may also increase openness to other foreign languages.

**Chart 9.8**  
Number of English language exams



Source: Accreditation Centre for Foreign Language Examinations.

#### Recommendations

**(22) Redesign language examination requirements and align school programmes accordingly:** In Hungary, foreign language teaching in schools – similarly to the teaching of other subjects – provides strong theoretical (grammar)

basis, but provides less practical knowledge and skills (speaking, reading). The language exams accredited in Hungary are essentially adjusted to this, while in real life the students entering the labour market face different expectations. Namely, employers prefer real knowledge to a language certificate and they are particularly interested in reading, speaking and presentation skills. Thus, it would be worth redesigning the domestic language teaching (and the language examination scheme) to provide students with knowledge that better complies with the labour market expectations and the international trends.<sup>62</sup> This may necessitate teachers' participation in methodological in-service training, increasing the number of language classes and the more active involvement of native speaker teachers in education.

**(23) Provide public support and premises for extra-curricular foreign language activities and language exam preparatory courses:** With a view to increasing the number of successful language exams, the public subsidy for extra-curricular language learning should be increased. In this area, we welcome the reimbursement of the examination fee for successful exams and the concept of student loan available for the learning of languages, since these provide a wider range of students with the opportunity to learn

languages. In addition, public education institutions would be also able to support the initiatives outside the traditional education system (e.g. study groups, language exam preparatory courses, foreign-language clubs) by providing venues and teachers. We recommend that targeted public tenders should be made available to the institutions for the organisation of regular events for this purpose.

**(24) Provide the option to take secondary school admission and secondary school leaving examinations in English:**

With a view to acquiring deeper (technical language) knowledge, all public education institutions should have the option to teach certain subjects in a foreign language. It would be expedient to make the launching of such subjects conditional upon a licence; additional financing should be provided to the institutions active in this area. At the same time, the development of such system also depends on the possibility of taking the entrance examination to the secondary schools in certain subjects in several languages. In addition, it should be permitted to take the school-leaving exam in foreign languages also in schools that are not bilingual at present. Following the successful set-up of the system, consideration should be given to prescribing that all grammar school students must complete at least one subject in a foreign language on a mandatory basis.

<sup>62</sup> Employers or foreign educational institutions usually specify as entry requirement a score achieved in an international test (e.g. IELTS or TOEFL exam) in the past 1-2 years rather than an intermediate or proficient language exam of category 'C' passed many years ago.



## 9.1.5 Boosting foreign relations in education

- (21) Promote more active participation in exchange programmes with other countries
- (22) Provide incentives for foreign students to stay in Hungary
- (23) Provide bi- and multilingual education in each Hungarian county
- (24) Promote subtitled films and series

### Assessment of the situation

In recent years, the focus of the international programmes for mobility was mainly on tertiary education and lifelong learning. In the 2007–2013 budget period, the European Union made it possible for 86,000 people to gather experience abroad. 29,000 students and almost 10,000 teachers had the opportunity to participate in tertiary education mobility programmes. In the Comenius public education programme the mobility of 22,000 students and teachers was realised. The Leonardo da Vinci vocational education programme facilitated the study-tour and internship of more than 17,000 persons, while the mobility of 5,000 participants was realised in the Grundtvig programme, which focuses on adult education (Eurydice, 2018). In the present, 2014–2020 period, the main financing instrument of the EU was the Erasmus+ programme, and thus the main focus of the programmes shifted somewhat towards tertiary education mobility. In addition to the EU programmes, Hungarian educational institutions are also active in this field (mostly by organising exchange programmes with certain sister institutions), and several for-profit enterprises also deal with the organisation of study programmes abroad. In addition, the potential employment of the parents abroad can also influence the study opportunities of Hungarian students abroad.

Several measures can contribute to making Hungarian students ready to capitalise on the international opportunities. By international standards, the teaching of foreign languages in Hungary starts relatively late (Chart 9.9). 61 per cent of Hungarian lower grade primary school pupils learn foreign languages, which lags substantially behind the average of the other Visegrád countries (86 per cent) and the EU average (roughly 85 per cent). Increasing the number of foreign students studying in Hungary may also have a favourable impact on the attitude of Hungarian students.

### Recommendations

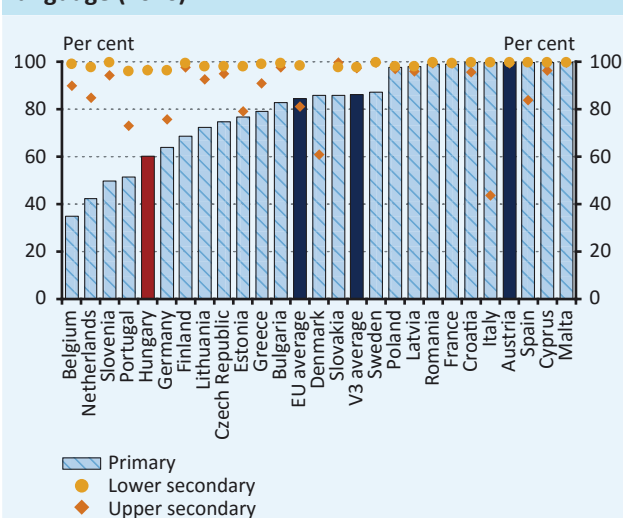
**(25) Promote more active participation in exchange programmes with other countries:** With a view to broadening the range of participants in international exchange programmes, we recommend that these programmes receive stronger public support. The means of this may include the promotion of international programmes in Hungary, provision of grants for the individual exchange programmes of public education institutions through tenders and the simplification of the administration of exchange programmes.

**(26) Provide incentives for foreign students to stay in Hungary:** With a view to increasing the chances that the foreign students who visit Hungary and study here for short periods stay in Hungary in the long run, consideration should be given to providing greater support for the learning of Hungarian language and to the development of an application system for these students, which would facilitate the prolongation of their stay in Hungary.

**(27) Provide bi- and multilingual education in each Hungarian county:** By means of supporting the mastering of deeper foreign language skills, we recommend that multi-language education institutions that are prominently active in the field of mobility, should be strengthened. All counties should have institutions that provide high quality bilingual education.

**(28) Promote subtitled films and series:** With a view to facilitating the practicing of foreign languages by the population, and particularly by the younger generations – which are the main target group for movies – it should be possible to see all movies presented in cinema with subtitles or in the original languages as well, in as many cinemas as possible. The international (mainly Scandinavian) experiences related to the subtitling of films and series suggest that this measure would be able to contribute to improving language skills.

**Chart 9.9**  
Number of students learning at least one foreign language (2016)



Note: No data for Ireland.

Source: Eurostat.



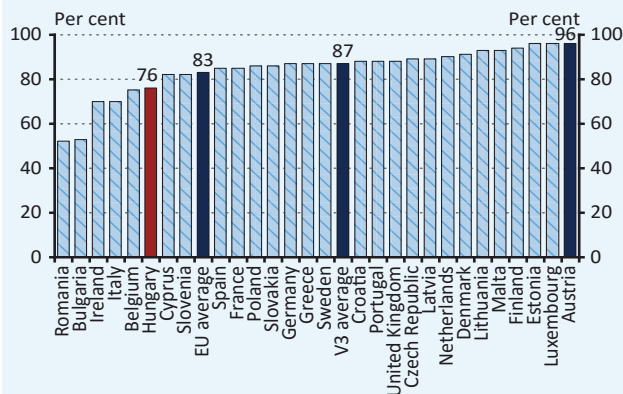
## 9.1.6 Enhancing digital skills

- (25) Develop and maintain information technology instruments in schools and vocational training centres
- (26) Develop digital learning materials
- (27) Integrate programming into the teaching of mathematics

### Assessment of the situation

**The digital skills of the Hungarian youth lag behind the regional and EU level (Chart 9.10).** Based on the Eurostat composite indicator measuring the level of digital skills, 76 per cent of the Hungarian youth aged 16–19 years had at least basic digital skills (e.g. they have already copied folders on the computer or found information on some kind of service on the internet), which falls short of the regional average by 9 percentage points and falls far short of the top-ranking Austrian level (96 per cent). In its earlier study, containing 180 points, the MNB formulated as an objective that all Hungarian students should have at least user-level digital skills and as many students as possible should acquire higher-level, primarily programming, skills.

**Chart 9.10**  
Digital skills in the age group 16–19 years (2017 or the latest available data)



Note: Ratio of people with at least basic digital skills in the age group 16–19.

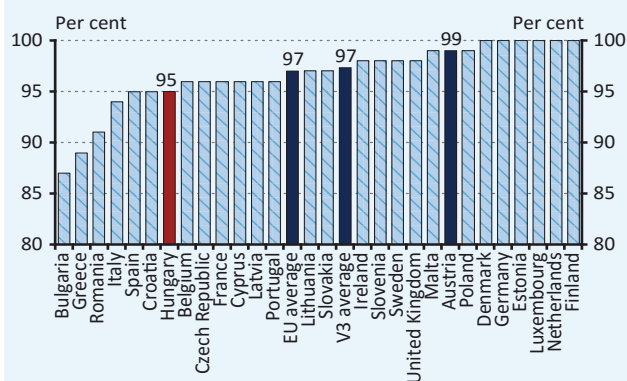
Source: Eurostat.

**The shortcomings in Hungarian students' digital skills also influence the results of other education surveys.** The 2012 PISA tests dealt with digital competences as a one-time priority topic. Hungarian students were ranked last (450 score points) in the subject of digital reading among the OECD countries (falling behind the OECD average by 50 points). Another part of the test dealt with the opportunity that a major part of the students continue to perform the mathematical test fully on paper, while a smaller part of them performed part of it on computer. The average of the Hungarian students who completed the test on computer was 470 points, while of those who did not use computer it

was 477 points. Hungarian students were able to resolve 31 per cent of the problems not requiring computer, and only 21 per cent of the tasks that required the use of computer (OECD, 2015). In the case of the test performed in 2015, the tests already for all three basic subjects (mathematics, sciences, reading) were filled in on the computer, which presumably contributed to the fact that the results of the Hungarian students deteriorated compared to the previous years.

**For the improvement of digital skills, it is essential that the students be able to use IT equipment both in the educational institutions and at home under proper circumstances.** The ratio of households with children and with access to the internet increased substantially in the past decade in Hungary (from 63 per cent in 2008 to 95 per cent), but still lags behind the value of most EU countries (Chart 9.11). There is also room for extending the supply of schools with internet, although major progress has been achieved in this area during the implementation of the Digital education strategy. Furthermore, with a view to developing digital curricula and utilising the opportunities offered by modern IT as efficiently as possible, it would be important to ensure that the quality of Hungarian students' education is comparable to that of the countries' with the most efficient education systems (Finland, Estonia or Poland). The general introduction of the electronic class book this year is definitely a step forward, since in this way parents can simply access their children's performance assessment through a cloud-based system.

**Chart 9.11**  
Ratio of households with children and with access to the internet (2017)



Source: Eurostat.

## Recommendations

### **(29) Develop and maintain information technology instruments in schools and vocational training centres:**

We recommend that ‘Hungary’s digital education strategy’, approved by the government (Government, 2016), be implemented as widely as possible. Major progress has already been made in this area: the Klebelsberg Centre procured 45,000 laptops and 24,000 tablets, and almost one third of the teachers participated in IT training (Government, 2018a). Special attention should be paid to ensuring that free, protected, broadband wifi – with the restrictions appropriate for the children’s age – is made available as soon as possible in all schools and vocational education centres, since this is essential for enabling teachers to utilise the opportunities offered by digital technologies. In addition, we recommend decreasing schools’ administration obligations related to IT equipment and that institutions receive funding not only for the procurement of new equipment, but also for the operation and maintenance of such.

**(30) Develop digital learning materials:** The availability of digital learning materials of proper volume and quality

is a precondition for the regular use of digital equipment in classes. In the development of digital curricula, efforts should be made – based on the Polish model – that preferably all curricula are made freely available on an identical platform through cloud technology. With a view to guaranteeing quality, it should be avoided that the digital learning materials are created by the simple digitalisation of the existing curricula, but rather the curricula should be properly adapted to the IT tools. Furthermore, it would be expedient to permit the adjustment of the curricula to the students’ level (e.g. teachers should have the option everywhere to select the homework from the digital workbook at the individual level) or to customise the curricula (e.g. there should be an IT developer in every school district, who helps teachers include local examples in the appropriate part of the curriculum).

**(31) Integrate programming into the teaching of mathematics:** As a result of economic and technological development, high level IT skills are likely to be more appreciated on the labour market. In order to ensure that all students have IT, and particularly programming basic skills, we recommend that the principles of programming should be integrated in the teaching of mathematics.

## 9.2. INTERNATIONALLY RECOGNISED TERTIARY EDUCATION

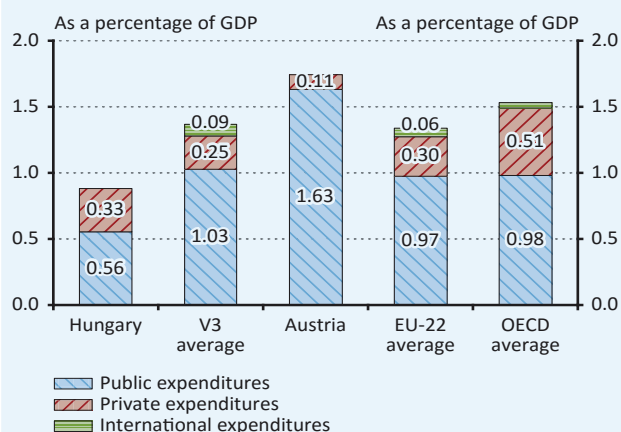
### 9.2.1 Boosting competition among tertiary education institutions

- (28) Create a competitive environment in tertiary education
- (29) Develop the infrastructure and equipment of tertiary education institutions
- (30) Strengthen links between tertiary education and companies
- (31) Channel market needs and private capital into education
- (32) Raise R&D expenditure in tertiary education to 0.5 per cent of GDP
- (33) Provide opportunities to lease university infrastructure

#### Assessment of the situation

**Both in a regional and international comparison, Hungary allocates funds to tertiary education below the average (Chart 9.12).** In Hungary, tertiary education expenditures amounted to 0.9 per cent of GDP, which falls short of the average of the other Visegrád countries (1.4 per cent), the OECD countries (1.5 per cent) and Austria (1.7 per cent). In addition, in Hungary only 63 per cent of the expenditures come from government sources, which also lags behind the values registered in the neighbouring countries.

**Chart 9.12**  
Tertiary education expenditures as a percentage of GDP (2015)

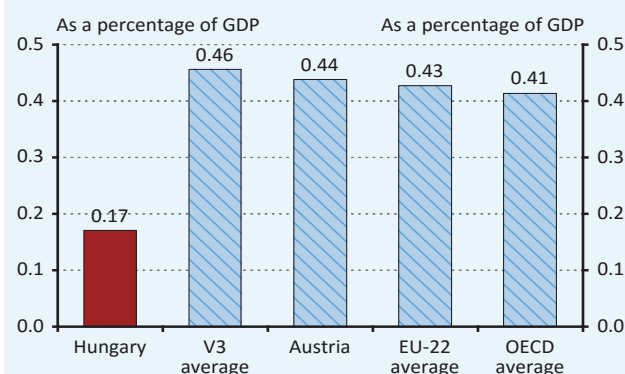


Source: OECD.

**In the area of R&D expenditures in the tertiary education sector, Hungary lags behind other countries:** Both the OECD countries and Austria spend twice the Hungarian level on this area as a percentage of GDP (0.4 per cent), while the average of the countries in the region is even higher (0.5 per cent) (Chart 9.13). In 2017, with a view to enhancing research infrastructure, eight projects (three in Budapest and five in the countryside) were launched, financed by EU and national funds, for the creation of a Higher Education and Industry Cooperation Centre, the implementation of which is in progress (NRDIO, 2018). Raising the number of ‘centres of

excellence’, developed jointly by companies, universities and research centres, may be key to boosting R&D expenditures in tertiary education. The centres of excellence are workshops created in strategic areas that utilise the universities’ intellectual potential and provide companies with access to specialised human capital and core research. In addition, the expansion of the research areas covered by the centres of excellence and the strengthening of mutually advantageous cooperation of the participants may also be of help. With a view to creating such cooperation, in addition to public subsidies, the financial participation of the private sector is also important. International examples of cooperation worth following include the Catapult programme in the United Kingdom and the Centres of Excellence for Commercialisation and Research in Canada (Palotai – Virág, 2016).

**Chart 9.13**  
R&D expenditures of tertiary education institutions (2015)



Source: OECD.

**With a view to increasing the available funds, the utilisation rate of universities’ infrastructure may be improved by leasing certain areas; the number of foreign students studying in Hungary for a tuition fee may be increased and companies may also be involved in the financing of tertiary education.** Strengthening relations between tertiary education and companies would be also important because market needs and private capital could thus also be channelled into the education system to a higher degree. All

of this may be achieved by the more active involvement of external actors (e.g. corporate managers or researchers) in university organisations, increasing the number of visiting professors and organising extracurricular lectures.

**The infrastructure background and technical equipment of Hungarian tertiary education institutions is often obsolete and requires renovation or replacement.** In order for the education system to be able to grab the attention of the young generation, it is essential for the teaching process to be built on the application of modern IT tools. The expectations of the young generation can no longer be met by materials projected by overhead projector or by paper-based lecture notes. Moreover, compared to the previous generations, they are much more mobile: if the quality of the education does not meet their expectations, they continue their studies elsewhere, even in another country. In order to meet these new types of expectations, it is essential to develop the IT background of tertiary education and to spread digital learning materials. The improvement of the universities' equipment is a necessary precondition for increasing the number and importance of the research conducted there.

## Recommendations

**(28) Create a competitive environment in tertiary education:** In order to improve the international competitiveness of the Hungarian tertiary education, first competition among the domestic institutions should be boosted. All initiatives that contribute to increasing the universities' reputation should be supported (for example, through courses available through the internet, e.g. Coursera, strengthening the alumni networks and developing them based on the UK model, e.g. through programmes organised jointly for graduates and active students) and efforts should be made to remove the obstacles hindering competition (e.g. termination of the budgetary organisation status of the institutions, changeover to the market-based employment of teachers). The revision of the financing may also boost competition. Furthermore, consideration should be given to transforming the education structure in certain faculties (perhaps to education of 4+1 years) to ensure that it is better aligned with the international education system (in certain areas of education, foreign master's courses expect a 4-year bachelor's education, and thus the Hungarian students cannot enrol in it).

**(29) Develop the infrastructure and equipment of tertiary education institutions:** With a view to providing the background for education and R&D activity, we recommend that universities' IT equipment be improved, the development of an equipment pool necessary for research activity be supported and the university campuses and dormitories be renovated and modernised.

**(30) Strengthen links between tertiary education and companies:** In order to ensure the practical application of the tertiary education curriculum, economic agents and universities should cooperate more closely. In developing course programmes, universities should take into consideration the skills deemed important by the companies and align them with the curricula.

**(31) Channel market needs and private capital into education:** The courses elaborated jointly should not attempt to satisfy the short-term requirements of certain companies, but rather endow students with knowledge that will enable them to adjust to the labour market's continuously changing requirements in the long run in a flexible way. Accordingly, mastering the basic knowledge which covers a wider area is as important as the teaching of subjects providing special practical knowledge. The inclusion of long-term market requirements in education may be facilitated by the organisation of project and research projects jointly with the companies.

**(32) Raise R&D expenditure in tertiary education to 0.5 per cent of GDP:** Tertiary education should be developed in a way that helps this sector to once again become the driver of R&D activities. In addition to improving the equipment, the increase in research expenditures should be used to raise the wage level of researchers. Within the scope of this, research scholarships should be expanded and the PhD studies of teachers should be supported more strongly. All of this, in addition to the public's efforts, also requires the active cooperation of the university actors and the distribution of the resources should be also revised.

**(33) Provide opportunities to lease university infrastructure:** The development of research infrastructure within companies often exceeds SMEs' financing resources. This applies particularly to the early phase, when companies are not yet creditworthy and mature enough to win EU-financed tenders. The wide-scale spread of leasing solutions for the equipment and infrastructure available at the tertiary education institutions and scientific research workshops may support the innovation activity of young SMEs. With a view to increasing the utilisation of universities' infrastructure and thereby their market revenue, consideration should be given to simplifying and promoting the leasing of unutilised premises and equipment. This also provides a good opportunity for developing more active cooperation between universities and market participants. A good example of this is the University of Debrecen, which has made great progress in this area in recent years.

## 9.2.2 Improving the international competitiveness of Hungarian tertiary education

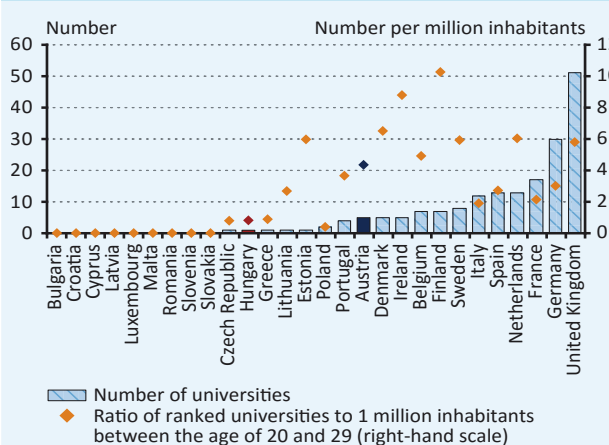
- (34) More attractive career path for university professors
- (35) Ensure that the ranking criteria for tertiary education institutions are taken into account in funding
- (36) Support dual degree programmes
- (37) Support publications in English
- (38) Launch specific postgraduate courses to reverse student emigration

### Assessment of the situation

**Based on the international rankings of tertiary education institutions, at present the Hungarian universities are not among the top universities in the world (Chart 9.14).**

According to the QS World University Ranking, only one Hungarian institution is included in the TOP 500 universities of the world (the University of Szeged, ranked 470th) and another five institutions are included in the extended list, containing 1,000 universities. The location of the best tertiary education institutions is strongly concentrated: the TOP 500 universities include 51 institutions in the United Kingdom, 30 in Germany and 17 in France, while the new EU member states, which joined the EU from 2004, have only 6 such institutions in total. When examining the population-to-top university ratio, the best tertiary education systems are in Finland, Ireland and Denmark. Austria has 5 institutions in the TOP 500. If Hungary wants to achieve this level, another 5 Hungarian universities should be included among the best institutions.

**Chart 9.14**  
**Number of tertiary education institutions ranked in the world's TOP 500 universities of the EU Member States**



Note: Based on the ranking applicable to 2019.

Source: QS World University Ranking.

**Advancing in the tertiary education rankings can only be achieved by conscious development and targeted measures.** In addition to the QS World University Ranking, a number of international organisations<sup>63</sup> prepare ranking of higher education institutions, in the case of which both the criteria taken into consideration and the calculation methodology differ. The usual criteria in the ranking include the number and quality of publications by the university teachers, the teacher-student ratio and the ratio of international students, while some of the rankings take into consideration the ratio of Nobel laureate teachers or the later wage level of the graduates. It would be expedient to choose a ranking and make efforts to achieve progress in the criteria measured by that. In addition to the comprehensive rankings, it is also worth monitoring the positions in the specialised rankings of the individual professional fields, since these rankings – owing to their narrower focus – are usually able to better capture the individual institutions' performance.

**Making instructors' careers more attractive is a condition for improving the international competitiveness of Hungarian tertiary education.** At present, Hungarian universities are unable to offer relevant alternatives to their graduates open for teaching and research compared to employment in the private sector. Entry-level university instructor wages fall short of the wages available for persons with secondary school education without any special skills.<sup>64</sup> In the absence of prepared and talented instructors it is not possible to provide high quality education, and thus it is essential to develop appropriate circumstances for them. Furthermore, due to the publication requirements of international rankings, it is also essential to support the research activity of instructors. This must definitely extend to supporting publication in English language periodicals, and also to ensuring that as many impact factor journals are published in Hungary as possible. Furthermore, efforts should be made to involve foreign lecturers of international reputation in the Hungarian tertiary education.

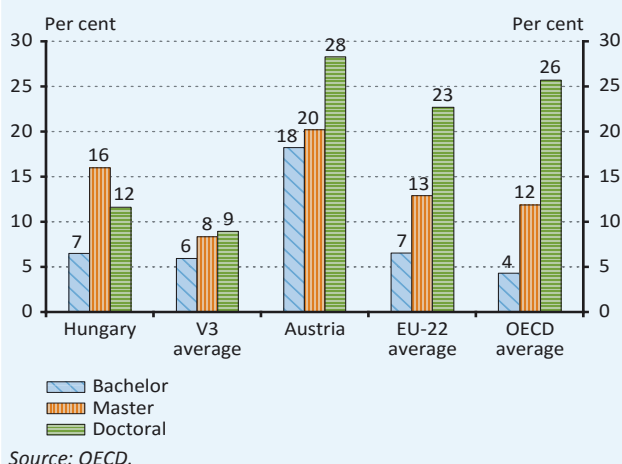
<sup>63</sup> In addition to the previously presented QS World University Ranking, it is also worth examining the Academic Ranking of World Universities (also referred to as Shanghai Ranking), or the rankings prepared by Financial Times.

<sup>64</sup> In 2018, the monthly gross wage of an assistant lecturer was HUF 222,000, while that of a senior lecturer was HUF 277,000 (Act CXXXI of 2015).



**A good measure of the international perception of tertiary education is the ratio of foreign students.** Hungary performs better in this area than its competitors in the region, but lags substantially behind the level of Austria (Chart 9.15). In Hungarian bachelor's courses, the ratio of foreign students is in line with the EU average, while in the master's courses it even exceeds this level. By contrast, Hungary's achievement in the area of PhD courses is substantially worse, where only 12 per cent of the students come from abroad, compared to the EU average of 23 per cent. Increasing the number of English-language courses and supporting the dual degree programmes may help attract foreign students to Hungary and improve the international recognition of Hungarian tertiary education institutions.

**Chart 9.15**  
**Ratio of foreign students by the level of tertiary education (2016)**



## Recommendations

**(34) More attractive career path for university professors:** For the renewal of the Hungarian teaching staff it is essential to increase the recognition of instructors' careers. The methods of this may include the extension of the career path model (or even terminating the civil servant status of instructors); rationalisation of the number of subjects taught; the outsourcing of as many administrative tasks as possible; providing company housing, nurseries and kindergartens at universities (based on the Dutch or English model); supporting non-degree and in-service trainings for instructors abroad; providing research leave (even on a mandatory basis); and strengthening instructor and researcher talent support measures (e.g. consultant mentoring in PhD education).

**(35) Ensure that the ranking criteria for tertiary education institutions are taken into account in funding:** With a view to attaining the set objectives, we recommend reforming the financing system in such a way that part of the public financing depends on the same criteria as those taken into consideration in the international ranking. In this way, the institutions would be also motivated to improve their performance in these indicators. In addition, consideration should be given to involving as many international experts as possible in the education processes (American universities are in the vanguard of this practice) and to simplifying the administrative conditions of their employment. One good way to involve international lecturers could be the organisation of courses in blocks (e.g. international week, where all students participate in various English-language courses in blocks).

**(36) Support dual degree programmes:** With a view to increasing the international relations and recognition of the tertiary education institutions, incentives should be provided for the elaboration of dual degree programmes and the number of foreign-language, particularly English, faculties should be increased. The Erasmus Mundus programme provides a good framework for the implementation of the dual or multiple degree programmes, where it would be expedient to increase the number of participating Hungarian institutions.

**(37) Support publications in English:** In order to advance in the international tertiary education rankings, the number of English language publication should be increased. One method of this may be the direct financial recognition of publication in prestigious foreign periodicals. Furthermore, we deem it important that English language periodicals be published in Hungary as well in as large a number as possible (possibly in the form of translation of existing periodicals) and that the Hungarian universities and professional organisations participate in the highest possible number of international research cooperation.

**(38) Launch specific postgraduate courses to reverse student emigration:** With a view to reversing the emigration of young talents, consideration should be given to the reinforcement of postgraduate education, as well as to the simplification of and the support for the launch of specific courses. It is worth considering the transformation of the education system, to reduce the number of bachelor courses (perhaps with higher number or more stressed specialisations) in tertiary education, while the masters' and PhD courses should be more specific than at present.



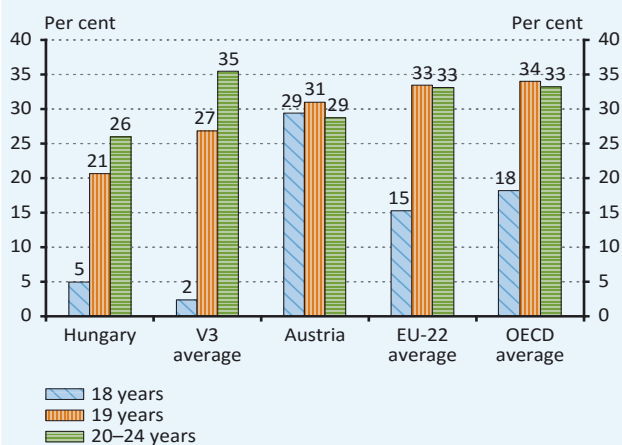
### 9.2.3 Increasing the ratio of tertiary education graduates

- (39) Widen the enrolment base of tertiary education
- (40) Increase the capacity of dormitories
- (41) Expand merit-based and needs-based scholarship schemes
- (42) Make tuition fees in tertiary education dependent on academic progress
- (43) Redesign the course structure in tertiary education
- (44) Increase student activity
- (45) Increase opportunities for partial training abroad

#### Assessment of the situation

In Hungary, fewer people participate in tertiary education or hold a tertiary education degree than the average of Europe and the region. In the past years, the number of students in Hungarian tertiary education decreased significantly: in the 2005/06 academic year 424,000 students studied in Hungary, which fell to 283,000 students by the 2017/18 academic year (HCSO, 2018). In 2016, only 4.9 per cent of the Hungarian 18-year-old youth participated in tertiary education, compared to Austria, where 29.9 per cent of the same age group studied at universities (Chart 9.16). This suggests that in Hungary (similarly to the other Visegrád countries) students become involved in tertiary education courses relatively late. At the same time, in Hungary even the highest ratio (28.7 per cent of the 20 year-old youth studied in higher education) lags behind the Austrian ratio recorded for the 18-year-old group.

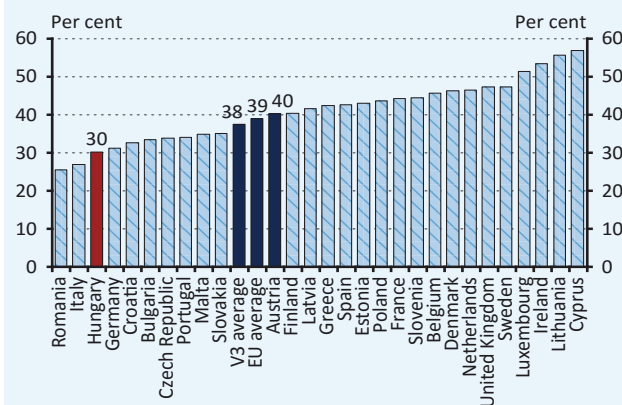
**Chart 9.16**  
Ratio of participants in tertiary education by age (2016)



Source: OECD.

In the 25–34 age group, Hungary has the third lowest ratio of higher education graduates in the European Union (Chart 9.17). As a result of this, the wage premium of further education is one of the highest in Hungary among the OECD countries (for more details, see the section entitled ‘Strengthening the secondary education system’) and in the case of Hungary, the social and individual rates of return on participation in tertiary education are very high by international standards.<sup>65</sup>

**Chart 9.17**  
Ratio of tertiary education graduates from 25 to 34 years (2017)



Source: Eurostat.

Increasing the ratio of tertiary education graduates is an essential precondition for breaking out of the middle-income trap. In order for Hungary to join the innovation-driven economies, it is necessary to have a sufficient number of employees with high qualifications. For this reason, efforts should be made to enrol more students in Hungarian tertiary education than at present, to reduce the drop-out rate and to ensure that the new graduates do not leave Hungary in the hopes of more favourable employment

<sup>65</sup> The MNB's 2018 Growth Report deals with this topic in detail.

opportunities. Expanding the non-degree temporary education possibilities abroad may contribute to decreasing the number of Hungarian students who pursue their tertiary studies at a foreign university in full. Only 4,135 Hungarian students participated in the European international mobility supporting programmes of 2015, which falls substantially short of the Austrian and Czech values (6,939 and 8,015 persons, respectively) (European Commission, 2017).

**The expansion of the dormitory accommodation and the renovation of existing dormitories may contribute to increasing the number of participants in tertiary education.**

In 2016, the National Union of Students (NUS) prepared a proposal for the improvement of dormitories, based on a survey. In 2016, Hungarian dormitories could accommodate 54,500 students, of which 44,400 beds were controlled by public tertiary education institutions. The average age of the dormitories in Budapest (50 institutions) was 56 years, and since 2000 only 4 new institutions were built and 21 were renovated. The situation was somewhat better in the countryside: here the average age of dormitories (106 institutions) was 49 years, and almost 20 new dormitories were built and more than 60 were renovated since 2000.

**A subsidy system should be developed that permits everyone, irrespective of their financial standing, to participate in tertiary education.** At present, the Hungarian tertiary education scholarship scheme is rather extensive. Among the scholarships depending on the academic performance, the most important ones are the study scholarship provided by the institutions and the republic scholarship approved centrally. Social scholarships include the regular and extraordinary benefits, the basic grant for the start of the academic year, and the Bursa Hungarica Municipal Scholarship to support socially disadvantaged students. At the same time, there are additional opportunities in the scheme to obtain special scholarships (e.g. Klebelsberg Education Scholarship, Hungarian Sports Stars Scholarship), and the student loans scheme also provide opportunity to finance studying (Felvi, 2018). However, efforts should be made in the future to ensure that these scholarships are in sync with the rising costs of study and living. Without this, the burdens on the families will increase and employment will offer too strong an alternative in the short run as compared to participating in tertiary education.

## Recommendations

**(39) Widen the enrolment base of tertiary education:** With a view to increasing the number of tertiary education applications, real opportunities should be created for enrolment in tertiary education from vocational training and to ensure that the highest possible ratio of grammar school

graduates continue their studies after the baccalaureate. To this end, more conscious career planning should be facilitated (e.g. career advising, organising career afternoons in cooperation with local entrepreneurs). For students living in socially disadvantaged areas, it would be expedient to introduce talent support scholarships, which may assist pupils with chances to enrol in tertiary education.

**(40) Increase the capacity of dormitories:** The tertiary education institutions are usually concentrated in larger towns, and thus – among the costs related to further education – accommodation costs often represent the largest burden for families. With a view to ensuring that accommodation-related costs do not hinder further education, a comprehensive programme should be launched to increase dormitory capacities and to renovate existing dormitories. Furthermore, special attention should be paid to the active support of the college for advanced studies movement – which plays an important role both in professional and social terms – and to providing the organisations with proper accommodation.

**(41) Expand merit-based and needs-based scholarship schemes:** In order to ensure that excellent students can participate in tertiary education irrespective of their social background, the existing scholarship programmes should be extended. In addition, entitlement to scholarships should be independent of the financing form of the education. Furthermore, efforts should be made to ensure that the awarded scholarships are disbursed as soon as possible.

**(42) Make tuition fees in tertiary education dependent on academic progress:** At present, the tuition fee payable for tertiary education in Hungary depends on the results of the secondary school diploma. Students who obtain publicly subsidised places during the entrance examination, remain – almost in all cases, irrespective of their performance at the university – public scholarship holders, which does not motivate them to improve their performance. For this reason, we recommend that the tuition fee also depend on the academic performance achieved at the university rather than on the results achieved in public education. The amount of public subsidy should be tiered (e.g. the top 20 per cent should not pay any fee, while the next 20 per cent should pay 80 per cent of the tuition fee, etc.), and student loans should be available for the payment of the tuition fee. Such an amendment would be a strong incentive for students to continuously strive for the best performance during their tertiary education studies.

**(43) Redesign the course structure in tertiary education:** The structure of the subjects could be revised in a way that each semester includes fewer subjects but requires

the investment of more work (and thus worth more credits). The tutorial groups should primarily strive for the interpretation and practical application of the curricula or articles delivered at the lectures or read at home (e.g. group exercises, project works, reproduction of thesis results). Furthermore, consideration should be given to the conversion of the course structure into a pyramid, where students who performed well in previous courses may enrol to certain advanced courses (e.g. block course held by foreign professors) earlier.

**(44) Increase student activity:** With a view to increasing the students' academic and extracurricular activity, there should be as many incentives as possible in tertiary education dedicated to this purpose. Activity during the lectures can be primarily stimulated by interactive teaching methods (e.g. group works, case studies, voting). Teachers should be encouraged to apply the new methods, and training should be organised for them to enable them to realise their ideas. Students' extracurricular activity may be facilitated

by supporting participation in domestic and international competitions (e.g. participation in a major international competition may as well replace a subject), increasing the recognition of research work in the scholarships and supporting the colleges for advanced studies and other student organisations organising professional and community events.

**(45) Increase opportunities for partial training abroad:**

With a view to reducing the number of students completing their studies abroad in full and finally settling there, the opportunities for non-degree temporary studies abroad (e.g. Erasmus, Erasmus+, CEEPUS) and the number of exchange programmes operated by the institutions should be increased. In addition, efforts should be made to ensure that students are aware, already in the secondary school, of the fact that even if they continue their studies in Hungarian tertiary education, they will have the opportunity to test themselves abroad and for this they do not need to complete the entire course in a different country.

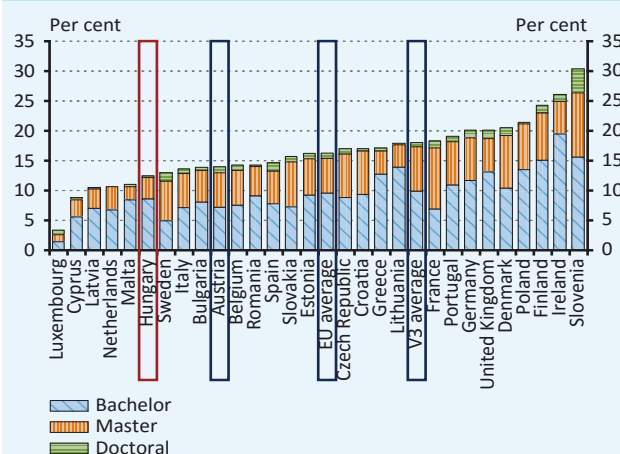
## 9.2.4 Increasing the ratio of graduates from technical, natural science and ICT faculties

- (46) Introduce another science subject in addition to mathematics as a mandatory school leaving examination  
(47) Reduce the drop-out rate in university courses

### Assessment of the situation

In Hungary, the ratio of science graduates<sup>66</sup> is relatively low in society (Chart 9.18). 12.5 per cent of the 20–29 age group hold such a degree in Hungary, which lags behind the average of the EU (16.3 per cent) and the other Visegrád countries (18.1 per cent). In addition, in Hungary 69 per cent of science graduates completed only the bachelor's course, which is lower by 10 percentage point than the EU average. In the case of the V3 countries and Austria, 41 per cent of the science graduates completed the master's course as well.

**Chart 9.18**  
Ratio of science graduates from 20–29 years (2016)

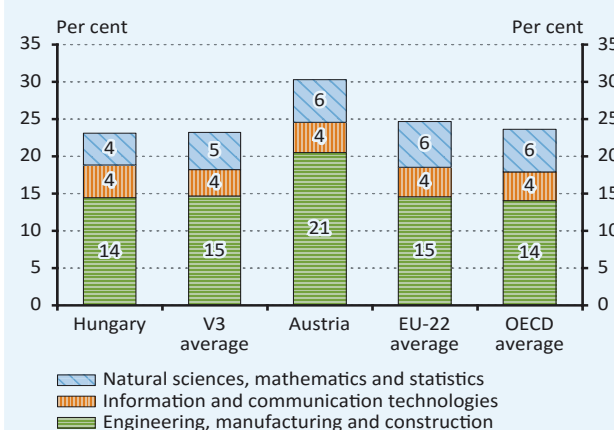


Source: Eurostat.

In the case of new graduates, Hungary's shortfall is much smaller (Chart 9.19). 14 per cent of the students graduated from engineering, production or construction faculties in Hungary, which essentially corresponds to the average of the region and the EU (15 per cent), but is lower than the value in Austria. The ratio of ICT graduates is identical in all country groups under review (4 per cent), while the ratio of natural science and mathematics graduates is somewhat lower in Hungary than in other countries. The ratio of science graduates within all higher education graduates increased substantially in the past decade: in 2006 it

was only 13 per cent, but this figure has now risen by 10 percentage points.

**Chart 9.19**  
Ratio of science graduates among new tertiary graduates (2016)



Note: As a percentage of all new graduates.

Source: OECD.

Based on the international education surveys (PISA, TIMSS), Hungarian students are able to acquire the designated natural science curriculum in public education, but are unable to apply it to a sufficient degree in real life situations. In the PISA tests, which measure the practical application of knowledge, a sharp deterioration was observed in the last two tests, while in the TIMSS tests – which measure the knowledge of the curriculum – Hungarian students still outperformed the international average. The reform of the public education system is dealt with in the section entitled 'Strengthening the secondary education system'.

A further increase in the number of graduates from faculties of science can contribute to the realisation of sustainable convergence by strengthening innovation activity. We have reasons to believe that in the next decades the labour market will be substantially influenced by the process of digitalisation and automation. In order to ensure that Hungary is able to cope with these challenges, it is important that all employees have the necessary digital

<sup>66</sup> Science qualification includes degrees obtained in natural science, mathematics, statistics, ITC, engineering, production or construction.

knowledge and skills (for more details, see the section entitled 'Primary education focusing on skills development') and the economy should have highly qualified IT and engineer employees in sufficient numbers. They are the ones who will be able to capitalise on the opportunities offered by technological progress and thus pull Hungary out of the middle-income trap through innovation.

**In order to increase the number of graduates from the technical, scientific and ICT faculties, the teaching quality of scientific subjects must be improved, primarily in public education.** It will be difficult to persuade pupils in whom no affinity was developed in primary school for science or physics to view these further education subjects as real options. The common feature of the specialisations discussed in this section is that they require much more conscious career planning than other professions. In order for students to continue their studies in science, they must pass – in addition to mathematics – the school-leaving exam (in certain cases on advanced level) in at least one additional science subject. However, due to the structure of the subjects, in practice this can only be achieved if the students already decide in the 10th grade that they will enrol in an elective course in one of these subjects. This means that students who have no strong preference with regard to the direction of their further education and thus

decide only at the last minute where to continue their studies, are no longer able to apply to science faculties.

## Recommendations

### **(47) Introduce another science subject in addition to mathematics as a mandatory school leaving examination:**

With a view to increasing the ratio of science students, consideration should be given to prescribing that the 5th baccalaureate subject, freely electable at present, must be a science subject. This measure would be able to create the opportunity for all secondary school graduates to continue their studies in the field of science.

### **(48) Reduce the drop-out rate in university courses:**

With a view to reducing the number of students leaving the university without a degree, more practical curricula should be developed and the number of faculties offering dual education should be increased. Furthermore, it would be important for the students to already be aware of the real content of the courses before starting their studies, thereby avoiding that they realise only after starting the course that in fact they would like to participate in an utterly different type of education. It may also help to reduce the drop-out rate if the possibility to reenrol in other courses is simplified (supportive attitude, more harmonised curricula).

## 9.2.5 Spreading financial skills

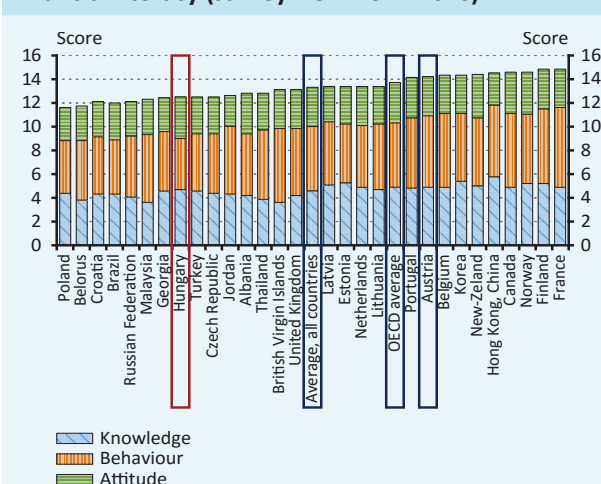
(48) Deepen financial literacy

(49) Provide further training for financial professionals

### Assessment of the situation

For the development of the economy and the financial sector, it would be important to enhance the financial knowledge of the Hungarian population. Between 2014 and 2016, the OECD assessed the financial literacy of the population of 29 countries or economic units. Hungary was ranked 22nd in the survey, with a score of 12.5, which fell short of the results achieved by the participating OECD countries and also by Austria (Chart 9.20). However, it should be noted that none of the countries was able to score more than 15 out of the maximum 21, and thus there is significant room for development in all countries. In terms of financial skills, Hungary was in the middle of the field (ranked 14th), in terms of financial behaviour at the end of the field (ranked 29th) and in terms of attitude to financial matters it was in the forefront (ranked 3rd). Financial knowledge supports the utilisation of financial opportunities, while the low level thereof decelerates the economic growth rate. Hungary's poor result in the area of financial behaviour is mainly attributable to the low ratio of households with savings other than a bank account. In this respect, the economic data already reflect a more positive picture in the years elapsed since the survey, but nevertheless it would be expedient to further increase the ratio of active savers. An improvement in financial literacy is also able to cushion the procyclical behaviour of the banking sector through the more conscious (borrowing) decisions of consumers.

**Chart 9.20**  
**Financial literacy (survey from 2014-2016)**



Note: The survey covered the age group of 18-79.

Source: OECD/INFE.

In 2018, the government adopted a strategy for deepening financial literacy, with the involvement of several institutions (including the MNB and the State Audit Office of Hungary) and taking into consideration the recommendations of international organisations (particularly the OECD/INFE) (Government, 2018b). One of the key priorities of the strategy is to educate the population to have proper financial skills and attitude, which may substantially support Hungary's competitiveness, efficiency and effectiveness. The strategy included seven objectives:

1. Creating the framework for strengthening and generalising real financial education within the public education system
2. Strengthening the basics of conscious financial behaviour and households' ability to absorb financial stress
3. Creating an attitude that fosters prudent financial decisions and establishing institutions/infrastructures supporting conscious financial consumer behaviour, and making those widely known
4. Strengthening the population's self-reliance attitude
5. Increasing the level of access to financial products and basic financial services, as well as the degree of financial inclusion
6. Fostering the use of modern cashless payment instruments
7. Supporting prudent borrowing

As follows from its statutory mandate, the Magyar Nemzeti Bank contributes to the deepening of financial literacy via several channels. Of these – in addition to participating in the development of the national strategy – the areas to be highlighted include the work performed in the Money Compass Foundation (Pénziránytű Alapítvány) and the operation of the Financial Consumer Protection Centre. The activity of the Foundation covers, among other things, the development of textbooks, the in-service training of teachers, the development of a primary and secondary school network and the implementation of comprehensive educational campaigns (e.g. Money Week (Pénz7)). The



Money Compass Foundation received an international award in 2016 for the BankWithMe (BankVelem) programme. In the consumer protection area, we should mention the Financial Navigator series, which – in addition to information brochures and films – also includes a mobile phone application.

## Recommendations

**(50) Deepen financial literacy:** With a view to increasing the population's financial literacy, the 'Financial awareness strategy', elaborated by the government and the relevant professional organisations (including the MNB) should be implemented in full. We see outstanding opportunities in

enhancing the financial skills of underqualified people, since in their case major results could be achieved with minimum expenditure. In recent years, several countries started to deal with the expansion of financial skills. Australia was the first country that started to deal with this issue at the national level in 2011 (OECD, 2017).

**(51) Provide further training for financial professionals:** In order to keep the knowledge of the active participants in the financial markets up-to-date, we recommend that the in-service trainings organised for them (e.g. second chance, assessment of real risks) should be supported. The courses offered by the Budapest Institute of Banking support this objective.

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# 10. Research, development and innovation

**Main objective: R&D expenditure to reach 2 per cent of GDP**

**Research, development and innovation capacities fundamentally determine an economy's capability for renewal.** According to the European Commission's European Innovation Scoreboard scheme, Hungary still belongs to the group of moderately innovating countries. Hungary's shortfall in the Commission's scoreboard is around 35 per cent compared to the European average, and the Hungarian innovative performance fails to reach even half of that of the European top performer, Sweden.

**In response to the gap that has long been present between Hungary and the European leaders, support for R&D has increased in recent years.** Companies are particularly strong beneficiaries of this endeavour, inasmuch as they can reduce their tax liabilities with the corporate tax allowance for their R&D expenditures or with targeted allowances after their developments. Additionally, they can also request social contribution exemptions on their R&D wage costs. In conjunction with these tax and contribution related measures, it should be noted that in the EU's 2014–2020 programming period R&D and innovation targeted funds constituted 8-9 per cent of Hungary's available EU sources. For example, Austria has one-third this much to spend on R&D from EU funds, while France is allocated only 150 per cent more resources for this cause, even though its population is five times larger than Hungary's (European Commission, 2018). Finally, internationally recognised research infrastructures also play a crucial role in helping Hungary secure a place on the global map of innovators. In this context the ELI 'laser centre', which is under construction in Szeged, and the Budapest-centred European Institute of Innovation and Technology represent good perspectives.

**However, in their own right, the available resources and their accessibility will not be sufficient for the country to converge with other Member States in terms of research and development.** Additional efforts are needed to ensure that Hungary will not fall back in the international competition for human resources in the research field. To this end, recommendations have been made for the extension of research-related tax allowances for researchers who are active in the private sector and hold a university degree.

**Hungary's spending on R&D is a matter of efficiency as well.** It will be primarily important to promote processes with a spillover effect. For this, research should be internationalised and a growing number of projects should be fostered between the various companies and state-run research institutes. This segment again offers opportunities to alleviate the administrative burden. For example, if assessment periods become shorter and patent fees become lower.

## 10.1. PROVIDING THE NECESSARY HUMAN RESOURCES FOR RESEARCH

- (1) Extend the tax allowance for PhD graduates to researchers holding university degrees
- (2) Raise the number of assistant staff in research and development through further wage increases
- (3) Provide state coverage of 50 per cent of the costs of doctorate courses for employees over 30 years of age

### Assessment of the situation

The Hungarian R&D headcount falls short of the EU average and also does not reach the Austrian figure (Figure 10.1). Its growth is clearly hindered by the low number of highly-skilled experts in sciences. Another factor that moderates R&D as a career choice is that no Hungarian institutions are classified among the world's 200 leading universities. The currently ongoing EU-funded and state financed project, which was started in 2017, is partly aimed at improving this situation: it was launched for the establishment of eight Higher Education and Industry Cooperation Centres (3 in Budapest and 5 in the country) to develop the research infrastructure (NKFIH, 2018). By way of increasing the number of such projects, R&D is believed to become more appealing, which may contribute to a growing headcount of researchers and developers and to sustainable convergence.

In addition to ensuring that researchers and developers are offered proper, incentive-driven employment, it is equally important to ensure the availability of assistant staff and stop the brain drain. The tasks' complexity requires researchers to rely on other professionals, which calls for the establishment of appropriate framework conditions for a more favourable employment of assistant staff. Human resources in research still remain an outstanding

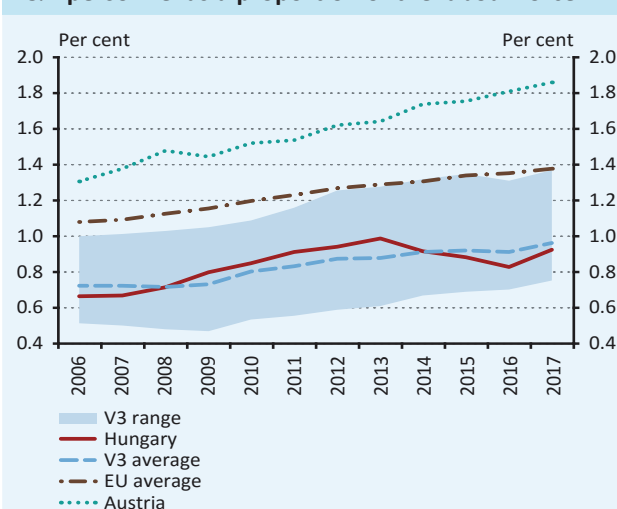
cornerstone in R&D, the provision of which is impeded by the threatening phenomenon of brain drain. In 2012, a junior researcher was alleged to earn almost three times as much in Austria as in Hungary (based on data corrected with purchase power parity). In addition, foreign wage bonuses are reported to grow in proportion to experience (Idea Consult, 2013).

**Research embodies a long-term profession, which is supported by the incentive of a number of financial subsidies in Hungary. Nonetheless, their further expansion may prove to be useful and essential.** A tool that contributes to a higher R&D headcount in the business sector is the social contribution tax allowance offered to researchers and developers working in research institutes with a PhD. At present, researchers with a PhD or higher are eligible for 19.5 per cent social contribution tax allowance up to a gross salary of HUF 500,000, together with a vocational training levy allowance of 1.5 per cent. At the same time, PhD students are entitled to 9.75 per cent social contribution tax allowance up to a gross salary of HUF 200,000, which equals half the total amount of the social contribution. This, however, cannot be requested for researchers with a university degree. Yet, it is important that employees working at a job requiring scientific background and skills receive financial support in their doctoral studies so that researcher succession is ensured. In the 2017–2018 academic year as many as 7,676 students were engaged in doctoral studies, with 82.5 per cent thereof in full time training (HCSO data). 1,270 new doctoral students were granted state scholarships in the 2018–2019 academic year (National Doctoral Council data).

### Recommendations

**(1) Extend the tax allowance for PhD graduates to researchers holding university degrees:** In Hungary 0.8 per cent of the employees work in R&D, while in the EU average this figure is at 1.3 per cent. One possible tool for enhancing the number of people conducting R&D activities could be the extension of the social contribution tax allowances, available to researchers and developers, to researchers with university degree employed in research organisations in the business sector. Such a measure would practically affect three-fourth of those employed in research and development (HCSO, 2017).

**Figure 10.1**  
R&D personnel as a proportion of the labour force



Source: Eurostat.

**(2) Raise the number of assistant staff in research and development through further wage increases:** In addition to boosting the employment of researchers and developers, a growing number of assistant staff members may again enable higher efficiency in research and development activities. Such members include those who perform scientific and technical supply tasks, which all require the application of various theoretical and practical methodologies. Their duties are usually carried out under the guidance of researchers and developers. Basically, this group comprises technicians, laboratory technicians and assistants (HCSO, 2017).

**(3) Provide state coverage of 50 per cent of the costs of doctorate courses for employees over 30 years of age:** Upon the universities' individual judgement and depending on the possible headcount, currently (partial)

state scholarships and other, special scholarships may be granted to beneficiaries to cover their doctorate study costs. As regards people above 30 who have already gained some work experience at jobs requiring scientific skills, their doctorate studies may as well be fostered, if in their study contract the Hungarian state took over half of the training costs of even those who do not receive a (partial) state scholarship. The regulation of this benefit could ensure that the assumed costs would be paid back only if, following the training, the PhD student enters into long-term employment in a country other than Hungary or in a field that does not qualify as research and development. The benefit should also be reimbursed if the PhD studies remain uncompleted without a final qualification for reasons attributable to the student. Such a measure could also enhance the number of those with a doctoral title or that of employees in R&D.

## 10.2. INCREASING RESEARCH EXPENDITURE

- (4) Encourage enterprises to raise their R&D expenditures via enhancements to the business environment (reduction of red tape, more benefits for R&D)
- (5) Grant special assistance for companies at the start of their life cycles for their R&D expenditure
- (6) Reduce employers' contributions for SMEs implementing R&D investments
- (7) Reduce patent maintenance fees
- (8) Favourable accounting treatment of patent revenues

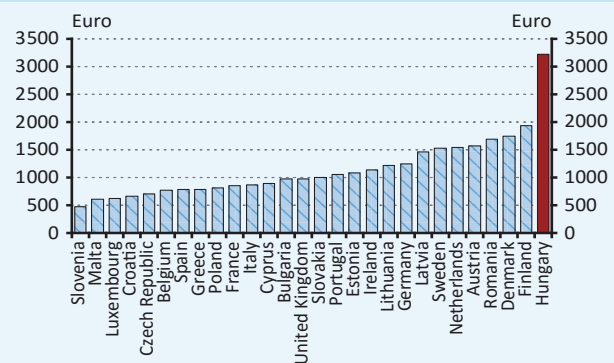
### Assessment of the situation

Research and development is unequivocally one of the most definite elements of a country's capability for renewal. International findings indicate that for economic convergence Hungary's shortfall compared to developed countries needs to be mitigated in this respect as well. To this end, corporate R&D spending needs to be increased in particular, as this currently accounts for a mere 0.9 per cent of GDP in comparison to the EU average of 1.3 per cent. The difference may be partially explained by the Hungarian economy's dual structure. Foreign-owned large companies primarily conduct production activities in Hungary and not development. At the same time, Hungarian SMEs have low innovation capacity. They lack the capital, the technology and often the management skills to make developments successful. Every third SME invests in research and development in Austria, while in Hungary not more than every fourth or fifth company does so (Eurostat CIS survey, 2015).

In order to improve the situation, the Government has taken a number of tax and direct support related measures in recent years, thus creating one of the most generous R&D support environments in the region. Nevertheless, research and development expenditure in the business sector accounted for a mere 0.9 per cent of GDP in 2016, which – although it was higher than the 0.5 per cent recorded ten years earlier – still fell below the EU average.

**Another significant element for research and development expenditures should be sought in the regulatory environment for patents.** In addition to an efficient legal protection system, patent fees also have a significant impact on the parties' desire to register. Apparently the Hungarian patent maintenance fees are remarkably high (Figure 10.2). The very high costs in the field are further aggravated by the fact that patent maintenance fees need to be paid even in the first years after the patent's registration in Hungary. In Austria, however, the interested parties are exempted from the payment of this fee until the end of the fifth year after the patent's notification. In addition, the payable amount remains lower than the Hungarian sum even in the sixth to eighth year.

**Figure 10.2**  
Patent maintenance fees (2016)

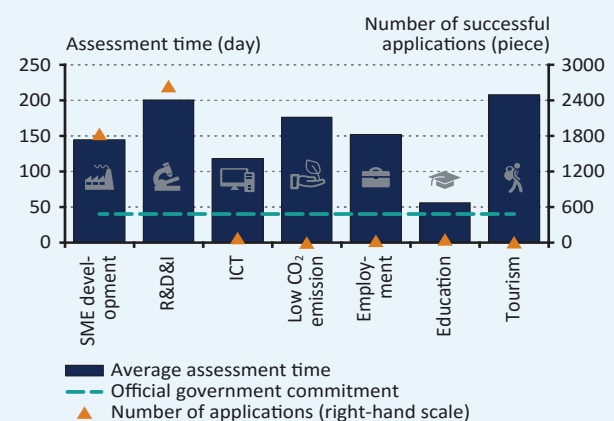


Note: Calculated for a ten-year period.

Source: EPO.

R&D tenders contribute significantly to rising R&D expenditures. Their effectiveness, however, is mitigated by the tenders' assessment period, which is one of the longest in the case of research and innovation projects. As our estimates suggest a normal R+D+I tender requires 6 months of assessment for a final decision on average, while this is 2 months shorter in the case of IT projects (Figure 10.3).

**Figure 10.3**  
Assessment time for the application of the EDIOP (EU funds for competitiveness) in order of priority (2018)



Note: The average number of days passed between the grant decision and the submission deadline (where negative results are ignored).

Source: MNB estimation based on [palyazat.gov.hu](http://palyazat.gov.hu).



## Recommendations

**(4) Encourage enterprises to raise their R&D expenditures via enhancements to the business environment (reduction of red tape, more benefits for R&D):** According to international cross-sectional data, business-oriented research and development grants have a low level of efficiency in Hungary, and therefore the resources absorbed need to be improved in terms of efficiency. At present, R&D tenders do not require the demonstration of any cooperation, which would promote the flow of knowledge transfer among the involved companies. This is why it is highly recommended to favour R&D projects that take the form of a consortium or cluster. There may again be room for mitigating the bureaucratic burden, including the improvement of the tender assessment period.<sup>67</sup>

**(5) Grant special assistance for companies at the start of their life cycles for their R&D expenditure:** Outstanding support for R&D expenditures for companies at the start of their business cycle may foster research activities among innovative businesses. The research and development cost accounting system dedicated to innovative companies may complement the already existing business angel tax allowance. As per the present corporate tax law, companies may decide to account the direct costs of their R&D expenditures fully as a tax base reducing item. The tax base allowance that innovative non-early phase companies are entitled to would surpass 100% of the direct R&D expenditures according to the currently effective regulation, ultimately growing to 200%. Similar to early-phase companies, this would need the statutory definition of businesses in a stage of development.<sup>68</sup>

**(6) Reduce employers' contributions for SMEs implementing R&D investments:** Wage costs for research and development staff are usually higher than the average. The current contribution legislation allows businesses to reduce their contribution payment commitments even

with a negative tax base upon the employment of R&D staff. The assistant staff's wage increase proposal could be coupled with some targeted contribution allowance (cf. PhD students) for SMEs that are implementing an R&D investment.

**(7) Reduce patent maintenance fees:** In an EU comparison, the number of patents registered by the Hungarian authority is rather low. Practically, it is less than 50 patents for one million people, which fails to reach one half the average recorded by EU Member States and falls below the average of the other Visegrád countries as well. An annual maintenance fee must be paid for the duration of patent protection in Hungary. Reduction of the maintenance fees or their suspension in the first two years (which usually includes the assessment period) could contribute to somewhat intensifying patent activity in the domestic environment and cause the owners to maintain their patents for a longer time. Besides, favourable taxation conditions for patent revenues may also enhance and foster patent activity. Such an allowance has been available in the United Kingdom since 2013 (UK Patent Box).

**(8) Favourable accounting treatment of patent revenues:** Additionally, favourable taxation conditions for patent revenues may also enhance and foster patent activity. Such an allowance has been available in the United Kingdom since 2013 (UK Patent Box). The allowance system enables British businesses to reduce their corporate tax rate to 10 per cent based on their patent revenue. (In 2017, the effective corporate tax rate stood at 20.5 per cent in the United Kingdom.) The allowance may as well be requested on an EPO patent or for the exclusive use of a patented technology. However, the allowance is subject to revenue growth conditions. An affiliated enterprise may take advantage of the allowance if it has been involved in the patent's development. This requires the creation of an accounting standard that separately specifies the revenue on patent rights.

<sup>67</sup> R&D calls for tender specify at least 13 types of documents to submit.

<sup>68</sup> Early-phase companies are defined in Government Decree No. 331/2017 (XI. 9.) . A similar regulation is needed for the targeted allowance allocation of innovative non-early phase companies.

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# 11. Efficient governance

**Main objective: Reducing the time for preparing a tax declaration to 170 hours**

**As the largest employer, regulator and service provider, the state exerts an influence on competitiveness and convergence through several channels.** The Fundamental Law of Hungary stipulates that the state shall serve its citizens, and the state-owned organisations should have regard to the principles of lawfulness, rationality and effectiveness in the course of their operations (Fundamental Law of Hungary, 2011). As the public administration is expensive to run, it is essential that expenditures be utilised efficiently. Gains in operational effectiveness could be achieved through reduced bureaucracy, the optimisation of workflows and of the headcount of public administration, the elimination of parallelisms, and the digital transformation of public administration. 6.8 per cent of Hungarian employees work in the general administration which can be considered a high rate in a regional and even in an European Union comparison. Reducing the state-employed headcount in a circumspect, gradual manner could free up a significant amount of workforce – under the current tight labour market – for the private sector, which could be further promoted by an increased extension of e-governance.

**While Hungary's developments on e-governance are ongoing, the degree of digitalisation in public services still falls considerably short of other countries in the European Union.** One of the major accomplishments in recent years has been the completion of personal income tax returns by the tax authority, covering almost 4 million taxpayers. By contrast, as regards corporate operations the time spent with tax administration is still considered high: in 2018, an average enterprise spent 277 hours on preparing a tax declaration compared to the EU average of 172 hours, which indicates that additional measures are needed to reduce the time requirement. With the spread of digitalisation, the reduced administrative burden does not tie up the resources of the private sector excessively, and companies can spend more time on their operations, which could result in increased productivity, due to improved resource allocation.

**After 2010, the extent of the shadow economy has been reduced in Hungary, however, its level is still higher than that of the regional and EU average, and therefore further measures are needed to continue fighting the shadow economy.** Starting from 2010, several economic policy measures supported the reduction of the shadow economy in Hungary (connecting online cash registers to the tax authority (OPG), introduction of the Electronic Trade and Transport Control System (EKÁER), launching the system of online invoicing), thanks to which the estimated rate of tax evasion has been lowered and the degree of VAT evasion has also decreased rapidly. Total tax evasion is still higher by four percentage points in Hungary than the EU average (17.9 per cent). A further reduction in tax evasion may be facilitated by phasing out the financial transaction levy in the household segment, extending the use of the OPG system and continuing to provide support for electronic payment methods.

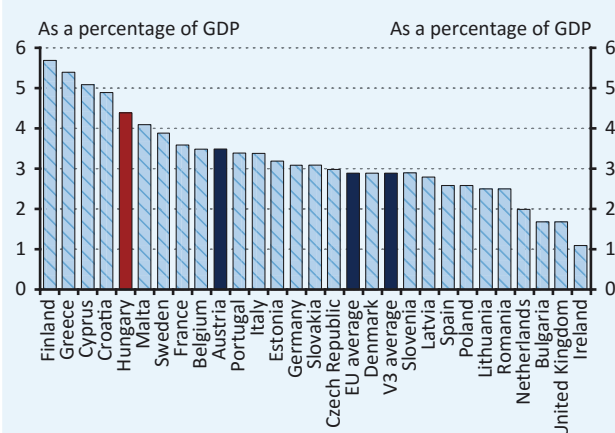
## 11.1. SMALLER BUREAUCRACY

- (1) Audit, rationalise and remove parallelisms in the system of public institutions
- (2) Raise average wages in public administration and reduce bureaucracy
- (3) Promote wage bill management and performance measurement instead of headcount management
- (4) Measure the efficiency of state-owned enterprises and of services provided by state agencies

### Assessment of the situation

The rate of expenditure by the Hungarian state on public administration is one of the highest in Europe as a percentage of GDP and is one third higher than the average of the V3 countries. A supporting public administration is indispensable for the proper operation of the economy, as a result of which the state is at once the largest employer, regulator and service provider. Consequently, operating the public administration requires significant state expenditure – depending on the size and degree of extension of the public sector. Thanks to organisational restructuring, the ratio of state expenditure on public administration as a percentage of GDP fell significantly in Hungary between 2014 and 2016, by approximately 1 percentage point. Despite this, however, the 4.4-percentage point value in 2016 is still high in an international comparison. Based on the expenditure rate of 2.9 per cent in the European Union and the Visegrád Countries, it can be concluded that there remains potential to transform public institutions and improve their efficiency.

**Figure 11.1**  
Public administration expenditures as a percentage of GDP (2016)



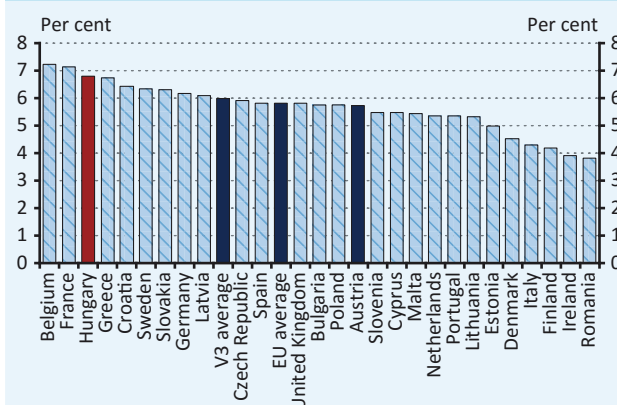
Note: Data from transactions related to debt servicing have been filtered out.

Source: Eurostat.

**The high headcount results in high costs to maintain public administration.** The reason that the ratio of expenditure

on public administration in Hungary exceeds that of the other countries in the region is the above-average number of workers employed in public administration. According to statistics on employment in public administration in the narrow sense, 6.8 per cent of Hungarian employees work in public administration, while the average rate in the European Union and in the region is below 6%.

**Figure 11.2**  
Civil service employment as a proportion of total employment (2017)



Note: Without healthcare, educational, law enforcement professions and elementary occupations.

Source: Eurostat.

**While the Hungarian state spends a relatively large amount on public administration as a percentage of GDP, the average wage level in the sector is low in an EU-level comparison.** A peculiar duality can be observed in public administration because of the high rate of employment in the public sector: on the one hand, it is more expensive for the state to run and maintain the administration than the international average, while on the other hand, the wages of employees in the public administration sector are lower than the average wage in the national economy, compared to the figures in the European countries. Given the dynamic rise in wages seen for several years in the private sector, a pay increase has become necessary in the public administration as well. A significant pay rise was effected at the tax authority and in the district and government offices starting from 2016. A new salary system has been introduced at the ministries and certain

background institutions since the beginning of 2019. By adopting measures affecting a large range of those working in public administration, the system may gravitate towards a model where a small central headcount with higher average wage could fulfil its tasks more efficiently.

## Recommendations

**(1) Audit, rationalise and remove parallelisms in the system of public institutions:** Prior to implementing a major systemic transformation, plans need to be elaborated for determining the quantity and quality of tasks to be fulfilled by the state and for the desired structure of the institutional system; after this, the necessary headcount can be derived from these factors. A major transformation of public administration started in the 2010s with the integration of some of the tasks of the local governments into the central administration as a first step. As an integral continuation of that process in central public administration, 46 state background institutions were terminated after 2016, mainly by legal succession. Parallelisms have not been fully eliminated, however. Further cost reductions can still be achieved by rationalising the activities and making use of synergies and the savings could be spent on raising wages for the existing personnel.

**(2) Raise average wages in public administration and reduce bureaucracy:** From international comparisons it can be concluded that a smaller sized bureaucracy is also able to fulfil the tasks of the state at a high level of quality. The favourable economic prosperity, the tight labour market environment and the continual reduction of administrative burdens make it easy and at the same time necessary to free up civil service personnel capacities for the private sector. In accordance with that necessity, in October 2018 the Government announced that a total of 6,810 jobs would be terminated at the ministries and subordinated institutions. Along with maintaining tight budgetary management, the savings obtained from this staff reduction could provide appropriate budgetary coverage for raising the wages of those remaining in the sector. Wage increases have been started in certain parts of the public administration. Upon the introduction of the new career path model, those working in government offices have received a pay raise of 30% on average in several stages since 2016, while the employees of the National Tax and Customs Administration received a 50% wage increase on average. At the ministries, the rate of salary increase will be 30% on average from 2019. Efficiency improvement can also be expected from a wider-scale implementation of the salary increase.

### **(3) Promote wage bill management and performance measurement instead of headcount management:**

Headcount management is often used as a budgeting method in public administration. This is a less expedient approach because the heads of the institutions are interested in employing as many people as possible, irrespective of the efficiency of the activities. As opposed to this, in the case of wage bill management the institution can manage and use a pre-determined amount of wage bill during the relevant year, which ensures a wider range of manoeuvre in establishing the headcount or the wage level. As a consequence, a closer correlation can be established between the wages paid and efficient work accomplishment. A properly parametrised performance assessment and evaluation system could contribute to a great extent to implementing that goal. The new system incentivises the employees to achieving higher performance. Research pursued in the British public administration has confirmed that a wage scheme linked to performance boosts individual efficiency and is able to allocate employees more suited to the specific tasks. In part of Hungarian public administration, the previous multi-stage normative system was replaced in 2016 by a wage system based on individual responsibility and job functions. The new system that provided a pay-rise of 30% on average for employees was launched in the district offices in 2016 and in the county government offices in 2017. With the adoption of the Act on Governmental Administration, the new regulations will enter into force in additional areas of public administration from January 2019 and will apply to employees of government offices as well, in addition to those working in ministries. The measures launched from 2016 can be considered as a step towards implementing the proposal.

### **(4) Measure the efficiency of state-owned enterprises and of services provided by state agencies:**

In addition to traditional budgetary indicators, a stronger role should be attributed to efficiency indicators describing the results and the relationship between results and costs. Although this poses a challenge in the case of certain services fulfilled or provided primarily by the state and there is a limited possibility of using analogies from the market to this end, international best practices for measuring this are already available. The United Kingdom provides the best international practice, where the productivity of the services provided by the state is measured regularly. According to IMF estimates, cost reduction or increase in revenues deriving from efficiency improvement can amount to as much as 3 per cent of GDP annually (IMF, 2018).

## 11.2. DIGITAL PUBLIC ADMINISTRATION

- (5) Adopt the Estonian model to ensure that all matters dealt with in government one-stop shops may also be processed online
- (6) Interlink the databases of administrative organisations
- (7) Enhance mobile applications for simpler processing
- (8) Increase the share of auto-populated information in electronic forms and datasheets
- (9) Carry out regular online satisfaction surveys for public services

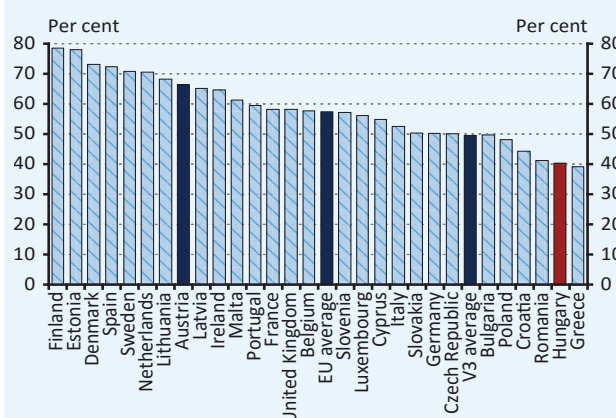
### Assessment of the situation

With respect to digitalisation of public services, Hungary lags considerably behind the countries of the European Union. The Public Services pillar of the Digital Economy and Society Index (EU-DESI) set up by the European Commission evaluates the degree of digitalisation of public administration based on various criteria. Based on these, the proportion of persons using the e-government portals is low in Hungary. Based on the EU-DESI index, less than half of the population of Hungary uses and sends data online, and therefore Hungary is ranked 24th among the 28 EU member states. As regards the availability of pre-filled data, Hungary achieved a better result and is ranked 22nd among the EU member states, which was also supported by the government measures in recent years. Completion of a tax return pre-filled by the tax authority was such a measure, and this option has been available for each private individual since the 2016 tax year. The digitalisation of the administration necessary for company formation and conduct of business has gradually improved in the past years, but Hungary still lags behind the EU average, and is ranked 23rd in this EU-DESI sub-index. Access to open data is important for the population, the organisations of the private sector and for institutions with a public-service mission. As far as this sub-index is concerned, Hungary's lag is significant, as it is ranked 26th among the 28 EU member states in this respect. In 2017, Hungary was ranked in the next to last place in the EU as far as the degree of development of the e-healthcare systems is concerned. But a cloud-based service of the Hungarian healthcare sector, the National eHealth Infrastructure (EESZT - e-egeszsegugy.gov.hu/eeszt) was launched in November 2017 and therefore a better ranking can be expected in this field in the future.

### Recommendations

**(5) Adopt the Estonian model to ensure that all matters dealt with in government one-stop shops may also be processed online:** The development of public administration matters that can be handled online (e-governance) has been in progress for several years, but for the time being only a

**Figure 11.3**  
EU Digital Economy and Society Index - Digital Public Services (2018)



Source: European Commission.

limited number of official matters can be handled digitally throughout the entire process. The best international practice in this field is provided by Estonia, where the deployment of e-governance started as early as 1997 and there is an opportunity for the population to handle several thousand different kinds of matters online. Behind such measures lies the recognition that the extension of the scope of e-governance contributes to the reduction of state expenditure and headcount need in the medium term and thus releases workforce for the private sector. In addition, the decreasing bureaucratic burdens will tie up the resources of the private sector to a lesser degree, thereby improving the efficiency of enterprises. At the beginning of 2018 a new governmental portal (szuf.magyarorszag.hu) was launched with a customisable administration interface (SZÜF), which consolidates the state agencies that offer the option of digital processing of matters and replaces the magyarorszag.hu portal. The number of matters that can be handled online has also increased, and starting from this year even the police also ensure the option for citizens to process their matters electronically. The possibility of reporting domicile address electronically will also be ensured in the future and with the renewal and enhancement of the transport registration system it will also be possible to process the initial registration of vehicles



online. In September 2018, the EU Competitiveness Council decided to establish an online administration database accessible from each Member State (single digital gateway) to provide access to information, procedures, assistance and problem-solving services for both private individuals and enterprises (European Council, 2018).

**Ensuring the possibility of electronic payment in state administration procedures** also contributes to saving time and money on the part of the population and the enterprises. The use of the yellow cash inpayment money order is more expensive than the electronic solutions and also acts as an incentive for cash use. In the case of payment using the yellow cash inpayment money order, no special fee is charged on the payer but costs are incurred for the beneficiary (recipient), which are ultimately paid by the customers using this service because the costs are incorporated in the prices of the service providers. Since July 2015 Magyar Posta ensures payment of the cash inpayment orders by bank cards and QR codes are indicated on the cash inpayment orders, whereby they can be read and paid in a simple way by mobile applications. Payment by yellow cash inpayment money orders still has a great tradition in Hungary, and 54 per cent of the population still uses cash for paying them (Nézőpont Intézet, 2018). It is set as a goal for the future that the share of payment by cash inpayment orders should decrease as electronic payment solutions gain ground.

**(6) Interlink the databases of administrative organisations:** Interlinking and automation of data stored in databases accelerates the pace of administration and consequently saves time both for the public and for enterprises. The goal is that data should need to be given at less points, which will reduce the rate of errors as well, in addition to accelerated administration. The Austrian family support scheme without filing reports is a good example of the connection of the public institutions' databases, where the data from the Austrian population register are forwarded to the tax authority's system by automatic data transfer. As a result of this, the Austrian tax authority automatically pays the family allowance to families with newborn babies without any need to file documents with the tax authority. Development of the administrative registration systems is currently in progress in Hungary. The administrative bodies do not have building and developing their own registers and records as objective, but to have access to and harmonise the most up-to-date data from certified public databases. According to information received from the Ministry of the Interior, with the interlinking of the databases no such case can occur in the future that the name of the same person is included with different spelling and orthography in the

Land Register than in the residence register. Administrative matters will be adapted to different life situations, for example if documents are lost, all of the documents can be replaced in one procedure, instead of several ones as was previously the case.

**(7) Enhance mobile applications for simpler processing:**

The spread of mobile applications accelerates and simplifies the administrative process and supports the operation of the economic actors. In South Korea, the tax authority makes it possible for enterprises to file pre-filled tax returns via mobile applications. Via the mobile interface, the enterprises can view their electronic invoices, obtain information on their business partners, and private individuals may initiate tax credits. In Hungary, the handling of administrative or taxation matters does not yet function smoothly via mobile applications, and therefore it would be beneficial to develop them. The OkmányApp application of the Ministry of the Interior promises to process document-related matters quickly and simply, while the NAV-Mobil application of the tax authority places the main emphasis on providing information on taxation.

**(8) Increase the share of auto-populated information in electronic forms and datasheets:**

The proportion of auto-populated electronic datasheets has been continuously increasing but it is justified to continue the developments which have already started. As a result of the development of administrative registration systems, an improvement in the share of auto-populated datasheets can also be expected. In order to achieve that goal, cooperation between the authorities in charge of certified public databases is also required, which could ensure free movement of data between the various institutions. Based on information received from the Ministry of the Interior, an increase in the number of auto-populated datasheets can be expected in electronic administration: personal data will be auto-populated in the necessary forms upon provision of the e-identity card or the personal identification number.

**(9) Carry out regular online satisfaction surveys for public services:**

Regular online satisfaction surveys for public services could provide feedback on the efficiency of the operation of public administration. If the public is satisfied with the functioning of public administration and feels that the state institutional system is customer-focused, a good relation of trust may develop between the two parties. E-governance contributes to the strengthening of relations between the citizens and the state and may facilitate that the opinion of the population reach the decision-makers in a wider range.

### 11.3. CUSTOMER-FRIENDLY TAX AUTHORITY

- (10) Develop the tax authority and increase its efficiency
- (11) Implement the scheme for corporate tax and value added tax returns produced by the Tax Administration
- (12) Develop a taxpayer-friendly, transparent website, provide online processing for a wider range of matters
- (13) Discontinue the use of supplements to the advance corporate tax
- (14) Gradually shift the corporate income tax to “cash-based taxation”
- (15) Reduce administrative burdens

#### Assessment of the situation

Tax administration reform started in 2016, with the aim of establishing a customer-friendly, cooperative tax authority that orientates the taxpayers towards law-abiding behaviour using appropriate measures and modern incentives. The goal behind the transformation of the tax authority was to establish an institution that functions more efficiently and that contributes to reducing the taxes levied on taxpayers and improving their tax payment morale in a cooperative, supportive manner. Thanks to the paradigm change, several new measures have been introduced, such as the **rating system of taxpayers**, the **support procedure**, **mentoring**, **tax speed camera** and the institution of **conditional tax fines** (Palotai and Parragh, 2018).

In order to reduce tax-related administration, the **National Tax and Customs Administration (NTCA)** assumes the task of **electronic completion of personal income tax returns starting from the 2016 tax year**. In addition to launching the **e-personal income tax** system, since 2018 it has also been the tax authority that prepares the **excise tax returns** and from July 2018 the system of **online invoicing** has also been launched. Due to the improvement in customer-focused approach, **the reduction in the amount of the fines and the**

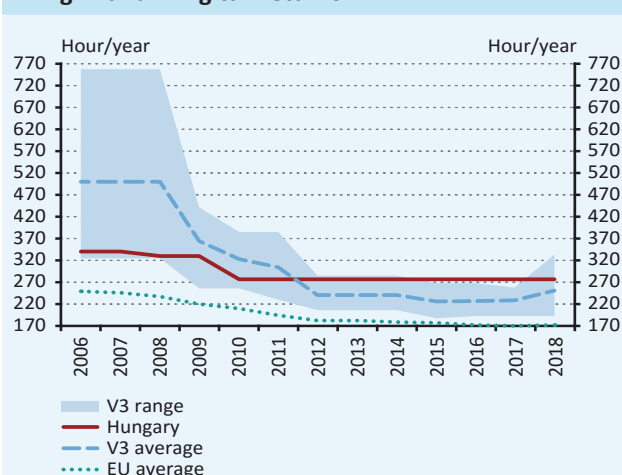
**promotion of counselling services**, further improvement in tax payment morale can be expected.

However, in relation to the operation of enterprises tax administration burdens remain high. The time spent on tax administrations curbs the productivity of economic agents. In 2018, the average time spent by companies on tax payment in Hungary was 277 hours, while the EU average was 172 hours.

#### Recommendations

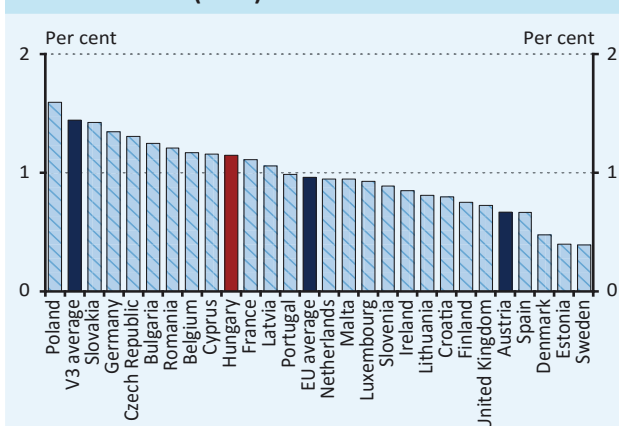
**(10) Develop the tax authority and increasing its efficiency** ensures tax revenues for the state budget in a way that taxation rules that are acceptable and can be met by the public are adopted, and small administrative burden is imposed on the taxpayers, which does not curb their functioning, and which promotes law-abiding behaviour as much as possible. From 2016 on the organisational structure of the tax authority was transformed, by the termination of the regional main directorates a two-level system (county directorates and central management) has been established instead of the former three-level structure. As of 1 January 2016, an Appeal Directorate has been set up within the NTCA, which ensures the conditions for uniform legislation interpretation and application practice.

**Figure 11.4**  
Number of hours per year spent by enterprises on filling in and filing tax returns



Source: IBRD-Doing Business, PwC.

**Figure 11.5**  
Taxation-related administration costs as a percentage of tax revenues (2015)



Source: OECD.

The aims of the organisational restructuring of the tax authority were to eliminate the previous parallelisms, to accelerate internal procedures and to reduce operational costs. Based on data for 2015, **taxation-related administration costs** in Hungary can still be considered high in a comparison with the European Union (amounting to 1.15 per cent of the tax revenues). The transformation that started from 2016 may result in a decline in the tax administration costs. For the sake of further decreasing tax administration costs, it is worth rationalising the operational processes still more and reducing costs by implementing further efficiency improving measures.

**(11) Implement the scheme for corporate tax and value added tax returns produced by the Tax Administration:**

Taxation processes can be further accelerated by tax authority filling out tax returns and the automation of tax administration. The tax return, issued and pre-filled by the tax authority, has been available to all private individuals since the 2016 tax year. By launching the e-personal income tax system, 3.8 million private individuals had the opportunity to view, amend and approve the draft return through the new electronic system. The launch of the electronic tax return was also a decisive step in the Estonian digital state programme and by now the return can even be finalised in just 3 minutes. In addition to the personal income tax return, this year the revenue tax return will also be produced by the tax authority for the taxpayers in Hungary. It would be reasonable to extend the system of pre-filled tax returns in the future to more tax types, for example to the corporate tax return as well. Since the launch of online invoicing, the tax authority can practically monitor all transactions subject to VAT liability, which provides the opportunity for NTCA to assume the task of completing VAT tax returns as well in a certain time. Interlinking the state databases to the required extent also promotes the implementation of this proposal.

**(12) Develop a taxpayer-friendly, transparent website, provide online processing for a wider range of matters:**

A well-structured, easy-to-use website facilitates quicker access to information and reduces the time spent on tax administration. The website of the British Government can be considered an example worth using as a reference, as it provides information, advice and assistance for business planning for the enterprises, in a manner almost intertwined with the website of the tax authority. The structure of the website is logical, it presents the services transparently and in a manner adjusted to the life and business situation of the users. The Tax Administration launched its e-personal income tax website ([eszja.nav.gov.hu](http://eszja.nav.gov.hu)) in 2016, which also helps taxpayers to obtain the necessary information by infographics, thereby making it simple-to-use and well-

structured. The developments are proceeding in the right direction and must be continued. Upgrading the web interface of the Tax Administration has not taken place yet, and its structure is hard to understand and is less user-friendly. There is much room for improving written communication with clients – based on the example of e-personal income tax return – which in general cannot be considered user-friendly today, because it uses a language hard to understand and follow.

**(13) Discontinue the use of supplements to the advance corporate tax:**

The administrative burden on enterprises can further be reduced by simplifying payment of the corporate tax. The current legislation rules that companies whose net revenue exceeds HUF 100 million must supplement the advance corporate tax to the total tax liability. There are several uncertainty factors in December in relation to the annual profit or loss and the tax liability, and therefore the obligation to supplement the advance tax represents an extra administrative burden for the companies. The uncertainty engendered by the supplementation adversely affects the plannability of the state budget as well. A gradual phase-out of the supplement to the advance corporate tax could thus entail a positive effect both for the companies and the state budget.

**(14) Gradually shift the corporate income tax to “cash-based taxation”:**

Mitigation of the characteristic distorting effect of corporate tax on investment and savings decisions could improve the productivity of the economy. The current regulation on the corporate tax distorts the decisions of business organisations through several conceptual problems (non-realised profit, depreciation, disregard of inflation, structure of funds). Efficiency could be improved by a shift to “cash-based taxation”, where the tax base is arrived at from the result of cash flow, instead of the accounting result. In this case, reinvested capital revenue would be taxed only once – as opposed to the current scheme – during the term of the investment, thereby constituting an incentive for increasing investments by companies.

**(15) Reduction of administrative burdens** is given top priority in almost each international competitiveness ranking. Hungary’s ranking in this respect is not bad, given that there is already an opportunity for companies to handle several types of matters electronically, and founding a company has also been made easier. Based on the most recent data, an average Hungarian company spends 277 hours per year on the fulfilment of administrative obligations and the enterprises must follow changes in 60 tax types. This could be simplified to a large extent. Several steps have been taken recently in order to achieve this goal.

## 11.4. REDUCE THE EXTENT OF TAX EVASION

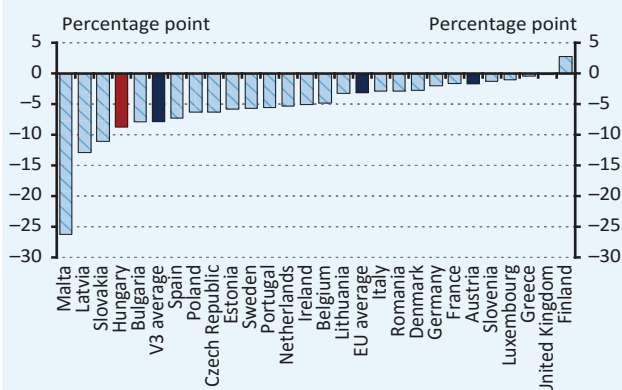
- (16) Extend tax obligations to digital multinationals
- (17) Continue the roll-out of online cash registers
- (18) Phase out the financial transaction levy
- (19) Make it mandatory for specific merchant groups to accept electronic payment methods
- (20) Reducing illicit activity in the construction industry

### Assessment of the situation

Reducing the extent of tax evasion has been supported by several economic policy measures in Hungary since 2010, with the underlying objective of improving the “fairness” of the tax system as well. The online connection of cash registers to the tax authority (OPG) and the introduction of the Electronic Trade and Transport Control System (EKÁER) supported the efficiency of tax collection, contributed to reducing the shadow economy and decreased the estimated ratio of uncollected VAT revenues (Palotai and Parragh, 2018).

The online connection of cash registers to the tax authority was started in September 2013 and this scheme now extends to the entire retail trade sector. Operation of the OPGs strongly supports the tax authority’s auditing activity and strengthens voluntary compliance with the laws. The introduction of online cash registers also exerted a positive impact on the evolution of VAT revenues. The effectiveness of this measure is well reflected by the change in the VAT gap, which in theory is the difference between the potentially collectible and actually collected VAT revenue. Between 2012 and 2016 the VAT gap declined by more than 8 percentage points to 13 per cent in Hungary, which thus is already well below the average level of 20 per cent registered in the Visegrád region.

**Figure 11.6**  
Cumulated change in the VAT gap (2012-2016)

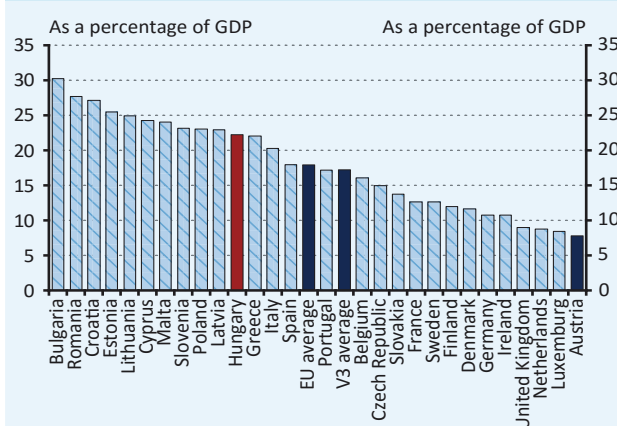


Source: European Commission.

The introduction of the Electronic Trade and Transport Control System (EKÁER) system was started in 2015. In addition to monitoring goods trade and transport, the aim was to eliminate fraud by screening out tax evaders and strengthen the position of law-abiding economic operators. In the summer of 2018, the online reporting of electronic invoice data (e-invoicing) was also launched as another means of combating the shadow economy, with a view to enabling the tax authority to monitor transactions between the taxpayers remotely and take more efficient measures against VAT fraud.

The roll-out of the OPG and EKÁER systems contributed to reducing the shadow economy and improved the budgetary positions. As a result of the measures, between 2010 and 2016, the estimated degree of tax evasion fell from 23.3 per cent to 22.2 per cent. This value is, however, is still more than four percentage points higher than the EU average (17.9 per cent) and almost three times as high as the Austrian figure of 7.8 per cent (Schneider, 2016). With a view to further reducing the shadow economy, ongoing measures aimed at curbing the shadow economy should be continued and extended.

**Figure 11.7**  
Estimated degree of the shadow economy as a per cent of GDP (2016)



Source: Schneider (2016).



## Recommendations

**(16) Extend tax obligations to digital multinationals:** By properly managing the challenge posed by enterprises in the digital economy, tax evasion by such companies can be avoided. Multinationals in the digital economy are especially affected by tax evasion, because they generate revenues not only from the countries where they are physically or legally present. In addition, owing to the fact that they rely strongly on intangible assets, they also make use of the regulatory differences between the individual countries. The OECD and the European Commission have been working for several years on elaborating an international solution to this problem, and tax evasion by these companies can be reduced by transitional measures as well.

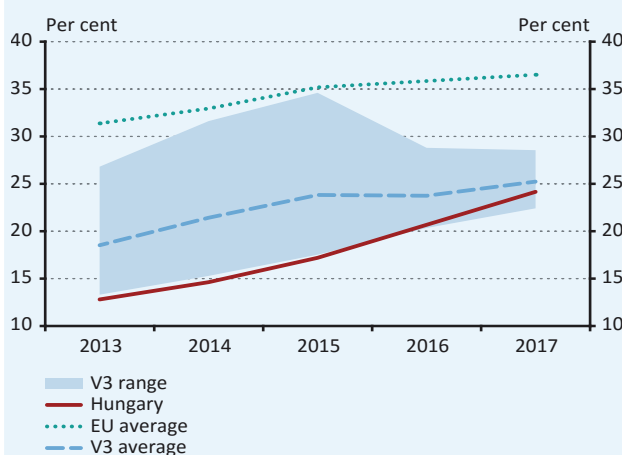
**(17) Continue the roll-out of online cash registers:** The degree of the shadow economy can be further decreased by extending the OPG scheme. The introduction of online cash registers started at the end of 2013, based on successful Bulgarian and Swedish examples. In 2017, the range of sectors obliged to use online cash registers was extended to include additional activities, such as vehicle repair and maintenance, retail trade in car parts, currency exchange, plastic surgery, taxi services, dry-cleaning, fitness and wellness services. It is worth examining which other sectors could be included in this range, for example gambling, the services of travel agencies, beauty care, and private healthcare and veterinarian services.

**(18) Phase out the financial transaction levy in the case of households:** By phasing out the financial transaction levy (PTI) directly levied on credit transfers, the roll-back of cash use in Hungary could be supported. While in case of payment by cash the payer is not subject to direct costs, several such items are imposed on electronic transactions. This significantly contributes to the fact that the ratio of transactions by cash is very high in Hungary, amounting to approximately 80 per cent (Ilyés-Varga 2015, 2018), which has several disadvantages. With a higher degree of use of the electronic methods of payment, savings amounting to as much as HUF 100 billion could be achieved at society level (Turján et al. 2011), and, furthermore, a decline in the use of cash could greatly contribute to the elimination of tax evasion and the shadow economy. Upon the launching of instant payment in 2019, electronic payment will be possible from technical aspects practically in all payment situations. However, in order for credit transfers to become competitive compared to payment by cash, the phasing out of fees directly levied on electronic payment transactions is required. It is a significant achievement in this respect that credit transfer transactions below HUF 20,000 will be exempt from PTI from 2019 on, which will affect approximately 45 per cent of the credit transfer volume, according to the estimates of the MNB. With a full-scale phase-out of this levy, however, significant additional progress could be achieved in the field of electronisation of payments by cash to a large extent. In

considering phasing out the PTI over the long term, it must be taken into account that the impact of a full-scale phase-out on the state budget is relatively low in the case of credit transfers of the household segment, which represents the most important and largest number of such transactions from a cash-based aspect, as it would result in a loss of revenue of about HUF 15 billion.

**(19) Make it mandatory for specific merchant groups to accept electronic payment methods:** While it is easy to offer electronic payment from technical aspects, many merchants still do not make it possible or offer it to the consumers because based on various considerations. That is why the option of choosing from various payment methods freely is not available for the consumers. This adversely affects and hampers the wide-scale spread of electronic payment methods, and, simultaneously, the roll-back of use of cash as well, which is rather expensive at the level of the society. Bearing this in mind, it is recommended to make it mandatory for specific groups of merchants and service providers (e.g. those obliged to use online cash registers) to accept electronic payment methods.

**Figure 11.8**  
Ratio of electronic payment for purchases



*Note: Annual value of payments made by payment cards and other electronic solutions / Annual household consumption.*

*Source: For international data: ECB, Eurostat; for Hungarian data: MNB and HCSO.*

**(20) Reducing illicit activity in the construction industry:** The option of extending the so-called simplified employment that can be used for seasonal work and casual work in the agricultural and tourism sectors to the construction industry could be considered. The framework system of simplified employment already determines, depending on the size of the enterprise, what proportion of the employees may be casual workers; therefore, avoiding false reporting of workers in mass could be ensured further on. At the same time, it would represent a cheap and simple solution for workers not formally employed for pursuing their work in compliance with the official requirements.

## 11.5. COMPETITIVE TREASURY SYSTEM

- (21) Consolidate and improve the efficiency of the Treasury system
- (22) Provide treasury account servicing for local governments and state-owned enterprises
- (23) Improve the Treasury's customer relations, particularly in the sale of retail government securities

### Assessment of the situation

The framework system for the operation of the currently existing treasury system needs to be reconsidered with a view to the competitiveness efforts. There are as many operational models as the number of countries, but it can be clearly stated that in an international comparison the age of the infrastructure existing at the Hungarian State Treasury can be considered old and it operates with fragmented and more complex IT systems than desirable. This hampers quick decision-making on targeted state asset management, and the implementation of such decisions, makes the provision of services to the wide range of clients of the Treasury at a high quality standard difficult and implies an extra burden and risk of operational and maintenance tasks. The processes and tasks implemented at the Hungarian State Treasury are various and wide-ranging, and go well beyond the traditional treasury tasks; therefore, an optimum re-allocation of such tasks could help establish a more efficient institutional system.

The Treasury as the most important institution for effecting state expenditure has a wide range of customer relations. Serving the interested parties is ensured with a high degree of manual administration with respect to all fields, with a high administrative time requirement in proportions. The operation of the Treasury is characterised by several isolated/piecemeal developments and several parallel key projects.

Under the current framework there is a limited possibility for achieving the important goals promoting competitiveness and the stability of the country. Such goals are, for example, increasing the liquidity of the Single Treasury Account by extending the scope of entities for which an account is kept, creating harmony between revenues and expenditure, modernising customer relations, with a view especially to increasing further the government security portfolio held by the households.

### Recommendations

**(21) Consolidate and improve the efficiency of the Treasury system:** The most important actors ensuring the operation of the treasury system are: the Hungarian State Treasury, the Government Debt Management Agency Pte Ltd. (ÁKK), the Ministry of Finance and the independent Magyar Nemzeti Bank (Central Bank of Hungary). With respect to all treasury tasks and taking Hungarian particularities and international best practices into account, it would be necessary to examine which allocation of tasks would be the most efficient from the aspect of competitiveness and feasibility. For example, the implementation of the treasury's payment activities appears in the international practice among the framework of the tasks of the treasury, the bank of issue and the commercial banks. In view of this, it is necessary to reconsider what is the most efficient institutional structure from the aspect of an implementable, efficient and competitive performance of the flow of state funds.

**(22) Provide treasury account servicing for local governments and state-owned enterprises:** The local governments hold funds worth approximately HUF 1,000 billion at credit institutions. If the local governments and the state-owned companies kept their accounts on the Single Treasury Account, that would facilitate the financing of the state and would indirectly decrease public debt.

**(23) Improve the Treasury's customer relations, particularly in the sale of retail government securities:** Serving the existing and potential clients and providing competitive services for them at a high quality standard is a most fundamental requirement. Within that aim, key importance is attributed to government securities for households, in the further sales of which a special role is to be assumed by both the Government Debt Management Agency Limited and the Hungarian State Treasury.



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## 12. Modern infrastructure and efficient energy

**Main objective: Reducing energy imports below 50 per cent**

**Advanced traditional infrastructure (roads, railway, water and air traffic) and modern infrastructure (infocommunications, electrical grid, cyber security) and efficient energy use play a key role in making Hungary competitive over the long run.** Modern infrastructure reduces transport costs, attracts investments that contribute to economic development and promotes the mobility of labour within the borders of the country. Furthermore, by developing a proper energy mix and fostering energy efficiency, the state can reduce the country's energy dependency and contribute to the maintenance of the trade surplus. The involvement of the state is also important in developing the green economy, primarily by supporting SME investments aimed at environmental protection, the spread of renewable sources of energy and the development of waste management.

**The density of Hungary's railway and road network is adequate, but its quality falls short of the European average in several respects.** The share of high-speed, electrified and double-track railroad sections is low, which holds back the speed of railway traffic. The overall length of motorways is satisfactory, but they lack international connections. There are noticeable issues with road surface quality in other sections of the public road network. Traffic could be accelerated and made safer by building additional access roads to motorways, making motorways suitable for self driving vehicles and creating intermodal transport hubs.

**The quality of the telecommunications infrastructure is adequate, but this infrastructure develops quickly and thus requires constant efforts.** Hungary is leading the way in 4G mobile internet technology, but further steps should be taken to achieve a leading position in the field of infocommunications, in line with the challenges of the fourth industrial revolution. Hungary is among the frontrunner countries regarding the coverage and speed of the 4G mobile internet network in an international comparison, and the 5G network is already being established. In this regard, this position can only be kept by supporting the development of new generation telecommunications networks and increasing the share of fibre optic telecommunications cables. The MNB is also participating in tackling the challenges arising from modern technologies (creation of Fintech Lab and Innovation Hub, membership in the Artificial Intelligence Coalition). However, in the field of information security awareness, Hungary lags behind in comparison to other EU members. Strengthening information security awareness and relevant developments would promote the retention of Hungary's competitiveness in modern technology.

**Compared to the EU, the energy consumption of the Hungarian economy is high, which is primarily due to the obsolete energy management of enterprises and households; therefore, energy efficiency investments should be promoted with multiple tools.** Several steps have been taken in recent years to strengthen Hungarian energy competitiveness, the continuation and extension of which would contribute to Hungary's economic convergence. Although energy use per unit of output decreased in the economy between 2005 and 2015, energy intensity increased within industry in Hungary, while it dropped in the EU. The efficiency of corporate energy use can be improved by supporting environmentally friendly solutions and energy savings, which could be driven by the spread and extension of the energy-efficiency tax benefit. Two thirds of the buildings in the country are obsolete in terms of energy management: modernising these structures could be facilitated by renovating windows, upgrading heating solutions and increasing the ratio of heat insulated wall surface. The modernisation of property can be primarily promoted through the continuation of the Otthon Melege ('Warmth of Home') Programme and its more intensive aid intensity if budgetary sources are available.

**The ratio of highly polluting energy sources is high in Hungary compared to other EU members, which could be reduced by increasing the number of renewable energy installations and implementation of the Paks 2 project.** The share of

renewable energy sources within energy consumption almost doubled (13 per cent) since 2006 in Hungary, and, as a result, Hungary satisfies the EU 2020 national target (13 per cent). However, this level is still below the EU average (18 per cent) and the Austrian percentage (33 per cent), and the structure of renewable sources of energy can also be improved. Energy generated by solar, wind and geothermal plants is low, but biomass use is high, which includes wood-heating. There are projects currently underway in Hungary to promote the construction of renewable energy plants in Hungary, but there is still more space for building more renewable energy plants. In addition to increasing the share of renewable energy sources within the Hungarian economy, the extension of the Paks nuclear plant will create additional capacity of 2,400 MW by 2030, which will also contribute to the relieving of the country's energy dependency.

**Over the last ten years, business activity has become more environmentally friendly, but further measures may be needed for environmentally sustainable convergence.** The protection of the environment and the acknowledgement and implementation of the right to a healthy environment are included in the Fundamental Law of Hungary (Fundamental Law of Hungary, 2011). The share of Hungarian SMEs making investments in environmental protection does not reach the EU average, and the creation of a state fund would facilitate the funding of such investments. Exposure to air pollution from particle emissions is higher in Hungary than the EU average and the Austrian level, the reduction of which is primarily possible through the modernisation of heating solutions. The quality of drinking water is good in Hungary, but over one fifth of the population (mainly living in small settlements) is not connected to the wastewater network. This rate could be improved by increasing the number of wastewater connection points in small settlements. The amount of waste generated decreased, but the rate of recycling is low; hence, the introduction of alternative incentives, such as plastic and glass bottle deposit fees, should be considered.

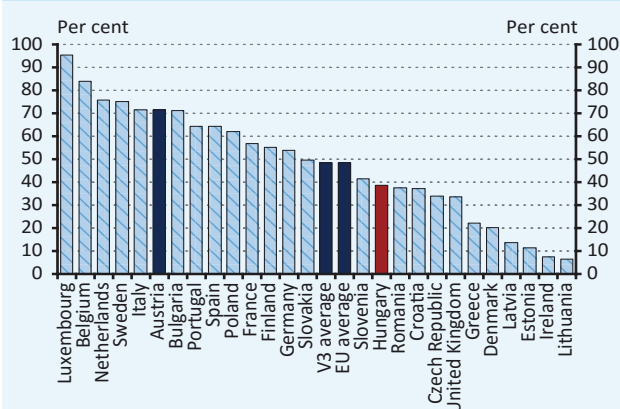
## 12.1. FASTER RAILWAY TRAFFIC

- (1) Provide electric railway access to every town with at least 30,000 inhabitants and to the Northern Balaton region
- (2) Ensure travel speeds of at least 160 km/h on all principal railway lines
- (3) Replace or modernise railway engines and passenger wagons
- (4) Establish an intermodal hub in every county seat and develop railroad freight terminals

### Assessment of the situation

**The density of the Hungarian railway network is adequate, but the ratio of high-speed, electric and double-track sections is low, which hinders the competitiveness of railway traffic.** The Hungarian railway network is the fifth densest compared to other EU members, with 84 km of railway per square kilometre, which is 30 per cent above the Austrian level and one and a half times higher than the EU average. In Hungary the ratio of electrified track sections (39 per cent) is 10 percentage points lower than in other countries in the Visegrád Group and 30 percentage points lower than the Austrian level (Figure 12.1). In addition to the shortfall in electrification, the share of double-track sections is also low. Only 16 per cent of the Hungarian railway network is double-track, which is more than 20 per cent lower compared to the Austrian figure.

**Figure 12.1**  
Ratio of electrified railway lines (2016)



Note: Data is from previous years for Belgium, Denmark, Germany and Italy.

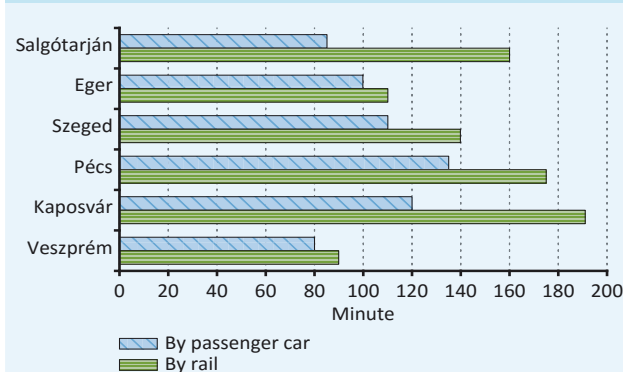
Source: Eurostat.

**A considerable amount of sources were spent on railway development in the last 10 years, which led to substantial modernisation, but railway vehicles are still obsolete.** 10 per cent of the EU funding received in the 2007–2013 programming period was spent on railway development in Hungary, while by 2022 it is expected that 11 per cent (approximately HUF 1,000 billion), or 2.6 per cent of GDP, will be used for this purpose, but there is still room for continuing

the development of railways (KPMG, 2017); (Government of Hungary, 2018a). A mere 15 per cent of railway vehicles owned by the Hungarian State Railways (MÁV) are in perfect condition: this ratio will likely improve with the 40 new, double-level suburban railway trainsets that are currently being purchased and commissioned. Over 90 per cent of vehicles operating in the suburban railway service (HÉV), which has been transferred to the management of MÁV, require complete modernisation or replacement. To this end, the government adopted several government decrees in November 2018, including one on the complete renovation of HÉV tracks, and committed HUF 11 billion for modernisation. In addition to passenger transport, the increase in railway freight capacities is currently held constrained the lack of intermodal transport hubs.

**The average speed of railway traffic is low due to quality issues in the network and obsolete trainsets.** There are only three railway track sections in Hungary that actually enable travel at 160 km/h, and on some others modernisation is in progress with the aim of becoming capable of such speed. Main railway lines in Hungary were designed for a speed of 120 km/h, and branch lines rarely enable speeds above 80 km/h. Travelling and waiting times show a much better picture if road freight transport is considered compared to railway use (Figure 12.2). Delays are prevalent in the Hungarian railway network when compared to other EU countries: on average, a total of 85 per cent of trains arrived at their destination with a maximum of 5 minutes of delay in 2017 (MÁV, 2018).

**Figure 12.2**  
Access time of Hungarian county seats by passenger cars and by rail (2018)



Source: Google Maps.

## Recommendations

### **(1) Provide electric railway access to every town with at least 30,000 inhabitants and to the Northern Balaton region:**

By increasing the ratio of electrified railways, the speed of railway traffic can be improved and environmental burdens can be reduced with the replacement of diesel traction. In the course of electrification, the interconnection of the capital and county seats as well as links between county seats should be given priority. When railways are electrified, the technological solutions between two countries should be ensured at border crossings. The replacement of diesel traction would reduce energy use and contribute to the easing of energy dependency by switching to energy that can be generated within the country.

### **(2) Ensure travel speeds of at least 160 km/h on all principal railway lines:**

Railway travel times can be reduced most effectively by improving the quality of railway tracks. The economy would be significantly promoted, if the European Train Control System (ETCS 2) and a GSM-R radio communications system complying with current standards were established and applied on important international railway lines. A good example for developing a railway network that corresponds to the challenges of the fourth industrial revolution (internet-based signalling systems, semi-automatic locomotion) is Norway, where approximately EUR 2 billion will be spent on the digitalisation of railway tracks and the implementation of the newest ETCS system by 2034 (SmartRail, 2018). Moreover, the capacity, speed and, if needed, the introduction of a denser time schedule can further be facilitated if, in addition to electrification, main railway lines were changed to a double-track system. Construction of the North/South Budapest-Bratislava-Brno-Warsaw, the Budapest-Belgrade and the West/East Vienna-Budapest-Cluj-Bucharest high-speed railway lines should be given priority in track upgrades. In addition to constructing high-speed railways enabling speeds above 160 km/h, it would also be important to ensure that branch railways can guarantee speeds of at least 80 km/h. In addition to renovation works, the construction of new railway tracks could also promote faster railway traffic. Act CXXXIX of 2018 includes the development of several high-speed railway lines and other core network railway sections, which could contribute to the implementation of this recommendation.

### **(3) Replace or modernise railway engines and passenger wagons:**

The modernisation of railway tracks in itself is not sufficient to make travelling by train faster and more comfortable. The modernisation of traction and passenger wagons is also an important aspect in creating a Hungarian railway transport that meets the requirements of the 21st century in Europe. First, the number of railway engines capable of at least 160 km/h speed should be increased, and these modern engines should be equipped with ETCS 2 train control system that can communicate with a system installed on the track sections. The increase in speed and improvement in quality could be further promoted, if MÁV raised the number of vehicles in its fleet that are designed to combine traction (railway engine) and passenger wagons. In addition to the aspects of comfort and standards of service, the speed of railway traffic is also influenced by the condition of passenger wagons; therefore, the purchase of new trainsets and the renovation of existing Intercity wagons should be considered. In relation to the modernisation of the vehicle fleet, the capacities of the Hungarian railway vehicle production and repair should be relied on. Besides the modernisation of vehicles, the maintenance and renovation of railway service buildings would also contribute to the competitiveness of long-distance railway travel.

### **(4) Establish an intermodal hub in every county seat and develop railroad freight terminals:**

In addition to passenger transport, an increase in railway freight traffic would generate more income and strengthen the logistics role of the country. The scale of freight traffic could be extended by increasing the number of intermodal hubs, the modernisation and capacity extension of freight stations and yards, and the creation of sections bypassing the cities connected to these investments. The development of freight traffic can also be promoted through track renovations to increase train speeds and upgrading to double tracks (freight trains reached their destinations one hour late on average in 2017 – Világgazdaság, 2018a). Furthermore, there is potential in developing the so called “single-wagon segment” in freight transport (disconnecting the freight train, detaching or attaching wagons between the starting station and the destination), because this would make freight shipments of smaller volumes economical, which could make railway transport more attractive to SMEs as well (Világgazdaság, 2018b).

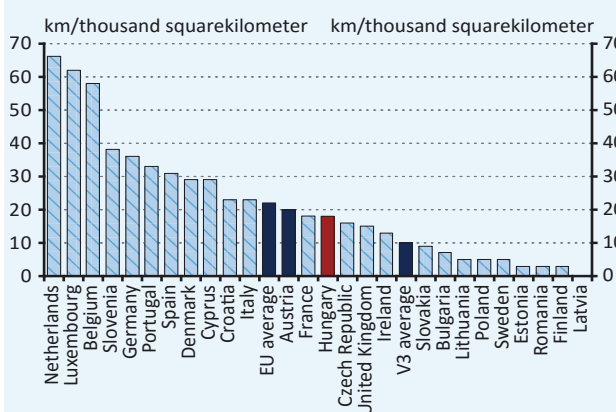
## 12.2. EXCELLENT ROAD NETWORK

- (5) Upgrade the motorways M1 and M7 to three lanes
- (6) Promote the construction of motorway feeder roads bypassing localities
- (7) Enable the use of self-driving cars on highways

### Assessment of the situation

The density of the Hungarian motorway network is satisfactory in EU comparison, but it is characterised by low traffic capacity, a lack of international connections and an insufficient number of motorway feeder roads bypassing localities. The length of motorways per one thousand square meters is 18 km, which is slightly less than the EU average and the Austrian level, but nearly twice the average of other countries in the Visegrád Group (Figure 12.3). The traffic load of the motorway network is not even. The sections of motorways M1, M3 and M7 close to Budapest and the M0 motorway are exposed to the highest traffic load, which means that the surface of these motorways is subject to greater wear and tear (Portfolio, 2016). The full international connection of the Hungarian motorway network is still awaiting completion. Motorways M3, M6 and other motorways do not reach the country's border, and in other cases the continuation of some Hungarian motorways has not been built over the border. County seats are not fully connected to the motorway network, since there are no motorways reaching Békéscsaba, Eger, Kaposvár, Salgótarján, Szolnok and Zalaegerszeg. County seats without a direct link to the motorway network will be connected through implementation of the Modern Cities Programme with a budget of approximately HUF 3 500 billion. In addition to the shortcomings of the motorway network, there is a lack of motorway feeder roads bypassing localities and not all Hungarian cities have a bypass road. The government adopted several measures in late 2018 aimed at the development of the road network. Act CXXXIX of 2018 specifies the long-term development plans relating to motorways and main roads. Government Decree No. 1792/2018 designates the public roads reaching small settlements that are to be modernised through the Hungarian Village Programme.

**Figure 12.3**  
Density of the motorway network (2016)



Note: Figures for Croatia and Italy are from 2015.

Source: Eurostat.

**When examining the condition of the public roads, in two thirds of the counties more than half of the roads are in poor condition.** The proportion of roads with surfaces in bad condition is the highest in Komárom-Esztergom, Nógrád and Győr-Moson-Sopron counties, the proportion of bad roads is lower than one third<sup>69</sup> only in Pest and Veszprém counties. While major modernisation has been undertaken on the main roads in the past decade, the renovation of inferior public roads has lagged behind in many cases. One third of the HUF 150 billion allocated to the Hungarian Villages Programme is aimed at the development of inferior public roads, and the Government is planning to use approximately HUF 40 billion generated from motorway tolls and the increase in tolls for lorries (Government of Hungary, 2018b; 2018c).

<sup>69</sup>

A road is in bad condition, if more than 20 per cent of the surfaces is cracked, patched, deformed, and potholes are common.



## Recommendations

### **(5) Upgrade the motorways M1 and M7 to three lanes:**

The development and lane expansion of high-traffic or high-priority motorways reduces the load on the road surface on the one hand and lowers the chance of congestion on the other hand, which makes traffic safer and reduces driving time. According to the statement of the government, upgrading the busiest motorway M1 to three lanes could commence in 2021, and an action plan was developed to ease traffic during the renovation and expansion work (Government of Hungary, 2018d). Upgrading the section of the M7 motorway between Budapest and Balatonvilágos to three lanes would be necessary because travellers to Lake Balaton, those travelling to and returning from Croatia, as well as road freight transport cause considerable additional traffic load and frequent congestion on this route. Currently, three lanes are already in use on the side leading to the capital, between Székesfehérvár and Budapest.

### **(6) Promote the construction of motorway feeder roads bypassing localities:** Leaving the motorways to nearby

main routes because of destination traffic and turning to motorways is realised through smaller settlements in the case of several motorway hubs, which significantly increases traffic on the roads of affected settlements. Traffic load could be relieved, and hence the quality of life could be improved and the environmental impact could be reduced, if the number of roads connecting to the expressway network bypassing small settlements was increased.

### **(7) Enable the use of self-driving cars on highways:**

Currently, there is no motorway in Hungary that would allow for the use of self-driving cars. In the future, we recommend building only motorways in Hungary that are technically suitable for self-driving cars. In Bavaria, between Munich and Ingolstadt, motorway A9 is already suitable for self-driving vehicles and has been tested by automotive companies since 2015. According to Government plans, motorway R 76, linking motorway M7 to Zalaegerszeg, will be built, in conjunction with the Zalaegerszeg test track, with technical capabilities enabling the use of self-driving vehicles.

## 12.3. A TELECOMMUNICATIONS AND ELECTRICAL NETWORK THAT MEETS THE NEEDS OF THE 4TH INDUSTRIAL REVOLUTION

- (8) Develop 5G technology by opening higher frequency ranges and providing state subsidies for the development of smaller cell sizes
- (9) Subsidise the spread of fibre optic cables
- (10) Improve insulation across the power grid
- (11) Increase the share of underground power cables
- (12) Provide subsidies for increasing the number of higher-amperage connections in households
- (13) Upgrade the capital and all county seats into smart cities
- (14) Develop Hungary's information security software industry

### Assessment of the situation

**In terms of the coverage and speed of the fourth generation mobile internet network, Hungary is at the international forefront and significant steps have been taken towards spreading new generation telecommunication networks through the government's establishment and operation of the 5G Coalition.** In Hungary, the national 4G coverage is 99 per cent. However, in terms of the number of mobile internet subscriptions per 100 users (49), Hungary is ranked the last among the EU member states. The 5G Coalition was established in Hungary in 2017 with a view to developing and building state-of-the-art mobile internet solutions, one key task of which is to foster the development of the internet of things and to make Hungary a leader in this area by international standards (Government of Hungary, 2018e).

**The price of broadband internet is low in Hungary compared to other EU members, but the proportion of broadband internet subscribers lags behind the ratios registered in top-ranking countries.** In addition to mobile internet, the development of fixed broadband connections is also very important. 82 per cent of Hungarian households have access to broadband internet, which reaches the EU average, but is still short of the top-ranking countries by more than 10 percentage points. 63 per cent of all subscriptions are for fast broadband internet (exceeding a download speed of 30 Mbit/sec), which exceeds the EU average by almost 20 percentage points, but lags behind the leading countries by 15-20 percentage points. In order to increase the rate of access to fast broadband internet, the government launched the Super-fast Internet Programme, the purpose of which is to make broadband internet with a speed of at least 30 Mbit/sec available in all Hungarian households by the end of 2018. In early 2019, the second phase of the programme (Super-fast Internet Programme 2.0) was launched, focusing on network development for at least 100 Mbit/sec and primarily on optical technology. It is a considerable competitive advantage for Hungary that

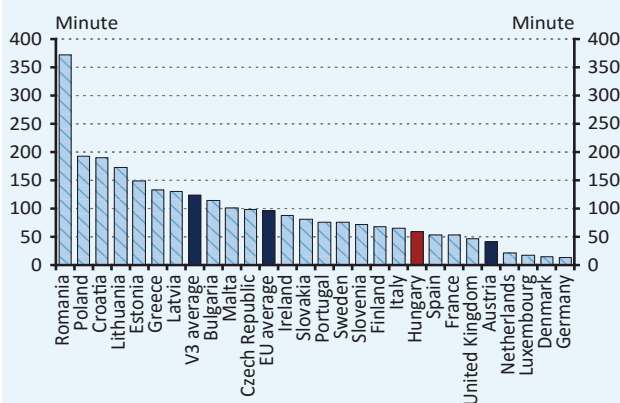
the price of broadband internet is the second cheapest after Lithuania in the EU. Low prices are supported by the fact that in two steps, the Digital Welfare Programme (DJP) reduced the VAT rate of internet from 27 per cent to 5 per cent in 2018, and the government established the Digital Welfare Standard Package. This subscription package was also introduced with a view to reducing the price of internet access; this solution is cheaper by at least 15 per cent even compared to the existing cheapest internet packages offered by service providers, for subscribers who do not yet have an internet subscription.

**The MNB is an active participant in several modern technology initiatives.** As a founding member, the MNB participates in the work of the Hungarian Artificial Intelligence Coalition established in autumn 2018. The coalition has 70 members, including university and academic research centres, technology companies and government entities. The task of the new forum is to formulate a common strategy, set the directions of development for artificial intelligence and establish a cooperation framework to bring Hungary to the forefront of this technology in Europe. In addition to establishing the Artificial Intelligence Coalition, the MNB set up a separate Fintech Lab organisational unit in 2018 to promote the efficient development and application of financial technology innovations, including artificial intelligence. The MNB has also played a proactive role in other innovative solutions. The Innovation Hub, also established within the central bank, acts as a regulatory support platform for innovators to clarify financial issues related to their innovations, and also as a communication platform for sharing information and ensuring effective collaboration. In addition to that, the Innovation Hub serves as an international cooperation platform (MNB, 2018).

**The Hungarian electricity network is well-developed, but has not yet been fully developed to accommodate modern technologies.** The quality and reliability of the Hungarian electricity network is adequate, which is reflected by the

fact that the unexpected loss of time per customer is 59 minutes per year. This is 37 minutes lower than the EU average and 65 minutes less than the V3 average (Figure 12.4). On the other hand, Hungary has one of the lowest ratios of underground power lines (20-30%) in the European Union, which increases the risk of unexpected power outages (Council of European Energy Regulators, 2018). In addition to the stability of power supply, it is also worth looking at new areas of electricity use. One of these is electromobility, which is supported by the government within the framework of the Jedlik Ányos Plan. As part of this plan, the electric road-charging infrastructure essential for electric cars will be built, but the household electric network is not yet ready for charging at home and thus for the widespread use of technology.

**Figure 12.4**  
Length of all unplanned, lengthy electricity supply interruptions (2016)

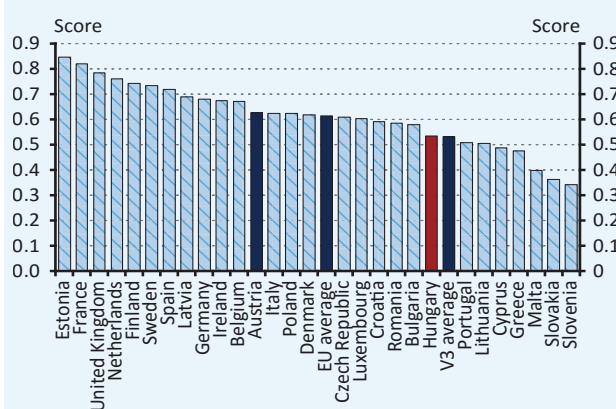


Source: Council of European Energy Regulators (CEER).

**Information security awareness is insufficient in Hungary.** Digitalisation not only offers opportunities, but also involves risks by leaving complex systems more vulnerable to malicious attacks. The high level of protection of networks is a prerequisite for safe operation. Practice in Hungary shows a low level of awareness in this area. 80 per cent of Hungarian companies have no advanced information security solution and in terms of robot attacks infected by malware Hungary is ranked first in an EU comparison. According to the Global Cybersecurity Index of the International Telecommunication Union, Hungary's cyber protection maturity lags behind the EU average (Figure 12.5). In order to reduce vulnerability, the Government Incident Management Centre was established in 2013, which plays an important role in the protection of IT systems critical to the economy and state operability, and, in this context, in the representation of Hungary in international organisations and in raising awareness of network security

(Government Incident Management Centre, 2018). In 2015, the previous cybersecurity organisational framework was restructured and centralised under the supervision of the Ministry of Interior. The National Cyber Defence Institute, as an umbrella organisation, was established and put under the Government Incident Management Centre by expanding its functions (Orbók, 2015). In the Digital Welfare Programme 2.0, the government proposed a revision of the National Cyber Defence Strategy and made several additional proposals regarding information security (R&D developments in the field of cyber security, creation of a national incident management centre).

**Figure 12.5**  
Results in the Global Cybersecurity Index (2017)



Note: The Global Cyber Security Index is a composite index of 25 indicators where 1 is the best, and 0 being the worst achievable result.  
Source: International Telecommunication Union (ITU).

## Recommendations

**(8) Develop 5G technology by opening higher frequency ranges and providing state subsidies for the development of smaller cell sizes:** Rapid, nationwide deployment of the 5G network is important because no EU country has any significant advantage in this technology, so Hungary can gain a considerable competitive advantage through well-coordinated development efforts. Hungary could take a big step, if users in Hungary were the first to use 5G technology among the EU countries. This can be facilitated by active cooperation between telecommunications companies and the government: opening higher frequency ranges and promoting the development of smaller cell sizes compatible with higher frequencies.

**(9) Subsidise the spread of fibre optic cables:** Increasing the proportion of fibre optic cables is necessary to ensure broadband access across the country, which is competitive over the long term. As part of the Super-fast Internet Programme, approximately 60,000 kilometres of fibre optic

cable, and, in the early 2020s, 20,000 kilometres of fibre optic cable is expected to be laid down per year for the development of e-government and the interconnection of 5G base stations. From a strategic and national economic aspect, it would be beneficial, if the production of these cables would be carried out partly in Hungary, which could be facilitated by state support for the development of operating environment of fibre optic cable producing companies in Hungary.

**(10) Improve insulation across the power grid:** Maintaining and upgrading the power grid is a prerequisite for the safe use of devices emerging during the 4th industrial revolution. The quality of the electric network can be improved through the continuous modernisation of the insulation of the existing power grid, especially in areas of block of flats, thereby providing the insulation resistance required for the correct functioning of the power grid.

**(11) Increase the share of underground power cables:** The quality of the electric network can be improved, if the share of underground power cables (less exposed to external influences) increases. As a result, it is presumed that the duration of unexpected power outages can also be shortened. In Denmark, in the 2000s, a significant portion of the power cables was placed underground, thereby managing to prevent weather conditions from affecting security of supply (Danish Energy Agency, 2016).

**(12) Provide subsidies for increasing the number of higher-amperage connections in households:** Increasing the capacity of the household electric networks is necessary to facilitate the use of new consumer goods (e.g. electric vehicles) that use more and more complex electricity. The expansion of household electric connections requires the assessment of future electricity demand of real estate (both family houses and condominiums) and that the number of connections with the appropriate amperage (e.g. deploying higher voltage connections in condominiums, considering electrical connections of sufficient amount and voltage when designing newly built real estate) be raised, and, that electricity providers prepare the physical infrastructure

for the expected increase in loads. The development of a smart grid, i.e. the installation of smart meters, can help in monitoring consumer demand and capacity.

**(13) Upgrade the capital and all county seats into smart cities:** A smart city is a city that develops its environment and digital infrastructure with the extensive involvement of its residents. In addition, the quality and economic efficiency of services available in its area are modernised through the application of modern, innovative information technologies in a sustainable manner, also taking into account the feedback of its citizens (Hungarian Official Journal, 2017). Developing and analysing real-time data services can contribute to the organisation of an economically more efficient, user-friendly urban infrastructure (use of public utilities, transport). One such development is ICT integration across all aspects of transport services. Another example is the analysis of the spatial and temporal use of energy and, through this, the promotion of energy efficiency. Budapest adopted a smart city vision in 2017 (Municipality of Budapest, 2017). Innovative developments in energy, transport and infocommunication are being implemented in a number of European cities, including Barcelona, Vienna, Lisbon and London using EU funding to promote the creation of smart cities (European Commission, 2017a).

**(14) Develop Hungary's information security software industry:** Enhanced protection of applied systems and networks is required to ensure protection against the interception of data and other malicious attacks. The minimum requirement in this regard is the installation of modern protection systems where no such systems have been set up (i.e. at a significant portion of Hungarian companies). In addition to this, however, there is considerable potential for growth in the information security industry itself. There are already internationally competitive information and cyber defence companies in Romania and Slovakia. For the development of innovation activities and from the point of view of national security, significant progress could be made if Hungary would be capable of relying on its own know-how in this field.

## 12.4. EFFICIENT ENERGY USE

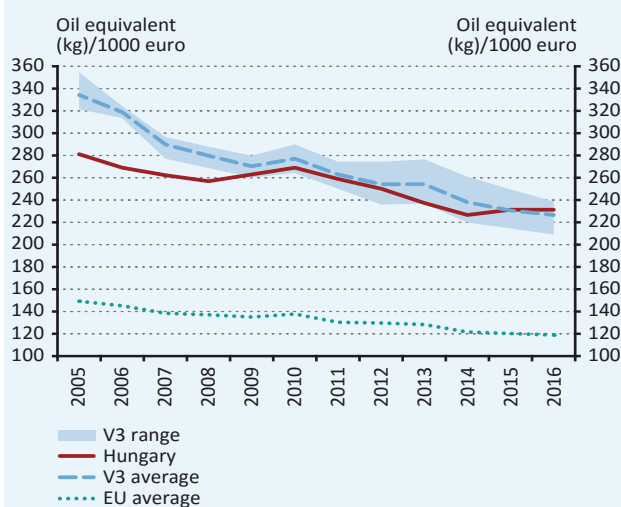
- (15) Grant tax benefits to improve corporate energy efficiency
- (16) Allocate public funds to support the introduction of energy audits
- (17) Improve household energy efficiency through more intensive subsidisation of renovations
- (18) Continuously assess opportunities for further reductions in regulated energy prices
- (19) Add high-capacity power storage facilities to the power grid

### Assessment of the situation

The energy consumption of the Hungarian economy is high compared to the EU, which is primarily due to the **obsolete energy management of enterprises and households**. Although energy consumption per unit of output fell by 18 per cent in Hungary between 2005 and 2015, it remains almost twice as high as the EU average (Figure 12.6). At present, the largest consumer of energy in Hungary is the household sector (34 per cent), followed by the transport sector (25 per cent) and industry (24 per cent). Examining the individual sectors, major differences can be identified in the degree of energy consumption. In Hungarian industry energy intensity rose, while it declined in the EU, and thus compared to the EU average Hungary has the greatest lag in this area (66 per cent). In the case of households, energy intensity stagnated, while in the European Union it fell on average, and thus the gap between the Hungarian and EU energy intensity rose (38 per cent) (European Commission, 2017b). The latter is mainly owing to the fact that many energy efficiency improvements have taken place in recent years, but two thirds of Hungarian buildings are still obsolete in terms of energy and the old Hungarian vehicle fleet also contributes to this (the average age of passenger cars is 14 years). Outdated technologies leading to environmental burdens used by industrial production also increase energy intensity. High energy consumption, in addition to low domestic energy production, contributes to a net energy import ratio of 55-60 per cent, which is 20 percentage points higher than the average of V3 countries, and thus to the considerable energy dependence of Hungary (Figure 12.7).

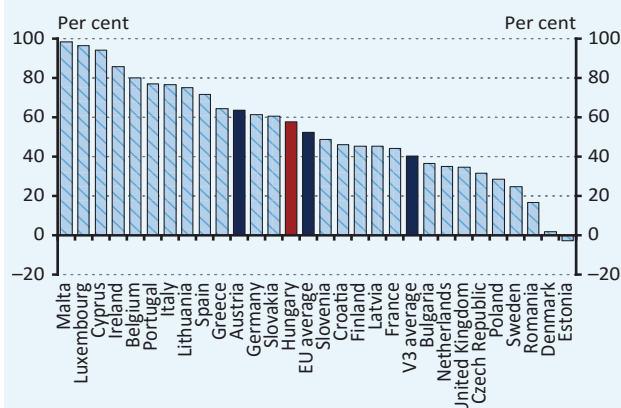
Several steps have been taken in recent years to strengthen Hungarian energy competitiveness, the continuation and extension of which would contribute to economic convergence in Hungary. Energy efficiency investments in the business sector are subject to tax benefits, which can be partially deducted from the corporate tax base. This tax benefit can be claimed in six tax years up to a maximum of 70 per cent of the calculated tax, and 30-50 per cent of the total investment cost can be deducted depending on company size and the geographical location of the company (NAV, 2018). The use of EU funds also contributes

**Figure 12.6**  
Energy consumption per unit output of the economy



Source: Eurostat.

**Figure 12.7**  
Net energy imports in proportion to total energy consumption (2015)



Note: Data for Cyprus, Croatia, Latvia, Lithuania, Malta and Romania are from 2014.

Source: World Bank.

significantly to the modernisation of energy systems. Launched in 2014, the Warmth of Home Programme aims to improve the energy efficiency of private and public buildings. The modernisation of energy systems can be implemented in the framework of the programme,



and household appliances can be replaced with a state subsidy. In addition, households can now take advantage of preferential loans to improve energy efficiency (Ministry of National Development, 2015; Government of Hungary, 2017a).

**Household energy prices are below the EU average calculated at purchasing value.** The price of natural gas in Hungary at purchasing value is the third lowest among the EU member states. Retail gas prices fell by 34 per cent between 2011 and 2014, and retail electricity prices also fell by more than 25 per cent between 2012 and 2014, primarily as a result of several steps of reduction in regulated prices in 2013–2014 (Eurostat data). The establishment of the Energy Innovation Council in October 2018 also serves to maintain low prices in the long term. The Council will focus, among other things, on energy reduction, changing consumer needs, innovative energy storage options and the integration of small power plants. The results of the Council's work will be included in the new National Energy Strategy (Government of Hungary, 2018f).

## Recommendations

**(15) Grant tax benefits to improve corporate energy efficiency:** Corporate tax benefits for energy efficiency investments primarily help businesses to perform energy-related modernisation. It is necessary to maintain and promote these tax benefits to motivate enterprises to invest in more environmentally friendly and energy-efficient production technologies. Corporate energy consumption can also be reduced by raising the amount of tax that can be deducted from energy efficiency investments. In addition, small and medium-sized enterprises changing their business vehicles to a younger fleet and receiving support for this could also contribute to the increase in corporate energy efficiency.

**(16) Allocate public funds to support the introduction of energy audits:** The voluntary introduction of energy audits (comprehensive energy efficiency auditing) in the SME sector could also improve energy efficiency; this is supported by public funds in Poland (Odyssey – Mure, 2015). Currently, only large companies are required to perform energy audits in Hungary.

**(17) Improve household energy efficiency through more intensive subsidisation of renovations:** Within the framework of the Warmth of Home Programme, the government is currently subsidising the renovation and replacement of real estate windows, the thermal insulation of facades and floors, modernisation of the heating and hot

water systems, as well as the installation of solar panels for heating and power generation. The intensity of the subsidy is 40–55 per cent. If this programme is continued and there is room for it in the state budget, increasing the intensity of the subsidy could make a significant contribution to reducing the energy consumption of existing residential properties. In the next multi-annual EU programming cycle, resources for energy-related modernisation should be earmarked to provide more resources for the energy modernisation of residential properties. In the UK, households in need of social support receive public financial support for energy efficiency improvements (UK Government, 2018a; 2018b). Execution of investments aimed at heating modernisation can also contribute to reducing air pollution. In France, in order to support the purchase of condensing boilers that are much more environmentally friendly than conventional boilers, a tax benefit of 15–25 per cent of the purchase price was introduced in the 2000s. As a result of this measure, the market share of condensing boilers increased by 25 percentage points in less than ten years (IEA (b), 2013). In addition to that, new innovative solutions, such as wall paints for heating developed by Hungarians, can reduce the ecological footprint of properties (Világgazdaság, 2018c). In addition to the renovation of doors and windows, heating systems and thermal insulation, the continuation of household appliance replacement programmes can also contribute to the reduction of energy intensity of households.

**(18) Continuously assess opportunities for further reductions in regulated energy prices:** The world market price of crude oil and natural gas is constantly fluctuating, and depending on the type, the price of Hungarian gas imports is influenced to a degree of 75–90 per cent by the leading futures of Western European stock exchanges (Palotai and Virág, 2016). It is important to monitor the price of these two commodities so that, in the event of a downward trend in their prices, officially regulated prices can be reduced. The low price level of residential gas boosts the consumption of other goods or the saving of households, and thus economic competitiveness. In order to maintain low energy prices, it would also be important to reduce Hungary's unilateral dependence on Russian gas. This could be facilitated by the construction of the Hungarian-Romanian, Hungarian-Croatian and Hungarian-Slovenian-Italian two-way gas transport interconnectors (cross-border network connections). The construction of a Hungarian-Slovakian interconnector could contribute to sustainable low electricity prices. In addition to the positive impact on prices, these development projects also promote the geographical diversification of Hungarian energy imports.



**(19) Add high-capacity power storage facilities to the power grid:** With the spread of renewable energy sources, the development of power storage is becoming more important, which can be a step forward in reducing the dependence of renewable energy production on weather and in serving more efficiently periodically changing (day-night, summer-winter) consumer demands. It may become necessary to store electricity generated in renewable power plants in high-capacity batteries. In the European power grid, 10-20 megawatts of energy storage units are already in operation, and batteries with a capacity of 50 megawatts or more are under construction. Network

expansion, which is becoming increasingly difficult due to increasing consumer demand, can be delayed in several cases or can be rescheduled for later by avoiding the periodic overloading of network elements (wires, transformer stations) using batteries (Portfolio, 2018). To this end, it may be advantageous in Hungary to extend the electricity network with electrochemical, high-capacity electricity storage facilities and, in this context, to explore the possibilities of expanding storage capacity. Solving the storage of renewable energy sources will also contribute to the further reduction of the amount of fossil energy used.

## 12.5. GREEN ECONOMY

- (20) Allocate HUF 50 billion in subsidies for wind and solar power plants
- (21) Allocate HUF 50 billion in subsidies for SMEs' environmental protection investments
- (22) Modernise and equip water utilities with smart meters
- (23) Enhance the sewerage infrastructure in localities with fewer than 2,000 inhabitants, and increase the number of wastewater treatment plants
- (24) Increase the share of recycled waste and introduce the deposit and return system
- (25) Strengthen support for electric vehicles
- (26) Improve the agricultural irrigation infrastructure

### Assessment of the situation

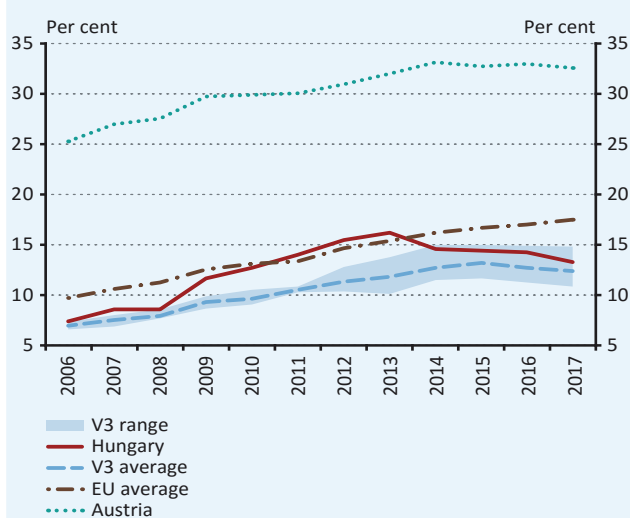
**The share of renewable resources in energy consumption is 13 per cent, which falls short of the Austrian ratio by 20 percentage points** (Figure 12.8). The share of renewable energy sources in Hungary increased by 6 percentage points between 2006 and 2017, which is 2 percentage points lower than the EU average, while the Hungarian figure meets the national EU-2020 target (13 per cent). The structure of Hungarian renewable resources is extremely unfavourable. In Hungary, 92 per cent of the biomass (i.e. mainly firewood) is from the recycling of renewable waste and biogas. The calorific value of biomass is low and the environmental impact of its use is high. Energy production from solar, wind and geothermal power plants is low in Hungary. The increase in the share of renewable energy sources in energy consumption is promoted by the METÁR programme (Renewable Support Scheme), which was introduced in 2017 and provides support to power plants that generate electricity from renewable energy sources. Electric power

generation that is linked to a new investment or power plant unit that undergoes major renovation or development can receive the METÁR support (MEKH, 2017). EU funds are also available to increase the rate of renewable energy sources used in corporate operations. The Paks2 project supports an increase in domestic energy production. According to the plans, the total capacity of the nuclear power plant will increase from the current 2,000 MW to 4,400 MW by 2030, hence reducing Hungary's energy dependency.

**Small and medium-sized enterprises in Hungary carry out investments reducing environmental burdens to a lesser extent than the EU average.** Fewer SMEs are making environmental investments than in Western and Northern European countries. The shortfall is the biggest in material and waste recycling during production. Only 18 per cent of Hungarian SMEs do any of these activities, which is 22 percentage points below the EU average. The share of Hungarian SMEs that have material-saving investments (49 per cent) or measures is below the EU average by less than ten percentage points. The share of SMEs implementing energy and water savings (59 per cent and 44 per cent of all SMEs), however, is at the EU average (European Commission, 2017c). There are mainly financial obstacles to the domestic SME sector increasing its investment activity in the environmental area.

**In Hungary, exposure to air pollution from particulate emissions exceeds the EU average and the Austrian level.** The primary source of air pollution is the use of solid fuels, including old furniture and similar waste, for heating homes. Fine particulate emissions are more than 1.5 times the guideline value set by the World Health Organisation. In 2011, the Hungarian government announced an action plan for reducing fine particulate matter concentrations ( $PM_{10}$ ), which primarily aims to reduce the concentration of fine particles by modernising heating and transport (Government of Hungary, 2011). Further measures focusing on reducing pollutants that are less than 2.5 microns entering but not leaving the lungs should be taken to ease the stress on air. Currently, Hungary has the ninth highest

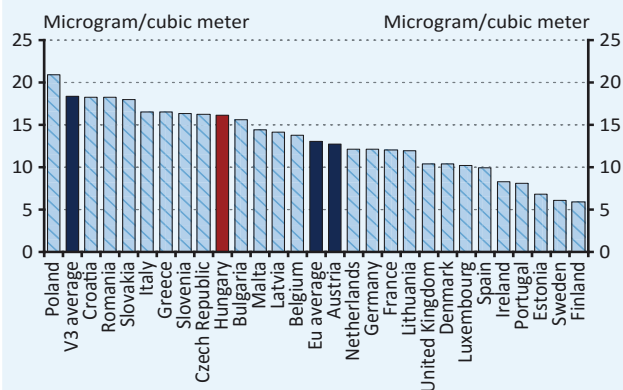
**Figure 12.8**  
Use of renewable energy sources in proportion to total energy use



Source: Eurostat.

concentration of air pollutants smaller than 2.5 microns per cubic meter among the EU members (Figure 12.9).

**Figure 12.9**  
**The population's exposure to air pollution (2017)**



*Note: The figure shows the concentration of particles below 2.5 microns in the air. The database does not include Cyprus.*

*Source: OECD.*

**The quality of drinking water is good in Hungary, but more than one fifth of the population is not connected to the wastewater network.** Drinking water in Hungary is of good quality, free from microbiological and chemical contaminants in more than 95 per cent of the cases, and only three per cent of domestic bathing waters are of poor quality. On average, 97 per cent of the population has access to piped water. However, the situation in Hungary is less favourable in the field of wastewater disposal. 78 per cent of the population has connection to the wastewater network, which, although reaches the average of other Visegrád countries, can be considered progress compared to 70 per cent in 2010, but lags behind the Austrian level by 17 percentage points (OECD, 2018). In Hungary, 67 per cent of clean water is used for electrical cooling, which is the second highest rate among the OECD countries. In 2017, the government adopted the National Water Strategy (Kvassay Jenő Plan), which aims to secure sustainable water management in the 21st century. The seven long-term goals set out in this strategy by 2030 are: water retention for the better utilisation of Hungary's waters, preventive flood and inland water protection, high-quality water supply and water utility services, improving the relationship between society and water, renewal of planning and management, and renewing the economic regulatory system of water management. Since a significant part of the above-ground water stock comes from abroad, Hungary is, among others, also active in the area of water diplomacy. The success of

this effort is demonstrated by the Water Summit held in 2013 and 2016 in Hungary and the role of Hungary in the High Level Panel on Water (Government of Hungary, 2017b). In addition, water management technologies and water purification are high-priority sectors in Hungary's exports.

**The amount of waste generated has decreased, but its recycling rate is low.** In Hungary, the amount of municipal waste generated fell by more than 20 per cent between 2006 and 2016. However, the recycling rate of waste is low, since only 35 per cent of all municipal waste generated is recycled or composted, which is 24 percentage points below the Austrian level. Half of the waste is landfilled in Hungary, although this ratio has decreased by 30 percentage points over 10 years. In the National Waste Management Plan for 2014–2020, the government set the following major objectives: increasing waste recovery rates, establishing and developing separate waste collection and reducing waste generation. The document also draws attention to the possibility of introducing a deposit system for glass and plastic bottles (Government of Hungary, 2013).

**Compared to the rates registered around the democratic transformation, Hungarian greenhouse gas emissions have decreased remarkably, but further steps are needed in line with international efforts and obligations.** Gross greenhouse gas emissions fell by a total of 35 per cent between 1990 and 2016, and greenhouse gas emissions per unit of GDP dropped by 60 per cent in this period. 80 per cent of this decrease is due to the modernisation of the energy sector, and to a lesser extent, the transformation of the chemical industry. However, gross greenhouse gas emissions started to rise in 2014, and increased by a total of seven per cent between 2014 and 2016. The reduction in greenhouse gas emissions per unit also ceased. This unfavourable tendency is primarily due to transport and, to a lesser extent, to agriculture. The increase in greenhouse gas emissions from transport is due to the soaring number and increasing average age of passenger cars in traffic (11 years at the end of 2010, 14 years at the end of 2017). Agriculture has contributed to the increase in greenhouse gas emissions by increasing the application of fertilisers containing nitrous oxide and by increasing the number of animals that, in turn, contribute to methane emissions (OECD, 2018). The Hungarian Government intends to take steps to further reduce greenhouse gas emissions with the Second National Climate Change Strategy for the period 2017–2030 that consists projections until 2050 and the Hungarian Decarbonisation Plan included therein (Government of Hungary, 2017).

## Recommendations

**(20) Allocate HUF 50 billion in subsidies for wind and solar power plants:** The country's energy mix could be improved by increasing the share of environmentally friendly energy sources in total energy production and energy use. Less than 10 per cent of total renewable energy generation comes from environmentally friendly energy sources. Currently, projects for the construction of renewable energy plants in Hungary are underway. In order to promote modern energy management, the number of renewable energy plants should be further increased. In addition to encouraging the construction of smaller and larger capacity solar power plants, it would also be important to increase the number of wind farms and geothermal power plants. For this, both state support and EU funds would be needed, and should include the extension of financial support for the construction of a solar power plant between 50 and 500 kW while maintaining the METÁR.

**(21) Allocate HUF 50 billion in subsidies for SMEs' environmental protection investments:** We recommend the creation of a dedicated, state-financed fund that supports the environmental investments of small and medium-sized enterprises. In the course of corporate production, Hungarian SMEs reuse materials and the waste generated to a lesser extent than the EU average. Recycling corporate waste in greater proportions would contribute to greener production. The implementation of investments facilitating the minimisation of waste generation, water conservation and the reduction in the use of materials in production would also contribute to the development of a greener, environmentally more friendly economy. In addition to conserving the environment, such a fund would also enable SMEs to spend more on other types of investments, which also lead to a technological modernisation. Furthermore, environmental investments could also increase the number of 'green jobs', that is, jobs that preserve the quality of the environment or are directly related to the restoration of the environment.

**(22) Modernise and equip water utilities with smart meters:** The prerequisite for a long-term, reliable water supply is that water utilities are modern and, thus contribute to the safety of supply. The aging of water utilities compels the state to provide the resources needed to modernise old water pipelines and related infrastructure. We recommend the planning and implementation of renovation works in water utilities across the country, as well as the digitalisation of newly renovated and newly built water utilities (e.g. monitoring of water consumption using smart meters), which also contributes to the spread of smart cities. The five criteria for smart metering integrated into public

utility networks include the automatic transmission and processing of metering data, remote control of meters, two-way communication between a metering and a measuring service provider, submission of consumer information to authorised parties, and promotion of energy efficiency across the entire range of services (Office of the National Assembly, 2017). In water utilities, installing smart meters can contribute to a more conscious and economical water consumption.

**(23) Enhance the sewerage infrastructure in localities with fewer than 2,000 inhabitants, and increase the number of wastewater treatment plants:** In Hungary, a little over three quarters of the population have sewage disposal. Although progress has been made in the field of extending and developing the wastewater network in recent years, and a new sewage plant was opened in Budapest in 2010, further steps are needed. A more modern solution to wastewater disposal of settlements with less than 2,000 inhabitants can be ensured by connecting villages and farms to the wastewater network. Moreover, more emphasis should be put on the purification and recycling of wastewater. More than three quarters of wastewater in Hungary is treated with advanced purification techniques, but 17 per cent of the Hungarian population live in settlements with less than 2,000 inhabitants where no sewage treatment plant is present. Furthermore, many wastewater treatment plants that have not been modernised have become overloaded, which can be remedied by their reconstruction and by construction of new ones.

**(24) Increase the share of recycled waste and introduce the deposit and return system:** The rate of waste recycling, which is significantly lower than the Austrian level, could be increased by developing the infrastructure of separate waste collection (increasing the number of separate waste collection points and separate waste collection facilities), launching information campaigns on the environmental impact of separate waste collection and the more pronounced inclusion of environmental protection in public education. In addition to expanding the recycling infrastructures, the introduction of social incentives could also promote the improvement in recycling rate of wastes. Such an incentive could be the introduction of the redeemability of plastic and glass bottles in line with the German example. In Germany, a 25-cent deposit has to be paid for every single-use plastic bottle (mineral water, soft drink, beer) (BMU, 2018). The deposit fee can be redeemed in redeeming machines located at supermarkets after returning the empty bottles. Gradually increasing the tax rate imposed on landfill placement could also promote the improvement in the rate of recycling. Increased reuse and recycling of waste can improve the resource efficiency

of the Hungarian economy, present additional business opportunities and create jobs in the recycling sector.

**(25) Strengthen support for electric vehicles:** Efforts to reduce greenhouse gas emissions could be reinforced by further steps. One important area is the promotion of electromobility. The increase in the number of electric cars can be further promoted by expanding the electric charging infrastructure and by increasing the amount of state support for the purchase of electric cars and the number of beneficiaries, in accordance with the principles set out in the Jedlik Ányos Plan and with EU regulations.

**(26) Improve the agricultural irrigation infrastructure:** The high volatility (in international comparison) of the added value of domestic agriculture could be dampened. Plant production directly exposed to weather conditions is around 60 per cent in Hungary. Similarly to Hungary, the share of plant production in Italy, Spain and Portugal is high, while the volatility of the sector performance is much lower owing to the higher prevalence of irrigation. Increasing the proportion of irrigated areas and the efficient use of available water resources would contribute to the competitiveness of agriculture and a lower volatility in its performance. However, this requires an adequate agricultural infrastructure.

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# Annex to the Recommendations

## LIST OF THE 330 POINTS OF THE MNB'S COMPETITIVENESS PROGRAMME

1. NEW FINANCIAL MODEL
1. Develop a "reverse" suretyship procedure
2. Ease exclusion ("KO") criteria in a targeted manner
3. Seek 'banks' commitment to increase credit portfolios that qualify as additional
4. Offer more flexible guarantee rates (70 to 90 percent)
5. Redesign bank processes related to higher risk taking
6. Make concerted marketing efforts to promote institutional guarantees
7. Extend the tax benefits for 'business angels' to enterprises that have been running for more than 3 years
8. Facilitate co-investment opportunities through government assistance
9. Mitigate interest rate risks for customers
10. Strengthen financial awareness
11. Continue to promote Certified Consumer-Friendly Mortgage products
12. Reduce lead times for loan replacements
13. Reduce administrative burdens and charges related to early repayment
14. Enable the mandatory sharing of positive credit histories
15. Establish the continuous querying of credit histories
16. Enable simple, user-friendly bank account switching
17. Increase the comparability of bank account plans
18. Develop and promote bank accounts to improve the banking relations of retirees and socially disadvantaged persons
19. Adopt standardised bank account statements
20. Establish a standardised loan application interface for small businesses
21. Optimise branch networks
22. Improve the coverage of POS terminals and other electronic payment solutions
23. Provide a tax benefit on the financial transaction levy to encourage the upgrade or replacement of obsolete IT systems, and developments related to the instant payment system
24. Develop and deepen the digital transformation
25. Provide a tax benefit to encourage the development of mobile payment applications
26. Support digital development related to the instant payment system
27. Incentivise banks to introduce package pricing in retail payment services
28. Make online contracting and signatures simpler and faster
29. Enable credit institutions to submit electronic queries for the income statements held by the National Tax and Customs Administration
30. Reduce the notarial fees associated with housing loans
31. Replace notarial certification with a central digital platform
32. Establish full online processing for taking out unsecured loans
33. Set up a central appraiser database
34. Automate the land registry information system (TakarNet) while ensuring continuous availability
35. Increase the share of mortgage and consumer loans sold through digital channels
36. Ensure that administrative and operational requirements are proportional to the risks that are being addressed
37. Provide wider access to available information sources for new entrants to the market

38. Facilitate close cooperation between innovators and the regulator through the Innovation Hub
39. Grant preliminary operating licences in the Regulatory Sandbox framework
40. Enhance the Regulatory Sandbox with the capability to grant exemptions from regulatory provisions
41. List state-owned enterprises through a stock ownership plan for small investors
42. Provide incentives for listing of banks
43. Establish a modern corporate bond market
44. Ensure state participation in the development of the domestic equity market
45. Grant tax exemption on long-term investment accounts holding newly listed shares
46. Launch a specialised trading platform tailored for SMEs
47. Ensure the deductibility of listing expenses from corporate income tax
48. Ensure consistency between capital market rules and general EU practices
49. Improve access to digital platforms
50. Appoint a government or ministerial commissioner for stock exchange development
51. Increase the product value to customers in non-life insurance
52. Provide legal and technological means to facilitate changing insurers
53. Enhance the system of the Annual Cost Rate (TKM) and extend it to the pension funds sector
54. Develop the digital links between the insurance and banking sectors
55. Increase CASCO in motor own damage penetration
56. Develop the system of guarantees in the insurance and the health and pension funds sectors
<b>2. ACTIVATION OF HOUSEHOLD SAVINGS</b>
1. Increase maturity of bonds and redesign the product structure of retail government securities
2. Encourage the transition from cash savings to government securities
3. Use technical innovations and convenience services for retail government securities purchasing
4. Redesign the arrangements for granting tax benefits, rethink the concept of long-term investment accounts
5. Develop sales channels
6. Grant tax exemption on stock dividends
7. Provide incentives for employee stock ownership programme
8. Establish welfare funds through a combination of pension and health savings
9. Extend dividend tax exemptions to pension savings accounts
<b>3. SME STRATEGY</b>
1. Reduce the investment limit from HUF 500 million to HUF 100 million for the development tax benefit available to SMEs
2. Enable the immediate deductibility of investments in the corporate tax base
3. Ensure the deductibility of investments from the local business tax base
4. Provide assistance for SME wage increases subject to investment commitments
5. Support acquisitions and mergers
6. Make liquidation proceedings simpler and faster
7. Provide a 2-year dividend tax waiver for companies undergoing a generation change in management
8. Increase the innovation management capacity of SMEs by establishing a non-profit advisory centre
9. Support the operation of clusters
10. Support the emergence of clusters and other forms of networks
11. Communicate state-sponsored programmes and opportunities on a broad base
12. Support the operation of mentor networks
13. Provide preferential grant application and borrowing options for young and female entrepreneurs
14. Increase the number of co-working offices in large cities
15. Increase the number of accelerators sponsored by large corporations
16. Support university incubators and spin-offs

17. Organise and support relevant startup conferences and meetups
18. Grant a corporate tax exemption for aspiring entrepreneurs in their first three years
19. Reduce the social contribution tax further for SMEs
20. Enter into strategic partnership agreements with innovative SMEs
21. Provide digital courses conditional on achievements
22. Make company websites mandatory
23. Develop digital infrastructure in rural areas
24. Tighten rules for the management of ICT risks
25. Establish the János Neumann Fund to support firms' ICT developments
26. Prefer knowledge-intensive industrial services in EU funds' disbursement
<b>4. FOREIGN TRADE</b>
1. Strengthen export of services (besides export of goods)
2. Exploit the benefits offered by China's One Belt One Road initiative
3. Support the entry into fast-growing new markets with stable institutions
4. Support foreign traders in Hungary, introduce a new trading house concept
5. Enable market-ready companies to operate temporarily in international co-working offices
6. Separate country, sector and product promotion and corporate brand building
7. Channel public development funds to manufacturing sectors that are knowledge-intensive or well embedded domestically
8. Provide incentives for strongly subsidised enterprises to use Hungarian suppliers
9. Give priority to supporting productive investments on the services side when programming for the next EU programming period
<b>5. LABOUR MARKET</b>
1. Public employee wages to be paid by the state after private sector employment for a certain period when the employer will continue employing them for at least the same length of time
2. Increase the difference between the wages paid for public work and the minimum wage
3. Raise the permitted upper limit on the amount of earnings for persons employed below the retirement age or while receiving pension
4. Provide additional incentives for atypical forms of employment to encourage capacity building and organisational development
5. Expand the category of elementary occupations of the Job Protection Action Plan
6. Extend the Job Protection Action Plan to employees' contributions
7. Extend the Job Protection Action Plan up to the minimum wage
8. Extend the Job Protection Action Plan in the form of sector-specific allowances based on criteria for reducing the shadow economy
9. Provide an incentive for the employment of pre-retirees by granting a tax exemption on employers' voluntary pension fund contributions
10. Introduce a counter-cyclical labour market contribution
11. Promote targeted work time reduction combined with full or partial social contribution tax compensation and/or public wage compensation in vulnerable groups
12. Continue the reduction of taxes on labour, introduce a single-digit personal income tax rate
13. Attract digital nomads
14. Increase wages paid in high-demand jobs in the public sector
15. Increase awareness of family support elements, run campaigns to raise awareness of the educational and healthcare system supported by the state
16. Support Hungarian companies' recruitment abroad through the deduction of expenditures and tax benefits
17. Simplify the recognition of degrees obtained abroad
18. Introduce output criteria and independent examination centres in the system of adult education and training
19. Ensure that first qualifications may be obtained free of charge in adult training
20. Develop digital and language skills in senior generations
21. Provide incentives for lifelong learning by allowing education expenses to be deducted from the corporate income tax base

22. Introduce a mandatory further training minimum for companies
23. Reimbursement of the fees of successfully passed examinations for the most renowned international certifications
24. Support the retraining of labour released as part of reducing red-tape by covering costs and granting allowances on contributions
25. Incorporate entrepreneurship skills into public and tertiary education
26. Run domestic and foreign media programmes for the promotion of entrepreneurship
<b>6. REGIONAL CONVERGENCE</b>
1. Support labour market mobility by providing incentives for commuting
2. Support labour market mobility by supporting change of residency status
3. Provide mobility incentives to supplement the employment benefits granted to public employees
4. Improve interurban passenger transport
5. Introduce coupon benefits based on the Polish model
6. Ensure strong reliance on the sectoral and technological specialisations of economic centres outside Budapest
7. Provide for the favourable treatment of tenders based on local suppliers and resources
8. Introduce a territorial compensation mechanism to counterbalance the labour drain
9. Introduce a compensation mechanism for teachers taking up employment in less developed regions
10. Incorporate territorial differentiation into the Széchenyi Card Programme
11. Provide a combination of capital and funding through banks' participation
12. Provide a wider range of benefits in 'Free Enterprise Zones'
13. Increase the absorption of funds from the European Investment Bank
<b>7. FAMILY-FRIENDLY PROGRAMME</b>
1. Raise the ceilings applicable to the infant care allowance and the childcare allowance
2. Raise the amount of the one-off maternity allowance subject to an employment relationship (introduce a progressive allowance amount for additional children, depending on the number of children)
3. Introduce an initial capital scheme for young returnees who undertake to have children in Hungary
4. Provide a one-off health fund allowance to cover the expenses of childbirth care
5. Support parenting by higher-education students
6. Ensure the constant review of the elements of the family support system and analysis of their efficiency
7. Promote parenting (by awareness raising, advertising of family support elements, and support for preparatory trainings)
8. Provide for the prevention and treatment of diseases that inhibit parenting
9. Run an information campaign on insulin resistance and provide free insulin resistance screening for women of reproductive age
10. Provide more active support for artificial insemination
11. Provide a wider range of subsidised examinations during pregnancy
12. Reduce the number of foetal deaths through improvements to prenatal care
13. Reduce vaccine prices
14. Align consulting hours to working hours
15. Ensure that the employment-related elements of the family support benefits track the dynamic wage growth (e.g. via the family tax base allowance)
16. Reform the family tax base allowance by allowing negative taxation
17. Grant full tax exemption for mothers in large families on a broader base
18. Increase the family tax base allowance for the children of mothers giving birth under 30 years of age
19. Ensure that infant nursery care is available for all Hungarian children between 2 and 3 years of age
20. Increase nursery school capacities in order to enable admissions to mini groups from the age of 2.5 years
21. Support the use of private nurseries through public contributions to charges
22. Make family-friendly improvements to the public education system (e.g. longer duty hours aligned with working hours)
23. Support the re-entry of women into the labour market following childbirth
24. Create a family-friendly workplace environment and provide incentives for day care in the workplace

25. Support summer camps for children
26. Clarify the legal status of babysitters
27. Set up a public school bus system
28. Make family-friendly improvements to the services of the financial system
29. Extend eligibility for non-refundable assistance under the family housing benefit scheme (CSOK) as an incentive for birth of second children
30. Adjust the figures specified in the CSOK rules so that the scheme may effectively track developments in the property market
31. Remove the HUF 35 million cap on the CSOK available for the purchase of used homes
32. Tighten the rules applicable to the purchase of homes for investment
33. Develop new district concepts to improve the territorial allocation of housing developments
34. Utilise vacant public housing
35. Increase the tax advantage on first home purchases
36. Arrange for the continuous review of the value threshold of the tax advantage on new home purchases
37. Increase the construction workforce
38. Scheduled market entry of public investments
39. Ease administrative barriers to home construction
40. Acknowledge the number of children raised in assessing the initial pension amount
41. Consider the family tax allowance for pension calculation
42. Membership in supplementary pension funds by subjective right
43. Support employers' contributions to supplementary pension funds
44. Increase the effectiveness of state subsidies in supplementary pension funds
45. Increase investment and cost effectiveness and security
46. Ensure that welfare funds provide a range of family-friendly services and support home purchases
<b>8. HEALTHY SOCIETY</b>
1. Promote healthy eating habits through information and tax benefits
2. Incorporate basic health knowledge into public education curricula
3. Extend the public health product tax
4. Increase the excise duty on spirits
5. Increase the excise duty on tobacco products to reduce smoking and the costs of related diseases
6. Provide opportunities for regular sports activities
7. Offer grant schemes to support the creation of quality work and home environments
8. Strengthen the functions of the general practitioner system
9. Support regular physicals and screening tests
10. Set up a National Health Database
11. Develop and systematically implement a comprehensive mental health package
12. Strengthen the system of emergency medical services
13. Extend funding methods based on patient cooperation
14. Strengthen rehabilitation care
15. Increase capacities for long-term and home care by strengthening cooperation between health care and social care systems
16. Establish a public funding system based on actual costs
17. Ensure that administration and controlling on a case-to-case basis is implemented at health care institutions
18. Review the application of performance volume limits
19. Introduce a financing method across levels of care
20. Extend the application of pay-for-performance financing methods
21. Set up a professional feedback system for patient treatment histories
22. Establish a transparent remuneration system
23. Increase the number of health care personnel and staff



24. Elaborate the conditions for a system of supplementary private health insurance
25. Guaranteed membership in the health funds and provision of targeted incentives for in and out payments
26. Extend support to prevention and service invoices
27. Provide tax benefits on corporate healthcare packages
28. Provide tax benefits on private health insurance
29. Ensure that minimum requirements, professional and financial directives and protocols are regularly reviewed and updated
30. Develop a clear definition of the care package covered by social security
31. Strengthen professional and financial control
32. Ensure standardised measurement and publication of the performance of health care institutions and patient satisfaction
33. Increase the reporting obligations of private health providers
34. Introduce a management assessment system in public institutions
35. Increase the capacity for active same-day care
36. Reallocate and reduce pharmaceutical expenditures on a professional basis
37. Treat the pharmaceuticals trade as a strategic industry
38. Develop telemedicine
39. Increase reliance on innovative technologies to simplify care management
<b>9. KNOWLEDGE-BASED SOCIETY</b>
1. Introduce a grounding grade 0 in primary schools on demand
2. Elaborate a National Core Curriculum focusing on skills development and practical knowledge
3. Improve the methods and forms of teaching and learning
4. Ensure standardised measurement and publication of the performance of educational institutions and the satisfaction of stakeholders
5. Introduce a basic examination at the end of primary school studies
6. Increase the weight of sciences and information technology in secondary school admission examinations
7. Improve career guidance and promote increased awareness in career planning
8. Implement curriculum reform in the secondary school system
9. Apply output criteria and more flexible curricula
10. Strengthen dual vocational training
11. Strengthen the links between vocational training schools and market actors
12. Ensure flexible switching between various forms of education
13. Reduce (early) school leaving without a qualification
14. Allocate more public and private funds to education
15. Increase the number of primary school teachers and teaching assistants
16. Provide regular further training for teachers
17. Improve the social esteem of teachers, kindergarten teachers and nursery nurses by extending and enhancing the career path model
18. Redesign language examination requirements and align school programmes accordingly
19. Provide public support and premises for extra-curricular foreign language activities and language exam preparatory courses
20. Provide the option to take secondary school admission and secondary school leaving examinations in English
21. Promote more active participation in exchange programmes with other countries
22. Provide incentives for foreign students to stay in Hungary
23. Provide bi- and multilingual education in each Hungarian county
24. Promote subtitled films and series
25. Develop and maintain information technology instruments in schools and vocational training centres
26. Develop digital learning materials
27. Integrate programming into the teaching of mathematics
28. Create a competitive environment in tertiary education

29. Develop the infrastructure and equipment of tertiary education institutions
30. Strengthen links between tertiary education and companies
31. Channel market needs and private capital into education
32. Raise R&D expenditure in tertiary education to 0.5 per cent of GDP
33. Provide opportunities to lease university infrastructure
34. More attractive career path for university professors
35. Ensure that the ranking criteria for tertiary education institutions are taken into account in funding
36. Support dual degree programmes
37. Support publications in English
38. Launch specific postgraduate courses to reverse student emigration
39. Widen the enrolment base of tertiary education
40. Increase the capacity of dormitories
41. Expand merit-based and needs-based scholarship schemes
42. Make tuition fees in tertiary education dependent on academic progress
43. Redesign the course structure in tertiary education
44. Increase student activity
45. Increase opportunities for partial training abroad
46. Introduce another science subject in addition to mathematics as a mandatory school leaving examination
47. Reduce the drop-out rate in university courses
48. Deepen financial literacy
49. Provide further training for financial professionals
<b>10. RESEARCH, DEVELOPMENT AND INNOVATION</b>
1. Extend the tax allowance for PhD graduates to researchers holding university degrees
2. Raise the number of assistant staff in research and development through further wage increases
3. Provide state coverage of 50 per cent of the costs of doctorate courses for employees over 30 years of age
4. Encourage enterprises to raise their R&D expenditures via enhancements to the business environment (reduction of red tape, more benefits for R&D)
5. Grant special assistance for companies at the start of their life cycles for their R&D expenditure
6. Reduce employers' contributions for SMEs implementing R&D investments
7. Reduce patent maintenance fees
8. Favourable accounting treatment of patent revenues
<b>11. EFFICIENT GOVERNANCE</b>
1. Audit, rationalise and remove parallelisms in the system of public institutions
2. Raise average wages in public administration and reduce bureaucracy
3. Promote wage bill management and performance measurement instead of headcount management
4. Measure the efficiency of state-owned enterprises and of services provided by state agencies
5. Adopt the Estonian model to ensure that all matters dealt with in government one-stop shops may also be processed online
6. Interlink the databases of administrative organisations
7. Enhance mobile applications for simpler processing
8. Increase the share of auto-populated information in electronic forms and datasheets
9. Carry out regular online satisfaction surveys for public services
10. Develop the tax authority and increase its efficiency
11. Implement the scheme for corporate tax and value added tax returns produced by the Tax Administration
12. Develop a taxpayer-friendly, transparent website, provide online processing for a wider range of matters
13. Discontinue the use of supplements to the advance corporate tax
14. Gradually shift the corporate income tax to "cash-based taxation"
15. Reduce administrative burdens

16. Extend tax obligations to digital multinationals
17. Continue the roll-out of online cash registers
18. Phase out the financial transaction levy
19. Make it mandatory for specific merchant groups to accept electronic payment methods
20. Reducing illicit activity in the construction industry
21. Consolidate and improve the efficiency of the Treasury system
22. Provide treasury account servicing for local governments and state-owned enterprises
23. Improve the Treasury's customer relations, particularly in the sale of retail government securities
<b>12. MODERN INFRASTRUCTURE AND EFFICIENT ENERGY</b>
1. Provide electric railway access to every town with at least 30,000 inhabitants and to the Northern Balaton region
2. Ensure travel speeds of at least 160 km/h on all principal railway lines
3. Replace or modernise railway engines and passenger wagons
4. Establish an intermodal hub in every county seat and develop railroad freight terminals
5. Upgrade the motorways M1 and M7 to three lanes
6. Promote the construction of motorway feeder roads bypassing localities
7. Enable the use of self-driving cars on highways
8. Develop 5G technology by opening higher frequency ranges and providing state subsidies for the development of smaller cell sizes
9. Subsidise the spread of fibre optic cables
10. Improve insulation across the power grid
11. Increase the share of underground power cables
12. Provide subsidies for increasing the number of higher-amperage connections in households
13. Upgrade the capital and all county seats into smart cities
14. Develop Hungary's information security software industry
15. Grant tax benefits to improve corporate energy efficiency
16. Allocate public funds to support the introduction of energy audits
17. Improve household energy efficiency through more intensive subsidisation of renovations
18. Continuously assess opportunities for further reductions in regulated energy prices
19. Add high-capacity power storage facilities to the power grid
20. Allocate HUF 50 billion in subsidies for wind and solar power plants
21. Allocate HUF 50 billion in subsidies for SMEs' environmental protection investments
22. Modernise and equip water utilities with smart meters
23. Enhance the sewerage infrastructure in localities with fewer than 2,000 inhabitants, and increase the number of wastewater treatment plants
24. Increase the share of recycled waste and introduce the deposit and return system
25. Strengthen support for electric vehicles
26. Improve the agricultural irrigation infrastructure
Source: MNB.

# Acronyms annex

## DEFINITION OF THE ACRONYMS INCLUDED IN THE MNB'S COMPETITIVENESS PROGRAMME FOR 2019

NHSC (ÁEEK)	National Healthcare Services Centre
VAT	Value added tax
GDMA (ÁKK)	Government Debt Management Agency
NPHMOS (ÁNTSZ)	National Public Health and Medical Officer Service
ASEAN	Association of Southeast Asian Nations
SAO (ÁSZ)	State Audit Office
ATM	Automatic Teller Machine
BCE	Corvinus University of Budapest
BSE (BÉT)	Budapest Stock Exchange
IPF (BEVA)	Investor Protection Fund
BigTech	Major technology companies
BMI	Body Mass Index
BMU	Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (Germany)
B-N industries	The industries according to the HCSO's TEÁOR'08 (NACE) classification (private sector without agriculture)
BUBOR	Budapest Interbank Offered Rate
BSCI	Banking System Competitiveness Index
CEEPUS	Central European Exchange Program for University Studies
CEER	Council of European Energy Regulators
CFA	Chartered Financial Analyst
CIS	Community Innovation Survey
CISA	Certified Information Systems Auditor
CISSP	Certified Information Security Professional
COPD	Chronic obstructive pulmonary disease
COSME	Programme for Competitiveness of Enterprises and Small and Medium-sized Enterprises
CRM	Customer Relationship Management
CT	Computed Tomography
icb (csed)	Infant-care benefit
FHBS (CSOK)	family housing benefit scheme
DESI	Digital Economy and Society Index
DWP (DJP)	Digital Welfare Programme
EHCSS (EESZT)	Electronic Health Cooperation Service Space
EIB	European Investment Bank
EIOPA	European Insurance and Occupational Pensions Authority
EPRCS (EKÁER)	Electronic Public Road Trade Control System
ECB	European Central Bank
ECB CBD	European Central Bank - Consolidated Banking Data
ELI	Extreme Light Infrastructure

EMF	European Mortgage Federation
UN	United Nations
EPO	European Patent Office
ERP	Enterprise Resource Planning
ESHRE	European Society of Human Reproduction and Embryology
MoHSFA (ESzCsM)	Ministry of Health, Social and Family Affairs
ETCS	European Train Control System
EU	European Union
FDI	Foreign direct investment
ISCO (FEOR)	International Standard Classification of Occupations
FinTech	financial technology
FRM	Financial Risk Management
GDP	Gross domestic product
EDOP (GINOP)	Economic Development and Innovation Operational Programme
HCA (GVH)	Hungarian Competition Authority
ccb (gyed)	Child-care benefit
CASA (GYESZ)	Child Advance Savings Account
DRG (HBCs)	Diagnosis-related group
HEPA	Hungarian Export Promotion Agency
BSR (HÉV)	Budapest Suburban Railway
HIPA	Hungarian Investment Promotion Agency
NUS (HÖÖK)	National Union of Students in Hungary (HÖÖK)
HPV	Human papilloma virus
IEA (a)	International Association for the Evaluation of Educational Achievement
IEA (b)	International Energy Agency
IELTS	International English Language Testing System
ICT	Information and communications technologies
IMD	International Institute for Management Development
IMF	International Monetary Fund
IPO	Initial public offering
IRS	Interest rate swap
IT	Infocommunication technology
ITU	International Telecommunication Union
R&D	Research and development
R&D&I	Research, development and innovation
STILST (KATA)	Small taxpayers' itemised lump sum tax
TSA (KESZ)	Treasury Single Account
MTPL (KGFB)	Compulsory motor third-party liability insurance
CCIS (KHR)	Central Credit Information System
SBT (KIVA)	Small business tax
CEE	Central and Eastern Europe
MoFAT (KKM)	Ministry of Foreign Affairs and Trade
SME	Small and medium-sized enterprise
KO criteria	Knockout criteria
HCSO	Hungarian Central Statistical Office

JPAP (MAT)	Job Protection Action Plan
MÁV	Hungarian State Railways
HEA (MEKH)	Hungarian Energy and Public Utility Regulatory Authority
RESS (METÁR)	Renewable Energies Subsidy Scheme
CCHL (MFL)	Certified Consumer-friendly Housing Loan
MNB	Magyar Nemzeti Bank
ESOP (MRP)	Employee Stock Ownership Plan
MTF	Multilateral trading facility
NCC (NAT)	National Core Curriculum
NTCA (NAV)	National Tax and Customs Administration
NIFYPP (NCSSZI)	National Institute for Family, Youth and Population Policy
NHIF (NEAK)	National Health Insurance Fund of Hungary
NEHR	National Electronic Health Record (Singapore)
PHPT (NETA)	Public health product tax
NFC	Near field communication
NES (NFSZ)	National Employment Service
FGS (NHP)	Funding for Growth Scheme
NHS	National Health Service (United Kingdom)
NUPS (NKE)	National University of Public Service
NRDIO (NKFIH)	National Research, Development and Innovation Office
RSA (NYESZ)	Retirement savings account
NDIF (OBA)	National Deposit Insurance Fund
NPRDC (OBDK)	National Patients' Right and Documentation Centre
NOJ (OBH)	National Office for the Judiciary
OECD	Organisation for Economic Cooperation and Development
OECD INFE	OECD International Network on Financial Education
NRVQ (OKJ)	National Register of Vocational Qualifications
NAS (OMSZ)	National Ambulance Service
OCR (OPG)	Online cash registers
PAD	Payment Accounts Directive
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
MoF (PM)	Ministry of Finance
POS	Point of Sale
FTL (PTI)	Financial transaction levy
PIT (SZJA)	Personal income tax
CAI (SZÜF)	Custom Admin Interface
FEZ (SZVZ)	Free Enterprising Zone
TAKAR	Scheme of Cadastral Maps
CIT (TAO)	Corporate income tax
LTIA (TBSZ)	Long-term Investment Account
NACE (TEÁOR'08)	Standard Classification of Economic Activities
APR (THM)	Annual percentage rate of charge
TIMSS	Trends in International Mathematics and Science Study
TCI (TKM)	Total Cost Indicator



TOEFL	Test of English as a Foreign Language
TOP	Territorial and Settlement Development Operative Programme
CMA (Tpt).	Capital Markets Act
PVL	Performance volume limit
V3	Visegrád Four without Hungary
V4	Visegrád Four
World Bank - FII	World Bank Financial Inclusion Indicators
World Bank - GFD	World Bank Global Findex Database
WEF	World Economy Forum
WHO	World Health Organization



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# Albert Szent-Györgyi

(Budapest, 16 September 1893 – Woods Hole, Massachusetts, 22 October 1986)

Albert Szent-Györgyi, Nobel Prize winner Hungarian physician, biochemist.

Between 1904 and 1911 he attended the Presbyterian Secondary Grammar School in Lónyay Street, then continued his studies at the Medical Faculty of the Budapest University. He participated in World War I as a medical officer on the Eastern Front. Risking his life, he helped to rescue the wounded, for which he received the Silver Medal for Valour. After World War I he continued his studies in Bratislava, Prague, Berlin, Leiden and Groningen in the fields of biology, physiology, pharmacology, bacteriology and then physics and chemistry.

During his studies, he identified a new material in the adrenal of animals; later he succeeded in extracting the same material from cabbage and orange. The material with the molecular formula  $C_6H_8O_6$  was named hexuron acid. In 1927 he defended his doctoral thesis written about discovering the hexuron acid at Cambridge University, and became a doctor of chemical sciences.

On 1 October 1928 he was appointed to professor of Szeged University, where he started his research and teaching activities as a professor of the medical chemical institute in 1931. As of 1931, he dealt with the research of vitamin C, whose exact composition was still unknown. However, Szent-Györgyi proved that the hexuron acid found in the adrenal and vitamin C is the same material. Following that, he succeeded in producing significant quantity of vitamin C from green pepper. His further researches covered, inter alia, biological oxidation, the examination of certain parts of the citrate cycle, which was not completely known at that time, and the exploration of the protein chemical background of mechanical muscular movement.

In 1937 he received the Nobel Prize in Physiology or Medicine for his research related to vitamin C, 'for his discoveries in connection with the biological combustion processes, with special reference to vitamin C and the catalysis of fumaric acid'. He offered the medal he received with the Nobel Prize to those who suffered from the Finnish war that broke out at that time. Later this medal was bought by Wilhelm Hilbert, a company director in Helsinki, who, in 1940, presented it to the Hungarian National Museum, where it is still preserved. In 1938 he became a member of the Hungarian Academy of Sciences.

In 1947 he left the country, and settled in Woods Hole, near Boston, where first he was the director of the Marine Biological Laboratory, then a professor of Dartmouth College. He devoted the last two decades of his life to cancer research. His important observation was the realisation of the role of free radicals in the development of cancer and the realisation of the radical catching role of vitamins (such as vitamin C). In 1972 he founded the National Cancer Research Foundation. In the 1960s he started to deal with politics as well. He wrote numerous articles in which he criticised the nuclear arms race, and in 1970 he also protested against the Vietnam War. In 1978 he was a member of the delegation that brought the crown jewels back to Hungary.

Albert Szent-Györgyi remained mentally and physically fit in his old age as well. He died in his home due to renal insufficiency on 22 October 1986. He was buried in the garden of his house on the shore of the Atlantic Ocean.

**COMPETITIVENESS PROGRAMME IN 330 POINTS**  
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